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*****
*5110053                BOLIVIA
*                        AGRICULTURAL DEVELOPMENT SECTOR I
*                        FY75 TO FY80
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PROJECT SUMMARY DESCRIPTION

LOAN PROVIDED TO THE GOVERNMENT OF BOLIVIA TO INCREASE THE BASIC CROPS AND LIVESTOCK PRODUCED BY SMALL FARMERS OF THE CENTRAL VALLEYS AND EASTERN LOWLANDS. THE FOUR MAJOR COMPONENTS OF THE PROJECT ARE: (1) AGRICULTURAL SECTOR MANAGEMENT; (2) TECHNOLOGICAL DEVELOPMENT AND EXTENSION; (3) EDUCATION AND TRAINING; AND (4) CREDIT.

IMPROVED SECTOR MANAGEMENT WILL REQUIRE UPGRADING THE POLICY FORMATION AND RESEARCH ANALYSIS CAPABILITIES OF THE MINISTRY OF CAMPESIN AFFAIRS AND AGRICULTURE (MACAG). LOAN FUNDS WILL PROVIDE POLICY AND PLANNING TRAINING FOR MACAG EMPLOYEES AND NEW DATA PROCESSING EQUIPMENT TO UPGRADE AGRICULTURAL AND MARKETING INFORMATION.

THREE DECENTRALIZED AGRICULTURAL SERVICE CENTERS (ASC) WILL BE CONSTRUCTED TO IMPROVE THE TECHNOLOGICAL DEVELOPMENT AND EXTENSION ACTIVITIES OF THE MACAG. THE ASC'S WILL PROVIDE CROP-SPECIFIC SMALL FARM TECHNOLOGIES, MARKET AND PRICE INFORMATION, AND A SEED IMPROVEMENT PROGRAM TO THE SMALL FARMERS THROUGH AN ADULT EDUCATION PROGRAM.

CREDIT WILL BE MADE AVAILABLE TO HELP SMALL FARMERS PURCHASE AGRICULTURAL IMPROVEMENTS RECOMMENDED BY THE ASC'S. AID WILL PROVIDE \$4 MILLION LOAN CAPITAL TO ESTABLISH A REVOLVING AGRICULTURAL CREDIT FUND TO BE ADMINISTERED BY THE SMALL FARMER CREDIT DIVISION OF THE BOLIVIAN AGRICULTURAL BANK (BAB). AN ESTIMATED 30,000 LOANS WILL BE PROVIDED BY THE END OF THE FOUR YEAR PROJECT.

EDUCATION AND TRAINING ACTIVITIES INVOLVE THE AGRICULTURAL DEPARTMENT OF THE COCHABAMBA AND SANTA CRUZ UNIVERSITIES. TWENTY-TWO FACULTY MEMBERS WILL RECEIVE LONG- AND SHORT-TERM TRAINING ENABLING THEM TO TEACH ADDITIONAL COURSES IN THE PLANT AND ANIMAL SCIENCES, AND AGRICULTURAL ECONOMICS. THE PROJECT WILL BE ADMINISTERED BY THE MACAG IN CONJUNCTION WITH THE ASC'S, BAB, AND UNIVERSITIES. THE GOB WILL ASSUME 36% OF THE TOTAL PROJECT COST, MOSTLY IN THE FORM OF SALARIES AND OPERATING EXPENSES. THE COMPLEMENTARY AID GRANT PROJECT (BASIC FOOD PRODUCTION #5110346) WILL PROVIDE TECHNICAL ADVISORS.

DESCRIPTORS

FARMER TRAINING	SMALL FARMERS	SMALL FARM CNTR	AGR TECHNOLOGY
AGR SECT ANALYS	MGMT INFO SYS	AGR RESEARCH	AGR PROD CREDIT
AGR EXTENSION	AGR PRODUCTION	CREDIT	AGR PLAN POLICY
AGR CREDIT	AGR FINANCE	AGR MARKETING	AGR EXTEN TRNG
AGR MGMT			

SUB-PROJECT NUMBER: 00

BATCH NUMBER: 97

57/Capital Assistance
PD-AAF-761(2)

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

Proposal and Recommendations
For the Review of the
Development Loan Committee

BOLIVIA - AGRICULTURE SECTOR LOAN

AID-DLC/P-2066

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

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AID--DLC/P-2066

December 20, 1974

MEMORANDUM FOR THE DEVELOPMENT LOAN COMMITTEE

SUBJECT: Bolivia - Agriculture Sector Loan

Attached for your review are recommendations for authorization of a loan to the Government of Bolivia in an amount not to exceed nine million two hundred thousand dollars (\$9,200,000) to assist in the financing of the United States dollar and local currency costs of an agricultural development program for Bolivian small farmers in selected geographic regions.

This loan proposal is scheduled for consideration by the Development Loan Staff Committee on Friday, December 27, 1974. Also, please note your concurrence or objection is requested at the meeting. If you are a voting member a poll sheet has been enclosed for your response.

Development Loan Committee
Office of Development
Program Review

Attachments:

Summary and Recommendations
Project Analysis
ANNEX I - Exhibit 4
(the balance of the annexes will be
the subject of a separate printing)

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AGRICULTURE SECTOR LOAN

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BOLIVIA - AGRICULTURE SECTOR I LOAN

SUMMARY AND RECOMMENDATIONS

1. BORROWER:

The Government of Bolivia (GOB) will be the Borrower. The executing agency will be Ministry of Campesino Affairs and Agriculture (MACAG) which is charged with the development of the Bolivian agriculture sector.

Four other public organizations will directly participate with loan project. Two of these organizations are decentralized public institutions under the jurisdiction of the MACAG: the National Community Development Service (NCDS) and the Bolivian Agricultural Bank (BAB). The two remaining organizations are the public universities located in the cities of Cochabamba and Santa Cruz.

2. AMOUNT AND TERMS OF THE LOAN:

An A.I.D. loan not to exceed \$9.2 million is proposed. The loan would be repayable over 40 years including a grace period of 10 years on principal and with interest at 2% per annum during the grace period and 3% per annum thereafter. An estimated 56% of the loan will be converted to Bolivian Pesos to meet the projected local currency requirements.

3. GOALS AND PURPOSE:

The goal of the GOB and the USAID/B Mission in the agricultural sector is to increase per capita income and to improve the standard of living of rural people. To assist in the attainment of this goal, the sub-goal of A.I.D. assisted, GOB programs in the agricultural sector is increased factor productivity and increased production of basic food crops and livestock produced in the small farm sub-sector.

The purpose of this loan is: (1) to develop improved technologies and more modern management practices relevant to the small farm operators of the valleys of central Bolivia and the newly developing agricultural areas of the lowlands of eastern Bolivia; (2) to extend to these small farm operators improved technologies and more modern management practices; (3) to broaden the availability of and assure the target small farmer of improved access to needed inputs, information, financing, and markets; and (4)

proved

to develop the capacity of the MACAG's Offices of Economics and Statistics and Planning to generate basic data, analyze problems and opportunities, and formulate and implement coordinated policies and programs for the sector.

4. PROJECT DESCRIPTION:

The Project contemplates the strengthening of agricultural research, extension, and the use of modern factors of production through the development, expansion and decentralization of essential public services in the high valleys and newly developing Eastern lowlands of Bolivia. Projects funds will be utilized to (i) improve agricultural sector management, (ii) enhance technological development, (iii) make available credit resources, and (iv) accelerate agriculture education and training. Activities to be implemented under these four general components are described below. The Project will establish an agricultural production and marketing data center which will improve and expand upon the activities currently carried out by the Ministry's Division of Economic and Marketing Studies. The center would also assume part of the marketing data collection activities currently being carried out by the Ministry of Industry and Commerce. By employing improved linkages with the MACAG regional and field offices, the center would improve the quality of MACAG data and the timelines of their release, expand crop coverage, initiate crop production forecasts in the major commodities and expand the currently limited analysis of crop production costs. Concurrently, timely marketing-situation and pricing surveys, covering both product and input markets, would be conducted on a periodic basis and the appropriate data disseminated in timely fashion to local producers and marketing elements. While the activity of this data center would essentially be national scope, initial priority would be assigned to the needs of the basic commodities and target groups addressed by the other project components.

Parallel to the activities noted above, this Project will assist in the expansion and improvement of the MACAG's sector analysis and planning capacity.

The Project will strengthen agricultural research and extension services and expand the use of modern production factors, principally through a strengthening expansion, and organizational decentralization of essential public services to the target clientele. This will involve the creation of three strong departmental (geographical) units in Cochabamba, Sucre and Santa Cruz, organized administratively into MACAG("regional service centers"). These centers will focus on the development of crop-specific, small-farm level technologies to be disseminated via an integrated delivery system consisting of expanded extension services, new credit resources, increased availabilities of modern inputs, assistance to cooperative

organizations, market and price information services, an expanded seed improvement program, etc. These center would draw upon and coordinate the related services of MACAG's research and extension services and semi-autonomous public agencies, such as the Agricultural Bank, the National Community Development Service, the Colonization Institute, as well as the research capabilities of the two Bolivian University agricultural faculties in Cochabamba and Santa Cruz.

Project funds will be used to establish a credit fund designed to meet the short and intermediate-term production credit requirements of the target group. Such credit will be made available to groups of farmers on a cooperative basis, as well as to individual borrowers under directed credit programs.

Interest rates will be established in accord with the GOB's more general credit policy, currently 13%. The spread between that rate and the AID loan interest rate will be utilized to cover the administrative costs of disbursing, collecting, and accounting for sub-loans, and to establish a bad debt reserve. The Agricultural Bank of Bolivia will serve as the fiduciary institution and bear the credit risk. However, the BAB will rely on local credit committees, which will include government officials such as agricultural extensionists, cooperative agents of NCDS, and local community leaders for assistance in establishing regional operational guidelines and for guidance in credit decisions. These agents would also provide supervision and direction directly to loan clients as part of the supervised production credit program. The fourth component of the Project involves the upgrading of the professional and technical capabilities in the related units and institutions directly concerned with the Project. That effort will include extensive in-service training activities to be carried out principally under the separate technical assistance project and though short and long-term external training under this Project. In total it is proposed to train under the various project components approximately 25 Bolivians to the MS level and approximately five to the Ph. D. level. Tentatively, this distribution includes eight in the field of agricultural economics, policy and planning, credit and marketing; 12 in the plant sciences, six in animal sciences and four in agricultural extension and education.

The specific activity under this project component relates to the need to improve the quality of agricultural graduates from the Bolivian University system. The two principal universities with agricultural faculties are both within the target area of this Project, Cochabamba and Santa Cruz, and, as noted earlier, this Project envisions their increasing involvement

in the expansion of agricultural research. For these universities to become more useful to the sector program, there is a need to expand their related curriculum to include new courses in farm management, credit, marketing, etc., and to improve the quality of their instruction in the plant and animal sciences. Assuming satisfactory mutual accord on the upgrading of the related curriculum and the relation of the faculties to the work of the regional service centers, loan funds for both short and long-term training would be made available to initiate the faculty training programs specifically related to the objectives of the Project. Approximately 6 faculty members would be candidates to receive MS level and supplementary training in the following areas: a) plant sciences (4); animal sciences (2); c) agricultural economics (2); and d) marketing (2).

5. FINANCIAL PLAN:

The cost of the Agricultural Sector Project is estimated at \$14,850,000, with a GOB input of \$5,650,000, representing 38% of project costs, and an AID loan of \$9,200,000.

a. Proposed Use of Loan Funds

About 44% of AID loan funds will be used for foreign currency procurement (AID Geographic Code 941 sources) of equipment, materials and vehicles, participant training, technical assistance and feasibility studies. A small part of the credit fund will be identified directly with products, mostly chemicals, of known U.S. source and origin. About 56% of the loan funds will finance local currency costs of the project. The largest part of this will be devoted to the credit fund (\$3.5 million) and to engineering and construction (\$1.370 million). In both cases there will be some indirect foreign exchange costs, difficult to measure.

The GOB contribution to the project will include new salary and operating costs, a contribution of \$1 million to the credit fund by the Agriculture Bank and funds for the seed multiplication fund and feasibility studies. All GOB expenditures are expected to go for local costs.

b. Tabular Summary of Financial Plan

The following table shows the project cost breakdown by components, foreign exchange and local costs and by loan and GOB financing.

DETAILED FINANCIAL PLAN
(US \$ 000)

<u>Component</u>	<u>L O A N</u>		<u>G O B</u>
	FX	LC	
I) <u>Improved Sector Management</u>			
A. <u>Agric. Data & Mktg. Info</u>			
Materials and Equipment	200		
Vehicles	75		
Salaries and Operating Costs			500
Participant Training	50		
B. <u>Policy and Planning</u>			
Materials and Equipment	90		
Vehicles	15		
Salaries and Operating Costs			300
Participant Training	100		
Technical Assistance (14 m/m)	70		
	<hr/>	<hr/>	<hr/>
	600		800

<u>Component</u>	FX	<u>L o a n</u> LC	<u>GOB</u>
<u>II) Technological Development</u>			
<u>A. Agricultural Research</u>			
Engineering & Construction		500	
Materials & Equipment	550		
Vehicles	100		
Salaries & Operatings Costs			1,300
Participant Training	350		
Technical Assistance (41 m/m)	205		
<u>B. Agricultural Extension</u>			
Engineering & Construction		570	
Materials & Equipment	250		
Vehicles	135		
Salaries and Operating Costs			850
Participant Training	150		
Technical Assistance (18 m/m)	90		
<u>C. Seed Improvement</u>			
Engineering & Construction		100	
Materials & Equipment	150		
Vehicles	150		
Salaries and Operating Costs			300
Multiplication Fund			200
<u>D. Small Farmer Training</u>			
Engineering & Construction		200	
Materials & Equipment	100		
Mobile Units	100		
Salaries and Operating Costs			400
Participant Training	50		
<u>E. Marketing Development</u>			
Feasibility Studies		250	100

<u>Component</u>	<u>Loan</u>		<u>GOB</u>
	<u>FX</u>	<u>LC</u>	
III) <u>Agricultural Credit</u>			
A. <u>Supervised Production Credit</u>			
Loan Capital	500	3,500	1,000
Vehicles	100		
Technical Assistance (40 m/m)	200		
Salaries & Operating Costs			650
Participant Training	100		
IV) <u>Agricultural Education</u>			
A. <u>Improved University Preparation</u>			
Participant Training	200		
Salaries & Operating Costs			50
TOTALS	<u>4,080</u>	<u>5,120</u>	<u>5,650</u>

6. SUMMARY OF BENEFITS:

The internal rate of return to the project, which quantified only the increase in net returns of target farmers and ignores such other benefits as gains from sectoral management, is calculated to be 45.4%. Annual income increases for the small farmer, i.e. net income defined as gross value of output minus cash input costs, are estimated at about 25% per annum for those involved in the project. Food availabilities in the departmental and provincial capitals of the target area should increase by about 20%. Total output of the farmers in the target area should increase by the end of the project implementation plan by about \$20,000,000 or four times the initial credit allocations.

7. PROJECT BACKGROUND:

Currently the agricultural sector in Bolivia, with about 90 percent of its farmers annually cultivating perhaps no more than three to four hectares, provides a livelihood for two thirds of Bolivia's population. Yet, the sector contributes less than 20 percent to Gross Domestic Product and per capita output of food is about 15 percent below the average for Latin America. Internally, food demand is increasing at about 4 percent annually while domestic food production has been increasing at less than 2 percent per year.

The Sector Assessment has identified a series of major problems retard- ing the development of the agricultural sector, including the following:

a) inadequate research and extension activities necessary to develop and deliver a technological base to support development of a modern agricultural sector;

b) absence of a sufficient number of well trained scientific and professional personnel in public agencies serving the sector;

c) low skill levels in the rural labor force which limit its capacity for participating in the modernization process;

d) limited availability and high cost of modern production inputs;

e) lack of credit resources to finance modern production inputs and the absence of an effective system for distributing credit in the small farm sector; and

f) poorly organized public services serving agriculture, lack of sufficient budget support for those services, and an inadequate planning capacity in the Ministry of Agriculture.

Largely as a result of these constraints, Bolivian agriculture has been increasingly characterized by a dual economic structure with rapid development of large scale modern agriculture in the Santa Cruz area and a small farm sub-sector that is only slowly being integrated into the modern economy. Low and stagnant levels of productivity, inadequate family income, poor nutrition, and limited capability for supply response characterize the small farm sector.

Recognizing that the above constraints are interrelated, the GOB's emerging long-run strategy for agricultural development has the following four principal components: a) to encourage a shift to more modern production methods in the small farm sector by developing an improved technology relevant to the needs of the small farm sector and by encouraging increased utilization of modern production inputs; b) to develop human resources available to the sector through better education at the primary and secondary level in rural areas, increased opportunities for agricultural vocational education, improved agricultural university level training, and more effective adult education programs providing more relevant agricultural

informa-
tion to larger numbers of rural people; c) to provide a policy environment which ensures adequate economic incentives for investment in agriculture and which is conducive to greater private sector participation in both agricultural production and marketing activities; and d) to improve the public services directed toward agriculture through reorganizing and strengthening government programs which affect rural people.

As explained in the Sector Assessment (pp 278-279), the constraints listed above are highly interrelated, therefore AID's overall sector assistance strategy is designed to address several bottlenecks simultaneously. This proposed Sector Loan, along with a proposed grant financed Technical Assistance Project, are directly related to the following three of the five sets of priority development problems identified in both the DAP and Sector Assessment as of particular concern to the USAID program: a) Sector Management, b) Key Crop Production and Marketing, and c) Agricultural Education. (For a fuller discussion of these development problems, see pp. 291, 295, and 298-300 of the Sector Assessment.)

The particular mix of activities to be undertaken under the first Sector Loan represents those programs which, in the judgment of the Mission and MACAG, can effectively utilize the planned inputs and at the same time have a significant impact on easing the interrelated constraints noted above. The phasing of future sector programs to address additional problem areas such as small farmer organization and farm-to-market transportation is discussed in the Assessment (pp 289-302). Inasmuch as this proposed loan and the proposed new grant program are mutually supportive, it is of course assumed that these two elements of the assistance program will go forward pari passu.

8. OTHER DONORS:

The Export-Import Bank, the World Bank Group and the Inter-American Bank have indicated no interest in financing this project. Both the World Bank and the Interamerican Development Bank are active in other programs in the Bolivian Agricultural Sector and the various agency plans take into account and are designed to support and complement each other.

9. LOAN ADMINISTRATION:

Standard A.I.I. loan disbursement and procurement procedures are expected to be followed. Engineering and construction will be contracted for. Standard procedures will be used for material, equipment and vehicle procurement with most of it procured by Letter/Commitment/Credit techniques. We will have complete implementation and evaluation plans submitted by the Borrower and approved by USAID for each component before any disbursement is made for that component.

10. STATUTORY CRITERIA:

All statutory criteria have been met. (see Annex I, Exhibit 3).

11. ISSUES:

As indicated in the body of this CAP the issues raised by the Intensive Review Request and the IRR cable have been addressed and resolved. There remains an issue as to the level of lending for the Credit Fund. Assuming fully successful implementation of the Project, availability of credit to assist farmers turn to new technology could limit project success in the fourth year. The question then is whether the loan should be increased at this time or the problem addressed in later assistance.

12. RECOMMENDATIONS:

On the basis of the conclusions of the Capital Assistance Committee that this project is technically, economically and financially sound, it is recommended that a loan be authorized to the Government of Bolivia in an amount not to exceed \$9.2 million, subject to the following terms and conditions:

a. Interest and Terms of Repayment

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

b. Other Terms and Conditions

In addition to the standard conditions and covenants associated with A.I.D. lending, the Loan Agreement should include the following:

1. Conditions

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

(i) evidence of a budgetary plan which, during the life of the Project, increases the agriculture sector budget to levels adequate to provide for salary increases of existing personnel, hiring of new personnel, A.I.D. program counterpart requirements, program operations, and larger allocations to field activities of direct benefit to small farmers;

(ii) evidence of agreements between the MACAG and the decentralized public institutions, including the NCDS and BAB, and the

Universities in Cochabamba and Santa Cruz which set forth their respective roles, responsibilities, and contributions to the Project;

(iii) evidence of a Supreme Decree establishing a separate supervised credit fund within the BAB for the benefit of the small farmers of the Project area; and

(iv) evidence of the design and establishment of an adequate system of accounting, budgeting, and auditing procedures within the MACAG.

b. Prior to any disbursement or issuance of any commitment documents under the Loan for any purpose other than to finance consulting engineering, design, or technical assistance services, the Borrower shall submit to A.I.D., in form and substance satisfactory to A.I.D.:

(i) evidence of a time-phased implementation plan (e.g. a PERT or Critical Path) for the Project showing interrelationship with and priority relative to other components and activities;

(ii) evidence of a time-phased plan to reorganize and strengthen agriculture sector public services which is designed to eliminate duplicative efforts and improve operational efficiency; and

c. Prior to any disbursement or issuance of any commitment documents under the loan for each sub-activity, a time-phased implementation-
evaluation plan for each such component or activity of the Project complementary to the Project plan described in sub-paragraph 2 (b) above.

2. Covenants

The Borrower shall covenant:

(i) that the increased agricultural sector budget required by the Project above will be provided at the levels indicated therein and that those levels will be maintained after the termination of the A.I.D. loan;

(ii) to provide adequate staff and support on a timely basis to, inter alia, the MACAG's Agricultural Statistics and Planning Offices, Research and Extension Services, and Adult Education Units which will be attached to agricultural service centers;

(iii) that the interest rates charged to any sub-borrower will be equivalent to 13.0% or such other rate as the Borrower and A.I.D. may establish through future arrangements, except as A.I.D. may otherwise agree in writing;

(iv) to maintain the newly created credit fund for small farmers in the Project area at an amount equal to the peso bolivianos equivalent of the dollars disbursed to the Borrower by A.I.D. for the fund; and

(v) that funds will be made available to the newly created credit fund, on a timely basis, to fund any shortages that may occur in carrying out the Project.

(vi) Borrower covenants to provide price policies which will provide incentive to production on the part of the affected group including consideration of the cost of the group for needed inputs, and, fertilizers, pesticides, etc. and the cost of credit.

13. COMPOSITION OF THE CAPITAL ASSISTANCE COMMITTEE

Larry T. Armstrong	Capital Development Officer, Project Coordinator, USAID/B.
J. R. Moffett	Food and Agriculture Officer Chief, Rural Development Division
Hasan A. Hasan	Engineering and Transportation Div. USAID/B.
David D. Bathrick	Chief, Community Development Div. USAID/B.
Angel M. Diaz	Deputy Program Officer, USAID/B.
Douglas M. Jones	Agriculture Economist, USAID/B.
Loc Eckersley	Financial Analyst, USAID/B.
Randolph L. Mye	Economist, USAID/B.
Robert F. Saubis	Agricultural Economist, AID/W/LA/DR
Lawrence R. Hausman	Capital Development Officer, AID/W/LA/DR
Drafted by:	Larry T. Armstrong
On:	12/16/74
Reviewed by:	Farke B. Massey, AD/CAF, USAID/B.
Approved by:	John R. Oleson, Director, USAID/B.

SECTION I - NATURE OF PROJECT

A. Introduction

1. Program Goals

As discussed in the Agriculture Sector Assessment, the basic, GOB agricultural sector goal is to increase per capita income and to improve the standard of living of rural people. To assist in the attainment of this goal, the sub-goal of A.I.D. assisted GOB programs in the agricultural sector is increased factor productivity and increased production of basic food crops and livestock produced in the small farm sub-sector of the intermountain valleys of central Bolivia and the developing agricultural areas of the lowlands of eastern Bolivia.

2. Project Purpose

The specific purposes of the Agriculture Sector I Loan are: a) to develop improved technologies and more modern management practices germane to the small farm sub-sector of the valleys of central Bolivia and the newly developing agricultural areas of the lowlands of eastern Bolivia; b) to extend to small farm operators in the specified regions improved technologies and more modern management practices; c) to broaden the availability of and assure the target small farmer improved access to needed inputs, information, financing, and markets; and d) to develop the capacity of the MACAG's offices of Agricultural Statistics and Planning to generate basic data, analyze problems and opportunities, and formulate and implement coordinated policies and programs for the sector.

To achieve the purposes of the Project outlined above, the following items will be financed from A.I.D. loan funds:

1. the establishment of a revolving credit fund to meet the short and intermediate-term production credit needs of the small farmer target group;

2. the creation of Agriculture Service Centers (ASC) in Cochabamba, Sucre, and Santa Cruz and the development and improvement of related support facilities by either renovation or new construction;

3. the procurement of equipment, materials and vehicles to enhance the capability of the MACAG's Agricultural Statistics and Planning Offices and the ASC's and their related supporting facilities.

4. the provision of short and long-term participant training for selected personnel within the MACAG's Agricultural Statistics and Planning Offices, the Bolivian Agriculture Bank (BAB), the agricultural faculties of the Universities of Cochabamba and Santa Cruz, as well as within other MACAG units and institutions related to the Project;

5. the procurement of technical assistance to improve the MACAG's agricultural economics and administrative capability; the ASC's capability in the fields of research, plant and animal sciences, and extension; and the operations of BAB offices in the geographic areas of interest; and

6. the execution of feasibility studies in the area of marketing emphasizing marketing problems and possibilities within the Project's target group and commodity focus.

3. Rationale

Currently the agricultural sector in Bolivia, with about 90 percent of its farm families annually cultivating perhaps not more than three to four hectares, provides a livelihood for two-thirds of Bolivia's population. Yet, the sector contributes less than 20 percent to Gross Domestic Product, and per capita output of food is about 15 percent below the average for Latin America. Internally, food demand is increasing at about 4 percent annually while domestic food production has been increasing at less than 2 percent per year.

The Sector Assessment has identified a series of major problems retarding the development of the agricultural sector, including the following:

a) inadequate research and extension activities necessary to develop and deliver a technological base to support development of a modern agricultural sector;

b) absence of a sufficient number of well trained scientific and professional personnel in public agencies serving the sector;

c) low skill levels in the rural labor force which limit its capacity for participating in the modernization process;

d) limited use and availability of modern production inputs;

e) lack of credit resources to finance modern production inputs and the absence of an effective system for distributing credit in the small farm sector; and

f) poorly organized public services serving agriculture, lack of sufficient budget support for those services, and an inadequate planning capacity in the Ministry of Agriculture.

Largely as a result of these constraints, Bolivian agriculture has been increasingly characterised by a dual economic structure with rapid development of a small but modern large-scale agriculture sub-sector in the Santa Cruz area and a large, small farm sub-sector that is only slowly being integrated into the modern economy. Low and stagnant levels of productivity, inadequate family income, poor nutrition, and limited capability for supply response characterize the small farm sub-sector.

Recognizing that the above constraints are interrelated, the GOB's emerging long-run strategy for agricultural development has the following four principal elements: i) to encourage a shift to more modern production methods in the small farm sub-sector by developing an improved technology relevant to the needs of that sub-sector and by encouraging increased utilization of modern production inputs; ii) to develop human resources available to the sector through better education at the primary and secondary level in rural areas, increased opportunities for agricultural vocational education, improved agricultural university level training, and more effective adult education programs providing more relevant agricultural information to larger number of rural people; iii) to provide a policy environment which insures adequate economic incentives for investment in agriculture and which is conducive to greater private sector participation in both agricultural production and marketing activities; and iv) to improve the public services directed toward agriculture through reorganizing and strengthening government programs which affect rural people.

As explained in the Sector Assessment, the constraints listed above are highly interrelated. Therefore, A.I.D.'s overall sector assistance strategy is designed to address several constraints simultaneously. This Agriculture Sector I Loan along with a proposed grant financed Technical Assistance Project (see Basic Foods Production and Marketing PROP of October 7, 1974) is directly related to the following three of the four sets of priority, long-term development problems identified in both the DAP and Sector Assessment as of particular concern to the USAID program: Sector Management, Key Crop Production and Marketing, and Agricultural Education. (For a fuller discussion of these development problems, see pp. 291-195 and 298-300 of the Sector Assessment.) The phasing of future sector programs to address additional problem areas such as small farmer

organization and farm-to-market transportation is discussed in the Assessment (pp. 289-302).^{1/} Inasmuch as this proposed Loan and the proposed new grant program are mutually supportive, it is of course assumed that these two elements of the assistance program will go forward together (see I, D, 3 below).

Critical to the successful utilization of the assistance proposed under both the grant and loan project elements is the need for the GOB to take the steps to strengthen its own staff both in terms of numbers and quality, to provide adequate budgetary support for those activities towards which USAID assistance will be directed, and to further rationalize the sector's public services. As perceived by both the Mission and MACAG, this will require, inter alia: (i) the release of a limited number of current MACAG staff to take advantage of training opportunities; (ii) substantial salary increases for professionally qualified and technically trained personnel to avoid the "brain drain"; (iii) additional permanent staff augmentations to support selected activities under the three priority assistance areas described above; (iv) increased operational budgets, especially in support of extension and research functions; (v) improved agricultural planning and information systems; and (vi) selected reorganization of the various public services for agriculture.

The GOB recently has demonstrated its concern for improving agricultural public services by consolidating the MACAG (previously consisting of two Ministries), expanding the responsibilities of the National Community Development Service (NCDS), and increasing salaries and operating budgets in the extension service. Further GOB actions upon which the proposed assistance program would be conditioned are discussed in the Loan Administration section of this paper. Most have been included in the GOB's Loan Application (see Annex 1, Exhibit 2).

B. Project Focus

Given the scope of the sector's problem, USAID has determined that, in order for the program to be manageable, initial activity should be focused on limited areas and selected crops. We fully expect however,

^{1/} The Mission intends to address the fourth long-term priority development requirement, Small Farmer Organization, through the proposed Small Farmer Organization Improvement Loan and an agricultural cooperative development technical assistance grant program both planned for FY-1976. A fifth priority development problem, entitled Short and Medium Term Supply Response in the Assessment, is addressed by the proposed FY-1975 Basic Foods Production Loan. The proposed Long Term Crop Production and Marketing is also addressed in the proposed FY-1976 Farm-to-Market Roads Loan.

that the progress made and lessons learned will be applied elsewhere. The initial focus is described below:

1: Geographic Area

With the exception of the sector management component which is national in scope, the areas of concentration of the proposed Loan would be the valleys of central Bolivia and the newly developing agricultural areas of the lowlands of eastern Bolivia. As shown in Annex VII, Exhibit 1, the principal areas of influence of the Project represent a triangle in Central Bolivia, with services emanating from the service center complexes headquartered in the cities of Cochabamba, Sucre, and Santa Cruz. As discussed in the Sector Assessment, the reasons for concentrating on these regions include the following:

1) The central valley region is one of the poorest and most overpopulated in Bolivia with serious minifundia problems and a stagnant technology. About one-third of the rural population lives in this region.

2) The central Bolivian lowlands, with an extensive land resource base, has the greatest potential for rapidly increasing agricultural production, as well as for absorbing significant numbers of rural migrants from the overpopulated valley and Altiplano regions.

3) Many of the principal crops produced or capable of production in these regions are critical to improving the nutrition of both urban and rural poor, while others are important in saving foreign exchange.

4) These areas are a microcosm of the larger agricultural and rural development problem in Bolivia, and the experience gained under the proposed Project can be applied to other areas.

5) The two regions are linked by an all weather road which facilitates movement of people and produce, and there are strong marketing linkages between the two regions.

6) Both regions have major universities with agricultural facilities.

2. Crops

Emphasis will be given to commodities for domestic consumption that: (i) are currently or potentially important farm enterprises for the target farmer group; (ii) contribute to satisfying the nutritional

needs of both rural and urban consumers, and (iii) offer significant potential for increasing farm incomes in rural areas. Four classes of commodities meet these criteria: basic grains, oilseeds, vegetable crops, and animal proteins. More specifically, primary attention will be given: (i) to methods of increasing production of corn, wheat, rice, soybeans, and peanuts, (ii) to production systems which give attention to high-income yielding vegetables, and (iii) to improved management practices to increase the output of dairy products, poultry, and pork.

3. Target Group Profile

The primary target group toward which USAID assistance would be directed, both under this Loan and the complementary grant project, is an estimated 200,000 rural families in the small-farm sector of the central Bolivian valleys and the newly developing lowland area north of Santa Cruz in the oriente. This group accounts for about 1/3 of the rural population of Bolivia. While the larger part of this target group is located in the valleys, the recent growth of the small farm sector in the oriente and the agricultural opportunities offered by this region warrant attention to the development problems of this group as well.

Among this target group traditional production techniques, remnant of the ancient Incan civilization and colonial period continue to be used on small holdings which often are no more than 1-2 hectares in the valleys and 6-8 hectares in the oriente. Crop production is the principal subsistence activity with a limited share of farm output being surplus to the family's needs. Livestock are of secondary importance, and consist mainly of barnyard animals. Labor is the most important factor of production. Family labor, sometimes augmented by resources from a traditional community labor pool, or less often hired to meet seasonal needs, is used intensively in land preparation, seeding, insect and pest control, harvesting, livestock management, marketing, and in domestic activities such as weaving and spinning. The level of investment in fixed capital (animals, machines, buildings, irrigation facilities, etc.) is low; and, again, represents a heavy investment of the farmers' own labor resources. Primitive plows and digging tools, native varieties of seed, and livestock breeds long indigeneous to the continent predominate. Crop yields and, consequently, resource productivity and farm incomes generally are low even by Latin American standards.

The above picture admittedly is pessimistic; but the fact that a small proportion of farmers have adopted improved varieties of seeds, that the benefits of fertilizer use and irrigation are beginning to be more widely recognized, and that modern technologies generally have been proven to be adaptable to the resource base of the target farmer suggest

that an effort to develop an improved technology and make available the requisite production inputs at reasonable costs can result in increased productivity and higher incomes to the target group.

Given the geographic focus of the project and the objective of seeking technological transformation within the small farm sector, the Project's target group needs to be further described within the context of the Bolivian agricultural sector.

The agrarian reform activities, begun in the early 1950's, resulted in the virtual elimination of all farms in excess of fifty hectares in the Altiplano and upper valleys of Bolivia, where almost 95 percent of the rural population was then located. Large holdings were expropriated, divided up and redistributed to campesino farmers in small and often fragmented holdings. While no agricultural census has been taken since 1950, titling records on the redistribution process indicate a resulting average farm size of 7-8 hectares, with less than 4 hectares of arable land, for the estimated 600,000 campesino owners who now comprise at least 97 percent of the sector's agricultural population -more than half of whom have received legal titles to their property. Subsequently many of these holdings have been further divided under inheritance practices. Within this area the range of campesino holdings includes farm plots from as small as one-fourth hectare up to the 20-30 hectare limits imposed by the agrarian reform legislation. The range in sizes reflects local population pressures and land use potentials. Where larger-than-average size parcels were awarded, this normally reflected poorer quality land more suitable for livestock grazing or sparser rainfall patterns dictating more extensive cultivation techniques and/or following practices to conserve moisture as the appropriate farming technology. Agricultural holdings in the lowlands generally were not affected by reform activities, and larger farm sizes reflect the extensive availability of arable lands in that region. Both spontaneous and GOB-sponsored colonization projects have permitted campesino settlers to claim holdings of 20 to 50 hectares, although few have the capability of annually cultivating more than 5 to 6 hectares without hiring extra labor for peak requirements. With the exception of some 3,000 large scale farmers and cattle ranchers in the lowlands, the whole Bolivia agricultural sector is dominated by campesino owners.

More current information obtained from a Ministry of Agriculture survey of rural households taken in 1972 is useful in characterizing the small-farmer group which is the target of this Project. While information obtained from that effort has not yet been fully analyzed nor evaluated, preliminary examination of data covering areas where the proposed Loan funds would be utilized shows some interesting relationships. The following table presents selected information from the study on size of land holdings, area of cultivation, livestock enterprises and gross farm

sales for an area covering about 85 percent of the project. The area not covered in this table is a northeasterly portion of Potosi Department with conditions most comparable to that of Chuquisaca. (For further details concerning the typical types of farm units, see Section II, B, 1 below.)

FARM CHARACTERISTICS

	<u>Cochabamba Department</u>	<u>Chuquisaca Department</u>	<u>Santa Cruz Department</u>
Estimated Number of Farms	105,000	76,000	26,000
Average size of holding (Has.)	3.4	3.6	40.1
Percent of Farmers holding:			
less than 10 Has.	87	96	16
10.1 - 30	13	4	46
30.1 - 60	-	-	28
60 or more	-	-	10
Average Area in Cultivation(Has)	2.6	2.3	9.2
Percent of Farmers Cultivating:			
less than 4 Has.	87	94	47
4.1 - 10	13	6	40
10.1 - 20	-	-	4
20 or more	-	-	9
Major Crops Cultivated	Corn Potatoes Vegetables Wheat	Corn Potatoes Vegetables Wheat	Rice Cotton Sugar Cane Corn
Percent of farmers with one or more livestock enterprises	98	98	84
Percent of Farmers raising			
Beef Cattle	67	60	22
Dairy Cattle	56	52	24
Swine	36	55	19
Poultry	72	87	79
Sheep	70	85	4

	<u>Cochabamba Department</u>	<u>Chuquisaca Department</u>	<u>Santa Cruz Department</u>
Median Herd Size			
Beef Cattle***	2	2	4
Dairy Cattle	9	4	9
Swine	3	3	5
Poultry	10	10	21
Sheep	16	13	**
Average Value of Off-Farm Sales	\$ 700	\$ 650	\$ 2,100
Percent of Farmers Selling:			
less than \$ 600	50	55	21
\$ 600 to \$2,000	40	42	53
\$2000 to \$5,000	10	3	16
more than \$5,000	*	*	10

While a precise definition of a small farmer requires some arbitrary judgements, it is obvious that the large majority of farmers in the Cochabamba and Chuquisaca valleys fit this category. In these areas the mean size of farm holding is about 3.5 hectares with over ninety percent being 10 hectares or less. On these farms the average area in cultivation is less than 2.5 hectares; and, again, about 90 percent of the farmers cultivate less than 4 hectares. Over 93 percent of all farmers have gross cash incomes of less than \$2,000.

The mean size of farm holding in the Santa Cruz region is somewhat larger, about 40 hectares; however the average area in cultivation per farm is only around 9 hectares. Moreover, almost half of the farm operators have less than 4 hectares in cultivation; and only one farmer in eight cultivates more than 10 hectares. The large proportion of land not in cultivation on many of these farms reflects the extensive nature

* Less than .5%

** Insufficient data for reliable estimates

*** It should be noted that cattle are also used as draft animals especially in the Cochabamba and Chuquisaca departments.

of the slash and burn technology of this area and suggests that significant production increases could be obtained if more land could be cleared and brought into cultivation on these farms.

Almost every farm in the sample survey reported more than one crop enterprise, and nearly every farm had some type of livestock. The data further indicate that cattle and hog enterprises are much more important among farmers in the central and southern valleys than in the lowlands, although the medium herd size is somewhat higher on livestock farms in the Santa Cruz area. Small poultry enterprises are common in all areas, and sheep are found on a high proportion of farms in the central and southern valleys but only on an occasional farm in the lowlands. The relatively small median herd size and the fact that almost all farms have some livestock production enterprise suggest an opportunity for expansion of animal protein production in the small-farm sub-sector in all three areas.

The estimates of average value of off-farm sales also indicate a wide variance between the valleys and the Santa Cruz area. However, these data need to be interpreted with care inasmuch as the estimates reflect gross rather than net income. Cash production costs are no doubt higher in Santa Cruz where the typical crop mix includes sugar cane, cotton and rice for which large amounts of labor must be hired for tillage and harvest. Moreover, the higher proportion of large commercial farms in the Santa Cruz area tends to increase the mean value of sales for the region.

In summary, approximately 90 percent of the farmers in the above table are considered to be within the target group of this Project, i.e. all those having gross farm sales of less than \$2,000. As targets for the credit portion of the Project, they will be characterized by an inexperience with any kind of formal credit and an inability to receive and utilize credit effectively unless accompanied by supervision and extension activity. Excluded from the target group will be the large estate and mechanized farms of the Santa Cruz department; small farms approaching the commercial in character having larger gross off-farm sales and fit subjects for credit under such loans as the Basic Foods loan; and those farms, large and small, specializing in crops not covered in this Project's commodity focus.

The typical target farmer of this Project cultivates from one to two hectares with approximately 90 percent of his annual income derived from corn, potatoes, barley, wheat, rice and vegetables and approximately 10 percent from a mixed livestock resource. The farm value of his production is greatly affected by the vagaries of weather and can vary from as little as \$600 in a poor year to \$1,800 in a good year. It costs him about \$800 per year to maintain his family of six at a bare subsistence level. If in an average good year he has gross farm output valued between \$1,100 and \$1,300, he would typically hold from \$400 to \$500 worth on the farm and sell the balance. The off-farm income will be used in part (\$400-\$500) for family subsistence, lard, sugar, flour, salt, essential clothing, etc. The balance will go for fiestas, wedding, funerals, semi-luxuries such as a new derby hat or shawl for his wife, other clothing, etc. He may save a small portion usually in the form of livestock but also in a small cash savings which is often kept at home in his hoard.

He is largely a subsistence farmer but also sensitive to market forces with respect to that part of his production which he must sell to meet off-farm food requirements and other consumption needs.

He is physically isolated. The "market" for his produce is frequently no more than an open field along side of a road. If he is lucky he will have easy access to a road that is open to traffic eight months out of the year. He may well live several miles, by trail, from even such a road. His children may have access to a one-room school, giving an irrelevant education through three primary grades taught by an ill-trained teacher. Access to health facilities will be difficult or non-existent. His adobe, thatch-roofed hut will have no water and obviously no sanitary facilities.

He is not integrated into the national society. At home he and his wife, who, incidentally, shares in all significant commercial transaction decisions if she does not control them, will be more likely to speak Quechua or Aymara than Spanish, as will his children. He hopes for a better life for his children and will contribute his labor and his meager resources to improve his community, especially its school.

C. Project Description

1. Project Components

As related to the target farmer group, geographic and commodity focus described above, this Project provides for the strengthening of agricultural research, extension systems, and the use of modern factors of production through the development, expansion and decentralization of essential public services in the agricultural sector. Loan funds will be utilized to: (i) improve agricultural sector management; (ii) enhance technological development; (iii) make available credit resources; and (iv) accelerate agriculture education and training. Activities to be implemented under these four general components are described below.

a. Improved Sector Management

Chapter IV of the Sector Assessment discusses the limitation of public institutions concerned with agricultural development, the lack of program coordination, and the absence of effective planning. These weaknesses in large measure are a consequence of the lack of effective means of leadership by MACAG. For example, for MACAG to provide leadership in sector planning, it requires an improved data base and an improved capability to analyze problems, to prescribe solutions, and to formulate and implement programs. To facilitate both the policy and planning process as well as the sectoral response, an improved flow of production and marketing data is essential. Meeting these requirements necessitates: (i) an improved information system capable of gathering, processing and disseminating both production and marketing data on a national as well as local level; (ii) an increase in personnel and operating budget; (iii) technical assistance for establishing the information systems and for upgrading the analytical and planning processes; and (iv) the training of professional personnel. Currently, most of these related activities are conducted under the direction of technicians with little or no training beyond a local B.S. agrónomo level.

Accordingly, the Project would develop and establish a new and more complete series of agricultural production and marketing statistics, improving and expanding upon the limited activities currently carried out by the Ministry's Division of Economic and Marketing Studies. This statistics service also would assume part of the marketing data collection activities currently being carried out by the Ministry of Industry and Commerce. By employing improved linkages with the MACAG regional and field offices, the service would: improve the quality of MACAG data and the timeliness of their releases; expand crop coverage; initiate crop production forecasts in the major commodities; and expand the currently limited analysis of crop production costs. Concurrently, timely marketing-situation and pricing surveys, covering both product

and input markets, would be conducted on a periodic basis; and the appropriate data would be disseminated in timely fashion to local producers and marketing elements. While the activity of this statistics service would essentially be national in scope, initial priority would be assigned to the needs of the basic commodities and target groups addressed by the other Project components.

Parallel to the activities noted above, this Project would assist in the expansion and improvement of the MACAG's sector analysis and planning capacity. Reorganized approximately two years ago to assist in preparing a joint USAID/MACAG Sector Assessment, this unit consists at present of only six professionals trained at the local B.S. agrónomo level. The unit, in addition to being hampered by the lack of an appropriate data base, is technically incapable of adequately addressing the policy and program formulation and planning functions essential to permit the MACAG to assume effective leadership in the development of the sector. The immediate and critical needs of this unit will be addressed by long-term, grant-funded technical assistance. The proposed Loan envisions an intensive in-service and academic training program to the MS level for approximately seven current and new employees with the goal of developing nearly a three fold increase in the unit's staff. The strengthened unit would undertake: (i) short and long-term planning exercises, (ii) project analysis and evaluation, (iii) greater policy analysis, (iv) coordination of external donor assistance, and (v) special duties. The unit would also provide sector analysis results and data to the agricultural division of the National Planning Council (CONEPLAN) for use in global GOB planning and coordination.

For this sector management component, Loan funds would be utilized for the purchase of data processing input equipment and software, office machines, vehicles, both short and long-term external training, and short-term, technical assistance in the areas of agricultural economics and administrative reform. GOB contributions would cover salaries and operating expenses, including the servicing of MACAG data processing requirements at the GOB's National Computer Center (CENACO) facility.

The allocation of A.I.D. loan funds and the GOB counterpart for the two principal activities under this component are as follows:

	A.I.D.	Loan	Local
	(\$000 US)		Contribution
	FX	LC	(000's US\$)
A. <u>Ag. Data & Mkt. Information</u>			
1. Equipment & materials	200	-	-
2. Vehicles	75	-	-
3. Salaries & oper. expenses	-	-	500
4. Participant training	<u>50</u>	<u>-</u>	<u>-</u>
Sub-Total	<u>325</u>	<u>-</u>	<u>500</u>
B. <u>Policy and Planning Development</u>			
1. Equipment & materials	90	-	-
2. Vehicles	15	-	-
3. Salaries & oper. expenses	-	-	300
4. Participant training	100	-	-
5. Technical assistance (14 m/m)	<u>70</u>	<u>-</u>	<u>-</u>
Sub-Total	<u>275</u>	<u>-</u>	<u>300</u>
Component total	<u>600</u>	<u>-</u>	<u>800</u>

Additionally, as reflected in the related PROP and part E of Section II, Project Analysis, grant funded technical assistance during the Loan implementation period focused on the above activities is estimated at 108 man/months for \$361.800.

b. Technological Development and Extension

During the last ten years significant efforts and resulting improvements in production technology among the commodities to be supported by this Project have occurred only in wheat and potatoes. Yields in the other commodities have essentially remained stagnant. In comparison with the averages for other nations, Bolivian yields for the principal commodities to be addressed in this Project average 20 percent below the Latin American averages. Many factors have contributed to this stagnation in technology as noted in the Sector Assessment, but the principal constraint has been the limited resources dedicated to developing improved varieties and cultivation practices and the limited effectiveness of these efforts because of the lack of adequately trained personnel.

The proposed Project's approach would be to strengthen agricultural research and extension services and to expand the use of modern production factors, principally through a strengthening, expansion and decentralization of essential public services to the target clientele. This would involve the creation of three strong departmental units in the geographical Departments of Cochabamba, Sucre and Santa Cruz, organized administratively into MACAG "agricultural service centers". These centers would focus on the development of crop-specific, small-farm level technologies to be disseminated via an integrated delivery system consisting of an expanded extension and campesino training program, new credit resources, some limited assistance to cooperative organizations, market and price information services, and an expanded seed improvement program. Two centers would be provided with seed selection and improvement facilities related to the target crops designed to triple within two years the volume of improved seed currently being produced by the program, for sale to the small farm sector. (Continued technical assistance to this service program by the AID/W global TA contract with Mississippi State University is also anticipated.) They would have processing, grading, classification and storage facilities as well as support vehicles. Increased GOB funds would be made available for contracting with selected local farmers for seed multiplication services.

These centers would draw upon and coordinate the related services of MACAG's research and extension services and semi-autonomous public agencies - such as the BAE, the National Community Development Service, the National Colonization Institute - as well as the research capabilities of the two local Bolivian university agricultural faculties in Cochabamba and Santa Cruz (For further details on the organization and operation of these centers, see part 2 of this Section below.) Overall the Project would involve a four to six fold increase in the applied research activities currently being carried out in the target areas and almost a doubling (42 to 80) of the number of extension agents assigned to those areas as well as an increase in the number of campesino participants annually receiving MACAG production technology short courses from approximately 250 to 2,500. Early improvements in the productivity of the target group can be obtained from expanded use of improved varieties and cultural practices, including irrigation methods, already identified by the MACAG and in limited use by a small number of the target groups. The current constraint to an expanded use of these improvements is the limited effectiveness of the extension methods and lack of credit to facilitate their adoption. Further technological improvement involving new and improved varieties and cultural practices, and both biological/chemical and mechanical innovations already developed and proven in international research centers and other parts of the world, remain to be adapted to Bolivian conditions.

Loan funds would be used for the construction of expanded research and extension facilities for these centers, for the procurement of related equipment and training materials, laboratories, machinery and vehicles, and for short-term technical assistance services in the fields of research, plant and animal sciences, and extension. The allocation of A.I.D. loan funds and the GOB counterpart for the five activities under this component is as follows:

	A.I.D. Loan		GOB
	(000's US\$)		Contributions
	FX	LC	(000's US\$) LC
A. <u>Ag. Research</u>			
1. Construction & engineering	-	500	-
2. Equipment and materials	550	-	-
3. Vehicles	100	-	-
4. Salaries and oper. expenses.	-	-	1,300
5. Participant training	350	-	-
6. Technical assistance (41 m/m)	205	-	-
Sub-Total	<u>1,205</u>	<u>500</u>	<u>1,300</u>
B. <u>Ag. Extension</u>			
1. Construction & engineering	-	570	-
2. Equipment & materials	250	-	-
3. Vehicles	135	-	-
4. Salaries and oper. expenses	-	-	850
5. Participant training	150	-	-
6. Technical assistance (18 m/m)	90	-	-
Sub-Total	<u>625</u>	<u>570</u>	<u>850</u>
C. <u>Seed Improvement</u>			
1. Construction & engineering	-	100	-
2. Equipment and materials	150	-	-
3. Vehicles	150	-	-
4. Salaries and oper. expenses	-	-	300
5. Seed Multip. fund	-	-	200
Sub-Total	<u>300</u>	<u>100</u>	<u>500</u>
D. <u>Marketing Development</u>			
1. Pre-feasibility studies	-	250	100
Component total	<u>2,130</u>	<u>1,420</u>	<u>2,750</u>

Additionally, as reflected in the related PROP and part E of Section II, Project Analysis, grant funded assistance during the Loan implementation period focused on the above activities - principally research and extension - is estimated at 360 man/months for \$1,206,000.

c. Agricultural credit

Best available data indicates that less than 2% of the small farm sector participates in any type of formal agricultural credit activity. Because the resource endowment of farmers within the target group is limited almost exclusively to traditional inputs, credit resources will be required for the expansion of their productive base and output, and for the purchase of modern inputs if technological transformation is to be facilitated and accelerated. With the exception of some of the more "commercialized" small farmers, who in the past two to three years have participated in the Agricultural Refinancing Fund (FRA) credit program, the small farm sector does not have effective access to any institutionalized credit. Accordingly, Loan funds would be used to establish a revolving credit fund designed to meet the short and intermediate-term production credit requirements of the target group. This credit will be made available to groups of farmers on a group basis, as well as to individual borrowers, under directed credit programs to finance:

- 1) loans for annual production inputs which will be matured shortly after the time crops financed are harvested; and
- 2) loans for improvements, machinery, equipment and livestock which will be matured on an annual schedule in line with repayment capability not to exceed five years.

The BAB would serve as the fiduciary institution and bear the credit risk. Interest rates, subject to annual review and joint GOB/USAID concurrence prior to the initiation of each annual crop year, initially would be 13% per year. Sub-loan interest would be utilized to: (i) cover administrative costs of disbursing, collecting and accounting for sub-loans, (ii) establish a reserve for the amortization of the A.I.D. loan; and (iii) further capitalize the fund.

Additionally, Loan funds would be utilized to: (i) provide one long-term (2 1/2 years) credit adviser to focus on improving the BAB operations in the geographic areas of interest; (ii) provide short-term technical assistance to upgrade the skills of the related personnel, (iii) procure vehicles and office equipment; and (iv) provide participant training. GOB counterpart funding will cover an additional inputs to the revolving fund and salaries and operating expenses.

Further details on operating criteria, eligibility, cost/price relationships, interest rate structures and institutional and policy factors are included in part 2 of this Section below and parts B 3 and 4 of Section II. Sub-borrowers will be confined to the target groups as defined on pages 5, 6 & 27, and as described in the IRR instruction cable, State 250225.

The allocation of A.I.D. loan funds and the GOB counterpart for the activities under this component is as follows:

	A.I.D. Loan		GOB
	(000's US\$)		Contributions
	FX	LC	LC
<u>Agricultural credit</u>			
1. Loan capital	500	3,500	1,000
2. Vehicles and equipment	100	-	-
3. Technical assistance (40 m/m)	200	-	-
4. Salaries and oper. expenses	-	-	650
5. Participant training	100	-	-
Component total	<u>900</u>	<u>3,500</u>	<u>1,650</u>

d. Agriculture Education and Training

As noted in the Sector Assessment, the low level of training of human resources available to the sector has been identified as one of the most serious constraints on development in agriculture. The upgrading of the professional and technical capabilities in the related units and institutions directly concerned with the Project has been previously noted in the respective component descriptions. Regarding long-term training, it is proposed to train under the various project components approximately 21 Bolivians to the MS level and approximately three to the PE level, exclusive of those noted below in the university program. Tentatively this distribution includes: seven in the field of agricultural economics, policy and planning, credit and marketing; nine in the plant sciences; four in animal sciences; and four in agricultural extension. In addition, close to 100 MACAG and BAB personnel are scheduled to receive short-term training. The short-term and long-term training activities are included in the funding of the Project component to which they most directly provide support.

The specific activity under this component relates to the need to improve the quality of agricultural graduates from the Bolivian University system so that they can successfully fill sector career

positions in the fields of research, extension, and planning. The two principal universities with agricultural faculties are both - Cochabamba and Santa Cruz - within the target area of this Project; and, as noted earlier, this Project includes their increasing involvement in the expansion of agricultural research. For these universities to become more useful to the sector program, there is a need to expand their related curriculum to include new courses in farm management, credit, marketing, etc., and to improve the quality of their instruction in the plant and animal sciences. Pursuant to a MACAG/Bolivian University System accord on the upgrading of the related curriculum and the participation of the agricultural faculties in the research activities of the regional service centers, Loan funds for both short and long-term training are designed to initiate a faculty training program specifically related to both the immediate and longer range objectives of this Project. Approximately six faculty members would be candidates to receive MS level training in the following areas: a) plant sciences (3); b) animal sciences (2); c) agricultural economics (1). An estimated 16 additional members would receive supplementary short-term courses in similar areas. Bolivian University System consultation with the related grant funded technical advisors in research and extension is planned as well as a limited amount of periodic lecturing as indicated in the related PROP. This is expected to equal about 36 man/months during the period of the Loan implementation. The cost of this technical assistance is included in the respective component summaries noted earlier.

In addition, an extensive agriculture-oriented adult education and training program directed at both sexes of the target group would be initiated under this component of the Project. This adult education program, related to production and marketing technology, would form an integral part of each of the three ASC's extension activities. Each of the ASC's would have at least one principal adult education facility located on its principal research station. These facilities would provide one and two week courses in the specific target crop and livestock production technologies; agriculture credit; farm management; marketing; cooperative development; etc. Instructors would be drawn not only from the MACAG's Research and Extension services but also from other appropriate sources such as the NCDS, BAB, etc. The program also would be augmented by one mobile team per region whose activities in large part would be designed to facilitate extension of the programs designed primarily for village level presentation and to facilitate delivery of the related women's programs. Coordination with NCDS's community and cooperative development training activities, and the outreach programs of rural radio schools, will be accomplished through the periodic joint planning sessions at the regional service centers with the related institutions as further discussed in part 2 of this section below. Rural women will receive training in such areas as the

production of horticultural and animal protein commodities for home and village consumption, marketing, farm budgets, and nutrition. This aspect of the program would be provided in coordination also with the local programming activities of the Ministries of Health and Education. Loan funds would be utilized for construction activities in the renovation and expansion of existing training facilities and for the procurement of training materials and equipment, vehicles and mobile audio visual units.

The above activities would also draw upon the related long-term technical assistance to be provided under the complementary grant-funded technical assistance project pending completion of the intensive training of Bolivian professional and sub-professional staff.

Loan funds also would be utilized to undertake market studies, both product and input related, with a priority focus on prefeasibility studies for target commodity marketing and processing facilities.

The allocation of A.I.D. loan funds and the GOB counterpart for this components is as follows:

<u>Agricultural Education</u>	<u>A.I.D. Loan</u>		<u>GOB</u>
	<u>(000's US\$)</u>	<u>(000's US\$)</u>	<u>Contribution</u>
	<u>FX</u>	<u>LC</u>	<u>(000's US\$)</u>
			<u>LC</u>
<u>A. Improved University instruction</u>			
1. Participant training	200	-	-
2. Salaries and oper. expenses	-	-	50
Sub-Total	<u>200</u>	<u>-</u>	<u>50</u>
<u>B. Campesino Training</u>			
1. Construction an engineering	-	200	-
2. Equipment and materials	100	-	-
3. Mobile Units	100	-	-
4. Salaries and Oper. expenses	-	-	400
5. Participant training	50	-	-
Sub-Total	<u>250</u>	<u>200</u>	<u>400</u>
Component total	<u>450</u>	<u>200</u>	<u>450</u>

2. Mechanism - Delivery System

a. Agricultural Service Centers

Background: Pursuant to the Sector Assessment activities of 1973-74, the GOB and more particularly the Ministry of Agriculture, has been increasingly concerned over the need to develop a mechanism to insure the coordination and complementarity of governmental activities in agricultural and rural development which impact on the socio-economic well-being of the campesino sector. As detailed in Chapter 4 of the Sector Assessment, prior to February, 1974, the principal GOB activities affecting agriculture and rural development were divided between two Ministries, those of Agriculture and of Rural Affairs (MRA). In brief, MINAG was responsible for the traditionally assigned activities of agricultural research, extension, agricultural cooperative development, animal and plant sanitation and quarantine, natural resource management, sector planning, etc. The Ministry of Rural Affairs was principally responsible for a large rural community development program, a series of colonization projects, and continued implementation of the agrarian reform and titling activities. As a basis for its programming activities the MRA also had a sector planning unit. It also supported a separate, but smaller series of agricultural research and extension activities and even duplicated some of the educational and health functions normally a responsibility of ministries related to those areas of concern. In response to this concern for improved coordination and management of the related activities noted above, the GOB merged the MINAG and MRA in February 1974 to form the new Ministry of Rural Affairs and Agriculture (MACAG).

To facilitate the process of decentralization and provide a framework for detailed programming and coordination at the field level, the MACAG is currently in the process of developing its first three regional organizations. Two more are envisioned for the future, one for the north central Altiplano headquartered in Oruro and one for the southern valleys centered in Tarija. USAID assistance has been requested in the development of the first three.

The three regional organizations to be supported under this Loan and the related technical assistance project would be headquartered in the Departmental capitals of Cochabamba, Sucre and Santa Cruz. The respective operational areas, as illustrated in Annex VII, Exhibit 1, are largely a function of ecological zones and transportation and communication networks, and, commonality in crops, farming systems and

markets. The center headquartered in Cochabamba will service target clientele residing exclusively in that Department. The Sucre unit will focus on the target group residing in the northern and central portions of Chuquisaca Department and the adjacent northeastern provinces of Potosí. The unit in Santa Cruz will focus its efforts on the northeastern quadrant of that Department.

The principal characteristic of these new organizations is its responsibility for increased local planning, management and coordination of the diverse set of public services in rural and agricultural development most of which are either line divisions of the MACAG or the semi-autonomous agencies attached to the Ministry. In the past, almost all of the MACAG line divisions (research and extension for example) have tended to report to the Ministry offices in La Paz. While a MACAG departmental director existed, the functions of this office had become eroded almost to that of a simple local administrative position. At the same time, there exists a similar tendency in the departmental and regional operations of the semi-autonomous entities-Colonization, Community Development, Agrarian Reform. The result has led to a top-heavy administrative structure with a disproportionate amount of expenditures for rural and agricultural services spent in La Paz rather than in the field, duplication of effort, and inadequate emphasis on the complementarity of services and the solution of problems at the local or regional level.

A Regional Director of Agricultural and Rural Development will be named to head each of the three regional organizations. His function and authority will cover: (i) direction of all regional activities involving the line divisions of the MACAG; (ii) the planning and coordination of all regional activities of both the MACAG and its related semi-autonomous agencies; and (iii) coordination of the above activities with those of the other related regionally based public and private entities (particularly the Departmental committees of public works, the Bolivian Development Corporation, the Bolivian University System, etc.). Memorandums have already been set from MACAG informing line organizations and semi-autonomous agencies of some of the first steps involved in these administrative changes. The details and mechanisms to be applied are not yet fully developed but will be included in a related implementation-evaluation plan on regional and national coordination to be provided as a condition precedent to disbursement. The plan is expected to provide for:

Annual programs of work for the regions, reflecting all of the principal program activities of the MACAG and its related entities operating therein, which is also to serve as the basis for the inputs into the budget process;

MACAG budgetary process which at the national level will be constructed of a series of complementary programs, responsive to predetermined national priorities and targets, but which in turn also reflects a composite of the regionally developed sub-programs referred to above.

Creation of the office of Director General of Agricultural (consolidating two existing and competing offices at the MACAG national level) to which the Regional Directors will report and who will be responsible for national level coordination and overall supervision of plans, budgets and operations.

Improved coordination also will be facilitated to the extent possible in each of the three regions by housing related agencies and units in the same physical location in facilities financed under this Project. Although the creation of these service centers will not necessarily entail the development of a single physical facility in each region, administratively and conceptually, it is the whole set of coordinated, integrated, and expanded agricultural support facilities and services available to a region, improving public services for agriculture in the three regions of focus by: 1) coordination and integration of such services; 2) regional level decision making regarding problems and their solution; and 3) shifting funds from the national office to regional offices.

The purpose of the emphasis on regional coordination and planning is to provide a set of agricultural and rural development services to the small farm sector that will facilitate shifting to a more modern production technology. The mechanism for delivering this set of services to individual farmers in the target group is twofold in nature.

First, the diverse set of public services serving the sector will not only be directed or coordinated at the regional level, but will be housed in the same or nearby physical facilities. This will facilitate the efficiency with which these services are utilized by the target group as one trip will suffice for dealing with several different agencies. Also, this will encourage interchange among the agencies in improving their services and contributing to the coordination and efficiency goals.

The principal mechanism for effecting a change in the production technology will be the expanded and interrelated set of services to farmers in the target group which are detailed in the component and

activity descriptions of Section C, 1 above. This will involve an expansion of both research and extension services utilizing formal adult education classes, mobile extension teams, extension-credit agents, research station field days and demonstrations, with emphasis on working with groups. To facilitate the adoption of the new technologies an expanded seed multiplication processing and sales service will be provided as well as a new directed credit program to assist in the required farm improvement and production costs.

b. Decentralized Credit System

Pursuant to the GOB's concern for increasing public services to the small farm sector, the recent reorganization decree of the Bolivian Agricultural Bank provides for the establishment of a small farmer credit division. This division will be the implementing unit within the BAB which will be directly responsible for the management and banking services of the revolving credit fund to be established by the Project.

The BAB has 3 Departmental offices in the Project area and 14 provincial branch offices. Current regulations include no loan approval authority except at the Departmental level. The Project plan contemplates the early adoption of proposed regulations concerning the creation of provincial credit committees and approval authority for them for loans under this Project up to \$800. This level is considered adequate to cover almost all of the loans to be extended under the Project. The provincial credit committee is to include one local representative of the MACAG Extension Service, the SNDC and a representative chosen from existing leaders of the target group, plus the MACAG regional office's credit supervisor and the BAB's provincial agent. These committees will review all loan applications and certify their eligibility as to the loan purpose and the applicant. The screening process and knowledge of the committee members of the proposed sub-borrower's capabilities and credit worthiness should speed up loan processing by eliminating the necessity for time-consuming reference requests and contacts. The advisory committee also should accumulate, over time, a strong insight into proven farming practices and investments for further dissemination to local farmers through the various extension mechanisms. This committee also will generally participate in the review and recommendation of actions on problem loan cases which merit elevation to or require action at the departmental level as in all cases of loan extensions.

To facilitate the placement and field supervision of loans, reduce the administrative load of the BAB, and provide the intensive level of technical assistance required for the target group borrowers,

the MACAG will provide credit training to its extension agents in the target area, and also assign them to assist the BAB provincial agency in the related field work. Priority will also be given to group lending procedures to facilitate maximum clientele participation, but the current lack of viable cooperatives and other legal producer organizations among the target group precludes a more extensive use of this process. The NCDS will be providing support to the Project, over its life and beyond, in developing farmer groups and cooperatives to the point where they become credit eligible. By the end of the Project, a substantial number, probably half, of the Loan funds should be channelled to groups.

The existing and expanded adult education training centers would be utilized to provide periodic short courses in credit management and the specifics of this Project's credit program. As envisioned, the first trainees would be the BAB provincial agents and the MACAG extension agents of both sexes. Subsequently, but preceded by the development of appropriate instructional and informational material in the three common languages of the Project area, regular short courses would be provided to participants from the target group, both men and women. These participants would be selected or nominated by appropriate groups and the extension/credit agents from their respective areas for the training according to a predetermined schedule of courses within each region. A similar type of training would also be included in the schedules of the mobile audio-visual training units. Targeted for early training at the adult education centers would be the selected Project group representatives on the local provincial committees.

The total number of cumulative loans to target group individuals, whether on an individual basis or through a group process, to be made during the Project period is estimated at 30,000. The following schedule estimates the yearly distribution:

NEW LOANS AND CUMULATIVE TOTALS

	<u>Year</u>	<u>1st</u>	<u>2nd</u>	<u>3rd</u>	<u>4th</u>
N° of New Loans Placed:					
Operating		3,008	3,948	5,696	6,197
Investment		2,008	3,212	3,714	2,911
Total		4,016	7,160	9,410	9,108
N° Loans Serviced					
Annually		1,016	9,168	13,630	16,034
Cumulative Loans Made					
Operating		3,008	5,856	11,652	17,849
Investment		2,008	5,220	8,434	11,845
Total		4,016	11,176	20,586	29,694

This schedule illustrates two principal points. First, the BAB will have to increase rapidly its capacity for servicing the credit needs of the Project. The number of loans in the first year is 6,016 which would more than double by the end of the third year. The number of loans that must be serviced annually increases from 4,016 in the first year to 16,034 in the fourth year, an annual rate of growth of 60% in capacity to service this Project's loan portfolio. Currently BAB has 6,000 loans outstanding to small farmers in its portfolio representing the cumulative result of all past BAB efforts in the small farm sector. Technical assistance to BAB, training and use of MACAG extension agents in the supervised credit program, and decentralization of decision making via the regional loan committee planned under this Loan are expected to increase BAB's capacity enough to meet this schedule.

Second, a minimum of about 12,000 families, representing 75% of all those who adopt new technologies during the Loan period, will be serviced directly by this credit program. (This is the cumulative total of those expected to obtain improvement loans during the period). In addition to the approximately 12,000 improvement loans granted they will be the recipients of almost 18,000 production loans. Thus, each of the 12,000 families that are beneficiaries of the credit program will receive an average 2.5 loans during the four year period - 1 for increment and 1.5 for production, amounting to about \$830 per family. This represents about \$10.0 million of capital or one full rollover of the total \$5.0 million allocated to this component during the Project period. Further, based on the 1972 experience with farm units of essentially the same resource base, this would bring forth a \$20.0 million increase in production.

Based upon the 1972 farm survey of the Project area and adjusting this 1972 data to a 1973 price level (the latest price deflator available) the average farm family would need on the average slightly over one hectare of land to meet family maintenance requirements. This would produce approximately \$800 in net value of output. Given this information, i.e., that a farm family must generate approximately \$800 in net value of goods and services in order to maintain itself in 1973 pesos, then it is unlikely that a farm unit of approximately one hectare, which generates this amount of net value of output, would be a candidate for credit for any technology requiring a cash outlay except as might be financed from limited savings or accumulated capital. Beyond the \$800 net income level the family would be expected to either increase their standard of living or begin to accumulate savings.

It is not likely that a family at the maintenance level would even risk the use of new technologies unless the probability of failure with the new technology was virtually zero. Thus, any program to improve

the economic conditions of farm families in the absence of government guarantees against losses due to risks must be closely tied to a strong supervised credit and extension program. It must be understood, of course, that the farm production mix (i.e. combination of crops or crops and livestock) relative to market access and prices will determine the size of the productive land unit required to generate a given value of output. Value of output per farm unit thus becomes one of the basic criteria for identification of the eligible credit target group. The target farm who will utilize credit under the Project are characterized as farms having a production potential above family maintenance requirements, and a maximum net income from farming operations (based upon 1974 peso value) of \$1,500 per family. Thus the following become operational lending criteria to govern the administration of the credit program:

1. Demonstration of potential to a production level beyond family maintenance requirements (usually involving adoption of a new technique requiring credit for purchase of modern inputs).
2. Demonstration of gross income potential from borrowed funds at least twice the amount of funds borrowed.
3. The loan size limit to any one farm unit will not exceed \$2,000 annually, for the combined operating and investment loan.
4. A farm operating unit will be considered outside of the target group when net income from farming operations exceeds \$1,500 per family or gross off farm sales exceed \$2,000.
5. No farm with more than 10 hectares of cultivated land will be eligible for credit.
6. The farm family must live on the farm unit and derive at least 50% of its income from the farming operation.
7. The possibility for the prospective borrower of obtaining credit elsewhere under reasonable terms and conditions does not exist.
8. Loan repayment ability exists solely from farm income or in combination with seasonal off-farm income. In the event that off-farm income is a factor in loan repayment, it must be established that work is available and that it does not adversely affect carrying out the improved farming program agreed upon.

The annual credit program review will include specific attention to the tendency of average loan size to cluster above a desirable norm and to impact adversely on the number of potential participants.

D. Project Background

1. Summary of Sectoral Performance

Viewed in the perspective of Bolivia's long run development, the performance of the agriculture sector must be judged as less than satisfactory. Increases in agricultural production have lagged behind other sectors of the economy, and agricultural growth rates have failed to keep pace with the increase in population. The result has been declining per capita food production, greater demands on limited foreign exchange resources to support immediate consumption needs, and levels of savings and investment much lower than are necessary for stable and sustained economic development. Given declining food availabilities and rising prices (which in part reflect higher world price levels), the welfare of middle and low-income families who spend a larger share of their income on food appears to be deteriorating. Average nutritional levels, already well below recommended standards for calorie, mineral and vitamin intake, also appear to be declining, or are stagnant at best.

While in the aggregate performance of the agricultural sector has improved somewhat in recent years and has especially benefited from increased output and favorable world market prices of export commodities in 1972-74, average farm incomes remain among the lowest in Latin America. The agricultural production gains which have occurred are mainly the result of increased output of cotton, sugar, rice and beef, all of which are produced primarily or exclusively in the oriente where cotton and beef are exclusively a product of the large farm sector. Favorable returns generated by these crops have given rise to a small but growing modern agricultural sector centered in the fertile central Bolivian lowlands near Santa Cruz.

In contrast, most of the rest of Bolivian agriculture, with its farm structure a result of the agrarian reform activities in the highlands during the 1950's, is concentrated in the Altiplano and valleys and utilizes a traditional production technology on small land holdings with resultant low resource productivity and limited income producing capability. Much of the agricultural production from this small farm sub-sector is for subsistence consumption, and only a limited share finds its way into commercial markets. While the campesino farmers in this small farm sub-sector are responsive to market forces, their own resource constraints and the fact that much of their production is for their own consumption have limited their access to the more general market economy. As a result, Bolivia's rural sector contributes only marginally to the demand for goods and services of the non-farm sector.

Growing population and increasing incomes in the non-farm sector have led to increases in the aggregate demand for agricultural products,

particularly for food. Because of its limited supply response capability, the sector has failed to meet this increasing demand. The result has been a growing food deficit within the country with the resultant necessity for increased food imports and upward pressure on prices.

For a complete description of the nature and performance of the agricultural sector in Bolivia's economic development, see Chapter I of the Agriculture Sector Assessment.

2. Genesis of the Project

The proposed loan Project is a direct outgrowth of the joint USAID/GOB sector studies initiated in late 1972 which led to the development of the USAID/Bolivia publication in August 1974 entitled, Agricultural Development in Bolivia, A Sector Assessment. This Sector Assessment, reviewed in AID/W in October, 1974, identified an interrelated set of constraints to agricultural development and proposed an integrated assistance program focused primarily on the constraints limiting agricultural development in the small farm sector but, also, directed at other rural development problems in health and education. Chapter VII of the Sector Assessment identified five agricultural priority development requirements toward which the USAID agricultural assistance program should be directed: 1) Sectorial Management; 2) Key Crop Production and Marketing; 3) Small Farmer Organization; 4) Agricultural Education, and 5) Short and Medium Term Supply Response. The specific assistance program proposed therein outlined a complementary grant funded technical assistance project and this loan for FY 1975 to attack priorities 1, 2 and 4.^{1/} The resulting PROP for the technical assistance project and the IRR for this loan Project were both reviewed in AID/W in mid-October 1974. The Mission was authorized to proceed with development of the CAP on November 14, 1974.

3. Complementarity of AID Grant and Loan Program

This proposed Loan and the previously submitted grant project (Basic Foods Production and Marketing Project N° 511-11-190-346. 6) are in essence both part of one project. That is, the grant project addresses the same purposes as those described in Section I, A, 1 above for the proposed Loan.

Thus, two different sources of financing (loan and grant) are being proposed by USAID/Bolivia to assist the GOB to achieve the global project

^{1/} An IRR for a loan project addressing priority, 5 entitled Basic Food Production, was reviewed in AID/W in October 1974 and a PROP for a more global approach to priority 3, Small Farmer Organization, is scheduled for FY 1976.

purposes. The grant is being utilized to provide full-time technical advisors to work with MACAG counterparts in dealing with the first three of the farm global project purposes noted above. The loan will be utilized for five other general classes of inputs which are also necessary to the achievement of the first three purposes as well as the fourth. These inputs include: 1) participant training; 2) short-term (TDY) technical advisors; 3) construction of necessary buildings, laboratories, etc.; 4) procurement of vehicles, equipment and supplies; and 5) production credit.

Thus, the grant and the Loan each provide some of the external inputs necessary to achievement of each of the purposes. For example under the Sectoral Management activity, the grant provides for two full-time technical advisors to work in the Offices of Planning, Economic Studies and Statistics, and Marketing to help these offices improve the data base, upgrade the quality of economic analysis and policy formulation, and agricultural planning and programming. The Loan provides for data processing equipment, calculators, vehicles and other supplies. The full-time technical assistance without the commodities would severely limit the effectiveness of advisors and vice-versa. Similar relations exist between full-time technical advisors working in achievement of other project purposes and the inputs provided under the Loan for those purposes.

In addition, grant resources (technical advisors) are also complementary to the Loan resources devoted to achieving the fourth purpose under the Loan. (Loan resources devoted to the first three purposes are also complementary to those devoted to the fourth). If demand for modern factors and credit is not stimulated by the research-extension and sector management work of full-time advisors, the increased availability of modern inputs and credit, and broadened access of the small farm sector to these can be seriously restricted. In fact, a large part of the burden of acquainting the small-farm sector with the availability of modern factors and credit will fall on the shoulders of extension workers. Thus, in all of their aspects, the proposed Loan and the grant are highly complementary.

4. Evaluation of Previous USAID Assistance

This Loan Project will represent the first U.S. loan made directly to the Bolivian Ministry of Agriculture. However, there are two previous grant funded USAID or predecessor agency programs in the Bolivian agricultural sector that directly relate to the proposed loan: (a) the Servicio Agrario Interamericano (SAI) program between 1948-65 in research, extension and supervised credit; and (b) the Utah State University contracts from 1966-75 to provide technical assistance and institutional development related to sheep, forage and wheat production. A review of these two

programs and other USAID assistance in agriculture not directly related to this loan Project can be found in Chapter 6 of the Mission Agricultural Sector Assessment.

The SAI program (terminated in 1965) and the technical assistance program for sheep, forages and wheat (to terminate in FY 1975) indicate that substantial productivity gains can be achieved when new technology is developed and extended to farmers, despite relatively serious constraints of the resource base and/or availability of modern inputs. For example, there were several notable successes under SAI, including: (a) introduction of Zebu and other improved cattle to the natural pastures of the eastern lowlands which had a significant impact on the productivity of livestock in the area and formed the basis for moving Bolivia from a net importer to an exporter; (b) selection and introduction of the Cuban yellow corn variety, which substantially increased national corn yields between the mid-1950's and 1960's and remains the predominant variety throughout the country; (c) selection, multiplication and distribution of high yielding potatoes and quinoa resulting in greatly increased national yields; (d) development of the Cochabamba dairy industry, which supplies milk and milk products to the Cochabamba and La Paz markets; and (e) selection and introduction of improved varieties of rice and sugar cane which contributed greatly to the achievement of self-sufficiency in the production of these two products by the mid-1960's. Additionally, the SAI program included a very strong participant training component which has provided not only many of the leading agriculturalists in the private sector but also the small core of key career employees currently directing the government's agricultural development efforts.

While recognizing that each of the impact of the USAID technical assistance projects in the past 15 years there already are some significant gains, including: (a) selection and introduction of two high yielding new wheat varieties and the improvement of other local varieties which have contributed directly to a 33% increase in the national yields in less than a ten year period; (b) the start of winter wheat farming in the sub-tropical lowlands where the only lowland feasibility of near self-sufficiency in wheat appears to exist; (c) development of 20 breeding flocks of imported and improved local lines which are providing approximately 1,500 blooded rams and 11,000 improved sheep farmers in the Altiplano; (d) commercial planting of approximately 5,000 hectares of alfalfa in the Altiplano where essentially none existed prior to the project's initiation. The value of annual production is currently estimated at \$ 1.5 million, produced exclusively in the small farm sector.

While the improved wheat improvement programs have produced some significant gains, the lack of a commodity focus has resulted in only limited impact on agricultural production generally.

In contrast, the more broadly focused SAI program had a more global impact on the sector. Recognizing this, the proposed Loan is designed to address a relatively broad commodity focus and resource base as well as the technical and institutional constraints in two major regions of Bolivia.

5. Relationship of Project to Other Mission Programs

The focus of the A.I.D. effort in Bolivia is on assisting the GOB in improving the standard of living of the rural population through programs which will support Bolivia's overall economic and social development. Since Bolivia is too poor to adopt a strategy of income transfer to improve the standard of living of the rural sector, primary emphasis must be placed on programs which increase the rural sector's income earning ability. Thus the cornerstone of the Mission's overall strategy, as set forth in Chapter 7 of the Agricultural Sector Assessment, is this loan Project and its complementary technical assistance project which are scheduled for initiation FY 1975 and the expanded rural community and cooperative development loan and grant programs scheduled for FY 1976. Programs in other sectors would be designed to be supportive of increased income earning ability of the small farmer and rural dweller and, to the extent appropriate, of the particular programs undertaken in the agricultural sector.

As indicated above, USAID's plan in the agricultural sector is to work with national level organizations on national programs but with emphasis on discrete geographic areas. In regard to USAID assistance activities in education, it is planned to have a wider geographical focus than in agriculture, since it is necessary to have an improved education system geared to where the people are located. However, within that broader coverage, it will be necessary, initially at least, to select specific areas for concentration of resources with a view to: (i) making a start on improved rural teacher training; (ii) developing curricula more relevant to the needs and cultural interest of local people; (iii) quantitatively expanding the educational infrastructure base and rural out-reach facilities in those selected regions; and (iv) trying out, initially on a regional basis, pilot activities in modern aids to education and in non-formal approaches to learning for subsequent adoption on a national scale. An important criterion in selection of those specific regions where these programs will be first initiated will be the location of cooperative A.I.B. services and resources. An increasingly literate rural population, more alert to life's possibilities and better trained to take advantage of available opportunities, will be supportive to achieving increased agricultural production in the small farm sector.

Insofar as increased agricultural output will make more food available, it will be supportive of the Ministry of Health's program for improved nutrition, especially among the poor, be they rural or urban. Also, to the extent that food imports can be replaced by domestic production, and that greater export earnings can be realized, the consequent increase in foreign exchange reserves can be channeled toward investment capital to create more employment or to a broader range of consumption items, both leading to improved well-being for all Bolivians.

6. Relationship to Other Donor Programs

The general thrusts of other donors' current and planned assistance programs have been discussed more fully in Chapter 6 of the Agricultural Sector Assessment. USAID's planned inputs have taken into consideration and are coordinated with those on-going and proposed assistance programs of other donor agencies. Recognizing the necessity of a program focus on important development and equity problems and that no single donor agency can address all the problems of the sector in every region, USAID's proposed agricultural program with its geographical emphasis in the central valleys and central oriente will complement the other donor assistance programs which also tend to have a regional focus. For example, the IDB regional development programs are being proposed for the central Altiplano and southern valleys, and a similar IBRD project is being planned for the northern Altiplano. In addition, the IBRD is interested in regional development programs in selected colonization areas of the western oriente. The UNESCO and UNDP are also planning a series of small projects affecting agriculture in the southern valleys and technical assistance to CORDEPAZ (the departmental development corporation for La Paz Department) in the northern Altiplano. UNWFP is planning financial aid to assist in developing the dairy industry of the Altiplano. Similarly, while USAID's commodity focus will be on basic food products now in short supply and suitable for small farmer production, the proposed British Tropical Mission project will provide technical assistance for the production of cotton, sugar cane and tropical forages. The IBRD has proposed to provide credit for increased production of these and other crops, including beef cattle in the oriente, which are mainly produced on large scale commercial farms, and grape production in the southern valleys which is produced on both small and medium sized farms. USAID's program would also be mutually supportive of UNDP-FAC efforts to develop ground water resources and increase small scale irrigation in the Cochabamba department of the central valleys and the limited efforts of COTASU (the Swiss technical assistance program) in dairy production in the same area.

7. Consistency with CIAP Reviews

The proposed Project is consistent with the findings and recommendations of CIAP. Essentially the same set of constraints restricting agricultural development has been identified by CIAP as are set forth in the USAID Sector Assessment: 1) low productivity among the major share of the rural population in traditional production areas; 2) poorly developed factor and product markets including credit especially in traditional areas; and 3) lack of adequate financial and human resources in GOB agricultural institutions.

Most of the CIAP recommendations for dealing with these constraints are at least partially included in the loan Project and are additionally complemented by our grant funded technical assistance program. Project components which are responsive to CIAP recommendations include:

- 1) Strengthening the capacity of MACAG for research and extension activities, carrying out development projects, and planning and coordination of the sector activities;
- 2) Strengthening farmer level educational training programs; and
- 3) Strengthening credit markets for the small farm sub-sector.

There are, however, some CIAP recommendations and aspects of the proposed loan Project which go beyond or do not precisely coincide with certain of the CIAP recommendations. CIAP does not make specific recommendations for improving human capital in agriculture even though they identified this as a constraint, whereas formal and informal training of personnel from MACAG and related institutions is an integral part of the proposed loan Project. CIAP also recommends a continued program to improve native pastures and reduce overpopulation of sheep in the Altiplano. While the proposed USAID program does not address these problems, a currently concluding USAID program has set the stage for this process. The CIAP also recommends a team of technicians for work in irrigated agriculture (especially rice) be established and that emphasis be given to establishment of agro-industries. Neither this loan Project or other proposed USAID assistance explicitly emphasize irrigation or agro-industry. However, this Loan does provide a fund for pre-feasibility studies in agro-industry of a limited scale and a proposed FY 1976 Small Farmer Organization Loan will include resources for village level irrigation projects.

SECTION II - PROJECT ANALYSIS

A. Institutional Analysis

1. Executing Agency: the MACAG

a. Brief History

In the last 25 years, several important changes have been made in the system of public institutions engaged in the management of the Bolivian agricultural sector. During this period, the Bolivian Agricultural Bank (BAB), began making limited amounts of production credit available to the agricultural sector. In 1948, the newly created Ministry of Agriculture, Cattle and Colonization replaced the Bolivian Development Corporation (CBF) which had been responsible for managing the agricultural development program in Bolivia. In support of the activities and programs of the Ministry and BAB, the Interamerican Agricultural Service (SAI) was founded. It was financed and provided with technical assistance by the United States and carried out programs in agricultural extension, research, development operations, and supervised credit. Shortly after the Revolution of 1952, the Ministry was redesignated the Ministry of Agriculture (MINAG) but continued its close working relationship with SAI. The MINAG was organized around divisions which directly affected crop and animal production including the Departments of Agriculture, Livestock, Irrigation, Meteorology, Land Settlement, etc. As a result of this focus, the Ministry of Campesino Affairs (MAC) was founded at this time to provide for the social welfare needs of the rural population. Finally the National Agrarian Reform Service (SNRA) was created to administer the land redistribution program contained in the Agrarian Reform Law promulgated shortly after the Revolution.

The organization of the public services in the agricultural sector outlined above remained relatively stable until the mid - 1960's when U. S. support to the SAI Program was discontinued. The SAI extension program was transferred to the MINAG, its credit and research programs were transferred to other agencies, and its development operations were terminated. In 1961, the National Institute of Colonization and Community Development was created under the jurisdiction of MINAG to manage the colonization and community development activities being carried out by various public entities. In 1967, the Division of Colonization and Community Development was divided to form the National Community Development Service (NCCDS) and the National Colonization Institute (NCI) as separate decentralized public institutions under the MINAG. In addition to these MINAG institutions, the National Wheat Institute (NWI) was created in 1969 principally to promote wheat production throughout the country.

In a move to consolidate the disparate entities working in the agricultural sector, the MINAG and MAC were merged into the Ministry of Rural Affairs and Agriculture (MACAG) in 1970. This merger lasted until 1972 when the MACAG was again separated into the MINAG and MAC. However, during the GOB's reorganization in 1974, the MINAG and MAC have again been integrated into one Ministry: the MACAG.

b. Organization

As a result of the ministerial reorganization of February 1974, the MACAG was founded. Figure 1 indicates the current national organizational structure of the Ministry. It is headed by a Minister who is supported by one Sub-Secretary for Agricultural Programs and another for Rural Affairs Programs. In turn, these Sub-Secretaries are supported by and responsible for various program, staff and administrative sections. At present, these sections together with top management have a staff of approximately 508 full time employees. In addition to these sections, the MACAG has jurisdiction over various decentralized public entities including four public institutions (INT, INC, NCDS, and SNRA) and a public business (BAB).

For the most part, the MACAG incorporates the same programs that existed in the MINAG and MAC. However, a few changes have been made in the administration and organization of the Ministry. The MACAG currently has four program sections: two from the MINAG - Agriculture and Livestock; and two from the MAC - Rural Labor and Promotion of Rural Works. The Rural Credit Division and Home Economics Group of the Extension Department of the MINAG were transferred to SNDC during the reorganization. NCDS also was given the responsibility for organizing and providing assistance to cooperatives. In addition, the respective offices of the Staff and Administrative Sections of the two Ministries have been merged where functions were duplicated, and the Section of Cooperatives and Rural Cadastre of the MAC has been made part of the Planning Office in the Staff Section of the MACAG.

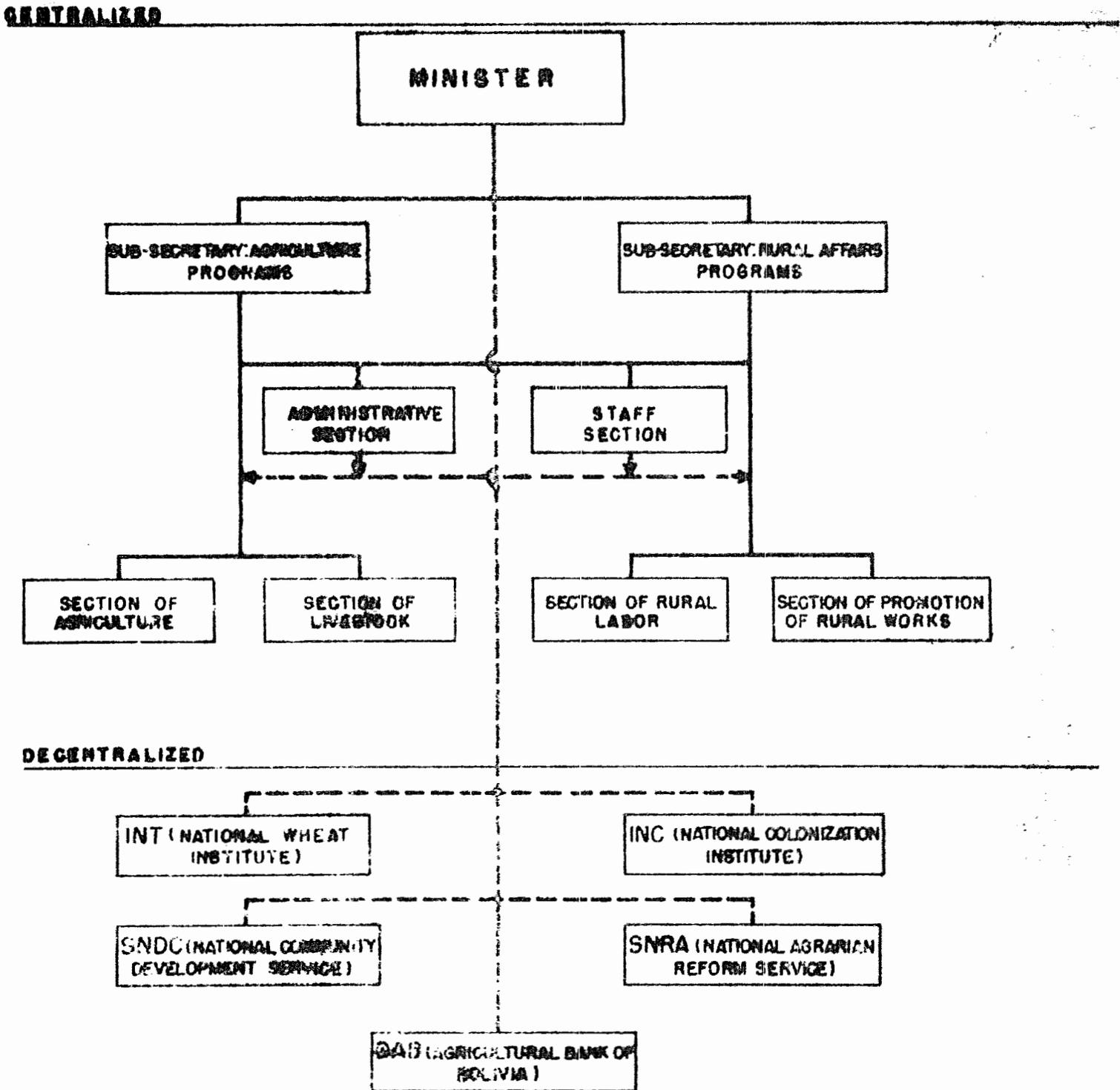
At the regional level, the MACAG is composed of 8 regional offices which are located in all Departments except La Paz which is serviced by the central Ministry. The regional offices are responsible for the MACAG programs in their respective Departments and contain a total staff numbering approximately 327. These Offices are supported by a system of 9 agricultural extension field and 86 provincial offices as well as by 9 agriculture research stations, various hatcheries, and laboratories. These support offices have a total staff of approximately 291 and together with the regional offices are, for the most part, responsible for the execution of the MACAG's agriculture development program.

c. Experience with External Financing

The MACAG as well as its predecessor ministries has had prior direct experience with the administration and implementation of programs financed from external sources. These sources include the

**ABBREVIATED ORGANIZATION CHART:
MACAS, MARCH, 1974**

FIGURE 4



United Nations Development Program (UNDP), Interamerican Development Bank (IDB), and A.I.D., whose projects have totaled approximately \$7.6 million since 1964, as well as other bilateral donors.

Since 1964, the MINAG and MACAG have received technical and program assistance totaling approximately \$2.3 million from UNDP. These funds supported five projects including forest development, animal health, improved agricultural production on the Altiplano, agricultural statistics, and credit utilization projects. These projects were considered generally successful, although lack of full GOB support was noted including shortages of counterpart funding and personnel. In addition to these funds, the IDB provided \$37,500 to finance technical assistance for the MINAG to assist that institution administer an IDB loan to the CBF/INC and the BAB.

Between 1965-1975, A.I.D. will have provided the MINAG and MACAG with grant assistance totaling approximately \$5.2 million. These funds have supported sheep, forage, and wheat production and were primarily in the form of technical assistance provided to the Agriculture Ministry by the Utah State University. Wheat yields have increased at about seven percent annually since the inception of the project. Sheep and wool production have also increased as a result of the introduction of improved breeding stock. Furthermore, the adoption and acceptance of a graded system of wool marketing has also resulted in incentives for product quality which has increased incomes for many sheep growers on the Altiplano. Generally both the wheat and sheep projects have been judged satisfactory (see Mission PAR's of January 31, 1974 and May 6, 1974 respectively).

In addition to UNDP, IDB, and A.I.D. financial assistance, the Agriculture Ministry has received other bilateral donor assistance including support from, among other, the Republic of Germany, England, Switzerland and the Netherlands. This assistance has come in the form of fellowships to ministry personnel, technical assistance in the production of soils maps and a livestock and pasture improvement project.

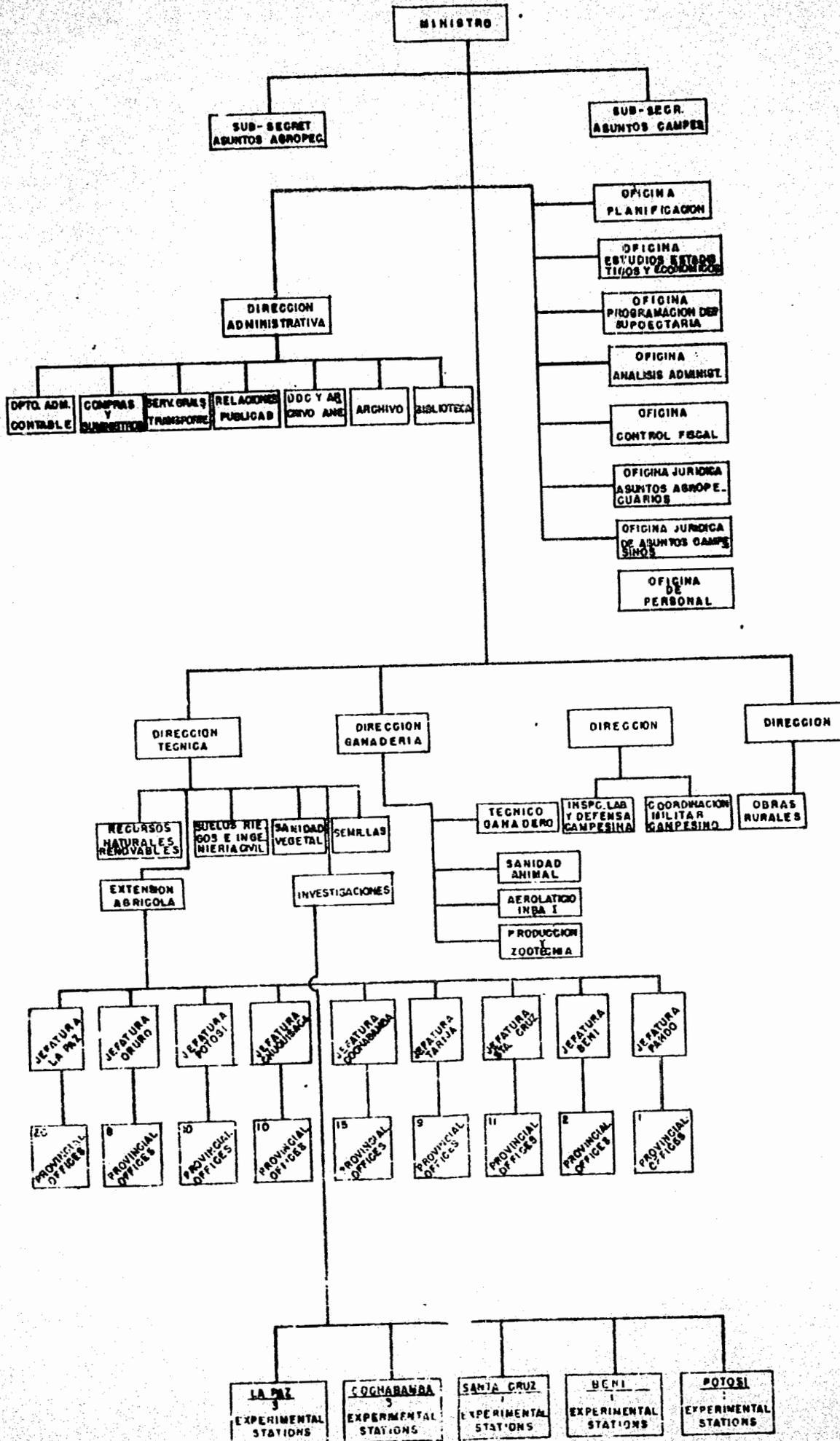
Besides the external financial assistance outline above, which was channeled directly through the MINAG and MACAG, more than \$54 million has been provided to the decentralized public institutions now under the jurisdiction of the MACAG. Since 1968, the International Bank for Reconstruction and Development (IBRD) has loaned about \$9.8 million to the BAB. The IDB has provided approximately \$7.5 million to the BAB and CBF/INC since 1962. From 1961 to present, CBF/INC, SNRA, NCDS and BAB have received IDB loans and grants totaling approximately \$27.6 million.

d. Managerial and Financial Capability

The MACAG is currently undergoing a major restructuring to correct past administrative inefficiencies. Thus, the Mission's judgment of the ability of the MACAG to manage and financially control the proposed loan Project is based on a preliminary analysis of the reorganized Ministry as well as on the capability of the Ministry personnel. While no detailed organization chart of the MACAG yet exists, the Mission's Office of the Controller has prepared a working chart which reflects the recent reorganization based on MACAG payroll information. (see Chart 1 page 39A). The Controller's analysis of this chart indicates that duplication of responsibility has been significantly reduced and a clearly defined chain of command has been established thereby correcting deficiencies of previous organizational structures. The chiefs of the advisory offices and administrative and technical divisions are directly responsible to the Minister and his two Sub-Secretaries. The Project Committee believes this to be a proper chain of command and a significant improvement over previous arrangements. It should be noted that while all the advisory offices are directly responsible to the Minister, all of the administrative and technical sections report to their respective division directors thereby significantly reducing the Minister's contact with technicians on day-to-day technical matters. Additionally, there should be little crossing of lines of responsibility within the MACAG under the new organizational scheme, thereby assisting in the flow of managerial, financial, and technical information through the Ministry.

The Office of the Controller's study also included an analysis of the personnel qualifications of the employees in the various financial sections of the MACAG. In its review of the auditing section, it was found that all the auditors from junior auditors up to the section chief are either licensed or have their studies completed in the field. This was essentially also true of the accounting section where it was found that almost all of the major employees had received their university degrees in accounting. The principal deficiency observed in the financial area was the lack of an adequate accounting system. It was noted that the existing system has very poor expenditure controls, allows a long lag time in making accounting/book entries, reflects confusion as to proper internal auditing procedures, has little or no budgetary controls, and is slow in producing financial statements (latest published statements are from December 31, 1972). In order to assure that there will be proper accounting of A.I.D. loan funds, the Mission's Controller Office will cooperate in establishing an adequate system of accounting, budgeting, and auditing procedures. The design and establishment of this system will be a condition precedent to initial disbursement of the A.I.D. loan.

Due to their importance in the management of the agricultural sector, the MACAG's Office of Planning (OP) and Economic Studies and



Statistics (CESS) were the target of a special study by a Mission-financed contractor. The principal responsibility of the OESS is the collecting and reporting of agricultural statistics and the carrying out of necessary economic studies for establishing agricultural policy while that of the OP is the development of plans and programs for public investment in agriculture and the carrying out of project analysis. The purpose of the study was to determine whether these offices were adequately carrying out their responsibilities and, if not, what measures should be taken to improve them so that they can accomplish their mission.

The study essentially disclosed that the OP and OESS were not providing top management of the MACAG with the information and advice it requires to make decisions and policy. More specifically the study observed that this situation was the result of, among other things, duplication of functions between the offices and within OESS; a lack of coordination between the offices; and, deficiencies in the training of the professional personnel in each office. Based on these findings, the study recommends that the OP and OESS be reorganized into one office to reduce duplication of effort and increase coordination among the various divisions engaged in statistics gathering, analysis, planning, and reporting (see Annex II, Exhibit 1). It also recommends that new technical positions, requiring increased technical capability, be created to staff the new organization and that long term training be provided to increase the technical capability of 13 OP/OESS professional employees to the Masters level and 2 to the PhD level. Finally, it recommends that equipment and short term technical assistance be provided to support the new organization. The Project Committee generally concurs with these findings and recommends including a condition precedent that loan disbursement will be contingent on the reorganization of the OP and OESS as well as for the adequate support of the reorganized entity.

e. Role in Project

As indicated in the Project Description, the role of MACAG in the Project is an extensive one. It encompasses activities in three of the five priority development problems isolated in Bolivia's Agricultural Sector Assessment. In the area of Improved Sector Management, the MACAG's role includes:

- providing expanded and improved agricultural production and marketing statistics; and
- developing short and long term agricultural development plans, project analysis and evaluations, greater policy analysis, coordination with external donors, and special studies.

Regarding the development problem associated with Key Crop Production and Marketing, the Ministry's role involves:

- providing adequate agricultural research and extension services to the small farmer target group;
- providing improved seed to the target group;
- undertaking market studies with a priority focus on pre-feasibility studies for target commodity and marketing and processing facilities; and
- making available cash credit to the target group.

In the area of Agricultural Education, besides supporting improved agricultural programs at the universities in Cochabamba and Santa Cruz, the MACAG role includes:

- offering an agricultural oriented adult education and training program directed at the target group.

Based on the results and recommendations of the various studies mentioned above, the Project Committee believes that, with the development of improved accounting, budgeting, and auditing procedures, the re-organization of the OP and OESS together with the training of their professional personnel, and the increase of Ministry salaries, the MACAG will have the necessary managerial and financial capability to adequately carry out its role and implement the proposed loan Project.

2. Other Participating Entities: Roles and Capacity

Besides the MACAG, four other public entities will play significant role in the execution of the Project. These entities include the MACAG's Extension and Research Services, the National Community Development Service, the Bolivian Agriculture Bank, and two Bolivian universities.

a. Agriculture Extension (AES) and Research (ARS) Services

The AES of the MACAG is responsible for the introduction of modern inputs, seeds, and techniques of production; the development of youth and home economics programs; and the provision of agricultural information through various communication media. To carry out these activities, the AES is organized into a small central office in La Paz and a network of 9 regional and 86 provincial offices spread throughout the country. Of the total AES staff of 97, eighteen are titled Ingenieros Agrónomos, twenty-four have completed their 5 years of university training but have not as yet completed their thesis, and fifty-five have certificates from vocational schools or institutes specializing in agriculture. The Project area contains 39 extension agents: 16 in the Department of Cochabamba, 12 in the Department of Santa Cruz,

and 11 in the Department of Chuquisaca. These agents are scattered throughout the Project area and are situated in 35 different towns and localities. Since the early 1960's, the extension program has suffered from a lack of funding which has resulted in the loss of staff and expertise and a limited schedule of field trips by agents thereby reducing the number of farmers reached by the program.

The ARS of the MACAG is responsible for the investigation of problems relevant to agriculture. This activity is presently being carried out in nine agriculture research stations located in the principal geographical/ecological zones of the country. These research stations have a combined staff of approximately 94 including agrónomos and support personnel. Within the Project area, there are presently five experiment stations: three are located at Toralapa, San Benito, and Chipiriri in the Department of Cochabamba, one is located outside Montero in the Department of Santa Cruz and one at Chinoli Potosí. These facilities have a total combined staff of 59: 24 are Ingenieros Agrónomos, 10 are either Directors or Administrators, and the balance are support personnel including mechanics, equipment operators, etc. While these facilities are relatively well equipped, they have suffered, like the AES, from budgetary problems resulting in staff turnover.

As indicated earlier, the principal role of these two services is to provide extension services, research data, and improved seed to the target group in the Project area. The mobility of personnel has been a chronic problem since the early 1960's and has impaired the ability of both services to get into the field with their services. In addition, lack of funds has limited the quality and quantity of their respective efforts. To improve one of these situations, an A.I.D. loan (the FRA) provided 101 vehicles to the MACAG for the AES and ARS activities. These vehicles have arrived and have been distributed thereby reducing the mobility problem. However, financial support of the operations of the AES and ARS is still insufficient to allow these services to carry out a full program of operations and retain their professional personnel. Thus, the Project Committee recommends that a condition precedent to initial disbursement be included which makes disbursement contingent upon the development of a budgetary plan which provides larger allocations to field activities of direct benefit to small farmers.

Based on the availability of new equipment for the AES and ARS; the magnitude, dispersion, and training of their respective personnel; and the inclusion of a condition precedent requiring increased support to both services, the Project Committee believes that both Services will be able to carry out their roles.

b. The National Community Development Service (NCDS).

Since its inception in 1965, the NCDS and its predecessor, the NCDP, have been directly engaged in rural community development through decentralized regional and zonal offices and various regional training centers. From 1965 to the present, these regional and zonal offices have constructed some 500 self-help projects while the training centers have trained over 15,000 community leaders. In addition, the newly created NCDS Division of Agricultural Development and Cooperative Organizations recently has initiated a program aimed at providing technical and financial assistance to rural, small farmer organizations.

In carrying out its activities, the NCDS has gained extensive experience with foreign donors and external financing. In the mid-1960's, it administered a \$435,000 loan from the Interamerican Development Bank. In addition, the NCDS has disbursed a \$915,000 A.I.D. loan signed in 1970 and is currently administering a \$3.0 million A.I.D. Rural Community Development Loan signed on Sept. 15, 1972. Finally, considerable amounts of grant technical assistance have been provided to it by A.I.D. from 1965 to the present.

The role of the NCDS in the proposed loan, while limited, is an important one. The NCDS will support the program by:

- 1) providing organizational, training, and technical assistance to small farmer organizations interested in improvement and agricultural production credit;
- 2) advising the BAB on all credit applications of small farmer organizations as a member of the regional credit committees; and
- 3) assisting the MACAG to carry out the adult education program at the ASC.

The NCDS appears to be well equipped to carry out its role in support of the proposed Project. Besides its record of success working with groups of organized campesinos in executing physical projects, training courses, and agricultural activities, the NCDS has recently augmented its decentralized structure to more effectively serve rural campesinos and campesino organizations. Of NCDS's current 615 full-time employees, 481 are located in 33 regional and zonal offices and training centers, which are scattered throughout the country, while 134 personnel are found in the national office in La Paz. In the geographic area of focus of the Project, the NCDS has 9 regional and zonal offices with a total of 151 employees, including 29 women extensionists, and 4 training centers - one of which specializes in cooperative development.

Thus, based on the role that the NCDS is expected to play in the Project, its prior experience with non-formal education, small farmer organization activities, and external financing, and its existing decentralized facilities in the Project area, the Project Committee believes that the NCDS is capable of executing its responsibilities under the proposed loan.

c. Bolivian Agricultural Bank (BAB)

The BAB was organized in 1943 to assist the socio-economic development of Bolivia's agricultural sector. Since 1962 the Bank has administered approximately \$26.4 million of loan funds made available by external financing institutions. Included in this total is approximately \$9.8 million from the IBRD, \$10.8 from the IDB, and \$5.8 in A.I.D. development loans. The BAB was chosen to administer the credit program over the Banco del Estado, the credit union system, and the agricultural cooperatives in the Project area because of its mandate from the GOB, its previous experience, and various safe-guards mentioned below.

The BAB has undergone three major reorganizations since its inception, the latest occurring on July 26, 1974 through Supreme Decree N° 11658. The bank's central office in La Paz was restructured in three principal ways as a result of that reorganization (see Annex II, Exhibit 2). A planning office has been created whose function is to include the programming of the available credit among the various sub-sectors within the agricultural sector as well as the planning of the banks' future needs and its sources for additional loan capital. Also, the BAB has added a department of small farmer credit development whose suggested functions include the development and review of credit projects in the traditional, small farm sub-sector. In addition, the four previously separate staff and technical offices have been combined into two management units composed of a total of five departments. This arrangement is likely to increase coordination among the related activities, reduce duplication among the various staff offices, and clarify the lines of responsibility and chain of command.

The BAB's regional and provincial office structure was left basically unchanged during the recent reorganization. Currently the BAB has a total of 412 employees of which 120 are located in La Paz and the remaining 292 are spread among the 12 regional offices and 59 provincial agencies. This decentralized organization is geographically disbursed so as to cover the entire country. It would appear ready made for supporting the local credit committees which are intended, under the project, to extend credit to small farmers. However, as a result of the difficulty of providing credit to this sub-sector, technical assistance will be provided from loan funds to train local BAB credit specialists in the provision of small farmer credit and to refine the mechanisms for delivering credit to them.

The role of BAB is an important one from the standpoint of the credit component of the Project. First, it will serve as the fiduciary institution responsible for the administration of the revolving credit fund. In addition, the BAB agent on the local credit committee will have the responsibility for making the decision on all small farmer credit applications. However, this decision will be made based on policy guidelines established by the credit committee and after receiving the opinions of the other members of the committee who will advise the BAB agent on all loans. Finally, the BAB will bear the credit risk on all sub-loans.

It is recognized that the BAB has had a poor "track record" in administering previous agricultural credit programs. Nevertheless, the Project Committee believes that the BAB will be able to fulfill its role adequately, given: (i) the restructuring of its administrative structure with priority emphasis being given to the small farmer and campesino organizations, (ii) the provision of agricultural extension to the small farmers of the Project area thereby minimizing the credit risk, (iii) the provision of assistance to the campesino in the preparation of his farm budget and loan application, (iv) the inclusion of an agricultural cooperative, extension, and credit specialist in the loan approval process, (v) the provision of technical assistance to the BAB and (vi) the limitation of the BAB's participation to only those regional and provincial offices in the Project area.

d. Universities

The Bolivian university system is comprised of eight public universities and one private university. The eight public universities are disbursed country-wide, with one each in eight of the nine Departments in Bolivia (the Pando has no university). Some 48% of the total university enrollment of about 25,000 students is in La Paz while 22% are enrolled in Cochabamba. All other universities have between 1,000 and 2,000 students with the exception of the new university in the Beni which has reached an enrollment of only 150. These universities vary in the number of programs offered: San Andrés in La Paz is the only one to cover the whole range of traditional offerings. Of the remaining universities, all (except Beni) teach Law and Economics; two teach Medicine, Dentistry, and Pharmacy; four offer Engineering; three teach Agronomy; and one offers Architecture. The university in the Beni offers only Animal Husbandry in which it has a national monopoly.

The agricultural departments of the universities at Cochabamba and Santa Cruz would be involved in the support of Project related activities. At present, these universities have an estimated 38 professors divided among the various agriculturally related departments including forestry, agronomy, animal sciences, veterinary medicine, and

tropical agricultural. Of these professors, only one is known to have a PhD, a few have MS's, while the vast majority hold the degree of Ingeniero Agrónomo which is equivalent to a BS in agriculture. The salary scale for full-time professors is low and compares poorly with professionals in comparable jobs within the public sector agencies as well as with the salaries for comparable jobs in third countries. In addition, approximately 75% of the agricultural faculty members teach eight hours or less a week which further mitigates against quality education since these professors devote only part time to teaching or related research.

The role of these two universities in the Project would be to support various loan funded activities by i) improving the quality of agricultural graduates so that they successfully can fill agricultural sector career positions in the fields of research, extension, and planning, and ii) increasing their involvement in agricultural research related to the Project area. Thus, in order adequately to support the Project, the universities at Cochabamba and Santa Cruz will have to expand their agricultural related curriculum to include new courses in farm management, credit, marketing, etc. and improve the quality of their instruction in plant and animal sciences.

Based on the above observations, the Project Committee believes that, if these two universities are to produce a better qualified agricultural graduate and support research activities related to the Project area, they will have to upgrade and expand the capacity of the existing staffs in the areas noted above through long and short term training and, at the same time, increase salaries so that they are competitive with governmental and private sector opportunities. Therefore, it is proposed that loan funds be provided to initiate a faculty training program specifically related to Project needs, that the GOB provide salary supplements to the agriculture faculty at the universities of Santa Cruz and Cochabamba, and that these universities provide additional space and equipment to the agricultural faculties. With these inputs, the Project Committee believes that the two universities mentioned will be able to carry out their roles in the Project.

B. Economic Analysis

1. Enterprise Analysis of the Typical Farms in Project Area^{1/}

Because of the heterogeneity of farm types between geographic areas, and indeed within areas, five separate model farms, each typical of the major types of agriculture in the small farm sector of the Project area,

^{1/} The principal source for this section is the 1972 MINAG/UTAH State University Rural Survey augmented by other MINAG survey data.

will be used as a basis for the analysis which follows. Two such models have been formulated for the Santa Cruz lowlands and three for the central valleys. The following briefly summarizes the salient characteristics of each and gives estimates of farm numbers of which each model is currently representative.

	Share of total Farms (Percent)	Est. Number of Farms
Santa Cruz Department:	10.7	21,720
1. Farm type 1 - cultivated area ranging from 0-5 ha. Averaging 3 has. with rice as the principal crop	(6.9)	(14,054)
2. Farm type 2 - cultivated area ranging from 5-10 has. averaging 6 has. with corn as principal crop	(3.8)	(7,666)
Chuquisaca, Cochabamba and Potosí Departments:	89.3	181,541
3. Farm type 3 - cultivated area ranging from 0-2 has. averaging 1 ha. almost all irrigated, with vegetables, corn, potatoes and alfalfa as principal crops	(50.3)	(102,268)
4. Farm type 4 - cultivated area ranging from 2-5 has. averaging 3 has., about 1/4 irrigated with corn, potatoes, and barley as principal crops	(33.8)	(68,741)
5. Farm type 5 - cultivated area ranging from 5-10 has. averaging 6 has. all dry land with wheat and barley as principal crops	(5.2)	(10,532)
	<u>100.0</u>	<u>203,261</u>

Tables 1-5 found in 4 below, indicate the enterprise mix and develops a summary of costs and returns for various crop activities for each farm model.

Farm types 1 and 2 are both found in the Santa Cruz area. Farm type 1 has an average area under cultivation of 3 hectares with a range of from less than 1/2 to about 5 hectares. The principal crop is rice, followed by corn, yuca, and potatoes. Rice is marketed commercially while the rest of the crops augmented by some vegetables, bananas and plantains and citrus production normally provide for the subsistence needs of the family. The farmer is apt to be a recent migrant to this area and speaks Spanish fluently. The technology used in this type of farm is usually of the "slash and burn" nature. Average net income (gross value of output less variable production costs valued at opportunity cost) is almost \$900. It is substantially higher if the farmer is located near enough to access roads to shift to the production of more profitable sugar cane. (This latter crop, grown largely for export, is outside the commodity focus of this Project).

Farm type 2 is larger than farm type 1 averaging 6 hectares with a range of 5-10 hectares under cultivation. The principal crop is corn, followed by rice, peanuts, soybeans and bananas, and some yuca and potatoes. Corn is the principal commercial crop, although some of the rice, peanuts, soybeans and bananas are also marketed. This farmer also grows the same subsistence crops as type 1 farmers. Both farm types have some barnyard livestock, primarily chickens and pigs which are raised principally for on-farm consumption. This farm type is distinguished from type 1 in that it tends to be located in the dryer areas of the Santa Cruz lowlands on less fertile land. The technology utilized is still primitive, but there is less evidence of "slash and burn" agriculture. The farmer is also likely to be a colonist, although his total holding is somewhat larger than those in farm type 1. He also speaks fluent Spanish. The average net income on farm type 2 is a little over \$1,000.

Three separate farm types are characteristic of the central valleys area. Farm type 3 is typically found in the lower Cochabamba and Chuquisaca valleys. The crop land under cultivation is small, averaging 1 hectare, but ranging from less than 1/4 to as much as 2 hectares. Principal crops grown are vegetables, and corn and potatoes which are double cropped in rotation with the vegetables. Some alfalfa may also be grown. This type of agriculture is irrigated and is intensively managed with natural fertilizers and some pesticides being used. Yields are relatively high compared to the Bolivian average. A relatively large share of the produce of these farms is marketed commercially. Alfalfa is typically used to maintain 1-2 Holstein dairy cows which provides milk for family consumption and a small marketable surplus. Among the Project's target group, this is the most productive farm enterprise in the valley region. Average net income is almost \$850 reflecting relatively high factor productivity compared to the other four farm types which have more land available. Still the technologies employed are primitive and average yields, while high by Bolivian standards, are less than the average for

Latin America, and much lower than the intensively managed agricultures of countries such as Japan and Taiwan. The farmer is likely to speak some Spanish with Quechua being his native language.

Farm type 4 is located in the intermediate and higher valleys of Cochabamba, Chuquisaca, and Potosí Departments with generally lower temperatures and rainfall regimes than farm type 3. The average farm here has 3 hectares of land, with a range of 2 to 5 hectares. The principal crops are wheat, barley, corn, potatoes, and alfalfa. While most of the crops are raised on dry land, a small portion of the farm, 1 hectare, is irrigated. The most likely crops to be irrigated are potatoes and alfalfa which yield the highest return. The average income from this farm type is about \$600, with potatoes and alfalfa likely to be the principal crop marketed, followed by corn. This farmer is likely to speak some Spanish, but, similarly to the type 3 farmer, his native tongue is Quechua.

Farm type 5 has an average of 6 hectares of cultivated land none of which is irrigated. The range is from 5-10 hectares. The principal crops are wheat and barley, with some corn and potatoes also being grown. This is the least productive of the valley farm types with only a small share of production being excess to subsistence needs. Only the most primitive production techniques are used. Net incomes are approximately \$600. This farmer also speaks some Spanish but less fluently than in farm type 3. Quechua is his native language.

All of the valley farm types (3, 4, and 5) raise livestock, mainly for subsistence use. In addition to the dairy cows already mentioned, farm type 3 also maintains barnyard animals, including chickens, ducks, pigs, and geese. In contrast farm types four and five are more likely to have draft animals (which are sold for beef at 3-4 year of age). Sheep and goats are also typical of many farms of this type. Some pigs, chickens, cuis (a native guinea pig) and rabbits are also found.

The total number of farm families in the target group is estimated from the MINAG/USU survey to be 203,260. Almost 90 percent of these are found in the valley areas of Cochabamba, Chuquisaca, and Potosí Departments. The most important farm type is type 3 - the 1 hectare irrigated farm accounting for over 50% of all farm families in the target group. The next most important is farm type 4 - semi-irrigated 3 hectares in the valleys with another 33.8% of all farm families. The other three farm types account for only 15.9% of all farm families and in descending order of importance are farm type 1, 5 and 2. That two of these farm types having the highest average net income are found in the Santa Cruz lowlands, illustrates the importance of that area to Bolivian agriculture and to the prospects for raising small farmer income.

2. Project Benefits

a. Economic Feasibility

The economic feasibility of the loan Project is analyzed in Annex IV, Exhibit 2. The internal rate of return rather than a benefit-cost ratio is calculated to evaluate the economic feasibility of the Project since it is not known what the relevant discount rate is. It is assumed that the Project includes all components of the assistance provided under this Loan and the related grant (PROP 511-11-190-364.6) including technology development, technology extension, sectorial management and credit and improved access to modern factors and product markets. It is assumed that the Project has a 15 year beginning life with FY 76. While selection of this time horizon is somewhat arbitrary, it is expected that significant benefits will accrue to the Project beyond that period in which the disbursements are made. Beyond the 15 year period the discounting process results in only very small increments to the total present value of benefits and hence can be ignored.

Only the increase in net returns of target farmers due to the Project is quantified as a direct Project benefit. Due to the lack of any meaningful measuring stick, no attempt is made to quantify the direct benefits such as increased incomes of people trained under the participant program, gains from improved sectorial management, etc. Furthermore, no attempt is made to account for indirect benefits through the multiplier effects via backward and forward linkages. Thus, Project benefits are understated.

Project costs include both the USAID and GOB contributions to the Loan and complementary grant project. All private costs required to adopt related new technologies have been accounted for in determining the increase in net returns. Both USAID and GOB costs are reported in the year in which expenditures are expected to be made, not the year for obligation of funds. Thus, the cost data for USAID and GOB support for the grant are one year later than those reported in the PROP which reflects the year of obligation. The internal rate of return to the Project is calculated to be 45.4%.

b. Income Distribution Effects

The GOB and the Mission recognize that the large farm sector will continue to grow in output and productivity by rates of 15% and 5% per annum over the medium term. The disparity between the large commercial farmer and small farmer reflects in part the ability of the commercial farmer to introduce new techniques as well as expand his production base to meet aggregate demand. On the other hand, the responsiveness of small farmers to economic incentives is circumscribed by a number of factors,

including lack of credit, unfamiliarity with modern management or production techniques, etc. Given these constraints, the small farmer is automatically relegated to a declining slice of the sector's income. Presently the small farmer is estimated to receive approximately 60% of the sector's income but he constitutes about 95% of the farm population. Without this Loan or the Basic Food loan, the Mission expects that this group of farmers would receive 50% of the sector's income by 1978, although in absolute terms this group may possibly be slightly better off than at present. Moreover, this group is considered to be within the third or fourth quartile on the Bolivian income distribution scale.

In relation to regional income disparities, the Mission has considered the impact of this program to be concentrated in these areas of the country suffering the greatest population pressure on land use and offering the best possibility for obtaining the technological transformation objectives. As the program succeeds, the results will be replicated in other areas.

This Loan is geared to attack the longer term issue of productivity as a necessary pre-condition to increasing rural per capita income as well as reduce, in relative terms, the increasing disparity between different rural income groups (including the large farmers). The Mission expects that the large commercial farmer will benefit (exogenous) from average annual increases in net income of 20-25% over the medium term future, while the data derived for the benefit-cost analysis would indicate that the small farmer group will obtain an average annual increase of 29% in the benefit flows from the various technical changes to be introduced by the Project. Translating this result into annual increments in net income to the small farmer would appear to indicate rates of growth equivalent to or above those estimated for the commercial farm group. At least, the Mission would expect that the small farmer group will be better off than it would be without the Basic Foods loan and this Project.

c. Employment Effects

The Project contains a direct employment impact through the construction of the regional Agriculture Service Centers and experiment stations. Assuming that 60% of the construction costs are wages and the average annual wage is \$2,000, the Mission expects this phase of the Project to generate 412 man years of employment. These results are consistent with the Mission's experience in other construction projects.

<u>Construction Estimated Cost</u>	<u>Non-Labor Costs US\$</u>	<u>Labor Cost US\$</u>	<u>Average Wage US\$</u>	<u>Employment (man years)</u>
US\$ 1,375,000	550,000	825,000	2,000	412

Presently, the rate of unemployment and disguised unemployment is about 28% for the economy with a rural sector concentration-at least for the disguised unemployment component. This implies that the employment created by this Project and the reduction in disguised unemployment will take place without detriment to production levels of the commercial farm sectors nor other sectors of the economy.

Beyond this direct impact, the Mission was unable to make employment estimates due in part to a lack of data. However, the use of modern inputs will necessitate additional farm labor as well as downstream employment to handle the transport and marketing of the prospective increased production. Furthermore, training programs will increase the capacity of rural labor both in mobility and adaptability terms to seek employment in other sectors -- particularly in skilled trades where shortages exist. Thus, the Mission concludes, even with the lack of quantification that increased employment opportunities will be generated.

d. Linkage Factors

The present structure of the Bolivian economy demonstrates very weak backward and forward linkages. This results, in part, from the limited size of the domestic market and relatively low level of effective internal demand. For example, the domestic consumption of minerals as inputs to industry is less than 2% of production. Domestic processing of cotton takes approximately 20% of domestic production. Forward linkages defined as inputs to other productive activities are generally minimal, while backward linkage defined as final demand satisfying inputs are considered weak.

In part, this Loan can be viewed as a demand creating undertaking through its emphasis on the technical transformation of the campesinos' economic activity in agriculture. The introduction of credit to finance the inputs of fertilizer, new seed varieties, insecticides, etc. will have the effect of increasing effective demand, which in the first instance will probably result in high imports. However, as this demand reaches the level necessary to justify investment in the domestic production of these inputs, the Mission would expect that this import leakage would be sharply reduced. For example, fertilizer imports in 1973 were estimated by the GOB to have reached 8,000 tons per annum while the economic size of most nitrogen fertilizer producing plants is estimated at 150,000 to 300,000 tons per annum. Assuming the present fertilizer consumption growth rate of 10% per annum were to continue without the Basic Foods loan and this Loan, it would take 31 years to reach the minimum breakeven point justifying the investment in a fertilizer plant. (Note: Bolivia is a small scale petroleum producer and if present exploration activities lead to major finds, the country would be justified in developing the petro-chemical industry, including fertilizer. These exploration activities should bear some fruit by 1978). However, the introduction of this Loan will stimulate

the introduction of modern inputs (including fertilizer). Assuming that the fertilizer consumption rate grows (beginning CY 1976) at 20% per annum and given the fertilizer export potential to Brazil and Argentina, the Mission would expect that the fertilizer plant would be justified to come on stream in about eight years. This represents an example of the backward linkage effects that would be stimulated by the proposed Loans for this sector.

The forward linkage effect is more problematical to define and demonstrate. Cotton production has increased threefold since 1971 with 80% of the production exported. On the other hand, the Bolivian textile industry imports nearly 75% of its raw material needs (mostly synthetic fibers). Only in the last year has the domestic textile industry taken interest in cotton as a raw material input. Under present conditions, the industry can absorb only 20% of the cotton production, but with the introduction of different processes, the industry could easily take 80% of the present production. Thus, a stronger forward linkage connection could be established between the agricultural and industrial sectors. Specifically, in relationship to crops financed by this Loan and the Basic Foods loan, soya offers almost immediate forward linkage connection opportunities. The production of cooking oil (an imported item) will be facilitated by the Villamontes processing mill which comes on stream in 1976 and the proposed expansion in private processing facilities in the Santa Cruz area. These facilities are to provide joint products -the cooking oil and high protein feedstock for the poultry and cattle sectors. These latter two commodity groups are supported by the above loans. This commodity represents an example of an immediate intra-sectoral linkage as well as a forward linkage connection to industry.

The Mission expects that an agro-industrial processing structure will be developed as agricultural production in other crops increases, assuring supplies and adequate production quality to these industries. The Mission concludes that in the short run import leakages will predominate as new agriculture inputs are adopted, but over the medium term the expected increase in effective demand will be converted into strong inter-sectoral linkages and by implication a reduction in import leakages.

3. Credit Policy and Interest Rate Analysis

In the period 1970-1974, the Mission estimates that total credit to the private sector increased at an average annual rate of 39% with credit to the agricultural sector increasing at an average annual rate of about 70%. The bulk of the credit expansion was channeled through the State and Agriculture Banks -- approximately 91% of the credit to this sector was through the above banks. During the same period the average annual rate of inflation was approximately 24%, implying that real credit availabilities to the private sector increased by 15% and substantially

more for the agricultural sector. By the third quarter of 1974, credit to the agriculture sector had reached about 33% of total credit available to the private sector which compares to 15% in 1970.

The large increases in the relative share of the agriculture sector in total credit availability was generally related to a substantial expansion in acreage dedicated to sugar, cotton, rice and, to a lesser extent at the end of period, to potatoes. In addition, the Agriculture Bank increased loans to the cattle ranchers five-fold in 1973 and it appears that in 1974 there will be a doubling or tripling of this level. The principal mechanism used by the Central Bank in the past two years to ensure that adequate credit was available to particular sub-sectors of the agriculture sector has been through rediscounting paper, mostly from the Agriculture and State Banks. However, this in part reflects the increased value of production due in part to world-wide inflation and to the general demise of the GOB's attempts to keep domestic food prices below their scarcity value.

a. Central Bank Policy Instruments

The Banco Central has in the past used the following policy instruments to obtain particular macro and/or micro objectives: required reserves, marginal reserve requirements, rediscounts, selective portfolio controls, and general portfolio controls. In addition, the bank can use the interest rate either in a rigid or flexible manner but has chosen a rigid rate structure with no attempt to utilize the interest rate structure as a means to allocate scarce financial resources. The basic argument normally put forward by the Central Bank for this position is that "the increased cost of borrowing would immediately be reflected in higher prices or more specifically inflationary pressures" while "not attracting adequate savings because of the overall low rate of domestic savings due to the low level of income". The basic Banco Central policy instruments are discussed below.

i) Basic Reserve Requirements: These requirements apply to all commercial banks (including the State Bank) but with different levels based on the bank's nationality. Demand and time deposits are subject to differential reserve requirements.

National Banks:	
Demand Deposits	40%
Time Deposits	25%

Foreign Banks:	
Demand Deposits	45%
Time Deposits	30%

The impact on foreign banks of these requirements is generally small because these banks' rely on external funding which normally is channeled through their respective external offices (usually head offices or other subsidiaries of the same bank). Deficiency penalties are applied at the following rates: one-half percent for the first three, ten-day periods; two percent from the fourth to the sixth period; and four percent from the seventh onward. These penalties are applicable to the deficient amount. In the past, the Central Bank has not enforced the reserve requirements in order to meet problems arising from liquidity which, if continued, would have caused a dramatic slowdown in economic activity -- the most recent occasion was in the aftermath of the 1972 devaluation. In general, the basic reserve requirements is the most comprehensive tool the Central Bank has to control global liquidity so as to obtain stabilization objectives.

ii) Marginal Reserve Requirements (MRR): The Central Bank has applied MRR to prevent the rapid growth in liquidity and to some extent to redirect credit. For example, a 100% MRR was imposed in January, 1974 to reduce excess liquidity; however, within two months this measure was found too restrictive. In an attempt to redirect credit, the Central Bank in June, 1974 imposed a 100% MRR but with the objectives of channeling 80% of the incremental credit expansion capability of the commercial banks toward specific agricultural crops to ensure that additional resources would be available to this sector as the Central Bank attempted to withdraw from its relatively low cost but highly expansive rediscount operations. In effect, this policy was oriented toward restructuring the assets of the financial intermediaries and forcing these institutions to use their own funds to finance certain sub-sectors within the agricultural economy.

iii) Rediscounting: Generally, the Central Bank has followed a policy of rediscounting for selected productive activities. For example, the bank has rediscount lines for handicrafts, construction, housing, etc. from its own resources as well as administering lines financed in part or in whole by external resources for the agricultural sector. Special lines exist for two public sector banking institutions to meet specific needs of these institutions (the State Bank and Agricultural Bank). The rates charged vary but are generally low, making these facilities important sources of liquidity in the past two and one-half years.

iv) Portfolio Controls: Aside from controls imposed on marginal increments of credit mentioned above, there exists a basic allocation requirement which forces banks to distribute credit to the productive and commercial sectors. Approximately 70% of a bank's portfolio must be located in productive activities. The system controls the allocation but not the use within the firm of the credit. Portfolios are reviewed monthly (sometimes less frequently) by the Central Bank to ensure compliance. As

a result, the share of commercial credit to total credit has declined rapidly since 1970. However, due to the broad definition of productive activities, it is reasonable to assume that the impact on economic activity in favored sectors has not been great, particularly because the use of funds is not subject to examination.

b. The Interest Rate Structure

Present Structure

<u>Type of Loan</u>	<u>Nominal Interest Rate</u>	<u>Effective Rate</u>
Agri: Wheat	10%	10.47%
Coffee, Soya, etc.	13%	13.80%
Other Non Traditional	16%	17.23%
Commercial	22%	24.36%
Central Bank's Foreign Financed Facilities	12%	12.68%
Agri. Bank's Own Funds	13%	13.80%

Other lending can take place reflecting the actual cost of funds borrowed by the Agriculture Bank which would mean 1 1/2% to 2% above the London Interbank Market. As one can see, the rates for the agriculture sector tend to be low relative to other sector borrowers. In real terms the interest rates are negative under present circumstance. Prior to 1970, the interest rate structure appeared to yield a real return of savings which until recently carried an 8% nominal interest rate. In June, 1974 the interest rate paid on time deposits was increased to 10% and to allow the banks to absorb this cost, the net return to banks on certain loans was increased by between 2% and 5%. Nevertheless, quasi-money deposits have increased at a rate of about 24% per annum since 1970, with the time deposit component representing 98% of the total.

From the point of view of resource allocation, the interest rate policies have been passive, reflecting the fear of inflation and/or a slowdown in economic activities in the industrial sector where employment effects and union antagonism would be exacerbated. Additionally, the Central Bank felt that loan rationing through its portfolio controls would be more effective in obtaining the GOB's desired credit allocation objectives. Alternatively to maintaining fixed interest rates, the GOB has considered in the past the possible use of a flexible interest rate policy to stimulate savings while permitting the rate structure to reflect more adequately the true cost of financial capital,

but for the present this possibility is not considered reasonable. The use of monetary correction is an idea that has floated-out and, in fact, is being utilized on sub-loans in the cattle sector under a World Bank/Agriculture Bank lending program. However, given the problems caused by indexation, it is unlikely that the GOB would opt for such a measure.

The overall structure of real interest rates in Bolivia have in the past two years been increasingly negative. Moreover, the GOB has felt constrained to permit this deterioration even at the risk of increased capital flight. Although there is not sufficient data to estimate capital flight, the Central Bank and the IMF believe that in 1974 the level of capital transfers may have declined, reflecting in part increased investment opportunities financed from internal savings in mining and agriculture implying that other factors besides the interest rate may be as important in investment decisions -- particularly improved world markets for exports and a more rational internal price structure for agriculture commodities.

Inasmuch as this Loan is focused on only one sector of the economy and the interest rate structure is wholly negative in real terms, the Mission considers it unreasonable to attempt to adjust the interest rate on sub-loans to the agriculture sector while leaving untouched the rest of the rate structure. The general weakness of the agricultural sector and fungibility of financial resources would probably lead to either slow utilization of our Loan funds and/or complete non-utilization which would not accomplish the Loan's objectives. The Mission does recognize the need for a restructuring of interest rates, but it does not seem feasible to attack this problem with the present Loan. It is recommended that an interest rate of 13% be applied on sub-loans under this Project with adjustments permitted to maintain constant the present real interest at the discretion of the Central Bank in consultation with USAID/B given overall GOB credit policy objectives. The 13% rate reflects the loan rates now provided to borrowers in the following categories: 1) coffee, soya, cotton, corn, sugar producers; 2) cattle raiser; 3) sugar refineries; 4) construction and improvements in the housing sector; and 5) non-traditional exports. A few of these items would be financed under this Loan implying that a fixed sub-loan rate above the present rate would be detrimental to the movement of this Loan and would discriminate against the smaller farmer who would be paying an interest rate higher than the larger farmers with access to the commercial market.

4. Project Credit requirements

That credit is a constraint to increased production can be demonstrated by the experience with the previous FRA Loan. Under that project approximately \$7 million in increased crop production was obtained from an estimated \$2.7 million outlay for short-term production credit. Furthermore additional production increases are anticipated from the first FRA outflows as a result of longer maturing investments in production and

marketing inputs into dairy, poultry, and swine enterprises, and from the incremental capital development which has occurred in the sector as a result of increased land habilitation. These latter outlays amounted to about \$3.5 million; and, while returns are only now beginning to be generated, it is expected that rates of return will at least equal that of the short-term production credit inputs. In the absence of that project or some alternative credit source, it is unlikely that such an increase could have been achieved.

The rapidity with which FRA funds were placed, both in the large and small farm sub-sectors is further evidence of a credit availability constraint. Credit funds provided under that program were fully disbursed one year ahead of schedule indicating a strong borrower demand. Moreover, amounts originally subscribed for and approved by ICI's at one point exceeded availabilities by as much as \$4 million. Undoubtedly, this resulted in many other potential borrowers being discouraged from making loan applications by the banks themselves or by the failure of other applicants in the community to obtain favorable action on their applications.

The above, of course, is only a qualitative indicator of credit demand. In an attempt to develop more quantitative measures it must be recognized that the demand for agricultural credit is derived demand based on aggregate production and marketing requirements for food products and agricultural raw materials. The effective demand for credit will depend on a whole series of related factors including prices of other inputs and products, interest rates, relevant technology and the structure and resource endowment of the production and marketing sector. A detailed analysis of the demand for credit would ideally require supply and demand projections for a number of commodities and an effort to relate those requirements to the resource base in some type of simulation or optimization framework. In the absence of adequate data to develop such an analysis during the intensive review, the Mission has estimated the amount of agricultural credit which can reasonably be expected to be absorbed by the target group for production of the basic food commodities within the context of the specific objectives of this Project.

The following analysis develops an upper and lower limit estimate of the short, medium, and longer term credit needs for each of the five farm types in the target group in the four years of the Loan. The upper limit for short term credit is the total variable costs of production (excepting family labor) required under the new technology on the average farm for each farm type, multiplied by the number of farmers in each farm type that are expected to adopt the new technology in each year. The lower limit estimate is obtained in the same way except the increase in variable costs (excepting family) under the new technology relative to the old one is used to estimate the short term credit needs for the average farm of each farm type. Data from approximately 430 farms in

the target area and group, developed in the 1972 MINAG/USU survey were used along with other MINAG survey data in estimating potential demand for short term credit. The upper and lower limit potential demand for short term credit is presented in Table 1 by year and farm type.

Data are not directly available from farm budgets for calculating the potential demand for intermediate and long term credit. However, our knowledge of the production technologies of the five farm types permits us to estimate the demand for this kind of credit. Almost no fixed investment is required under the traditional technologies and only a limited amount will be required under the new technologies especially in the valley regions whose innovations are land saving (chemical-biological). However, in the Santa Cruz farm types, more labor saving techniques will be required. In other words, it is our best judgement that even under the new techniques the variable costs of production (which require operating capital) will be predominant.

Because of these relationships we assume that credit needs to finance fixed capital are one-third of the need for credit for operating capital. The upper and lower limit potential demand for intermediate and long term credit is shown in Table 2.

The potential demand for both operating and investment credit is shown in Table 3, for those in the target group that are expected to adopt new technologies during the loan Project. It is, however, unlikely that all of these who adopt new technologies will demand credit, even at the lower limit. Some who adopt new techniques will provide for their own credit needs from personal savings while others have other traditional sources of credit. Thus, the actual number of loans made from credit supplies by this Loan are likely to be less than the number of people who adopt the new technologies.

The amount of funds in this Loan for production and investment credit for the target group appears to be adequate, at least through the first three years. The schedule of new loan funds, roll overs, and amounts available each year for both operating and investment loans are shown in Table 4. If we assume the demand for credit for the farm average of all farm types is the average of the upper and lower credit limits, we can then calculate how many of those who adopt new techniques can be serviced by the credit component of this Loan. The mid-point between the upper and lower limits for operating capital for the weighted average of all farm groups is \$466.91. The mid point for investment capital is \$155.63. Thus, the average farmer (of all farm types) will require \$466.91 for operating capital and \$155.63 for investment credit, or a total of \$622.55 per year to finance agricultural production using new techniques.

UPPER AND LOWER LIMITS OF POTENTIAL DEMAND FOR SHORT

TERM OPERATING CREDIT BY FARM TYPE

I. Cumulative Total of Farmers Adopting New Techniques by Farm Type and Year	<u>F A R M T Y P E</u>					<u>Total</u>
	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	
Year 1	183	101	1,337	898	138	2,657
2	425	234	3,097	2,081	320	6,157
3	722	397	5,260	3,535	544	10,457
4	<u>1,101</u>	<u>606</u>	<u>8,026</u>	<u>5,393</u>	<u>830</u>	<u>15,957</u>
Total	<u>2,431</u>	<u>1,338</u>	<u>17,720</u>	<u>11,907</u>	<u>1,832</u>	<u>35,228</u>
II. Total Variable Cost of Production Under New Technology (Upper Limit Demand per Farm Type):	809.65 ^a	920.55 ^a	477.50 ^b	820.15 ^b	730.60 ^b	636.01
III. Increased Variable Cost of Production under that Technology (Lower Limit Demand per Farm Type):	473.85 ^c	503.20 ^c	190.15 ^b	379.15 ^b	426.75 ^b	297.80
IV. Upper Limit Potential Demand by Farm Type and Year:						
Year 1	1,9,166	92,976	638,418	376,495	100,823	1,356,878
2	344,101	215,409	1,478,818	1,706,732	233,792	3,978,852
3	584,567	365,458	2,511,650	2,899,230	397,446	6,758,351
4	<u>891,425</u>	<u>557,853</u>	<u>3,832,415</u>	<u>4,423,069</u>	<u>606,398</u>	<u>10,311,161</u>
Total	<u>1,968,259</u>	<u>1,231,696</u>	<u>8,461,301</u>	<u>9,405,526</u>	<u>1,338,459</u>	<u>22,405,241</u>
V. Lower Limit Potential Demand by Farm Type and Year:						
Year 1	86,715	50,823	254,231	340,477	58,892	791,138
2	201,386	117,749	588,895	789,011	136,650	1,833,601
3	342,120	199,770	1,000,189	1,340,295	232,152	3,114,526
4	<u>521,709</u>	<u>304,939</u>	<u>1,526,144</u>	<u>2,044,756</u>	<u>354,203</u>	<u>4,751,751</u>
Total	<u>1,151,929</u>	<u>673,282</u>	<u>3,369,458</u>	<u>4,514,539</u>	<u>781,806</u>	<u>10,491,014</u>

a. Does not include cost of family labor

b Does not include cost of any labor which is exclusively supplied by the family in these farm type

c Includes cost of harvest labor which is hired

UPPER AND LOWER LIMITS OF POTENTIAL DEMAND FOR LONGER

TERM OPERATING CREDIT BY FARM TYPE^a

I. Upper Limit Potential Demand:

	<u>F A R M T Y P E</u>					
	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>Total</u>
Year 1	49,388.67	30,992.00	212,806.00	125,498.33	33,607.67	452,292.67
2	114,700.33	71,803.00	492,939.33	568,910.67	77,930.67	1,326,284.00
3	194,855.67	121,819.33	837,216.67	966,410.00	132,482.00	2,252,783.67
4	297,141.67	185,951.00	1,277,471.67	1,474,356.33	202,132.67	3,437,053.34
Total	<u>656,086.34</u>	<u>410,565.33</u>	<u>2,820,433.67</u>	<u>3,135,175.33</u>	<u>446,153.01</u>	<u>7,468,413.68</u>

II. Lower Limit Potential Demand:

Year 1	28,905.00	16,941.00	84,743.67	113,492.33	19,530.67	263,712.67
2	67,128.67	39,249.67	196,298.33	263,003.67	45,520.00	611,200.33
3	114,040.00	66,590.00	333,396.33	446,765.00	77,384.00	1,038,175.33
4	173,903.00	101,646.33	508,714.67	681,585.33	118,067.67	1,583,917.00
Total	<u>383,976.67</u>	<u>224,427.33</u>	<u>1,123,153.00</u>	<u>1,504,846.33</u>	<u>260,602.34</u>	<u>3,497,005.33</u>

Calculated from Table 1.

TABLE 3

POTENTIAL DEMAND FOR CREDIT BY YEAR
AMONG TARGET FARMERS

	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>Total</u>
	(Millions of dollars)				
Operating credit					
Upper limit	1.4	4.0	6.8	10.3	22.4
Lower limit	.8	1.8	3.1	4.8	10.5
Investment credit					
Upper limit	.5	1.3	2.3	3.4	7.5
Lower limit	.3	.6	1.0	1.6	3.5
TOTAL					
Upper limit	1.9	5.3	9.1	13.7	29.9
Lower limit	1.1	2.4	4.1	6.4	14.0

SOURCE: Calculated from Tables 1 and 2.

TABLE 4

DISBURSEMENT SCHEDULES FOR CREDIT

FUNDS - AGRICULTURAL CREDIT LOAN I

	<u>L (a)</u>	<u>YEAR</u>		
		<u>2</u>	<u>3</u>	<u>4</u>
Disbursements	\$1.25 M	1.5M	1.5M	.75M
Production loans	937,500	RO 843,750 (b) 1,000,000 <u>1,843,750</u>	RO 1,659,375 NCF 1,000,000 <u>2,659,375</u>	RO 2,353,437 NCF 500,000 <u>2,853,437</u>
Improvement loans	312,500	NCF 500,000	RO (c) 78,125 NCF 500,000 <u>578,125</u>	RO 78,125 RO 125,000 NCF 400,000 <u>603,125</u>

- (a) - We assume 7% to operating in year 1, and 6% in all other years.
- (b) - 10% loss of principal assumed for bad debt reserve for production loans.
- (c) - one-fourth of the principal is assumed paid at the end of the second year and is available at the beginning of the 3rd year to be re lent.

NCF - New credit funds
RO - Roll over

TABLE 5.

THE NUMBER OF FARMERS THAT CAN BE SERVICED EACH YEAR WITH A
 PRODUCTION CREDIT LOAN OF \$466.91, AND A IMPROVEMENT LOAN
 OF \$155.63

<u>Loan Funds Available at</u> <u>Beginning of Year</u>		<u># of Loans that</u> <u>can be made</u>		<u>Farmers Who Adopt</u> <u>New Techniques</u>		<u>Share of New</u> <u>Farmers who get</u> <u>Investment Loan</u>	<u>Share of total</u> <u>Farmers who get</u> <u>Operating Loan</u>
<u>Operating</u>	<u>Investment</u>	<u>Operating</u>	<u>Investment</u>	<u>New</u>	<u>Cumulative Total</u>		
US\$							
937,500	312,500	2,008	2,008	2,657	2,657	76%	76%
1,843,750	500,000	3,948	3,212	3,500	6,157	92%	64%
2,659,375	518,125	5,696	3,714	4,300	10,457	86%	54%
2,893,438	453,125	6,197	2,911	5,500	15,957	53%	39%

Source: Synthesized from Tables 1,2,3 and 4.

The number of the target group that can be serviced by the credit available each year is presented in Table 5. At the required loan level for the average farm credit funds are adequate to provide investment and operating capital loans for a significant share of farmers in the target group. But the percentage of farmers served begins to decline in the third year. The drop in the share of farmers receiving operating loans occurs because farms ready to use new techniques are increasing faster.

It is unlikely, however, that BAB even with technical assistance and MACAG extension service support can develop the institutional capacity to keep up with the increase in farmers who are adopting new techniques and this implies that the ability to deliver credit may become a real bottleneck to more rapid technical change in about the fourth year. Our credit component is kept at the level programmed, at least in part, because of this institutional constraint in BAB. As it is, BAB must start from scratch and service 2,008 operating loans in year 1 and then, increase this to 6,197 loans by the fourth year. At the same time, it will be required to service from 2,000-3,000 investment loans per year under this program.

The BAB currently has a portfolio of a little over 6,000 small farmer loans in the entire country but mostly in the area of concentration. To meet the needs indicated in the tables, the loan portfolio will have to increase by 66 percent in the first year and double by the end of the third year. In those three years nearly 12,000 loans, including repeats to the first batch of borrowers, will have to be serviced in the annual production category alone. Even with considerable technical assistance, the participation of the MACAG extension agents in loan preparation and supervision and the development of farmer groups as credit recipients, this represents a formidable task for the BAB. Periodic evaluation of credit placements and BAB regional office operations will be used to check on and stimulate movement of credit funds. Obviously if more loans can be made in the first three years, the credit fund will be disbursed more rapidly.

However, we also are faced with certain planning constraints. For example, we assume that a farmer opting for the new technology will require credit sufficient to cover costs lying halfway between the estimated total variable costs of the new technology and the differential costs of the new technology. The credit demand could well tend toward the lower requirement. If this were the case Loan funds could be extended to cover credit demands of about 20 percent more clients. Only in about the third year will we have data on the effect on farmer savings of increased outputs and income and hence lesser reliance on credit. We can only speculate on how many farmers adopting the new technology and using credit will be able to move away from supervised credit and become acceptable clients under other programs such as the FRA. We can say now, with considerable assurance, that, through the third year of the Project, availability of credit will not be a constraint on achieving year and Project targets.

When and if a credit constraint develops, and we expect it more on institutional than availability grounds, it will not be because we have included too small an allocation of credit in the Project. We have held that allocation down so as not to tie up funds that will not be used and to avoid the trauma of possible deobligation. The Mission hopes that it will be necessary in the third or fourth year of the Project to put in an additional infusion of credit from A.I.D., GOB, others, or a mix of resources. This would be one of the best indicators of Project success combining demand from new producers and improved administrative capacity of the involved institutions.

5. Marketing Analysis ^{1/}

a. Small Farmer Marketing Philosophy

For the most part the structure of Bolivia's product markets is private sector oriented. Government intervention in the marketing systems generally have been limited to four types of activities: i) attempts to administer prices (which is discussed more fully in Annex IV Exhibit 1); ii) direct purchase of commodities, particularly milled rice through the National Rice Company, and in 1974 a small pilot project for direct procurement of wheat; iii) public investment in selected processing facilities by the Bolivian Development Corporation - a state owned enterprise; and iv) regulatory measures usually directed at the processor level.

Thus, the agricultural sector generally and small farmers in particular are accustomed to having to meet the risks of production failures and inflation without GOB assistance. The system which has evolved involves spreading risk over more than one crop or livestock enterprises and where possible producing these crops in more than one location, and on maintaining a low cash liquidity level and investment in assets which either increase or maintain real value over time.

The impact of this upon the product marketing system is evidenced by the rate of flow of farm commodities into the marketing system. Depending upon the storeability of the commodity, generally less than 50% of that portion of the crop that is surplus to subsistence needs is sold immediately following harvesting. Initial sales following harvest provide the immediate cash for family needs and repayment of other obligations. Thereafter, farmers sell the remaining portion of their marketable surplus as the need for liquidity occurs. This accounts for the relatively even flow of small lots of storeable commodities into the marketing system over a long period following harvest. Funds in excess of

^{1/} For further details on the related marketing data and analysis contained in this Section see Annex IV, Exhibit 1.

family needs are invested in livestock which is one of the mechanisms to hedge against inflation in the rural areas.

b. Commodities

It has been shown that the target group hedges against potential production adversity by diversifying both crop and livestock production. The location within the Project area, rainfall, soil fertility, access to roads, to markets and similar factors govern what crops can be grown and to a certain extent when. The Project will concentrate on activities which will facilitate improvements in the production and marketing of potatoes, corn, wheat, vegetables, milk, rice, barley, oilseeds and animal proteins notably pork and poultry for domestic consumption. The Project area is currently the principal supply area of those commodities and the existing markets system is so oriented.

c. Seasonality of Production and Marketing

The production season for most crops coincides with the period of heaviest seasonal rainfall which begins to significantly increase in November, trends to a peak in December and January and subsides by mid-April. The rainfall in the Santa Cruz lowlands is twice that of the valleys and the average temperature about 10 degrees Fahrenheit warmer. The seasonal rainfall pattern has important implications with respect to access and transportation. Access to markets is a location specific constraint both with respect to the crops that can be grown for market and the cost of transportation. About 60 percent of the roads in the Project area are either closed during the rainy season or can be traveled only with difficulty. Some 20% of the roads in the Project area are closed as much as 4 to 5 months a year due to weather conditions. Experience has indicated that when road conditions deteriorate, transport costs more than double. However, as noted, it is the growing season, not the harvest time, which coincides with the greatest transport difficulty.

d. Agricultural Price and Market Policy

Despite recent government policies designed to maintain low prices for selected commodities to urban consumers, factors external to Bolivia's domestic market significantly contributed to the upward movement of major food prices, particularly during the last half of 1973 and 1974. Agricultural pricing policy, which has been mostly in the form of administered prices to consumers, and in the case of rice, sugar and wheat, a support price to producers, has been developed on a commodity by commodity basis. Such policies have failed to transmit effective incentives to the food production sector resulting in decreasing food supplies to consumers. The government response to this deteriorating supply situation was to

increase imports. In February 1974, in a major policy shift, the GOB increased the official prices for rice, sugar and flour and permitted the free importation of a number of basic commodities. The impact of the government's experimentation with various agricultural commodity policies has led the Ministry of Agriculture to take more aggressive leadership in advocating production incentives to farmers. As a result of a number of economic factors farm prices level for many basic food commodities have increased to a point where they now approach world price equivalents. Historically, the commodity by commodity approach to agricultural pricing policy has not brought the intended benefits either to consumers or producers. The government, now more clearly than ever, recognizes the need for a balanced set of production and marketing policies and for strategies which recognize the real value of resource scarcities. Given the current price situation and changing attitudes on the part of the government concerning the need for incentive prices to producers and for improved sectoral planning, the present set of marketing price policies are not considered to be a significant constraint to the success of the Project. The planned Project assistance in agricultural sector planning and marketing analysis will provide technical assistance and participant training to the MACAG to strengthen its capability for improving pricing policy analysis and formulation.

e. Structure and Conduct of Product Markets

Approximately 90% of the marketable surplus from farms in the Project area currently is marketed through the local fair mechanism. The marketing system is private sector oriented, highly competitive, and largely free of direct government intervention except for sporadic government attempts to administer prices or in the case of rice, to produce directly. Women control virtually every aspect of the retailing portion of the marketing system and sometimes are directly involved in the assembly and wholesaling functions as well. Some marketing is done directly from the farm to consumers with women playing the primary sales role. Commodities are concentrated at the local fair from many small lots, moved to larger fair mechanisms or directly to major consumption centers. Retailing is in the hands of many small vendors who likewise handle small lots. Losses, while not adequately documented, are thought to be much higher than official statistics indicate.

As previously noted, farm marketings are reasonably well distributed throughout the year with 50% or less occurring at harvest. This low rate reduces the need for extensive off-farm storage and handling facilities as the system now functions. While marketing efficiency is not a strong attribute of the system, the system does work after a fashion and is not considered a major constraint to the development of the Project. There are limited off-farm storage and handling facilities for perishables as well as for commodities such as cereal grains. Given the present flow of commodities into the system, the lack of storage and handling facilities has not constituted an insurmountable constraint. Both losses and deterioration in quality can be attributed to the lack of more adequate

facilities. The problem is not so much one of lack of physical capacity as it is of improved facilities to reduce losses and handling costs. While the government has limited storage facilities for cereals, these facilities would be totally inadequate if the government would choose to become more active in price support activities and expand their role in direct procurement beyond what is now being done in rice.

Improvements in the facility infrastructure will also be a principal focus of the marketing technical assistance, training and prefeasibility studies noted earlier. Funding for feasibility studies and related investments may also be drawn upon from the proposed Basic Foods Production loan.

f. Cost of Marketing

While marketing costs from the farms to the consumers are not adequately researched and documented, it is estimated that farmers are now receiving of the consumer's dollar -- an increase of 10% over the past two years. While marketing costs appear to be comparatively rigid as compared to farm and consumer prices, farm prices during the past two years have tended to rise faster than consumer prices.

g. Supply and Demand

Over the past ten years the valleys and the oriente have contributed slightly over sixty percent of the nation's crop production. With regard to specific crops, the region produces 65% of the wheat, 24% of the barley, 72% of the corn, 80% of the rice, 100% of the oilseeds, 44% of the potatoe supply, 80% of the bananas and plantain supply, and 40% of the citrus fruit.

While demand for food products has been rising at an annual rate of 4%, food production has been growing at half this rate to the point where food supplies per capita are lower than ten years ago. The demand for commodities produced in the Project area, which are basic to the Bolivian diet, have continued to increase and are expected to remain strong for reasons outlined in the Agricultural Sector Assessment. The domestic market demand exceeds domestic source supplies for all basic Project area food with the exception of rice, which has ready markets in Perú and Chile.

The economics of processing of perishable food supplies remains for analysis. Sizeable seasonal production increases for commodities such as vegetables could generate unmarketable surpluses without proper holding or processing facilities. This problem will be a focus of the grant funded FA project, and this loan Project includes an allocation for related prefeasibility studies. Overall, the analysis shows

that effective demand at incentive prices do not constitute a foreseeable constraint to the success of the Project.

h. Factor Markets

A review of factor markets for the main production inputs required for the commodities being addressed in this Project concludes that input constraints are not likely to be limiting factors. The private sector is responsive to demand at all levels for production inputs and has the capability to import and distribute needed production inputs. Importers, however, have a special interest in knowing beforehand what credit availabilities will be, especially in the small farm sector where purchases are made on a small lot basis, in order to forecast demand and place orders sufficiently in advance of needs. Current factor product price ratios appear to be favorable for the utilization of most modern inputs although fertilizer prices are such that farmers with a low risk preference would not likely be enthusiastic customers.

i. Summary of Market Conditions

The commodities to be produced under this Project are essentially the same as those already produced in the Project area. There is no new product for which a new marketing mechanism must be set up. We are expecting an increase of output by the end of the Project which we hope will exceed thirty percent. Part of this increase will be used to increase on-farm consumption, some will be marketed and consumed at the local village level. The balance, estimated at from 15 to 20 percent more than now marketed will move through the market system. As indicated the local market fair system appears competitive, responsive to supply and reasonably efficient. We would expect the system to accommodate itself easily to the increased output. This is true particularly since all production will not be dumped on the market at harvest time.

Transportation will be, as it always has been, a marketing constraint and represent the lion's share of marketing cost. This cost is somewhat hard to disaggregate since the transporter is also a marketing middleman and even, at times, a supplier of credit and all these costs are reflected in price differentials at various points. The same can be said of loss from damage or spoilage which shows up as a part of final price. It should be noted however that since the growing season is the same as the rainy season, most marketing takes place during the dry season when roads are passable.

The marketing process does have some taxes imposed, tolls are charged on truck traffic (a few pesos per vehicle or ton) and provincial taxes are levied on products moving from one province to another. These latter are estimated at from 3 to 4 percent of product price at the final market.

Given the situation described the Mission does not believe that a marketing constraint exists such as to reduce the incentives to farmers to participate or to drain off the income benefits expected for them.

6. External Debt Servicing Capacity

Bolivia's debt service capacity is analyzed in this section from the domestic savings and balance of payments points of view to determine the potential pressure on overall investment and foreign exchange availabilities.

a. The Balance of Payments

In 1974, Bolivia benefited from a sharp improvement in the terms-of-trade for its major exports as well as for its agricultural exports. This resulted in a sharp increase in net foreign assets of the Central Bank during the period. Export value indices for Bolivia show a 100% increase over the average for 1973. However, the comparable volume indices for mineral exports show a decline of about 5% compared to 1973. This latter phenomenon reflects the lack of adequate productive investments in the mining sector in prior years and a lack of exploration work to increase the amount of known reserves.

The Mission projects a partial reversal of the terms of trade in 1975 as import prices continue to move upward at a rate faster than the expected price increases for Bolivia's exports. Another factor which could have a detrimental impact on Bolivia's exports would be a recession in its major trading partners economies. However, we would expect the latter to be short lived. The prevailing uncertainties for Bolivia's export prices in the short term may cause temporary problems, but given the expected long term shortage of raw materials, we should expect export prices to trend upward over the foreseeable future. Thus, over the longer time frame, the prospects for Bolivia's exports should be good if appropriate investments are forthcoming.

Projected Exports (FOB) and Debt Service Requirements
(Millions US\$)

<u>Year</u>	<u>Exports (FOB)</u>	<u>Interest</u>	<u>Principal</u>	<u>Debt Service Ratio</u>
1974	500	21	49	14%
1975	500	28	53	16%
1976	550	31	59	17%
1977	605	39	63	17%
1978	725	45	75	16%

The export FOB projection is based on the assumption of relatively stable world prices at 1974 levels, increased agricultural

export volumes in 1975 and thereafter, and increased mineral volumes (10%) reflecting increased investment in the public and private mining sectors which should bear fruit by late 1976. The year 1978 reflects an optimistic view that exports of petroleum in volume terms will expand as present exploratory work gives favorable results by 1976 and pipeline investments are initiated in late 1976 to provide higher exports in 1978. In general, however, the assumptions underlying the above projections are reasonably conservative.

The Mission does not foresee, therefore, an unduly high debt service ratio. A debt service ratio of 20% would not be considered high in the short term if the type of projects being financed show internal rates of return of 15% or better. The present petroleum projects being financed or about to be financed with relatively high cost money appear to have internal rates of return of 20% or better. Infrastructure loans under discussion are concessional due to their lower immediate potential payback.

b. Domestic Savings

Of key importance to the repayment of external debt is whether the Loan funds finance projects whose rates of return are greater than the cost of financing. This implies that the growth in the rate of savings would exceed the growth of debt servicing requirements, while simultaneously meeting domestic investment requirements. It appears that in the period 1972-74 the investment ratio has reached 21% of GDP while domestic savings has financed 50% to 60% of the total. This would indicate an improvement over the 1968-71 period when domestic savings financed approximately 45% of investment. There is some evidence to indicate that investment in agriculture and private mining is being financed increasingly from internal generation of resources implying a higher savings ratio. Basic data to test fully this assertion is lacking, but the evidence of increased economic activity would tend to corroborate the hypothesis. Assuming the GDP will grow at the average annual rate of 5% to 6% in real terms over the next five years, then it would appear that domestic resource requirements to meet external debt service requirements would be manageable.

Projected GDP* to Debt Service Ratio

<u>Year</u>	<u>GDP</u> (millions of Pesos)	<u>Debt Service</u> (millions of dollars)	<u>Ratio</u>
1974	14,969	70	5%
1975	15,867	81	10%
1976	16,819	93	11%
1977	17,828	102	11%
1978	18,893	120	13%
1979	20,032	100	10%

* In Real Terms (based on annual 6% growth)

The need for concessional financing will continue over at least the next five years as the GOB attempts to increase both productive and infrastructure investments. The level of the savings gap implied by the investment aims of the GOB is estimated by the government's planning agency as being US\$100 - 125 million per year, of which non-concessional borrowing may cover as much as 40% leaving the bilateral and international donors to take up the remainder. Moreover, the Mission believes that any further hardening in the overall maturity structure of Bolivia's external debt would be detrimental to the country's development plans. At present, the Mission considers the present maturity structure acceptable from a debt servicing point of view and that this loan tends to add flexibility to Bolivia's debt service policy. However, the need for concessional financing would continue to reduce the investment gap implied by the use of domestic resources covering the debt service requirement over the next five years. Any further hardening of the overall maturity structure on external debt would only exacerbate a relatively good position enjoyed presently by Bolivia.

In general, it is considered by the Mission that the external debt service capacity of Bolivia will not be strained by this prospective loan.

C. Environmental Analysis

1. General

The Project consists of 1) improving agriculture sector management through institutional development of the MACAG, training, data collection and dissemination, technical assistance etc.; 2) technological development through the expansion of modern production factors through research and extension, seed improvement, farmer training and market development; 3) agriculture credit; and 4) agriculture education and training.

Of all activities to be undertaken, only the construction components and the purchase and utilization of fertilizer and insecticides pose adverse environmental implications. These will be addressed and tested herein.

2. Adverse Environmental Implications

a) Introduction of Pollutants

No contamination of water or air is expected as a result of Project activities. It is estimated that a total of 8,000 tons of fertilizer will be purchased with agriculture credit under the Loan over a four year period. This volume of fertilizer is considered too small to pose a threat. Furthermore, all will consist of nitrogen-potassium-phosphate compounds, and these normally breakdown and get absorbed within a matter of months as a part of the plant nutrient cycle. Insecticides will be of limited use due to the absence of cotton as a target crop, and will consist of approximately 99% organic phosphates that also breakdown within 30 days. Consequently, it is not expected that runoff from agriculture areas receiving either or both fertilizer and insecticide will contribute to water contamination of adjoining rivers and streams.

Air contamination is not considered a threat due to the absence from the Project of large commercial enterprises such as processing plants.

b) Disturbance of Existing Ecological Systems

No such disturbance is expected since no alien activity will be introduced, although on-going agriculture activities will be expanded and intensified. No significant land clearing, earthmoving, or change of land contours is expected. Erosion because of water or wind is not expected to increase as a result of Project activities.

c) Waste Disposal

Sewage and solid waste generated from new construction activity is not expected to be significant, and, in any case, will be treated through existing environmental protection systems. All Project areas where new buildings are being introduced already include similar edifices with functioning sewage and waste disposal systems. The magnitude of the additions in each case of a research station or extension center is considered minor, and does not warrant the expansion of these environmental protection systems.

3. Irreversible Commitment of Resources

The only irreversible commitment of resources contemplated will be the use of land for the erection of buildings or the reclamation of land from adjacent areas for cultivation. Little deforestation is anticipated, within the area of Project focus, and the reclamation will consist almost entirely of bringing lands presently being used for grazing or virgin lands into cultivation through irrigation and the introduction of chemical agents. It is not considered, therefore, that this commitment of land is a negative factor.

4. Alternatives

Improvement of the standard of living of the small farmer in Bolivia by increasing his productivity and his income is an overriding goal of the GOB. The purpose of this Project is to assist in achieving that goal, and it is not considered that other alternatives actually exist. The quantum of benefits that the small farmer is expected to receive from this Project overshadows by far the almost non-existent environmental risk inherent in its execution.

D. Engineering and Technical Analysis

1. General Description

Engineering and technical activities proposed under the Loan will be in support of over all Project objectives and will ensure that the physical facilities, vehicles, equipment, etc. will be adequate and will not become a constraint to the proper implementation of the Loan. Activities contemplated will include new construction, additions to existing facilities, the purchase and installation of laboratory equipment and the procurement of conventional vehicles, agricultural machinery and other auxiliary materials.

The engineering and construction phase of the project comprises the planning, design, and construction of agriculture research, extension

and education facilities in the areas of geographic focus of the Project: Cochabamba, Santa Cruz, Chuquisaca (Sucre). These facilities include regional agriculture service centers, adult education centers, assorted laboratories, seed processing and storage centers, quarters for resident agriculture staff, machinery sheds, green houses and dairy housing facilities and equipment. The following table illustrates the location and type of these facilities.

City of Cochabamba: Regional Agriculture Service Center
Toralapa Experiment Station (Cochabamba): Adult education center (capacity 30), quarters for four resident families and one green house.
San Benito Experiment Station (Cochabamba): Adult education center (capacity 60), combination laboratory and machinery shed.
Chipiriri Experiment Station (Cochabamba): Quarters for four resident families, machinery shed and combination laboratory.
City of Sucre: Regional Agriculture Service Center.
Chimoli Experiment Station (Potosi): Quarters for two resident families, machinery shed and a laboratory-classroom-warehouse combination building.
Zudañez Extension Center (Sucre): A combination seed processing center extension office.
City of Santa Cruz: Expansion of the existing regional Agriculture Service Center to include more office space.
Saavedra Experiment Station (Santa Cruz): Quarters for four families, remodeling and expansion of existing office building, adult education center (capacity 60), seed storage and processing center and additions and modifications to an existing dairy barn and installation of equipment.

The regional Agriculture Service Centers will include offices for the MACAG research and extension offices, a soils office, laboratory, offices for the National Community Development Service, regional conference areas and other offices. Adult education centers will include facilities to house participants of both sexes for short courses, dining areas and classroom space. Housing units for resident agriculture personnel will consist of duplexes containing two modest three bedroom units. Machinery sheds will consist of covered areas and will include an enclosed small parts and service section. Other laboratory areas, seed centers etc. will consist of normally modest edifices either identical or similar to existing facilities. The architectural treatment envisioned for these facilities will be in harmony with existing buildings without sacrificing the utility or functional purpose of each unit.

Preliminary sketches for these different types of buildings are shown in Annex III.

It is estimated that 89 assorted conventional vehicles will be procured in support of Project activities.^{1/} Vehicle needs will 1/ 54 jeeps, 16 pickup trucks, 12 trucks, 3 busses and 4 mobile units.

be verified at an early date during Project implementation and will be purchased under one contract to realize price economics resulting from bulk procurement. All vehicles will be of U. S. source and origin.

The Project will also require the procurement of agriculture machinery including agriculture equipment, seed processing and bagging units, dairy related machinery and laboratory equipment. An illustrative list of such equipment is shown in Annex III. Exact needs will be identified during the early stages of Project implementation and will be procured with enough lead time to allow their timely installation in the completed buildings.

Loan funds will be disbursed for the procurement of engineering and constructions services and for the purchase of vehicles and equipment.

2. Engineering Implementation Plan

a. Site Selection

With the exception of the site of the regional Agriculture Service Center in Cochabamba, all areas to be utilized for building sites are now owned by the MACAG and are located in either experiment stations, extension centers or other agricultural facilities. Consequently, no problems are anticipated in securing land title or acquiring such parcels of land. Site selection criteria within these compounds will depend almost entirely on where a proposed facility would best fit within the overall layout of the particular compound. Utility connections are readily available in all of these areas.

In the case of the Cochabamba site, the MACAG has already identified the site and plans are underway for its acquisition.

b. Design and Preparation of Contract Drawings

The Ministry of Agriculture has no resident engineering staff of its own, and none will be developed as a result of this Project. Consequently, architectural/engineering services will be procured from the private sector to develop construction plans, bidding documents and supervise construction. The buildings to be constructed pose no unusual architectural/engineering problem and there are available qualified Bolivian firms adequately staffed to handle the complexity and magnitude of this work. In addition, there are several U. S. firms with associations in Bolivia currently involved in work financed from AID or other international lending agency loans. Services will be solicited from among qualified AID 941 code countries through advertisements in the Commerce Business Daily in the U. S. and local press.

The consultants selected will undertake site development and sub-surface investigation and will design all facilities, prepare construction drawings and bidding documents and prepare prequalified construction contractor lists. The same consultant will also supervise construction on behalf of the MACAG.

Selection of consultants will be in accordance with AID guidelines and will be subject to the written approval of AID. The consulting engineering contract and all drawings and documents developed by the consultants will also be subject to the written approval of AID.

c. Public Bidding

Public bids will be solicited from a list of prequalified contractors for all work under one contract or in small construction package as the consultants may recommend in order to expedite the completion of the Project. In case of conflict with Bolivian decrees governing bidding procedures, the criteria set forth in AID guidelines stipulating award to the lowest qualified responsive bidder shall govern.

The scattered, relatively unsophisticated and isolated construction areas, and the relatively low monetary value of the proposed construction package are not expected to attract U. S. or other 941 code country contractors. The interest of such contractors, however, will be tested through the publication of a notice in the Commerce Business Daily during the qualification process of construction contractors.

Bids received will be publically opened. The consulting engineers will analyze all bids received and will make recommendations as to the award. Copies of all bid tabulation sheets, the Consultants analysis, and the technical report of the Junta de Almonedas will be submitted to AID for concurrence.

d. Construction

Construction services will be contracted from the lowest qualified responsive bidder by the MACAG. The contractor, in carrying out the work will collaborate with the consultants who will be responsible for construction supervision and inspection. In this capacity, the Consultants will be responsible for all related approvals to insure the quality of all workmanship and materials, and will approve all change orders, additional work orders, monthly progress payments and final inspection and acceptance of the project.

1/ Bolivian inter ministerial contract review and award Committee.

All construction contracts, and any subsequent modifications to such contracts, shall be subject to the written approval of AID prior to their execution.

e. Suitability of Fixed Amount Reimbursement Method

In conformity with AID Circular A-513 dated 7/17/74, The Capital Assistance Committee has considered the suitability of the fixed amount reimbursement method for construction projects financed under the Loan. It has to the conclusion that it would not be suitable in this case for the following reasons:

1) Traditionally Bolivian entities suffer a lack of liquidity in their budget allocations, specially for new capital investments, and lack the necessary financial resources to provide working capital. This is currently true of the MACAG.

2) Consequently, any advance given to the MACAG under this method would have to be substantial, probably over 50% of the project cost. The recovery of those funds by the Mission in case the project is not carried out in accordance with approved plans and specifications will be difficult if not impossible.

3) Processing of payments due contractors by the GOB has been very slow, and this may be reflected in higher prices since contractors know in advance that their capital will be tied up for long periods of time. This situation is less so when AID is involved in monthly disbursements.

As an alternative to this method of disbursement to construction contractors, the Mission proposes to advance the MACAG funds for the establishment of a revolving fund. These funds will be equivalent to what the construction contractor may earn in three months of project progress. The MACAG will disburse directly from this revolving fund, and replenishments will be made by AID to the fund on a quarterly basis based upon vouchers submitted by the contractor and certified by the consultants.

f. Time Provisions

It is estimated that the Project as a whole, including the non-construction components, will be implemented within a four year period from the date of signature of the Loan Agreement. Construction should be completed approximately ten months ahead of Project completion in order to facilitate the orderly equipping and furnishing of all buildings. Following is a preliminary estimate of the time frame envisioned for the engineering and construction activity:

Select and Contract Architectural/Engineer Consultants	6 Months
Design and Preparation of Contract Drawings	7 Months
Advertising and Bidding	4 Months
Construction	<u>21 Months</u>
TOTAL	38 Months

g. Maintenance

An on the site maintenance capability exists in all installations and stations where new buildings are being planned. The new facilities will be incorporated into existing maintenance plans.

3. Procurement of Vehicles and Equipment

The MACAG will be responsible for the preparation of all equipment and vehicles lists and those of farm machinery. These lists will be compiled at the earliest possible time in the life of the Project, and technical specifications will be prepared for each piece or component. The MACAG will also prepare suitable invitation(s) for bid, and these materials will be distributed to interested suppliers in accordance with standard AID procurement procedures.

Bids will be received and publicly opened. Contracts will be signed with suppliers that will insure the timely delivery of these vehicles and equipment.

All equipment lists, technical specifications and procurement contracts will be subject to the written approval of AID. All vehicles will be of U.S. source and origin. All other equipment will be procured from AID Code 941 countries.

4. Technical Feasibility

The Mission considers the Project to be feasible in engineering and technical terms in all respects. No specially manufactured pieces of equipment will be required, and all vehicles and materials are readily available either in Bolivia or in A.I.D. Geographic Code 941 countries. In most cases, materials are available off-the-shelf without any delay periods for delivery from manufacturers. No exceptions to normal A.I.D. procurement guidelines are anticipated.

Experienced engineering and construction firms are available in Bolivia with considerable experience in the type of construction envisioned. Adequate competitive response has been the rule

in other similar construction activity in Bolivia, and such response is anticipated in this case.

The terrain, climatic conditions, structural and foundations problems pose no threat to the timely implementation of the Project.

5. Estimate of Cost

The estimate of costs of the construction of all project facilities were carefully developed from the latest available data on the prices of materials and labor for comparable buildings. Records of the Camara Boliviana de Construcción were used as a basis for these estimates.

The estimate includes an escalation allowance to compensate for the expected rise of materials and labor over the next one and one-half years, at which time it is expected that construction would commence. An escalation allowance of 30% per year was used due to the current trend in Bolivia. Also included in the estimate is a 15% contingency item which is considered mandatory due to preliminary nature of this estimate. The estimate of cost for the different types of vehicles is based upon quotations of local supplies and include shipping and insurance allowances as well as an escalation allowance to compensate for the expected rise in vehicle prices. The estimate of cost for the agriculture machinery is based upon the quotations of similar equipment acquired by the MACAG with an escalation allowance to meet the expected inflationary effect.

It must be pointed out, however, that this estimate is tied to construction to commence in mid-1976. Minor deviations from this schedule would not materially affect the estimate. A drastic change in this target date, any sizable decreed increases in labor compensation by the Bolivian Government or any unforeseen problems in Bolivia or in the international scene that may affect material and transportation costs will render this estimate obsolete.

The estimates of construction costs are shown in detail for each facility in Annex III. The estimate of cost for vehicles and equipment is shown in Annex V.

6. Engineering and Technical Conclusion

From an engineering and technical standpoint, this appears to be a feasible and sound Project. The estimated costs of construction and equipment procurement have been carefully and realistically developed, based upon reliable data and taking into consideration

escalation problems resulting from the high inflation rate being experienced in Bolivia. These estimates are considered reasonably firm. All sources of equipment, materials, vehicles, labor, and other services required for the completion of the Project are available and pose no special problems. Time provisions are proven and realistic. It is, therefore, the judgement of the Capital Assistance Committee that the requirements of Section 611(a) (1) of the Foreign Assistance Act of 1961, as amended, have been met.

E. Financial Soundness

1. Summary Cost Estimate and Financial Plan

The total cost of the overall project and the proposed sources of financing are presented by the following table:

<u>Utilization of Project Funds</u>	<u>(US\$ 000)</u>		
	<u>AID Loan</u>	<u>Local Financing</u>	<u>Total</u>
Improved Sector Management	600	800	1,400
Technological Development	3,550	2,750	6,300
Agricultural Credit	4,400	1,650	6,050
Agricultural Education	650	450	1,100
	<u>9,200</u>	<u>5,650</u>	<u>14,850</u>

The GOB contribution to the project is approximately 38% of total project costs.

2. Analysis of Elements Included in Plan

The following table presents reasonably firm estimates of the component costs of the project broken down between U. S. Dollars and local currency:

	<u>(US\$ 000)</u>		
	<u>U.S.Dollars</u>	<u>Local Currency</u>	<u>Total</u>
1. Improved Sector Management	600	800	1,400
a. Agr. Data & Mktg. Infor.	325	500	825
b. Policy & Planning Develop.	275	300	575

2. <u>Technological Development</u>	<u>2,130</u>	<u>4,170</u>	<u>6,300</u>
a. Agr. Research	1,205	1,800	3,005
b. Agr. Extension	625	1,420	2,045
c. Seed Improvement	300	600	900
d. Marktg. Development	-	350	350
3. <u>Agricultural Credit</u>	<u>900</u>	<u>5,150</u>	<u>6,050</u>
4. <u>Agricultural Education</u>	<u>450</u>	<u>650</u>	<u>1,100</u>
TOTAL	<u>4,080</u>	<u>10,770</u>	<u>14,850</u>

Foreign exchange costs, about 28% of total project costs, will be used for equipment, vehicles, out of country participant training, and technical assistance. Local currency will finance local currency costs such as local staff salaries, in-country training and other operating expenses.

It was determined that the relatively large proportion of local currency to be provided by Loan funds (approximately 56% of the Loan amount) is necessary since the elements to be financed by the Loan are largely local in nature. The Mission does not own sufficient local currency to carry out the program without the proposed Loan. Bolivia continues to face a potential cash deficit in its annual budgets. The monetary impact of these potential deficits must be within acceptable bounds to avoid balance of payments and internal price pressures.

It is the conclusion of the Mission that directing the resources made available under the Loan to the local currency needs of small farmers for import substitution crops and for the improvement of the agricultural sector in responding to the needs of the small farmer will maximize the contribution of the Loan to the growth and development of the agricultural sector, and thus to national economic growth.

3. Component Breakdown

The following table presents the project component breakdown by items:

	(US\$ 000)			<u>Total</u>
	GOB			
	<u>F/C</u>	<u>AID Loan L/C</u>	<u>Contribut. L/C</u>	
a. Equip & Materials	1,340	-	-	1,340
b. Vehicles	675	-	-	675
c. Salaries and Op. Exp.	-	-	4,350	4,350
d. Participant Training	1,000	-	-	1,000
e. Tech. Assistance	565	-	-	565
f. Construction & Eng.	-	1,370	-	1,370
g. Loan Capital	500	3,500	1,000	5,000
h. Seed Multip. Fund	-	-	200	200
i. Feasibility Studies	-	250	100	350
TOTAL	4,080	5,120	5,650	14,850

A. AID Loan - The AID loan will finance the cost of importing equipment materials and vehicles to be used in the increase MACAG effort in the Agricultural Extension and Research programs and for the Banco Agrícola and National Community Development Service to support their efforts in implementing the loan Project. The loan funds will also provide training costs for 32 long term participants and 211 short term course participants and technical assistance in the areas of research, animal science, plant science, economics, extension and administrative reform. Engineering and construction costs will be provided for the research and extension stations to improve their facilities. Also provided by the AID loan will be \$4 million in loan capital for an agricultural production revolving credit loan fund for use by the small farmers. Finally the AID loan will provide \$250,000 for pre-feasibility studies in the area of processing and storage.

B. GOB Contribution - The GOB will provide the additional salaries and operating expenses needed for the expanded services contemplated under the Project. This includes any salary increases to personnel (extension, research, regional management) already working in the Project area plus new hires. Of the \$4,350,000 new expenditures, the MACAG general budget will absorb about \$3.0 million. The balance will cover some NCDS costs, the BAB's expenses in the credit activity and increased university costs. The Banco Agrícola from its recently increased GOB capitalization commitment of \$ 3 million will provide \$ 1 million to the credit fund. The GOB will also contribute \$300,000 to processing of improved seed and for pre-feasibility studies. None of the GOB contribution shown elsewhere as supporting the grant project is duplicated here.

The net effect of the GOB contribution will be an addition of \$4.6 million to their budget over the four years of the loan Project or \$1.15 million per year. This represents an increase of a little over 10% in the 1974 budgets.

5. MACAG Budget Implications of Project

The MACAG budget expenditures for 1974 are estimated to be \$b145 million and are expected to reach \$b190 million in 1975 including the incremental requirement generated by this Loan of about \$b16 million (this figure excludes the credit component which will come through the public sector banking system consistent with monetary stability). The balance of the increase will be needed to meet increased costs, mostly salaries, of ongoing programs. The Mission estimates that beyond 1975 and through CY 1978 the MACAG budget will require annual inputs of about \$b25 million to meet Project objectives and that thereafter annual inputs of \$b20 million will be necessary to maintain the level of activity achieved under the Project. In addition, the Mission expects that the MACAG will need about a \$b20 million annual increment to its budget through 1979 to meet escalating costs of its existing programs and that the additional increase necessary to its budget to undertake new programs (not including the proposed Project) could reach \$b60 million by 1979. Thus, by 1979, the Mission estimates that the MACAG budget will reach approximately \$b350 million. This result is set forth in the following table.

ESTIMATED MACAG BUDGET
(\$b millions)

1975 - 1979

<u>CY</u>	<u>Base Year Budget</u>	<u>GOB Project Costs</u>	<u>Natural Growth (a)</u>	<u>Program Growth (b)</u>	<u>Total</u>
1975	190	(16)	-0-	-0-	190
1976	190	24	20	10	234
1977	190	26	40	20	276
1978	190	26	60	40	316
1979	190	20 (c)	80	60	350

Notes:

(a) Natural growth is the estimated increase in costs for carrying out the Ministry's existing programs. It includes increased costs of goods and services plus increased costs arising from a steady upgrading of salaries for professionals designed to attract and hold the qualified people essential to the maintenance and improvement of ongoing programs. Part of this growth includes the cost to the GOB which can be specifically identified with meeting the covenants on improved professional salaries. This is expected to cost about \$b20,000,000 (\$1,000,000) over the period 1976-1978 for implementation of the covenant on a national basis.

(b) This is the estimated cost to the GOB of expanding its programs over the period covered; the provision of improved services in areas now served and the extension of new or expanded services into new areas.

(c) This is an estimate of the cost to the MACAG after the Project is completed of ongoing support to the Project. It will include such items as maintenance of installations and equipment, ongoing operating costs and eventual replacement of equipment and materials. Over the later years it will grow along with the growth of the whole budget.

The above result implies a growth in the MACAG budget of about 24% per annum during the disbursement period of the Project.

In relationship to the projected total GOB budget the MACAG budget will represent approximately 3.5% of total estimated expenditures during the disbursement period as compared to 3.3% in the base year 1975. Mission estimates that GOB revenues will grow at an average rate of about 18% per annum through 1979. (The revenue increase includes projections for increases in mineral, in gas, petroleum and agricultural exports which should benefit from existing or presently planned investments in expansion, exploration and exploitation over the next three years, and assumes that the present tax structure will be maintained throughout the 1975-79 period). Given the growth and the importance of the agriculture sector, the Mission is satisfied that the budget requirements of this Project are well within the GOB's financial capabilities, and that the Project should not be delayed during its implementation due to a lack of local resources to support the effort, and that the GOB will be able to provide the resources to maintain the Project's accomplishments.

6. Justification for use of A.I.D. Loan terms

As an exporter of metals, petroleum and gas, Bolivia's foreign exchange earnings increased by approximately US\$325 million in 1974. However it appears that Bolivia's export earnings will remain at 1974 levels during 1975 for its major exports (in value terms). On the other hand it is expected that the terms of trade will turn against Bolivia as import volume increases, will tend to turn the B/P's current account surplus into a deficit for 1975. This would imply a continuing weakness in the external economy of Bolivia.

The investment being undertaken in the petroleum and mining sectors in 1974 and 1975 would begin to bear fruit by 1976. This would imply a strengthening in the export capacity of the country.

Nevertheless, the allocation of this investment has weak linkages to the rest of the economy and 70% of the population will remain at relatively low per capita income levels. Bolivia's per capita income level remains the second lowest in Latin America.

Given the exceptional nature of Bolivia's foreign exchange earnings in 1974 it would not be in the country's development interests to finance a substantial part of its investment requirements during the financial planning period by extensive foreign borrowing on medium or short-terms nor should the international financial agencies hence push the country toward an excessive debt burden counter-productive to development.

The Project in question is primarily of social and long-term development concern, of undoubted economic benefit but not immediately productive to the government and hence fully appropriate for concessional international financing at the terms indicated.

F. Role of Women In The Project

Project activities have been specifically designed and will be further elaborated upon in the respective implementation plans required prior to initiation of disbursements in order to elicit the active participation of women and enhance their role in the economy as part of this Project. While there is only limited documentation on the precise nature of the role of women in the small farm sector, it is widely acknowledged that the housewife exercises an equal predominant role in family decisions concerning all significant marketing and bartering transactions, is responsible for management of the bulk of small scale domestic enterprises (milk, cheese, eggs, ducks, pigs, woven goods, etc.) and, has substantial influence over the control and use of family savings which are generally in the nature of live-stock. A current Mission funded study is underway by a local socio-economic research organization to provide further insights into these relationships. The results of this study will provide guidance to both the Mission and the GOB implementing agencies as to what specific program and modalities of implementation will be most effective in utilizing the resources of rural women to achieve the objectives of the Project.

This Project has no features which would necessarily or specifically preclude the participation of Bolivian women or restrict their access to Project resources. Also the laws of Bolivia with respect to access to credit and indebtedness are not discriminatory on the basis of sex. In fact many women already participate in various credit programs and have borrowed money for both production and marketing investments.

There is no reason to suspect that women, to the extent that they fall within the proposed target clientele, will not have equal access to Project resources to the same extent and on the same terms as men.

Moreover, the Ministry of Rural Affairs and Agriculture and its related entities are equally sensitive to the importance of women in the rural economy -not only with respect to their social role in the family but as contributors to production, marketing and technological change- and fully endorses the effort to expand their role in the development activities directed at the rural sector. For example, the NCDS conducts special courses in community development exclusively for the campesino, including training in community organization and leadership.

In summary, with respect to the rural Bolivian context, without a significant part of the extension, training, demonstration and credit program being directed at the women of the Project target group, the success of this Project could be endangered.

SECTION III - LOAN ADMINISTRATION

A. Target Dates

1. Execution of the Loan Agreement

No delays are foreseen in drafting and negotiating a loan agreement. It is expected to be signed within four months following loan authorization.

2. Conditions Precedent

It is anticipated that conditions precedent to initial disbursement of the Loan will be satisfied within four months following the signature of the loan agreement. All conditions precedent should be met within six months from the signing of the agreement.

3. Disbursement Period

The Project Committee believes that the proposed A.I.D. loan cannot be effectively disbursed within a three year period and recommends approval of a four year disbursement period. This judgement is based on considerations involving construction lead times, credit distribution capacity and an adequate period of project operation for effective institutionalization of effective planning and delivery systems .

The MACAG is beginning from an extremely low human resource base in terms of numbers and training of the existing staffs for research, extension, and sector planning. A four year period will be required in order to adequately train these personnel, and provide them with sufficient on the job experience at their new training levels, without disrupting the ongoing functions of their respective organizations. In addition, four years will be necessary to carry out the program for construction of three regional service centers, as MACAG is not yet familiar with AID procurement and construction procedures, and its staff will require a longer period to learn to handle these procedures. Shortly after loan signature, work can be started on advertising, selection and contracting for construction firms. All this will take well over a year, possibly as long as seventeen months after Loan signing. Actual construction and equipping will take about twenty months. Even if all these actions are telescoped and accelerated the full impact of the ASC's will not be felt for at least thirty months.

On the basis of the already existing organizations, on-board staff and using already existing technological packages, it is planned to start putting credit into the hands of some of the target group in the first year of the project. But again the full impact of this project, in terms of expanded availability, will only begin to be felt in the

third year. Similarly, while we expect an early impact from education and training, as well as from reforms and improvements in the local BAB offices, the impact on the farmer will be slow in appearing. (For greater detail on the phasing of the Project, see Graph 1, page 92.)

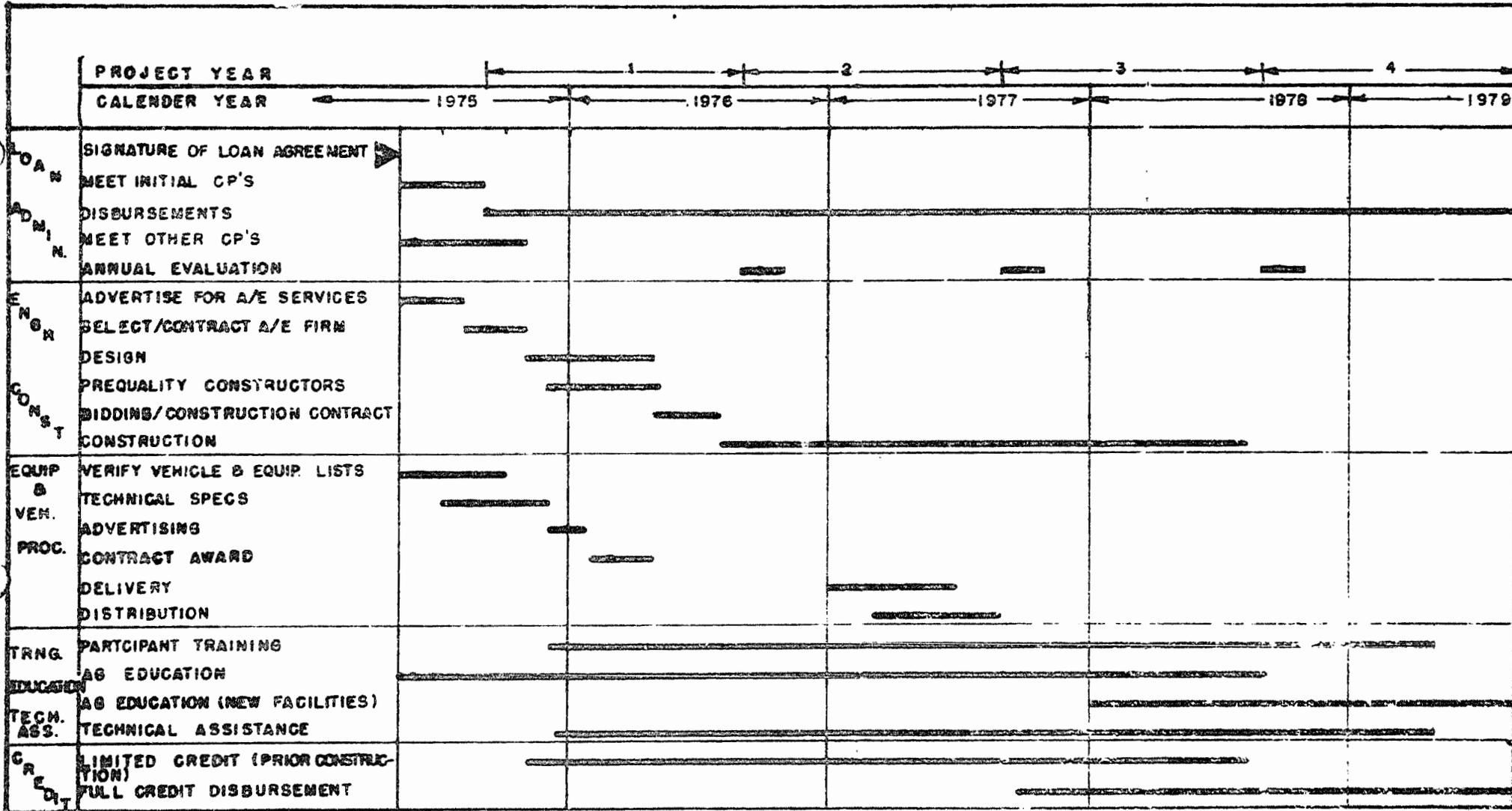
Obviously, we expect the evaluation of this Project to be a dynamic process continuing through and beyond the life of the Project. But, to get full value from the evaluation process, the Project Committee believes that at least four years experience with the Project is needed. Consequently, we wish to see the Project in all its other phases continue at least one full year after the construction and equipping phase is completed.

4. Summary

The following plan provides a summary of the major actions and their timing which must take place if the A.I.D. loan funds are to be disbursed as programmed.

<u>A c t i o n</u>	<u>Target Date</u>
1. Loan Authorization	December 1974
2. USAID/GOB Loan Negotiation	Feb-March 1975
3. Sign Loan Agreement and Issue Implementation Letter # 1	April 1975
4. Planning and Organizational Activities Related to Meeting Initial Set of Conditions Precedent (including development of an agriculture sector budget, agreements among the MACAG and other participating entities, a Supreme Decree establishing the credit fund, and auditing system.)	May-August 1975
5. Develop PERT of Project	July 1975
6. Conditions Precedent to Initial Disbursement Met	August 1975(A)
7. First Disbursement	(A) + 1 month
8. Other Conditions Precedent Met	October 1975
9. Annual Evaluation	(A) + 12 and 24 and 36 months.
10. Final Disbursement	(A) + 48 months

TIME-PHASED PROJECT IMPLEMENTATION PLAN



B. Disbursement Procedures

No deviation from A.I.D. established disbursement procedures is anticipated. Materials and equipment procured in the United States or other A.I.D. Geographic Code 941 countries and any foreign exchange costs of engineering, construction, and technical assistance contracts will be paid through A.I.D.'s standard letter of commitment/letter of credit procedure. Requests to open letters of commitment will contain appropriate certification that the items listed are required for the project and are eligible for financing under the Loan. Disbursement for approved local currency costs, including local engineering and construction contracts when appropriate, will be made from a U.S. Government owned RDO account held in the Central Bank of Bolivia.

C. Procurement Procedures

Goods and services procured under the Loan shall have both their source and origin in countries included in Code 941 of the A.I.D. Geographic Code Book or in Bolivia and procurement will be made in accordance with standard A.I.D. procedures contained in Manual Orders 1441.1, 1441.2, and 1441.3, Implementation Letters and attachments, etc. Appropriate reports will be required from the MACAG concerning compliance with procurement requirements such as source and origin, 50/50 shipping, reasonable price, etc.

Specifications for procurement and invitations for bid (IFB) will be prepared by the MACAG and will be reviewed by the USAID Engineering and Transportation Division and the Capital Development Office.

D. USAID Monitoring Responsibilities

Monitoring will be exercised by a Mission Project Committee whose members will have the following responsibilities:

1. The primary monitoring task will reside with the Project Manager who would be a member of the Mission Rural Development Division (RDD). His principal responsibilities will include receiving, reviewing, and taking appropriate action on all documentation relevant to the Project; maintaining contact with the MACAG Project officials; monitoring work progress; and submitting the monthly Project progress report.

2. The Mission Engineering and Transportation Division (ETD) representative will review all procurement lists, plans and specifications, and IFB's and periodically will inspect construction progress.

3. The Mission's Office of Capital Development (CAP) representative will have responsibility for ensuring that provisions of the A.I.D. Loan Agreement and Implementation Letters are met as well as reviewing, along with ETD, all IFB's.

4. The Mission's Office of the Controller (CON) representative will review all disbursement/reimbursement requests for conformity with A.I.D. regulations and will ensure that adequate financial control methods are followed by the MACAG.

E. Reports

The submission of the following reports would be required of the MACAG:

1. An annual audit report, prepared by an independent auditor acceptable to the Mission, will be submitted yearly to USAID/Bolivia.
2. Shipping reports will be submitted to USAID/Bolivia on a quarterly basis.
3. A monthly progress report may be required which would be developed by the USAID Project Manager and the MACAG for submission to the CAP Office.
4. Progress reports will be presented to USAID/Bolivia on a quarterly basis.
5. Other reports such as progress reports from consultants and technical assistance advisors may be required.

While some of the above reports have standard formats, others must be designed to the project. In the latter case, Implementation Letters will be used to specify the content and format.

F. Evaluation Plan

The Loan project and overall program will be evaluated annually starting approximately one year from the date that the initial conditions precedent are met. Progress will be measured against the indicators at the program goal, purpose, and output levels as contained in the Project Logical Framework (see Annex VI).

An agricultural production economics advisor will assist in developing input-output coefficients relevant to the various technologies applicable to crops in the target area. Additionally, an interview survey will be undertaken to obtain specific data on

the type and level of technology as well as aggregate production and input utilization estimates. Such monitoring will be assisted by various extension research and NCDS agents and other MACAG functions within the project area.

G. Conditions and Covenants

In addition to the standard conditions and covenants associated with A.I.D. lending, the Loan Agreement should include the following:

1. Conditions

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

(i) evidence of a budgetary plan which, during the life of the Project, increases the agriculture sector budget to levels adequate to provide for salary increases of existing personnel, hiring of new personnel, A.I.D. program counterpart requirements, program operations, and larger allocations to field activities of direct benefit to small farmers;

(ii) evidence of agreements between the MACAG and the decentralized public institutions, including the NCDS and BAB, and the Universities in Cochabamba and Santa Cruz which set forth their respective roles, responsibilities, and contributions to the Project;

(iii) evidence of a Supreme Decree establishing a separate supervised credit fund within the BAB for the benefit of the small farmers of the Project area; and

(iv) evidence of the design and establishment of an adequate system of accounting, budgeting, and auditing procedures within the MACAG.

b. Prior to any disbursement or issuance of any commitment documents under the Loan for any purpose other than to finance consulting engineering, design, or technical assistance services, the Borrower shall submit to A.I.D., in form and substance satisfactory to A.I.D.:

(i) evidence of a time-phased implementation plan (e.g. a PERT or Critical Path for the Project showing interrelationship with and priority relative to other components and activities;

(ii) evidence of a time-phased implementation-evaluation plan for each component or activity of the Project complementary to the Plan set forth in (i) immediately above;

(iii) evidence of a time-phased plan to reorganize and strengthen agriculture sector public services which is designed to eliminate duplicative efforts and improve operational efficiency;

(iv) evidence of a time-phased training plan for upgrading the professional and technical capabilities of Project related MACAG personnel and faculty members of the agricultural schools of the Universities in Cochabamba and Santa Cruz;

(v) evidence of a time-phased plan for increasing the salaries for professional and technical personnel in the MACAG and the agricultural faculties at the universities of Cochabamba and Santa Cruz to levels substantially competitive with the private job markets by December 31, 1977;

(vi) evidence of a time-phased plan to develop a system to analyze, on a continuing basis, the various policies (pricing, taxation, etc.) which affect agricultural production; and

(vii) a description of the procedures and any necessary legal action that Borrower will undertake to make effective the standard provisions of Section 4.05 of most Loan Agreements, and similar provisions for any grant project agreement associated with this Loan.

2. Covenants

Except as A.I.D. may otherwise agree in writing, the Borrower shall covenant:

(i) that the increased agricultural sector budget required by III, G, 1, a, (i) above will be provided at the levels indicated therein and that those levels will be maintained after the termination of the A.I.D. loan.

(ii) to provide adequate staff and support on a timely basis to, inter alia, the MACAG's Agricultural Statistics and Planning Offices, Research and Extension Services, and Adult Education Units which will be attached to agricultural service centers;

(iii) that the interest rates charged to any sub-borrower will be equivalent to 13.0% or such other rate as the Borrower and A.I.D. may establish through future arrangements;

(iv) to maintain the newly created credit fund for small farmers in the Project area at an amount equal to the peso boliviano equivalent of the dollars disbursed to the Borrower by A.I.D. for the fund.

(v) that funds will be made available to the newly created credit fund, on a timely basis, to fund any shortage that may occur in carrying out the Project;

(vi) that all plans and descriptions referred to under III, C, 1, b above will be executed according to the provisions contained therein;

(vii) to review the progress of the Project annually with A.I.D. utilizing the logical framework developed as well as other plans.

The budget amounts necessary to fulfill the GOB commitments, described in the various conditions precedent and warranties innumeraled above, will be given in the Project Description Annex of the Loan Agreement.

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D R A F T
LOAN AUTHORIZATION

Provided from: Development Assistance Funds ("Food and Nutrition")
BOLIVIA: Agricultural Sector

Pursuant to the authority vested in the Assistant Administrator for Latin America by the Foreign Assistance Act of 1961, as amended, and the delegations of authority issued thereunder, I hereby authorize the establishment of a loan ("Loan"), pursuant to Part I, Chapter 1 of said Act to the Government of Bolivia ("Borrower") of not to exceed nine million two hundred thousand United States Dollars (\$9,200,000) to assist the Borrower in financing the United States dollar and local currency costs of an agricultural development program for Bolivian small farmers in selected geographic regions.

1. Interest and Terms of Repayment

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

2. Other Terms and Conditions

(a) Goods, services (except for ocean shipping) and marine insurance financed under the Loan shall have their source and origin in Bolivia and countries included in Code 941 of the A.I.D. Geographic Code Book. Marine insurance may be financed under the Loan only if it is obtained on a competitive basis and any claims thereunder are payable in freely convertible currencies. Ocean shipping financed under the loan shall be procured in any country included in A.I.D. Geographic Code 941.

(b) United States dollars utilized under the Loan to finance local currency costs shall be made available pursuant to procedures satisfactory to A.I.D.

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

(i) evidence of a budgetary plan which, during the life of the Project, increases the agriculture sector budget to levels adequate to provide for salary increases of existing personnel, hiring of new personnel, A.I.D. program counterpart requirements, program operations, and larger allocations to field activities of direct benefit to small farmers;

(ii) evidence of agreements between the MACAG and the decentralized public institutions, including the NCDS and BAB, and the Universities in Cochabamba and Santa Cruz which set forth their respective roles, responsibilities, and contributions to the Project;

(iii) evidence of a Supreme Decree establishing a separate supervised credit fund within the EAB for the benefit of the small farmers of the Project area; and

(iv) evidence of the design and establishment of an adequate system of accounting, budgeting, and auditing procedures within the MACAG.

(d) Prior to any disbursement or issuance of any commitment documents under the Loan for any purpose other than to finance consulting engineering, design, or technical assistance services, the Borrower shall submit to A.I.D., in form and substance satisfactory to A.I.D.:

(i) evidence of a time-phased implementation plan (e.g. a PERT or Critical Path) for the Project showing interrelationship with and priority relative to other components and activities;

(ii) evidence of a time-phased implementation-evaluation plan for each component or activity of the Project complementary to the Project plan in 2.(d) (i) immediately above;

(iii) evidence of a time-phased plan to reorganize and strengthen agriculture sector public services which is designed to eliminate duplicative efforts and improve operational efficiency;

(iv) evidence of a time-phased training plan for upgrading the professional and technical capabilities of Project related MACAG personnel and faculty members of the agricultural schools of the Universities in Cochabamba and Santa Cruz; and

(v) evidence of a time-phased plan to develop a system to analyze, on a continuing basis, the various policies (pricing, taxation, etc.) which affect agricultural production.

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ANNEX 1, Page 34 of 34
Exhibit 4, Page 3 of 3

(e) Except as A.I.D. may otherwise agree in writing, the Borrower shall covenant:

(i) that the increased agricultural sector budget required by 2. (c) (i) above will be provided at the levels indicated therein and that those levels will be maintained after the termination of the A.I.D. loan;

(ii) to provide adequate staff and support on a timely basis to, inter, alia, the MACAG's Agricultural Statistics and Planning Offices, Research and Extension Services, and Adult Education Units which will be attached to agricultural service centers;

(iii) to maintain the newly created credit fund for small farmers in the Project area at an amount equal to the peso boliviano equivalent of the dollars disbursed to the Borrower by A.I.D. for the fund;

(iv) that funds will be made available to the newly created credit fund, on a timely basis, to fund any shortage that may occur in carrying out the Project;

(v) that all plans and descriptions referred to under 2.(d) above will be executed according to the provisions contained therein; and

(vi) to review the progress of the Project annually with A.I.D. utilizing the logical framework developed as well as other plans.

(f) The Loan shall be subject to such other terms and conditions as A.I.D. may deem advisable.

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

CAPITAL ASSISTANCE PAPER

Proposal and Recommendations
For the Review of the
Development Loan Committee

BOLIVIA - AGRICULTURAL SECTOR LOAN ANNEXES

AID-DLC/P-2066- ANNEXES

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

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AID-DLC/P-2066
ANNEXES

January 10, 1975

MEMORANDUM FOR THE DEVELOPMENT LOAN COMMITTEE

SUBJECT: Bolivia Agriculture Sector Loan

Attached for your review are ANNEXES for loan authorization of a loan to the Government of Bolivia in an amount not to exceed nine million two hundred thousand dollars (\$9,200,000) to assist in the financing of the United States dollar and local currency costs of an agricultural development program for Bolivian small farmers in selected geographic regions.

No meeting is scheduled.

Development Loan Committee
Office of Development
Program Review

Attachments:

ANNEXES I-IV

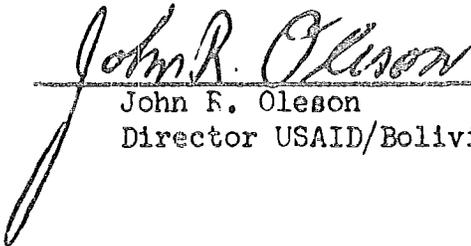
Loan Proposal previously distributed
12/20/74

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UNCLASSIFIED
ANNEX I
Page 1 of 29
Exhibit 1
Page 1 of 1

CERTIFICATION PURSUANT TO SECTION 611(e) OF THE
FOREIGN ASSISTANCE ACT OF 1961, AS AMENDED

I, John R. Oleson, the principal officer of the Agency for International Development in Bolivia, having taken into account among other factors the maintenance and utilization of projects in Bolivia previously financed or assisted by the United States, do hereby certify that in my judgment Bolivia has both the financial capability and human resources capability to effectively maintain and utilize the capital assistance project: BASIC FOODS PRODUCTION.



John R. Oleson

John R. Oleson
Director USAID/Bolivia

La Paz, diciembre 10, 1974.

Cite: SUB-GERENCIA DE OPERACIONES N° 78880

Señor
John R. Oleson
Director de USAID/B.
Presente.

Señor Director:

Tenemos a bien dirigirnos a usted con el objeto de hacerle conocer las necesidades de financiamiento que requerimos para continuar incrementando el desarrollo agropecuario de nuestro país, en base a la ejecución de una política crediticia orientada a la producción de productos alimenticios básicos por parte de pequeños agricultores valiéndose del mecanismo ejecutor existente en el Banco Central de Bolivia, la Oficina Técnica del F.R.A., dependiente de nuestra División de Desarrollo.

Como es de su conocimiento, el sector agropecuario cuenta con el mayor potencial de recursos naturales del país, pero el aprovechamiento de estos recursos para incorporarlos a la producción, requiere de la acción complementaria y dinamizadora de capitales financieros y técnica agrícola, de tal manera que conjuncionados estos factores en forma coherente, permitan el desarrollo acelerado de este sector de nuestra vida económica y consiguientemente la elevación del nivel de vida de la gran mayoría de la población boliviana.

Por otra parte se ha comprobado que si bien con los programas en ejecución, los agricultores grandes y de tipo empresarial, están logrando satisfactorios resultados en sus explotaciones, el pequeño agricultor o campesino recién está comprendiendo y utilizando exitosamente la ayuda financiera de los préstamos bancarios, para aumentar la producción y lograr un mejor estado económico para sí y sus familiares. Este último estrato humano de la agricultura, ha respondido con decisión a la iniciativa del Gobierno, para incrementar sus rubros de producción agrícola, requiriendo se ahora que se materialice la oferta de créditos en condiciones razonables.

De acuerdo a los informes que se han elaborado oportunamente y que son de su conocimiento, a las evaluaciones hechas por funcionarios de la oficina a su digno cargo, puede afirmarse que la experiencia de cerca de tres años de labor ininterrumpida del Banco Central de Bolivia, a través de su programa del Fondo de Refinanciamiento Agrícola -F.R.A.- se han de-

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terminado los campos de operación práctica de los recursos de capital del primer programa. Llegándose a la conclusión de que no cubren la creciente demanda de préstamos del sector y principalmente del estrato de pequeños agricultores o campesinos.

De otro lado, nuestro país se encuentra confrontando problemas cada vez más agudos, emergentes de la escasez de artículos básicos en la alimentación del pueblo y materias primas para su industria pudiendo ser todos ellos producidos en el territorio nacional. Este problema creemos que puede superarse mediante una acción coordinada con las autoridades e instituciones de fomento agrícola, en base a la ejecución de planes adecuados de créditos refinanciados, poniendo especial énfasis en incorporar en este trabajo a los pequeños agricultores, que por sus pocas disponibilidades, están inpedidos de formar parte del sector productivo del país.

El Gobierno ha establecido como meta principal, lograr con los esfuerzos de todos los productores, grandes, medianos y pequeños, una producción nacional de alimentos básicos suficiente para cubrir la creciente demanda efectiva de estos productos sin tener que recurrir a nuevos y más altos niveles de importación, sino por el contrario manteniendo éstos en sus niveles actuales. Para ello se hace necesario dar facilidades crediticias a todos los productores del país, incluyendo a pequeños agricultores los que hasta el momento, poco se han beneficiado con estas facilidades. Es por esto que el Banco Central de Bolivia considera que el mecanismo del Fondo de Refinanciamiento Agrícola debe cubrir exclusivamente los requerimientos de crédito de los pequeños agricultores. El Banco Central tomará las medidas necesarias para asegurar que las necesidades crediticias de los productores medianos y grandes sean atendidas por la banca privada y comercial.

Es en vista de los anteriores antecedentes, que nos permitimos solicitar a usted, se digne tramitar ante el Gobierno de Estados Unidos de Norte América, la concesión de un crédito de fomento, que tendría tentativamente las siguientes características:

MONTO:	\$us. 8.000.000.--
INTERES:	2% anual sobre saldos insolutos
PLAZO:	40 años -10 primeros años de gracia.
OBJETO:	Concesión de créditos a los agricultores para maximizar la producción de alimentos básicos siguientes:

Cereales: trigo, maíz, arroz, quinoa;
Semillas Oleaginosas: Soya, Maní;
Tubérculos: papas, Proteínas animales:
lechería, porcinos, carne y huevos de aves.

BANCO CENTRAL DE BOLIVIA

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Aporte del Gobierno de Bolivia: \$us. 3.000.000,00

PLAN FINANCIERO (En \$US.)

Fuente de Recursos

6.0 millones A.I.D.

1.0 millones aporte del Gobierno de Bolivia

1.0 millones Aporte del Gobierno de Bolivia

1.0 millones A.I.D.

1.0 millones A.I.D.

1.0 millones Aporte del Gobierno de Bolivia:

a. 0.25

b. 0.75

Destino de Recursos

Programas de producción anual con énfasis en préstamos a pequeños agricultores o campesinos organizados en cooperativas agrícolas con status legal definido y nivel de desarrollo adecuado para ser considerados como sujetos de crédito.

Programa global de mercadeo:

Mecanismos de almacenamiento, transporte y comercialización adecuados, para garantizar al agricultor precios justos y fácil venta de sus producciones.

Capital de Trabajo exclusivamente.

Obras de infraestructura. Incorporación de nuevas tierras a la producción.

Equipo y maquinaria agrícola para producción.

Estudios varios, de comercialización y producción.

Uso flexible para créditos de refuerzo en Items donde haya mayor presión.

RECUPERACIONES

Como el objetivo fundamental del programa es la de aumentar la producción, en forma continua y ascendente, las recuperaciones se destinarían, en lo posible, a préstamos de producción anual a pequeños agricultores. (Item N° 1°).

NAVIANA
Cafón Postal 3118
La Paz - Bolivia

BANCO CENTRAL DE BOLIVIA

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MECANISMO ADMINISTRATIVO

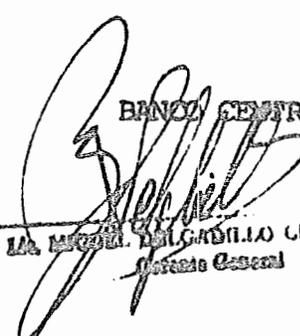
Se utilizará el mismo mecanismo del anterior Convenio A.I.D. N° - 511-L-042 - Fondo de Refinanciamiento Agrícola, -F.R.A.- del Banco Central de Bolivia, en vista que existe experiencia, buena orientación y - capacidad para canalizar los créditos al sector de pequeños agricultores. El mecanismo técnico del F.R.A., ha sido examinado por distintos evaluadores, que lo encuentran capacitado para continuar con este trabajo, bajo normas revisadas y adicionales.

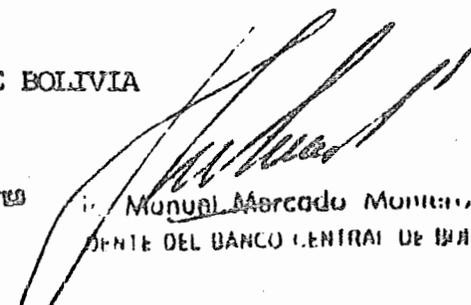
A fin de garantizar que el mecanismo impuesto para el manejo del F. R.A. continúe siendo adecuado, de común acuerdo con personeros de su oficina, hemos implementado una serie de medidas tendientes al logro de una mayor eficiencia en beneficio del programa. Estas medidas pueden sintetizarse en los siguientes puntos:

- Planificación interinstitucional previas a las campañas de producción - de los diferentes rubros agrícolas.
- Refuerzo de la División de Desarrollo mediante incorporación de estadígrafos economistas con destino exclusivo al Programa F.R.A.
- Gestiones ante el Supremo Gobierno para la implantación de un fondo especial para la amortización del préstamo A.I.D. original y del mismo - préstamo en curso de gestión.
- Standarización de formularios para el procesamiento de solicitudes de - refinanciamiento del Sistema Bancario Nacional.
- Plazos mínimos para el procesamiento y calificación de solicitudes de - refinanciamiento.
- Implementación de nuevas agencias en el Interior del país y refuerzo de las existentes.

En espera de conocer su valiosa opinión, sobre el presente planteamiento sobre el asunto de referencia, reiteramos a usted las seguridades de nuestra consideración más distinguida,


MDC/nam.


BANCO CENTRAL DE BOLIVIA
LA MERCE DEL CAJONILLO CERVANTES
Gerente General


Manuel Mercado Montaño
Gerente del Banco Central de Bolivia

LOAN REQUEST APPLICATION

CENTRAL BANK OF BOLIVIA

La Paz, December 10, 1974

Mr. John R. Oleson
Director
USAID/Bolivia
La Paz

Mr. Director:

We are addressing you so as to inform you of the financial needs which we require to continue expanding our country's agricultural development based on the implementation of a credit policy oriented toward production of basic food products by small farmers using the administrative mechanism which already exists in the Central Bank of Bolivia, the Technical Office of the FRA, a part of our Development Division.

As you are aware, the agricultural sector has the greatest potential of natural resources in the country, but the exploitation of these resources, to bring them into production, requires the complementary and activating action of financial capital and agricultural technology in such a way that combining these factors in a coherent manner may permit the accelerated development of this sector of our economic life and consequently raise the living standards of the great majority of the Bolivian population.

On the other hand, it has been shown that while the larger farmers and farm enterprises are achieving satisfactory results in their operations, based on current programs, the small farmer or peasant only recently has understood and used successfully the financial assistance of bank loans in order to increase production and achieve a higher economic standard for himself and his family. This latter level of agricultural people has responded decisively to the Government's urgings to increase their various kinds of agricultural production which now requires the assurance of credit on reasonable terms.

In accordance with reports which have been timely prepared, and with which you are familiar, and with evaluations prepared by officers of your organization, it can be stated that the experience gained from

three years work by the Central Bank, through its program of the Fund for Agricultural Refinancing (FRA), has determined the areas of practical operation of the first program, leading to the conclusion that it does not cover the increasing demand for credit to the sector and principally at the small farmer and campesino level.

Moreover, our country finds itself confronting even more acute problems which arise from the scarcity of basic items in its peoples diet and of raw materials for its country, all of which could be produced within the country. We believe we can overcome this problem by coordinated action from the agricultural development authorities and institutions, based on implementation of adequate credit refinancing plans putting special emphasis on incorporating into this effort the small farmers, who because of their limited resources are prevented from becoming part of the production sector of the country.

The Government has established as a principal goal to achieve, through the effort of all producers, large, medium and small a level of national production of basic foodstuffs sufficient to meet the increasing effective demand for these products without having to resort to new and higher levels of imports, but rather holding them at their present levels. To this end it is necessary to provide credit facilities to all the country's producers, including the small farmers who until now have little benefitted from these facilities. For this reason, the Central Bank considers that the mechanism of the Fund for Agricultural Refinancing should cover exclusively the requirements of the small farmers. The Central Bank will take the necessary measures to assure that the credit requirements of the large and medium producers are taken care of by the private and commercial banking system.

In view of the above, we request that you undertake proceedings with the Government of the United States for the granting of a development loan which would have, tentatively, the following characteristics:

AMOUNT: US\$ 8,000,000
INTEREST: 2% on the outstanding balance
TERM: 40 years, 10 year grace period.
Provision of credit to farmers to maximize the production of the following basic food products:
Cereals: wheat, corn, rice, quinoa;
Oil seeds: soya, peanuts;
Tubers: potatoes
Proteins: milk products, swine, poultry and eggs.

Government of Bolivia contribution: US\$ 3,000,000

FINANCIAL PLAN (in US\$)

SOURCE OF FUNDS

USE OF FUNDS

US\$ 6 million AID

1 million GOB

Programs of annual production with emphasis on loans to those small farmers or campesinos who are organized into agricultural cooperatives with a defined legal status and level of development adequate to be considered eligible for credit.

Global marketing program:

Installation for storage, transport and commercialization sufficient to guarantee the farmer fair prices and easy sale of his products.

1 million GOB

Working capital, exclusively.

1 million AID

Infrastructure works, incorporation of new land into production.

1 million AID

Agricultural machinery and equipment for production.

1 million GOB

a. 0.25 million

Various studies on marketing and products.

b. 0.75

Flexible use for reinforcement credit for items where there may be greater pressure.

RECUPERATION

Since the fundamental objective of the program is the increase of production, in a continuing and increasing way, the recuperations will be directed, as far as possible, to annual production loans to small farmers (Item No. 1).

ADMINISTRATIVE MECHANISM

The same mechanism will be used as that for the previous A.I.D. Loan No. 511-L-042, Fund for Agricultural Refinancing (FRA) of the Central

Bank in view of the existence of experience, good direction and capacity to channel credit to the small farmer sector. The technical mechanism of the FRA has been studied by various evaluators who have found it capable of continuing this work in accordance with revised and additional norms.

To guarantee that the mechanism set up to manage the FRA continues being adequate, in agreement with offices of your organizations, we have implemented a series of measures designed to attain a greater efficiency in support of the program. These measures may be summarized by the following points:

- Institutional planning, prior to the production campaigns, for the various agricultural products.
- Reinforcement of the Development Division by the incorporation of economist/statisticians exclusively serving the FRA program.
- Request to the Supreme Government for the establishment of special fund for the amortization of the original A.I.D. loan and this loan which is being proposed.
- Standardization of the form used in processing requests for re-financing from the National Banking System.
- Minimum periods for the processing and approval of request for refinancing.
- Establishment of new agencies in the interior of the country and strengthening of the existing ones.

Hoping to have your opinion concerning the presentation of this matter, we repeat our assurances of our distinguished considerations.

BANCO CENTRAL DE BOLIVIA

(signed) Manuel Mercader Montero
President, Central Bank of Bolivia

(signed) Miguel Delgadillo Cervantes
General Manager, Central Bank of Bolivia

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CHECKLIST OF STATUTORY CRITERIA

The following abbreviations are used:

FAA - Foreign Assistance Act of 1961, as amended.

FAA, 1973 - Foreign Assistance Act of 1973.

App. - Foreign Assistance and Related Programs
Appropriation Act, 1974.

MMA - Merchant Marine Act of 1936, as amended.

BASIC AUTHORITY

1. FAA 103; 104; 105;
106; 107. Is loan being made

a. for agriculture, rural development
or nutrition;

The loan is made for agri-
culture, rural development,
and nutrition.

b. for population planning or health;

c. for education, public administration,
or human resources development;

d. to solve economic and social develop-
ment problems in fields such as transpor-
tation, power, industry, urban develop-
ment and export development;

e. in support of the general economy of
the recipient country or for development
programs conducted by private or interna-
tional organizations.

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COUNTRY PERFORMANCE

Progress Towards Country Goals

2. FAA 201 (b) (5), (7) & (8); 208

A. Describe extent to which country is:

(1) Making appropriate efforts to increase food production and improve means for food storage and distribution.

Bolivia is making appropriate efforts with respect to food production, storage, and distribution. This loan will directly contribute to these efforts.

(2) Creating a favorable climate for foreign and domestic private enterprise and investment.

The GOB program emphasizes creation of a favorable climate for selected foreign and domestic private enterprise and investment. It is seeking a special exemption within the Andean Common Market for certain investments.

(3) Increasing the public's role in the developmental process.

The GOB continues to take an active role in the developmental process and is so doing to increase popular participation.

(4) (a) Allocating available budgetary resources to development.

The GOB appears to be allocating as much as it is able to development.

(b) Diverting such resources for unnecessary military expenditure (See also Item N° 20) and intervention in affairs of other free and independent nations.) (See also Item N° 11).

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(5) Making economic, social, and political reforms such as tax collection improvements and changes in land tenure arrangements, and making progress toward respect for the rule of law, freedom of expression and of the press, and recognizing the importance of individual freedom, initiative, and private enterprise.

The GOB is making these efforts.

(6) Willing to contribute funds to the project or program.

The GOB is willing to contribute funds to the project (see Annex I, Exhibit 2).

(7) Otherwise responding to the vital economic, political, and social concerns of its people, and demonstrating a clear determination to take effective self-help measures.

The GOB appears to be doing this in an increasingly effective manner.

B. Are above factors taken into account in the furnishing of the subject assistance?

Yes.

Treatment of U.S. Citizens and Firms

3. FAA 620 (c). If assistance is to government, is the government liable as debtor or unconditional guarantor on any debt to a U.S. citizen for goods or services furnished or ordered where (a) such citizen has exhausted available legal remedies and (b) debt is not denied or contested by such government?

The GOB is not known to be indebted under these circumstances to any U.S. citizen for goods or services furnished or ordered.

4. FAA 620 (c) (1). If assistance is to a government, has it (including government agencies or sub-divisions) taken any action which has the effect of nationalizing, expropriating, or otherwise seizing ownership or control of property

The previous government of Bolivia nationalized two United States mining firms. However, the GOB is now adequately compensating the former owners.

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of U.S. citizens or entities beneficially owned by them without taking steps to discharge its obligations toward such citizens or entities?

5. FAA 620 (o); Fishermen's Prospective Act. 5. If country has seized, or imposed any penalty or sanction against, any U.S. fishing vessel or account of its fishing activities in international waters,
- a. has any deduction required by Fishermen's Protective Act been made?
- b. has complete denial of assistance been considered by A.I.D. Administrator?

Not applicable.

Relations with U.S. Government and Other Nations

6. FAA 620 (a). Does recipient country furnish assistance to Cuba or fail to take appropriate steps to prevent ships or aircraft under its flag from carrying cargoes to or from Cuba?
7. FAA 620 (b). If assistance is to a government, has the Secretary of State determined that it is not controlled by the international Communist movement?
8. FAA 620 (d). If assistance is for any productive enterprise which will compete in the United States with United States enterprise, is there an agreement by the recipient country to prevent export to the United States of more than 20% of the enterprise's annual production during the life of the loan?

The GOB does not furnish assistance or fail to take appropriate steps to prevent ships or aircraft under its flag from carrying cargoes to or from Cuba.

Bolivia is not controlled by the international communist movement according to the Secretary of State.

Not applicable.

9. FAA 620 (c). Is recipient country a Communist country? No. Bolivia is not a Communist country.
10. FAA 620 (i). Is recipient country in any way involved in (a) subversion of, or military aggression against, the United States or any country receiving U.S. assistance, or (b) the planning of such subversion or aggression? No. Bolivia is not engaged in those activities.
11. FAA 620 (j). Has the country permitted, or failed to take adequate measures to prevent, the damage or destruction, by mob action, of U.S. property? The GOB has taken adequate measures to prevent the damage or destruction by mob action of U.S. property whenever possible.
12. FAA 620 (l). If the country has failed to institute the investment guaranty program for the specific risks of expropriation, in convertibility or confiscation, has the A.I.D. administration within the past year considered denying assistance to such government for this reason? The GOB has instituted the investment guaranty program.
13. FAA 620 (n). Does recipient country furnish goods to North Viet-Nam or permit ships or aircraft under its flag to carry cargoes to or from North Viet-Nam? No. The GOB does not furnish goods to North Viet-Nam nor permit ships or aircraft under its flag to carry cargoes to or from North Viet-Nam.
14. FAA 620 (g). Is the government of the recipient country in default on interest or principal of any A.I.D. loan to the country? No.
15. FAA 620 (t). Has the country severed diplomatic relations with the United States? If so, have they been resumed and have new bilateral assistance agreements been negotiated and entered into since such resumption? No. The GOB has not severed diplomatic relations with the United States.

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16. FAA 620 (u). What is the payment status of the country's U.N. obligation? If the country is in arrears, were such arrearages taken into account by the A.I.D. Administrator in determining the current A.I.D. Operational Year Budget?

Bolivia is in arrears but not to such an extent as to disenfranchise it in the General Assembly. The Administrator did take the arrearages into account in determining the O.Y.B.

17. FAA 481. Has the government of recipient country failed to take adequate steps to prevent narcotics drugs and other controlled substances (as defined by the Comprehensive Drug Abuse Prevention and Control Act of 1970) produced or processed, in whole or in part, in such country, or transported through such country, from being sold illegally within the jurisdiction of such country to U.S. Government personnel or their dependents, or from entering the U.S. unlawfully?

The GOB is actively cooperating with the USAID Narcotics Officer and DEA representatives as well as other international agencies to take such steps as may be necessary to control drug traffic in Bolivia.

18. FAA 1973 29. If (a) military base is located in recipient country, and was constructed or is being maintained or operated with funds furnished by U.S., and (b) U.S. personnel carry out military operations from such base, has the President determined that the government of recipient country has authorized regular access to U.S. correspondence to such base?

Not applicable.

Military Expenditures

19. FAA 62C (s). What percentage of country budget is for military expenditures? How much of foreign exchange resources spent on military equipment? How much spent for the purchase of sophisticated weapons systems? (Consideration of these points is to be coordinated with the Bureau for Program and Policy Coordination, Regional Coordinators and Military Assistance Staff (PPC/RC).)

The CY 1974 Budget for military purposes represents approximately 16% of total budgeted expenditures of the GOB. Approximately \$1.3 million has been budgeted for the purchase of non-sophisticated military equipment.

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Conditions of the Loan

General Soundness

20. FAA 201 (d). Information and conclusion on reasonableness and legality (under laws of country and the United States) of lending and relending terms of the loan.
- The loan terms are reasonable and consistent with United States and Bolivian laws.
21. FAA 201 (b) (2); 201 (e). Information and conclusion on an activity's economic and technical soundness. If loan is not made pursuant to a multilateral plan, and the amount of the loan exceeds \$100,000, has country submitted to A.I.D. an application for such funds together with assurances to indicate that funds will be used in an economically and technically sound manner?
- The GOB has made an application for loan funded assistance in this activity (see Annex I, Exhibit 2) and there have been assurances that the funds will be used in an economically and technically sound manner.
22. FAA 201 (b)(2). Information and conclusion on capacity of the country to repay the loan, including reasonableness of repayment prospects.
- There are reasonable prospects of repayments.
23. FAA 201 (b) (1). Information and conclusion on availability of financing from other free-world sources, including private sources within the United States.
- Financing for this activity is not available from other free-world sources, including private sources within the United States, on reasonable terms.
24. FAA 611 (a) (1). Prior to signing of loan will there be (a) engineering, financial, and other plans necessary to carry out the assistance and (b) a reasonably firm estimate of the cost to the United States of the assistance?
- The necessary financial, firm cost estimates, and other plans have been completed. (see Section II.D).

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25. FAA 611 (a) (2). If further legislative action is required within recipient country, what is basis for reasonable expectation that such action will be completed in time to permit orderly accomplishment of purpose of loan? Not applicable.
26. FAA 611 (e). If loan is for Capital Assistance, and all U.S. assistance to project now exceeds \$1 million, has Mission Director certified the country's capability effectively to maintain and utilize the project? Yes. The Mission Director has so certified (see Annex 1, Exhibit 1).

Loan's Relationship to Achievement of Country and Regional Goals

27. FAA 207; 113
Extent to which assistance reflects appropriate emphasis on; (a) encouraging development of democratic, economic, political, and social institutions; (b) self-help in meeting the country's food needs; (c) improving availability of trained manpower in the country; (d) programs designed to meet the country's health needs; (e) other important areas of economic, political, and social development, including industry; free labor unions, cooperatives, and Voluntary Agencies; transportation and communication; planning and public administration; urban development, and modernization of existing laws; or (f) integrating women into the recipient country's national economy. This loan will contribute directly to the objectives reflected in items (a), (b), and (e) (cooperative).
28. FAA 209. Is project susceptible of execution as part of regional project? If so why is project not so executed? This project could not be carried out as part of a regional project since it is designed to promote basic foods production wholly within Bolivia.

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29. FAA 201 (b) (4). Information and conclusion on activity's relationship to, and consistency with, other development activities, and its contribution to realizable long-range objectives.
- This activity has broad significance with regard to the long-range objectives of integrating the rural areas into the national economic, social, and political life and of strengthening the economy.
30. FAA 201 (b)(9). Information and conclusion on whether or not the activity to be financed will contribute to the achievement of self-sustaining growth.
- This project will contribute to the achievement of self-sustaining growth.
31. FAA 209. Information and conclusion whether assistance will encourage regional development programs.
- The project is national in scope and therefore not specifically designed to encourage regional development programs.
32. FAA 111. Discuss the extent to which the loan will strengthen the participation of urban and rural poor in their country's development, and will assist in the development of cooperatives which will enable and encourage greater numbers of poor people to help themselves toward a better life.
- The loan will directly strengthen the participation of the rural poor in Bolivia's development by enhancing their capability to contribute to the national economy by expanding their agricultural production. Priority attention will be directed at small farmer cooperatives thus enabling and encouraging greater numbers of rural poor to help themselves (see Part II, Section I, C of the CAP).
33. FAA 201 (f). If this is a project loan, describe how much project will promote the country's economic development taking into account the country's human and material resources requirements and relationship between ultimate objectives of the project and overall economic development.
- The project loan will promote Bolivia's economic development by increasing the country's agricultural production.

34. FAA 261 (a). Describe extent to which the loan will contribute to the objective of assuring maximum participation in the task of economic development on the part of the people of the country, through the encouragement of democratic, private and local governmental institutions.
- The project will provide loans which will stimulate agricultural production by small scale farmers; thus it will assure maximum participation of the people in the economic development of Bolivia.
35. FAA 281 (b). Describe extent to which program recognizes the particular needs, desires, and capacities of the people of the country; utilizes the country's intellectual resources to encourage institutional development; and supports civic education and training in skills required for effective participation in governmental and political processes essential to self-government.
- The loan will provide financing for agricultural production and marketing which will encourage entrepreneurship and provide employment.
36. FAA 201 (b) (3). In what ways does the activity give reasonable promise of contributing to the development of economic resources, or to the increase of productive capacities?
- The activity gives reasonable promise of contributing to the increase of productive capacity in agriculture by providing credit to Bolivia's rural small farmers.
37. FAA 601 (a). Information and conclusions whether loan will encourage efforts of the country to: (a) increase the flow of international trade; (b) foster private initiative and competition; (c) encourage development and use of cooperatives, credit unions, and savings and loan associations; (d) discourage monopolistic practices; (e) improve technical efficiency of industry, agriculture and commerce; and (f) strengthen free labor unions.
- This loan should directly affect all of the items with the exception of (f).

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38. FAA 619. If assistance is for newly independent country, is it furnished through multilateral organizations or plans to the maximum extent appropriate?

Not applicable.

Loan's Effect on U.S. and A.I.D. Program

39. FAA 201 (b) (6). Information and conclusion on possible effects of loan on U.S. economy, with special reference to areas of substantial labor surplus, and extent to which U.S. commodities and assistance are furnished in a manner consistent with improving the U.S. balance of payments position.

The loan will have no foreseeable unfavorable effect on the United States economy. Some U.S. commodities will be imported.

40. FAA 202 (a). Total amount of money under loan which is going directly to private enterprise, is going to intermediate credit institutions or other borrowers for us by private enterprise, is being used to finance imports from private sources, or is otherwise being used to finance procurements from private sources.

All of the loan funding will be channelled through intermediate credit institutions for use by the private agricultural sector.

41. FAA 601 (b). Information and conclusion on how the loan will encourage U.S. private trade and investment abroad and how it will encourage private U.S. participation in foreign assistance programs (including use of private trade channels and the services of U.S. private enterprise).

There will be U.S. private sector participation in this project to the extent that loan proceeds will be used to buy materials from U.S. sources, particularly for the capital goods credit category described in Section I.C. and II.D.

42. FAA 601 (d). If a capital project, are engineering and professional services of U.S. firms and their affiliates used to the maximum extent consistent with the national interest?
- Professional advisory services of U.S. firms will be utilized to the maximum extent consistent with the needs of the project.
43. FAA 602. Information and conclusion whether U.S. small business will participate equitably in the furnishing of goods and service financed by the Loan.
- U.S. Small Business will be invited to participate when appropriate.
44. FAA 620 (h). Will the loan promote or assist the foreign aid projects or activities of the Communist-Bloc countries?
- No. The loan will not promote or assist the foreign aid projects or activities of the Communist-Bloc countries.
45. FAA 621. If Technical Assistance is financed by the loan, information and conclusion whether such assistance will be furnished to the fullest extent practicable as goods and professional and other services from private enterprise on a contract basis. If the facilities of other Federal agencies will be utilized, information and conclusion on whether they are particularly suitable, are not competitive with private enterprise, and can be made available without undue interference with domestic programs.
- Not applicable.

Loan's Compliance with Specific Requirements

46. FAA 110; 208 (e). In what manner has or will the recipient country provide assurances that it will provide at least 25% of the costs of the program, project, or activity with respect to which the Loan is to be made?
- The GOB's loan request provides assurances that it will provide at least 25% of the costs of the project for which the loan is to be made (see Annex I, Exhibit 3 and Financial Plan, Section 11.0).

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Exhibit 3, Page 13 of 17

47. FAA 112. Will loan be used to finance police training or related program in recipient country? No.
48. FAA 114. Will loan be used to pay for performance of abortions or to motivate or coerce persons to practice abortions? No.
49. FAA 201 (b). Is the country among the 20 countries in which development loan funds may be used to make loans in this fiscal year? Yes.
50. FAA 201 (d). Is interest rate of loan at least 2% per annum during grace period and at least 3% per annum thereafter? Yes.
51. FAA 201 (f). If this is a project loan, what provisions have been made for appropriate participation by the recipient country's private enterprise? The project is designed to channel agricultural credit resources through the commercial banking system to private agricultural producers or processors/storers of agricultural produce.
52. FAA 604 (a). Will all commodity procurement financed under the loan be from the United States except as otherwise determined by the President? Yes. Code 941 and Bolivian sources will be used for procurement (see Part II, Section III, C of the CAP).
53. FAA 604 (b). What provision is made to prevent financing commodity procurement in bulk at prices higher than adjusted U.S. market price? Any bulk commodities which may be procured will be subject to bid procedure.

54. FAA 604 (d). If the cooperating country discriminates against U.S. marine insurance companies, will loan agreement require that marine insurance be placed in the United States on commodities financed by the loan? In the likely event that Bolivia discriminates against any U.S. marine insurance company, commodities purchased with loan funds will be insured against risks with a U.S. company.
55. FAA 604.(e). If offshore procurement of agricultural commodity or product is to be financed, is there provision against such procurement when the domestic price of such commodity is less than parity? Not applicable.
56. FAA 604 (f). If loan finances a commodity import program, will arrangements be made for supplier certification to A.I.D. and A.I.D. approval of commodity as eligible and suitable? Not applicable.
57. FAA 608 (a). Information on measures to be taken to utilize U.S. Government excess personal property in lieu of the procurement of new items. The Mission will ensure that the Borrower is apprised of the availability of excess U.S. Government property and that the Borrower purchases that property which fits its needs.
58. FAA 611 (b); App. 101. If loan finances water or water-related land resource construction project or program, is there a benefit-cost computation made, insofar as practicable, in accordance with the procedures set forth in the Memorandum of the President date May 15, 1962? Not applicable.

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Exhibit 3, Page 15 of 17.

59. FAA 611 (c). If contracts for construction are to be financed what provision will be made that they be let on a competitive basis to maximum extent practicable?
- This requirement will be met by adherence to A.I.D. and Bolivian regulations concerning procurement of contractor services.
60. FAA 612 (b); 636 (h). Describe steps taken to assure that, to the maximum extent possible, the country is contributing local currencies to meet the cost of contractual and other services, and foreign currencies owned by the United States are utilized to meet the cost of contractual and other services.
- No Bolivian pesos owned by the U.S. are available for financing this project. An effort was made during intensive review to ensure that Bolivian sources contributed local currency to the maximum extent possible.
61. App. 113. Will any of loan funds be used to acquire currency of recipient country from non-U.S. Treasury sources when excess currency of that country is on deposit in U.S. Treasury?
- No.
62. App. 61 (d). Does the United States own excess foreign currency and, if so, what arrangements have been made for its release?
- The U.S. does not own excess foreign currency in Bolivia.
63. FAA 620 (g). What provision is there against use of subject assistance to compensate owners for expropriated or nationalized property?
- Assistance will not be used to compensate owners for expropriated or nationalized property.
64. FAA 620 (k). If construction of productive enterprise, will aggregate value of assistance to be furnished by the United States exceed \$100 million?
- Not applicable.
65. FAA 636 (i). Will any loan funds be used to finance purchase, long-term lease, or exchange of motor vehicle manufactured outside the United States or any guaranty of such transaction?
- No. Any motor vehicles needed will be imported from the United States unless other procurement is authorized.

66. App. 103. Will any loan funds be used to pay pensions, etc. for military personnel? No. Loan funds will not be used to pay pensions for military personnel.
67. App. 105. If loan is for capital project, is there provision for A.I.D. approval of all contractors and contract terms? Yes.
68. App. 107. Will any loan funds be used to pay UN assessments? No.
69. App. 108. Compliance with regulations on employment of U.S. and local personnel. (A.I.D. Regulation 7). Will comply.
70. App. 110. Will any of loan funds be used to carry out provisions of FAA 209 (d)? No.
71. App. 114. Describe how the Committee on Appropriations of the Senate and House have been or will be notified concerning the activity, program, project, country, or other operation to be financed by the Loan. By the formal notification procedure.
72. App. 601. Will any loan funds be used for publicity or propoganda purposes within the United States not authorized by Congress. No. Loan funds will not be used for publicity purposes within the U.S.
73. MMA 901. b; FAA 640 C.
(a) Compliance with requirement that at least 50 per centum of the gross tonnage of commodities (computed separately for dry bulk carriers, dry cargo liners, and tankers) financed with funds made available under this loan shall be transported on privately owned U.S.-flag commercial vessels to the extent that such vessels are available at fair and reasonable rates. These regulations will be complied with.

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- (b) Will grant be made to loan recipient to pay all or any portion of such differential as may exist between U.S. and foreign-flag vessel rates? No.
74. Section 30 and 31 of PL 93-189 (FAA of 1973) Will any part of the loan be used to finance directly or indirectly military or paramilitary operations by the U.S. or by foreign forces in or over Laos, Cambodia, North Vietnam, South Vietnam, or Thailand? No.
75. Section 37 of PL 93-189 (FAA of 1973); App. 111. Will any part of this loan be used to aid or assist generally or in the reconstruction of North Vietnam? No.
76. App. 112. Will any of the funds appropriated or local currencies generated as a result of AID assistance be used for support of police or prison construction and administration in South Vietnam or for support of police training of South Vietnamese? No.
77. App 604. Will any of the funds appropriated for this project be used to furnish petroleum fuels produced in the continental United States to Southeast Asia for use by non-U.S. nationals? No.

BOLIVIAN BANKING INSTITUTIONS

BANCO DEL ESTADO

LA PAZ

Head Office
Churubamba
El Alto
Max Paredes
Miraflores
Villa Victoria

Agencies

Chulumani
Copacabana
Coroico
Caranavi

SANTA CRUZ

Head Office
Los Pozos
Siete Calles

Agencies

Camiri
Montero
Portachuelo
Puerto Suarez
Roboré
San Iganacio
Valle Grande

COCHABAMBA

Head Office
Calatayud

Agencies

Aiquile
Capinota
Punata
Quillacollo

CHUQUISACA

Head Office, Sucre

BANCO DEL ESTADO (Cont.)

Agency

Camargo

POTOSI

Head Office

Agencies

Atocha
Llallagua
Tupiza
Uyuni
Villazon

TARIJA

Head Office

Agencies

Bermejo
Yacuiba
Entre Rios
Villamontes

PANDO

Head Office, Cobija

BENI

Head Office, Trinidad

Agencies

Guayaramerin
Riberalta
Magdalena
Reyes
San Matías
San Borja
Santa Ana

ORURO

Head Office

BANCO AGRICOLA DE BOLIVIA

LA PAZ OFFICE

National, La Paz
Regional, La Paz

Provincial Agencies

Murillo
Caranavi
Coroico
Chulumani

COCHABAMBA OFFICE

Regional, Cochabamba

Provincial Agencies

Cercado
Aiquile
Villa Tunari
Quillacollo

SANTA CRUZ OFFICE

Regional, Santa Cruz

Provincial Agencies

Andrés Ibañez
Comarapa
Concepción
Warnes
Camiri

POTOSI OFFICE

Regional, Potosí

Provincial Agencies

Tomás Frias
Las Carreras
Camargo
Betanzos

CHUQUISACA OFFICE

Regional, Sucre

Provincial Agencies

Oropeza
Monteagudo
Padilla

TARIJA OFFICE

Regional, Tarija

Provincial Agencies

Cercado
Villa Montes
Entre Rios
Bermejo

BENI OFFICE

Regional, Trinidad

Provincial Agencies

Cercado
Santa Ana
Riberalta
San Borja

PANDO OFFICE

Regional, Cobija

ORURO OFFICE

Regional, Oruro

Provincial Agencies

Cercado
Challapata

MONTERO OFFICE

Regional, Montero

Banco Agrícola (Cont.)

Provincial Agencies

Portachuelo
Buena Vista

BANCO POPULAR DEL PERU

La Paz
Oruro
Sucre
Cochabamba
Santa Cruz

BANCO DO BRASIL S.A.

La Paz
Santa Cruz

BANCO NACIONAL DE BOLIVIA

La Paz
Sucre
Cochabamba
Oruro
Potosí
Tarija
Monteagudo
Bermejo (Authorized)

BANCO INDUSTRIAL Y GANADERO
DEL BENI (BIGBENI)

Trinidad

BANCO DE SANTA CRUZ DE LA
SIERRA

La Paz
Santa Cruz
Cochabamba

BANCO POTOSI S. A.

Potosí
Tarija

BANCO DE FINANCIAMIENTO
INDUSTRIAL DE ORURO S. A.

Oruro

FIRST NATIONAL CITY BANK

La Paz

BANCO DE LA PAZ

(In process of being organized)

BANCO MERCANTIL

La Paz
Cochabamba
Santa Cruz

BANCO BOLIVIANO AMERICANO

La Paz
Santa Cruz

BANK OF AMERICA

La Paz
Santa Cruz

BANCO DE LA NACION ARGENTINA

La Paz
Santa Cruz

BANCO DE CREDITO ORURO

Oruro
Potosí
Llallagua
Santa Cruz
Huanuni

BANCO HIPOTECARIO NACIONAL

La Paz
Cochabamba
Santa Cruz - Montero

BANCO DE COCHABAMBA

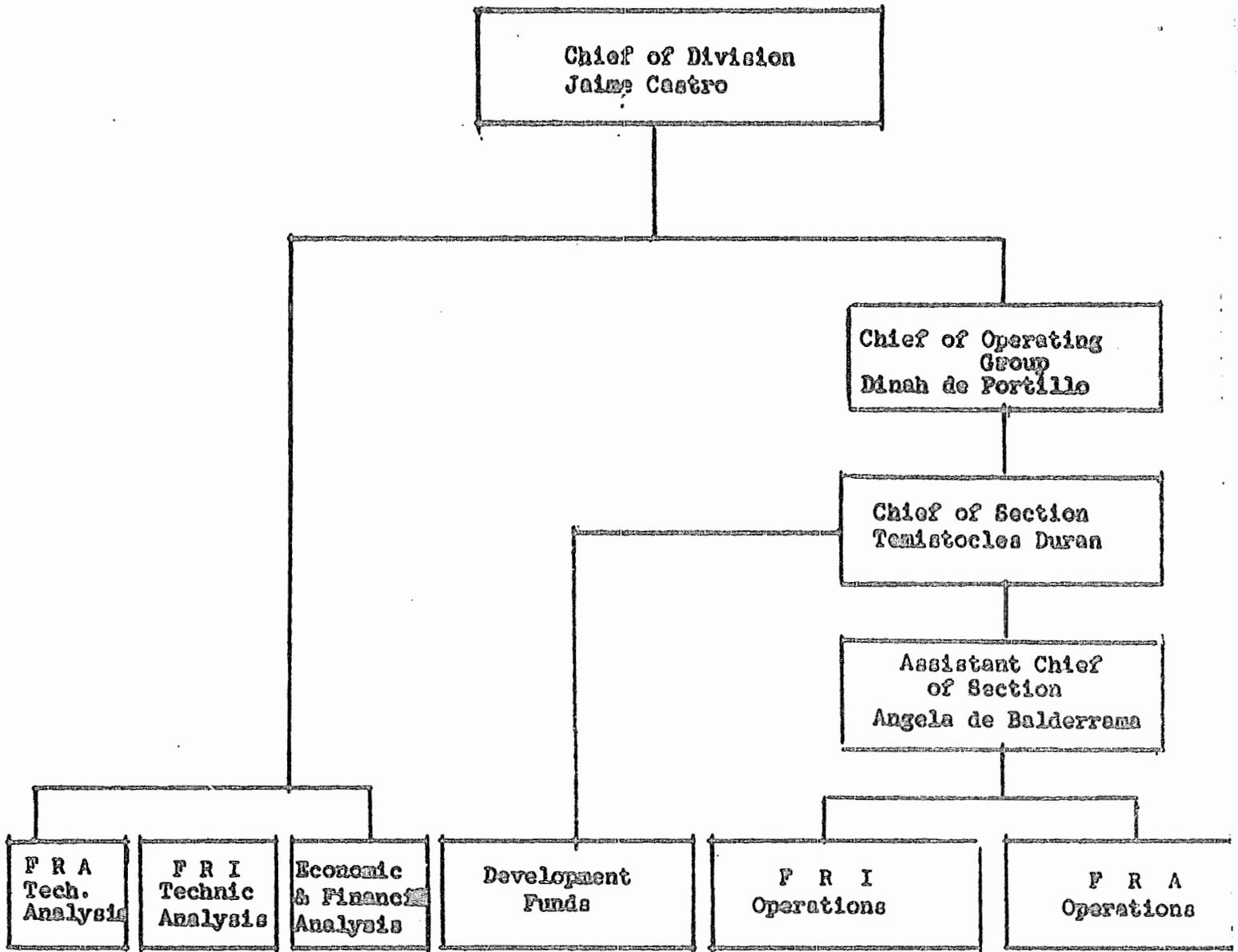
Cochabamba
La Paz (To be inaugurated)

BANCO INDUSTRIAL S. A.

La Paz

DEVELOPMENT DIVISION

ORGANIZATION CHART



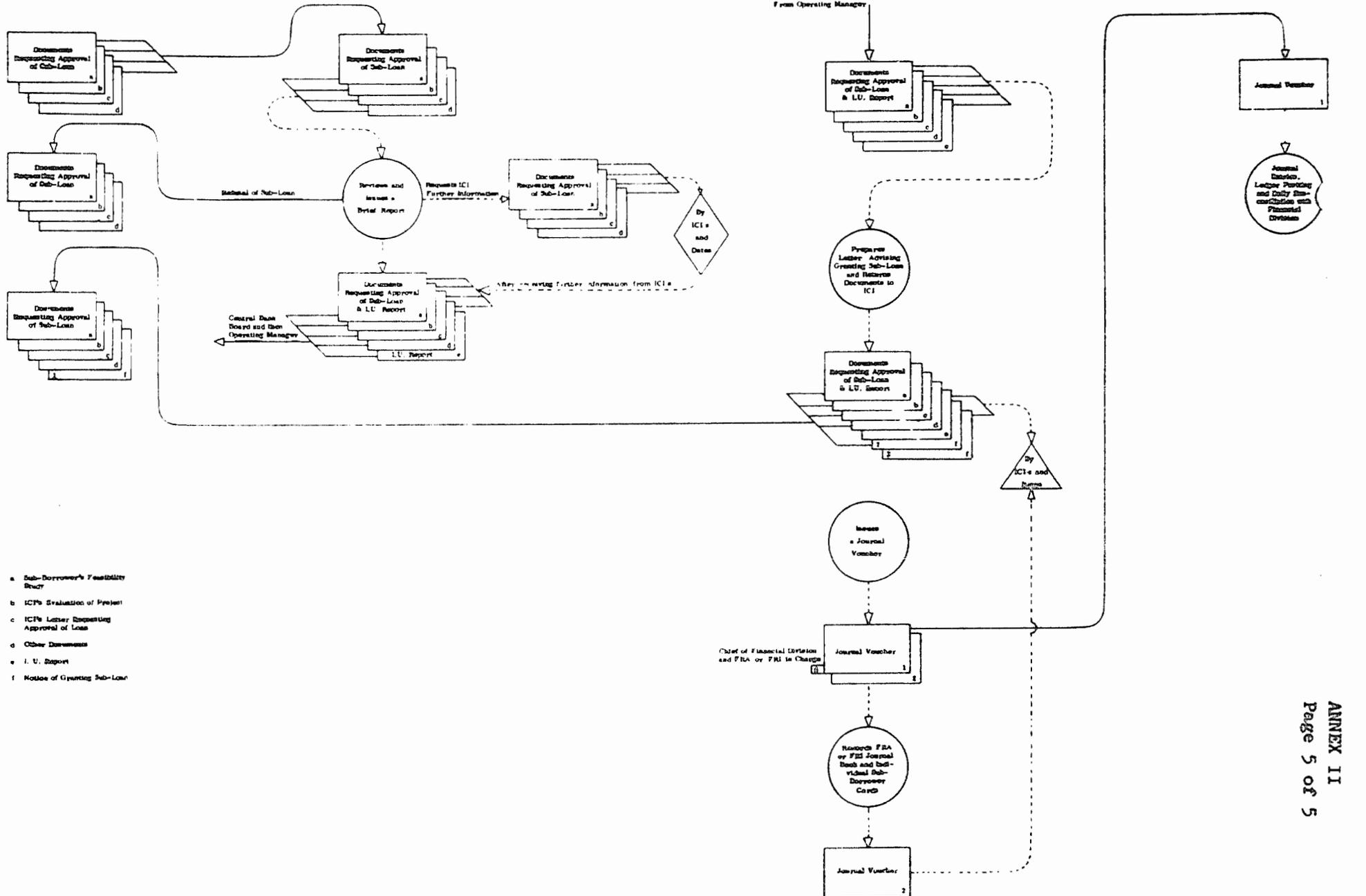
**DOCUMENT FLOW AND ACCOUNTING PROCEDURES UNDER LOANS
N° 42 (FRA) AND N° 43 (FRI) IMPLEMENTED BY THE BANCO CENTRAL**

INTERMEDIATE CREDIT INSTITUTION (I.C.U.)

CENTRAL BANK IMPLEMENTATION UNIT (I.U.)

CENTRAL BANK FINANCIAL DIVISION

CENTRAL BANK ACCOUNTING DIVISION



CREDIT AVAILABILITY TO THE PRIVATE SECTOR, 1975-1977

The attached tables demonstrate the implications of various hypotheses concerning inflation, real GDP growth, the balance of payments and fiscal situations on credit availability from the banking system to the private sector. Five projections are made, a "probable" projection, "most favorable" projection, "less favorable" projection, a "relative unfavorable" and "most unfavorable" projection. Obviously, the Central Bank (C/B) would be forced to take action to neutralize the monetary impact of a balance of payments surplus and/or fiscal deficit in order to prevent rates of inflation deemed unacceptable by the GOB. The projections attempt to define the parameters on which the C/B would act. For example, in the "less favorable" case the balance of payments surplus would have to be neutralized to avoid undue pressures on internal prices, which implies tightening-up credit availability to the private sector since the C/B would have little control over the Ministry of Finance's budget and fiscal policy. The projections do not attempt to discuss the question of credit allocation within the private sector.

The projections are based on the following: 1) various balance of payments projections; 2) an estimate of imported inflation of about 13% in 1975, 10% in 1976 and 7% in 1977; 3) an assumed constant income velocity of money; 4) fiscal projections for the Treasury (a preliminary estimate at this stage for 1975); 5) estimates of deposit drawdowns by the rest of the public sector which, combined with the Treasury estimate, gives net credit to the public sector from the Central Bank; 6) a transaction demand for money (reflected in the money supply calculation) determined by the expected rate of inflation and real growth in the economy; 7) an estimate for credit expansion based on the average historical (1970-74) relationship between reserves in the C/B and actual credit expansion -- a crude credit multiplier; 8) a money multiplier relating base money to money supply based on a ratio involving an estimate of cash/deposits ratio and required reserves; and 9) an implicit marginal propensity to import function (built into the balance of payments projection) amounting to .23 of GDP growth. All projections are viewed favorable or unfavorable in terms of stabilization implications and for the need to take steps to offset the impact of different factors on internal stability.

I. Probable Projection

The probable projection assumes a relatively moderate net draw-down of deposits in the C/B by the rest of the public sector of about \$b 100 million and relatively large net borrowings by the Treasury of \$b 450 million reflecting deficit financing needs. Partly for these reasons and partly due to export price assumptions, the balance of payments is projected to shift into deficit by US\$ 10 million in 1975 and smaller deficits through 1977, reflecting the Treasury's need to obtain financing from the Central Bank. The C/B will probably expand currency issue by 23% assuming a constant income velocity of money. Approximately 26% of the money supply expansion results from an increase in the banking system's deposits which is reflected indirectly in the change in required reserves held by the Central Bank. For simplification purposes, the projection uses a narrow money supply definition to avoid dealing with problems of quasi-money. However, the credit multiplier is based on all required reserves held in the Central Bank so that overall credit availability is not circumscribed to the multiplier impact of only increases in demand deposits. It is assumed that by 1977 the cash/deposit ratio will decline, implying greater confidence in the banking system which will obtain greater responsibility for expanding liquidity in the economy. This assessment is based on the marked decline in the last ten years of the cash/deposit ratio.

II. Favorable Projections

The most favorable projection assumes a rate of inflation of about 14% in 1975 and real growth of 6% in the GDP. Net drawdowns by the rest of the public sector are assumed to be about \$b 10 million and the net deficit financing requirements to be about \$b 250 million. Given the relatively small fiscal impact on the Central Bank and the expected surplus on the balance of payments, the result would lead to a stable expansion in the money supply with the private sector benefiting through a 27% expansion in credit available. It presently appears that this favorable combination of events are not very likely.

The less favorable projection implies an unacceptable 27% rate of inflation due almost entirely to a larger balance of payments surplus. In essence, these events would be repetitions of the 1974 circumstances with the exception that major internal price adjustments (aside from import price increases) would not be required in 1975. Import price increases are expected to provide about 13% to the expected 1975 inflation rate. The most favorable option assumes nearly zero internal price adjustments -- particularly for food items (a very

optimistic assumption). To reduce the destabilizing effect of the balance of payments surplus, it is possible that C/B would take restrictive action to hold the rate of inflation to 17% implying that the private sector would suffer a marginal reduction in credit available. This projection is considered unlikely to occur given the tentative fiscal requirements for 1975 and the likelihood that the balance of payments could slip into deficit.

III. Unfavorable Projections

The most unfavorable set factors are related to a large fiscal deficit requiring Central Bank net financing of about \$b 800 million and substantial drawdowns (net) by the rest of the public sector of \$400 million. This projection would apply substantial price pressure. The balance of payments would probably be farther in deficit than is presently projected. All-in-all, the Central Bank would have to take restrictive action to limit the B/P problem and restore a degree of price stability in which case the private sector would suffer, given the assumption that the C/B would have little influence over the fiscal deficit.

The relatively unfavorable projection is less inflationary than the less favorable projection, but the cause is an internal fiscal deficit which would be more inflationary but for the balance of payments leakage. The fiscal deficit is estimated at \$b 600 million, but the private sector would still receive a 27% increase in credit in nominal terms implying that credit available would be only marginally higher than the rate of inflation. Any further tightening of credit availabilities would force a small amount of recessionary pressure on the economy. The reasonable estimate projects a situation somewhat less restrictive on private credit with a bit less inflationary pressure.

In general, the credit picture looks reasonably good for the private sector in 1975 provided the GOB's fiscal deficit does not cause extreme pressure on the Central Bank.

FEASIBLE
(millions of pesos bolivianos)^{1/}

	<u>1974</u>	<u>Δ</u>	<u>1975</u>	<u>Δ</u>	<u>1976</u>	<u>Δ</u>	<u>1977</u>
I. Net Foreign Assets	<u>2,700</u>	<u>-200</u>	<u>2,500</u>	<u>-100</u>	<u>2,400</u>	<u>-100</u>	<u>2,300</u>
II. Net Dom Assets	<u>- 100</u>	<u>-790</u>	<u>690</u>	<u>+500</u>	<u>1,190</u>	<u>+450</u>	<u>1,640</u>
1) Credit to Public Sector (net)	(-50)	(650)	(600)	(400)	(1,000)	(300)	1,300
2) Credit to Private Sector (net)	(-50)	(140)	(90)	(100)	(190)	(150)	(340)
III. Currency Issue	2,600	590	3,190	<u>400</u>	3,590	<u>+350</u>	3,940
IV. Monetary Base	<u>3,450</u>	<u>794</u>	<u>4,244</u>	<u>621</u>	<u>4,865</u>	<u>730</u>	<u>5,595</u>
1) Currency in Circulation	(2,550)	(590)	(3,140)	(400)	(3,540)	(450)	(3,990)
2) Reserves	(900)	(204)	(1,104)	(221)	(1,325)	(280)	(1,605)
V. Money Supply	3,968	913	4,881	741	5,595	839	6,434
VI. Credit to Private Sector	3,870	877	4,747	951	5,698	1,204	6,902
Mult.	(4.3)		(4.3)		(4.3)		(4.3)
Reserves	(900)		(1,104)		(1,325)		(1,605)
Assumptions			<u>1975</u>		<u>1976</u>		<u>1977</u>
<u>Real GNP</u>			+6%		+5%		5%
<u>Inflation</u>			+17%		+10%		10%
<u>Constant Velocity</u>			-		-		-
<u>Money Mult. (1.15)</u>							
V = (1.15 x IV)							

^{1/} Rate of exchange \$b 20.38 = US\$ 1

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 Exhibit 1

MOST FAVORABLE
(millions of pesos bolivianos)

	<u>1974</u>	<u>Change</u>	<u>1975</u>
I. Net Foreign Assets	<u>2,700.0</u>	<u>300</u>	<u>3,000</u>
II. Net Domestic Assets	<u>-100.0</u>	<u>298.0</u>	<u>198</u>
(1) Credit to Public Sector	(-50.0)	(158.0)	(108.0)
(2) Credit to Private Sector	(-50.0)	(140.0)	(90.0)
III. Currency Issue	2,600.0	598.0	3,198.0
IV. Monetary Base	3,450	738.0	4,238.0
(1) Currency in Circulation	(2,550)	(598.0)	(3,198.0)
(2) Required Reserves	(900)	(140.0)	(1,140.0)
V. Money Supply (1.08 x MB)	3,968	797	4,577
VI. Credit to Private Sector	3,870	1,032	4,902
Mult.	(4.3)		(4.3)
Reserves	(900)		(1,140)

LESS FAVORABLE
(millions of pesos bolivianos)

	<u>1974</u>	<u>Change</u>	<u>1975</u>
I. Net Foreign Assets	<u>2,700.0</u>	<u>600</u>	<u>3,300</u>
II. Net Domestic Assets	<u>-100.0</u>	<u>298</u>	<u>198</u>
(1) Credit to Public Sector	(-50.0)	(158.0)	(108.0)
(2) Credit to Private Sector	(-50.0)	(140.0)	(90.0)
III. Currency Issue	2,600.0	898	3,498
IV. Monetary Base	3,450.0	1,198	4,698
(1) Currency in Circulation	(550)	(898)	(3,498)
(2) Reserves	(900)	(300)	(1,200)
V. Money Supply	3,968	1,294	5,074
VI. Credit to Private Sector	3,870	1,290	5,160
Mult.	(4.3)		(4.3)
Reserves	(900)	300	(1,200)

MOST FAVORABLE

Real Growth + 6%
Inflation 14%

LESS FAVORABLE

+ 6%
+27%

Constant Velocity

RELATIVE UNFAVORABLE
(millions of pesos bolivianos)

	Est. <u>1974</u>	<u>Change</u>	<u>1975</u>
I. Net Foreign Assets	<u>2,700</u>	<u>-300</u>	<u>2,400</u>
II. Net Domestic Assets	<u>-100</u>	<u>1,000</u>	<u>900</u>
1) Credit to Public Sector	(-50)	(900)	(850)
2) Credit to Private Sector	(-50)	(100)	(50)
III. Currency Issue	<u>2,600</u>	<u>700</u>	<u>3,300</u>
IV. Monetary Base	<u>3,450</u>	<u>954</u>	<u>4,395</u>
1) Currency in Circulation	(2,550)	(700)	(3,250)
2) Reserves	(900)	(245)	(1,145)
V. Money Supply	<u>3,968</u>	<u>1,086</u>	<u>5,054</u>
VI. Credit to Private Sector	<u>3,870</u>	<u>1,054</u>	<u>4,924</u>
Mult.	(4.3)		(4.3)
Reserves	(900)		(1,145)

MOST UNFAVORABLE
(millions of pesos bolivianos)

	<u>1974</u>	<u>Change</u>	<u>1975</u>
I. Net Foreign Assets	<u>2,700</u>	<u>-600</u>	<u>2,100</u>
II. Net Domestic Assets	<u>-100</u>	<u>+1,500</u>	<u>1,400</u>
1) Credit to Public Sector	(-50)	(1,300)	(1,250)
2) Credit to Private Sector	(-50)	(200)	(150)
III. Currency	<u>2,600</u>	<u>900</u>	<u>3,500</u>
IV. Monetary Base	<u>3,450</u>	<u>1,200</u>	<u>4,650</u>
1) Currency in Circulation	(2,550)	(900)	(3,450)
2) Reserves	(900)	(300)	(1,200)
V. Money Supply	<u>3,968</u>	<u>1,380</u>	<u>5,348</u>
VI. Credit to Private Sector	<u>3,870</u>	<u>1,290</u>	<u>5,160</u>
Mult.	(4.3)		(4.3)
Reserves	(900)		(1,200)

RELATIVELY UNFAVORABLE

Real Growth + 6%
Inflation +21%
Constant Velocity

MOST UNFAVORABLE

+ 6%
+29%

I. Structure and Performance of Product Markets

A. The General Pattern

B. Marketing Processes for Selected Commodities

1. Wheat
2. Corn
3. Rice
4. Soybeans
5. Potatoes
6. Milk
7. Other Commodities

C. Marketing Costs

1. Marketing Margins
2. Transportation
3. Transfer Taxes

D. Summary

II. Factor Markets

A. Seeds

B. Imported Inputs

C. Labor

THE ADEQUACY OF MARKETS AND DISTRIBUTION FACILITIESI. THE STRUCTURE AND CONDUCT OF PRODUCT MARKETSA. The General Pattern

For the most part the structure of Bolivia's product markets is private sector oriented. Government intervention in the marketing systems generally have been limited to four types: i) attempts to administer prices (which has been discussed more fully in a previous section); ii) direct purchase of commodities, particularly milled rice through the National Rice Company and in 1974 a small pilot project for direct procurement of wheat; iii) public investment in selected processing facilities by the Bolivian Development Corporation - a state owned enterprise; and iv) regulatory measures usually directed at the processor level.

Thus the agricultural sector generally and small farmers in particular are accustomed to having to meet the risks of production failures and inflation without GOR assistance. The system which has evolved involves spreading risk over more than one crop or livestock enterprises and, where possible, producing these crops in more than one location, and in maintaining a low cash liquidity level and investment in assets which either increase or maintain real value over time. The impact of this upon the product marketing system is evidenced by the rate of flow of farm commodities into the marketing system. Depending upon the storeability of the commodity, generally less than 50% of that portion of the crop that is surplus to subsistence needs is sold immediately following harvesting. Initial sales following harvest provides the immediate cash for family needs and repayment of other obligation. Thereafter, farmers sell the remaining portion of the marketable surplus as their need for liquidity occurs. Interim storage is almost always on farm. This accounts for the relatively even flow of small lots of storeable commodities into the marketing system over a long period following harvest. Funds in excess of family needs are invested in livestock which is one of the mechanisms to hedge against inflation in the rural areas.

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Exhibit 2

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The typical marketing pattern for most of the commodities significant to this project is through country fairs. Relatively few commodities are purchased directly at the farm. About 90% of all farm commodities produced in the small farmer sector are taken either to the local fair or to a larger fair some distance away. The larger fair is often used by local farmers as a check to ascertain whether the price he has been receiving at the local fair is equitable and reasonable in the broader market context.

Local fairs are tied together by an informal network comprised of country assemblers (most often women), truckers who buy on their own account, or wholesalers who buy from a number of local fairs on a regular or irregular basis. The fair mechanism, as well as the central market facilities in urban centers, are relatively unsophisticated open air sites or sheltered facilities where buyers can meet sellers directly and inspect the commodities they are buying. No storage or processing facilities are available at fair sites and commodities are sold on an as-is where-is basis with no attempts to standardize quality or establish price on the basis of grade. The many small lots assembled at the local fair are segregated by quality and concentrated as these commodities move from the local fairs to larger fairs, then to major consumption centers where they may move into processing channels or be sold to retailers for ultimate sale to consumers. Ownership changes often in this marketing system, and, given the large number of buyers and sellers, competitive forces usually govern the market. Prices are determined competitively but are strongly influenced by levels established by government price policy. Increasingly, the system is coming under more uniform regulations with the leadership in this effort being taken by the central government.

The marketing system described above is owned and operated by the private sector and subjected to various forms of internal and local government control. While the bulk of products from the small farm sector is sold in this manner, some products may also be sold at roadside to truckers or itinerant buyers or directly to processing plants, e.g. flour mills, slaughter houses, etc. In the latter case, however, commodities are marketed in somewhat larger lots than is typical of the small farm sector.

The above described system is typical of the way most crops move through the initial marketing phases. The fair system is relevant

to all of the crops which will be addressed in this project with the exception of rice. Rice marketing usually involves greater participation of the farmer in initial milling processes and is accomplished through the National Rice Company (ENA). Further details of this process will be discussed below. Beyond the initial phase of marketing each commodity tends to have its own distinct market system which is dependent on the area where the commodity is grown, processing requirements, storability, ultimate utilization and other factors. These process will be described for selected commodities below.

B. Marketing Processes for Selected Commodities

Wheat. Most of the wheat grown in Bolivia is stored and consumed on the farm where it is produced. It is estimated that only 10,000-12,000 of an estimated 65,000 to 70,000 is milled commercially. Wheat which is marketed is usually transported by the farmer to local fairs where it is sold to assemblers, or less often sold directly from the farm to assemblers who pick the wheat up at the farm gate. Transportation of wheat, like most other products, is by truck. Estimated freight rates by truck between major terminals are shown in Table 1. Considering general road conditions, the costs of transportation seem reasonable. Also, previous studies have shown that the competition between truckers is high and some truckers fail to cover their fixed costs.

Assemblers may, or may not own a truck but they normally have portable scales and bags. They sometimes provide some credit and other services to farmers, but the extent of these activities is not known. The price of wheat sold at fairs is estimated to bring a 4.5% higher price because of the greater buyer competition, as well as the fact that assembler transport costs can be reduced. Control of weights is also thought to be better at the fairs.

Assemblers resell wheat to flour mills, chicha (a local beverage similar to beer) producers, mote (similar to hominy) producers and others. Wheat sold to flour mills is graded and the price is based upon moisture, extraneous material and test weight. Flour mills are obligated, under Bolivian law, to buy all local wheat which is offered for sale and pay immediately. Wheat marketed at the flour mills is milled and distributed in the form of flour to bakers or

T A B L E 1

UNIFORM TRUCK TRANSPORTATION RATE SCHEDULE
FOR THE TRANSPORTATION OF COMMODITIES WITHIN
BOLIVIA AND FOR EXPORT, 1974

<u>Cities Served</u>	<u>Cost per</u> <u>101.4 lbs.</u> <u>Pesos</u>	<u>Cost per</u> <u>M.T.</u> <u>Pesos</u>	<u>Distance</u> <u>KMS.</u>
La Paz - Santa Cruz	27.00	597.80	903
La Paz - Cochabamba	12.00	260.80	403
La Paz - Oruro	7.50	163.00	230
La Paz - Potosi	19.00	413.00	574
La Paz - Sucre	22.00	478.20	740
La Paz - Tarija	33.00	717.30	952
La Paz - Camiri	44.00	856.50	1,211
Cochabamba - La Paz	12.00	260.80	403
Cochabamba - Oruro	9.99	195.60	228
Cochabamba - Santa Cruz	17.00	369.50	500
Oruro - La Paz	7.50	163.00	230
Oruro - Cochabamba	9.00	195.60	228
Oruro - Santa Cruz	26.00	565.20	728
Santa Cruz - La Paz	27.50	597.80	903
Santa Cruz - Cochabamba	19.99	369.50	500
Santa Cruz - Oruro	26.00	369.20	728
Santa Cruz - Sucre	18.00	391.30	608
Santa Cruz - Potosi	26.00	565.20	774
Santa Cruz - Tarija	40.00	869.50	1,120
La Paz - Matarani	15,222.00	330.48	665
Oruro - Matarani	22,484.00	532.26	884
Potosí - Matarani	35,471.00	771.12	1,084
Matarani - La Paz	27,870.00	605.88	665
Matarani - Oruro	35,471.00	771.12	884
Matarani - Potosí	44,333.00	963.90	1,084
Matarani - Santa Cruz	49,407.00	1,047.06	1,584
Matarani - Cochabamba	38,005.00	826.20	1,048

SOURCE: Ministry of Transportation.

other manufacturers who pick the flour up at the mill. Byproducts are usually sold at the mill to farmers or truckers who resell to farmers. Market outlets for byproducts appear to be good. Little flour is sold for family use in as much as little home baking is done. Marketing of wheat for other purposes (chicha, mote, etc.) is not well developed because of the small quantities sold at any point.

Wheat storage is primarily located at mill sites where 37,500 metric tons of storage capacity is reported. This appears to be adequate to meet any projected increases in domestic production. Installed capacity for milling of wheat is currently about 120,000 metric tons annually with current milling from domestic production limited to less than 10,000 MT. The remainder of domestic production is either consumed on farm, processed through country mills or used in the manufacturing of "chicha" or other locally processed products.

To the extent that domestic supplies were to increase to near milling capacity, this would necessitate a shift in the import mix of wheat and wheat flour. In other words, millers would grind domestic wheat first, import additional wheat up to milling capacity and import flour to meet the balance of domestic consumption needs.

Corn. Corn is a traditional crop in Bolivia and is used for human food and animal feed. In general, the hard corn varieties are used for feed and soft corn is used for human food. About 45% of total production is used for human consumption with the same amount being used for animal feed. Some corn is ground in small mills and sold for human food. Human food uses include the use in soups, hominy and a hot breakfast cereal. Considerable corn, perhaps as much as 15-20% is used in chicha production.

Corn production is not commercialized, so the problem of marketing is similar to the marketing of wheat in the traditional areas. Most corn is stored on the farm until sold to assemblers. Assemblers buy corn from farmers at country fairs, or less often at the farm gate, and transport it to urban markets. Obviously, considerable off farm storage exists, but no data is available regarding the extent or location of this storage. It is probable that it is scattered widely and is in small units.

As with wheat, transportation of corn from farm or fair to consumption centers is by truck. Movement of corn from storage to point

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of utilization has not been documented. It probably remains largely in the hands of assemblers until it is disposed of at retail markets, animal production farms, feed mills and processors such as chicha producers. Corn differs greatly from wheat in that most of the wheat is disposed of at the limited number of flour mills which have a fairly large amount of internal storage. To the extent that corn is milled, it is used mainly as a livestock feed.

Feed milling capacity in the country consists primarily of many small village type mills scattered throughout the area. Best estimates are that less than 50,000 metric ton capacity exists, mostly in small units of less than 2 tons per day capacity. Similarly storage facilities for corn are limited. The only known corn storage consists of five small silos with a capacity of about 175 tons each. While no doubt other facilities are used for corn storage, much of this is of a temporary nature and inadequate and inefficient in terms of losses and handling requirements. It is estimated that at least 50,000 metric tons of additional of farm storage is needed to adequately handle current supplies.

Corn prices have varied widely from year to year and location to location. Considering the tonnages involved, and the lack of adequate facilities, the marketing of corn is a greater problem than the marketing of any other grain. It is evident from the price variation experienced over recent years that improved storage and marketing facilities would contribute to a more stable production, greater efficiency and improved prices to producers.

Rice. Rice production is concentrated in the Santa Cruz area and the production has shifted in recent years from large to smaller farms. The last significant import of rice was in 1962 and since that date production has been great enough to supply local demand and some occasional export.

Currently, all rice is marketed through the National Rice Company (ENA) which purchases milled rice from private and cooperative rice mills. Marketing of rice from the small farm sector continues to follow a traditional marketing system. Three general types prevail: i) the farmer may sell to an assembler at the farm. Frequently, credit advances are made by the assembler to finance harvesting. The farmer then is obligated to sell to the assembler who offers a lower price and thus exacts what are probably usurious interest rates, ii) the farmer may transport rough rice to the mill and sell directly to the mill or to speculators. The rice is then dried to an appropriate moisture level usually on patios in the sun before milling, iii) the farmer can take his rice to the mill, tend to the drying himself, have it milled and then sell the milled rice to the

ENA representative. This system requires that the farmer spend a considerable amount of time at the mill waiting for drying space, tending the grain during drying and waiting for it to be milled. The total wait involved may run into weeks.

Because of the difficulties which farmers encounter in trying to maintain title during drying and milling, he frequently prefers to sell paddy rice to an assembler or speculator at 30-40% less than he would have received if he had maintained title until the rice was milled.

The new 27,000 T. bulk facilities for rough rice constructed in 1972-73 by ENA in the Santa Cruz area provides a very attractive alternative to this system. The farmer now is able to deliver rough rice, have it graded and receive payment. ENA then dries, mills, and stores the rice, and transports it for storage and resale in major consumption centers.

It is difficult to store milled rice in the Santa Cruz area because of high humidity and insects. Most rice is, therefore, transported to higher elevations as soon as possible. Transportation is by truck. ENA sells milled rice to wholesalers, acts as the sole exporter and has also established retail outlets in major consumption centers.

There are 37 rice mills in Bolivia. Twenty eight are located in Santa Cruz with a capacity of about 15 tons per day; seven in Cochabamba with an average capacity of 4 1/2 tons per day and two in La Paz also with a 4 1/2 ton daily capacity. Yearly capacity is estimated at 83,000 MT for 200 ten hour operating days but this could be extended to accomodate any increase in production by increasing the number or length of work days.

The mills are privately or cooperatively owned and are equipped mainly with machinery of Brazilian manufacture with rubber rollers and Engelberg type polishers. ENA has an employee at each mill to purchase rice. Many of these mills have a small storage capacity, or erect temporary facilities until the rice is milled and sold. Fortunately the rice harvesting season coincides with a period of relatively little rainfall in the major production areas. Additionally, some rough rice is stored on the farm and delivered to mills later on. Fully adequate storage facilities for rice are limited. In addition to the already mentioned 27,000 MT storage facility

for paddy rice in Santa Cruz, FNA also has 22,000 MT of rented storage capacity for milled rice in Cochabamba and seven other locations. All of this is bag storage. While current rice storage capacity is marginally adequate, additional investments in improved facilities especially at the cooperative mill sites is needed and would undoubtedly reduce marketing losses and increase efficiency.

Soybean. Soybean production is relatively minor compared to other crops grown in Bolivia. However, production is increasing significantly each year. Demand for soybean products appears to be large, judged by the volume of vegetable oil consumption which currently is satisfied basically through imports at the present time. Further evidence of this is found in the high prices that the livestock industry pays for high protein feed. Soybean oil, of course, has competition from other oilseed crops but is a much more efficient crop to process, and provides a higher efficient source of protein for animal feed. Oilseed processing plants are located in Santa Cruz and Cochabamba with a total capacity of 67 metric tons per day. Limited storage capacity is available. These mills are currently operating at about 80% capacity and managers have indicated difficulties in obtaining working capital. An additional 50,000 MT of processing capacity is under construction and should be operative by January 1976. Given projected increases of oilseed crops, current processing capacity should be adequate throughout the life of the project, although given the importance of controlled storage for soybeans, it is likely that commercial credit will be required to permit processors to acquire inventories at harvest time and hold storage through the processing cycle.

Potatoes. Potatoe, which is the most important crop produced in Bolivia is grown widely throughout the valley and altiplano regions. There are many varieties of potatoes some of which are adapted to specific production zones. Other related tuber crops such as oca and papaliza are also grown widely but in smaller volumes. Potatoes are stored on the farm and move to market in small lots. Potatoes are generally transported in bags from the farm to local fairs by draft animals. They are sold there to assemblers who transport them to central markets where they are wholesaled to small retailers. For the most part potatoes are sold without regard to grade or uniformity.

Some potatoes which cannot be sold or stored for long periods are processed into chuño and tunta in order to preserve them. These products are local versions of freeze dried and evaporated products which have been produced for centuries in the Andean region. These products are marketed similarly as are fresh potatoes.

No information is available on the volume of on-farm or off-farm potato storage. However, given the large number of potatoes producers and the predominance of small lot marketing, it is believed that most of the storage is on farms where holding losses are probably significant.

Milk. Most of the milk which is produced in Bolivia is consumed on the farm, however a number of small commercial milk producers operate near urban centers. Milk marketing in Bolivia takes two general forms - primitive and modern. The primitive system is utilized largely in small urban communities outside the major population centers. Raw unpasteurized milk is delivered in bulk directly to homes in accord with previous agreements with respect to quantities and price. Generally such marketing is done by the producer or his family. In areas more remote from urban markets excess milk is processed into cheese and then transported in small lots to urban markets.

Modern milk marketing is through two large dairy processing plants in Cochabamba and La Paz. These plants exercise strict quality control on all milk receipts which are delivered to the plant either by the farmer himself or by a contract trucker or are collected by milk trucks owned by the factory. Milk is purchased on the basis of butterfat content and weight. Raw milk is pasteurized and packaged in small plastic packages and distributed to retailers and delivery outlets. Some milk is processed into butter. Currently Bolivia is self sufficient in butter but still finds it necessary to import powdered milk to be reconstituted to meet the demand for whole milk. Processing capacity in both plants appears to be adequate to handle considerably larger volumes than are currently being processed.

Other commodities. The food industry and marketing mechanisms for fresh and semi-perishable vegetables and fruit are significant

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employers of labor throughout Bolivia. Commodities are sold from the farm in small lots, concentrated into truck lots for transport to consumption centers, wholesaled to small vendors and retailed to consumers in small lots, but a significant share is also sold directly in retail markets almost always by farm women. Livestock are also marketed through the fair mechanism although usually they will be sold at special livestock fairs which may be held less frequently than the other fairs at which a more general line of products is traded. Poultry and eggs, like vegetables, are often retailed directly by farm women.

C. Marketing Costs

1. Marketing Margins

There is relatively little reliable information on the cost and efficiency of marketing of the major commodities produced in Bolivia. Conclusions can only be inferred from comparison of observed prices at various points in the marketing chain on the assumption that the competitive nature of markets will equate price margins with real costs. Available data indicate that on the average, farmers are receiving from 40 to 50 percent of the consumer's expenditure on those commodities consumed in the major consumption centers. These statistics apparently do not reflect transport costs from the farm to the point of the first transfer of ownership which usually is borne by the farmer. Most farm prices are calculated on the base of the consumer price in La Paz less handling costs and losses. The farm price for potatoes, for example, may be 60 pesos for 101.4 lbs. at the regional fair, 93 pesos at the wholesale market in La Paz and 106 pesos to La Paz consumers. The following table indicates the average family level wholesale and retail prices for selected commodities for the period 1969 to 1973. For these commodities and most others for which price data are available, farm prices have risen more during the five year period 1969-73 than either consumer prices or wholesale prices.

Average Prices of Selected Agricultural Commodities at the Farm Wholesale, and Retail Levels, 1969-1973

Commodity		Farm Price 1/		Wholesale Price 1/		Retail Price 1/		Differences	
		Peso	Index	Peso	Index	Peso	Index	Between Farm and Retail	Peso
Cuban Yellow Corn	1969	16	100	34	41	100	31	47	100
	1970	14	87	29	40	97	35	49	104
	1971	15	94	25	37	90	44	59	106
	1972	24	150	44	41	100	30	54	112
	1973	48	300	53	74	180	43	91	194
Potatoes	1969	40	100	48	64	100	44	84	100
	1970	40	100	46	64	100	47	87	104
	1971	40	100	59	63	98	59	99	112
	1972	50	125	49	63	98	49	96	112
	1973	60	150	46	93	145	46	102	126
Wheat	1969	46	100	45	80	100	56	102	100
	1970	46	100	46	98	97	53	99	97
	1971	46	100	46	70	87	53	99	97
	1972	49	106	52	69	86	45	94	92
	1973	100	217	85	97	121	18	118	116

2. Transportation

As previously shown, transport costs from and between the major concentration points in the country are a function of distance and the level of utilization of equipment. The transport system has adopted fixed freight tonnage rates for most commodities between major consumption centers. The cost of transporting cattle is on a per head basis. The variable freight rate system utilized in the country side has not been formally studied but is reflected in the residual price received by farmers at the country fair point. Given the competitive nature of the trucking industry, and a generally adequate inventory of rolling stock, transportation is not seen as a particular marketing constraint.

3. Transfer Taxes

A multitude of taxes are imposed upon the food industry throughout the marketing system. If the farm wife wishes to sell her produce at the local fair, she often has to pay a fee to the local market authorities. Street vendors are charged a fee, dairy product distributors pay a fee, country assemblers pay a fee, and processing plants are charged fees.

The published tax rate schedules for the various municipalities indicate a variable rate based upon the day of the week. Thus, vendors, country assemblers, wholesalers, processors and so on, if they participate regularly in the market, are charged on an annual basis. Irregular participants are charged on a daily basis in many markets a variable rate as a function of the day of the week. Each market has its own fee schedule for specific products bought and sold on that market and in many cases the fee schedule is based upon quality of the product sold.

Internal customs charge fees for commodities moved between markets and a fix rate is applied to each commodity group. Road check points are used as revenue generation mechanisms by local communities and agencies of government. In spite of the large number of small levies which may be assessed at various points in the marketing system, the aggregate cost of such marketing expenses is small and the impact falls fairly evenly on all commodities moving through the market. Without more careful analysis of relative price and supply elasticities it is difficult to determine whether the impact of these costs is borne by the producer or consumer. At any rate, it is believed that such costs have little effect on the allocation of resources among competing enterprises at the farm level.

D. Summary

The marketing systems described above historically have been adequate to store, transport, process and distribute agricultural produce to consumers with reasonable effectiveness. Past sector performance indicates that year to year production increases of up to ten or fifteen percent can be accommodated. While it must be acknowledged that for several commodities some problems with respect to storage and intermediate processing capacity do exist, in general these constraints are not so much constraints on physical capacity to handle increased volumes as they are on efficiency. To be sure, marketing losses can be reduced, and costs of storage and transfer can be lowered. While it is recognized that investments in improved market facilities are needed and would impact favorably on all segments of the agricultural system, no specific recommendations can be made with respect to type, volume, or location of additional facilities without more detailed analysis and feasibility studies.

As a general proposition it may be concluded that the private transportation system is sufficiently responsive to agricultural sector needs to move the additional volumes of produce which are expected to be generated by this project from local assembly points to central markets and processor facilities in a timely manner. Again the conclusion of physical adequacy must be leavened by the need for improved efficiency. Though, it is axiomatic that a more extensive road system, and improved standards of existing roads would have a favorable impact with respect to a large number of farmers for whom access is now a limiting consideration, lack of transportation infrastructure or facilities are not seen as effective constraints to the successful utilization of funds provided under this project by the target clientele.

II. Factor Markets

Concerning agricultural inputs markets, three general classes of production inputs need to be considered here: seeds, imported agrochemicals, and machinery and labor.

A. Seeds

Generally, for most of the commodities which will be addressed by this Project the supply of seeds is adequate to meet demand. Most seeds utilized by the small farm sector are of the indigenous variety or are from improved stock which have been imported in the past. Improved wheat varieties are being produced and multiplied in Bolivia by both the National Wheat Institute and the private sector. The Ministry of Agriculture also has a small program to produce improved seed varieties for a number of crops. Seed for crops such as vegetables, soybeans or forage crops may have to be imported in small volumes and subsequently multiplied over one or two seasons in Bolivia. The commercial market for seeds is not well developed as most farmers produce their own or obtain seed from neighbors. In general, however, lack of seed is not seen as a major constraint to increased production although a greater effort to distribute more improved seed type would undoubtedly result in some increase in yield. Efforts along this line will be undertaken in conjunction with AID's other agricultural assistance efforts under the Ag Sector Loan and technical assistance project.

B. Imported Inputs

All agrochemicals and most agricultural machinery are imported into Bolivia and hence, conceptually may be treated jointly here. No reliable data is available on the quantity of agricultural inputs imported into Bolivia although estimates for 1972 indicate that the value of same were \$ 5.6 million. Farm machinery accounted for over 60 percent with the remainder being comprised of fertilizer, seeds, insecticides, live animals and veterinary supplies. Fertilizer imports are currently estimated at about 5000 MT annually.

Virtually all of the modern agricultural inputs are imported by commercial importers, some of which handle only one or two items and others which handle full lines of inputs including vegetable seeds, tools, machinery, fertilizers, herbicides, insecticides and veterinary drugs and vaccines. There are probably no more than five or six large importers who handle full lines for distribution on a nationwide basis. There are at least 26 commercial importers of fertilizers, 24 of pesticides, and 29 of veterinary drugs and vaccines. There are also a considerable number of importers who import only seed, farm tools, machinery or feed concentrates.

The distribution system for major production inputs generally consists of the importer's main office and supply outlet in La Paz, with branch offices and supply outlets in the capital cities of the principal agricultural departments throughout Bolivia. For some of the larger cities in the outlying areas importers maintain branch sales outlets. However, the sales in the outlying areas are handled mainly through assigned agents, distributors, redistributors, cooperatives, and associations such as the rice and cotton growers association, and some sales are made from consigned stock. Sales are also made directly by salesmen-cum-agriculture extension agents who are direct employees of the importers. Some sales are made in isolated areas through a responsible person in the community who acts as a consignee to receive shipment and send payment for a single delivery only.

Both MinAg Extension agents and the sales-extensionist employees also tend to support the distribution system by helping farmers to locate and use inputs. For example, in the immediate Cochabamba area, there are seven private sales-extension agents employed by the private sector distributors and fifteen MinAg extension agents. In addition, some cooperatives have agrónomos who act as extension agents for members of the Coop. There are also a number of extension agents who are unassociated with foreign organizations and mission groups. These agents have contributed to increased marketing of inputs both as a result of providing technical advice on the use of inputs and also in assisting farmers to locate sources of supply. They are also useful in helping distributors to locate potential buyers for their commodities.

The commercial supply houses are quick to respond to increased demand for inputs by the farmers. An example of this occurred last year when farmers in a valley area some 250 kilometers from Santa Cruz planted 500 hectares of tomatoes. Several supply stores immediately moved into the area. Currently, there are at least three major supply houses planning to open additional direct sales stores in Tarija this next year due to increased demand in that area. On the other hand, the commercial sales houses are just as quick to close out unprofitable outlets if sales volume cannot be maintained or does not develop. An example of this is in Montero where several stores have been closed down in the last five years, because the demand simply did not develop as expected.

Reasonably accurate demand forecasting is particularly critical for inputs such as agrochemicals, veterinary supplies and seed; for such commodities have a limited shelf life and cannot be stored beyond a period of a few months. Importers are almost always wont to err on the conservative side rather than end up with inventories which have

lost their potency and cannot be sold. This tends to work against the interests of the small farmer since he basically can buy only from spot stocks while most of the larger commercial operators are members of cooperatives or producer groups, such as the cotton associations which contract directly with the importers for the needs of their members on a yearly basis. Furthermore, for most imported products there is a lead time involved of at least four months from the date of order to the time when the product is ready for sale to the farmers. This long lead time makes the forecasting of demand especially difficult for the importers at the time they must place orders. In 1974 the forecasting was further complicated by the world energy shortage, which made it necessary to sign advance contracts for products that were daily increasing in price. In at least two cases (Casa Bernardo for insecticides and herbicides, and Grace & Cía. for fertilizers) foreign suppliers are just now, in November and December, making deliveries on contracts which were signed in December of 1973 for April and May 1974 delivery. The reason for the delay was that many factories were not able to obtain the raw materials particularly petrochemicals which are basic inputs for those products. However, as of the time of this report the energy crisis has eased considerably and suppliers are promising normal delivery schedules for 1975. By far the most important factor to be considered in forecasting agricultural input demand is credit availability especially for the small farm sector. If credit is not available when it is needed, the small farmer just cannot buy such inputs as fertilizers and pesticides. Therefore, the amount of available small farmer credit must be known ahead of time so that the importers can consider this when making their yearly contracts in December for delivery the following year.

Demand forecasting by importers has been further complicated by the increasing farm labor costs, making the use of products such as herbicides much more desirable. Another factor that is having an effect on the use of fertilizer, particularly in the Santa Cruz area, is that, historically, the farmers have simply cleared more virgin land after four or five years when the previously cleared land lost most of its fertility and production dropped to a point where planting was no longer profitable. Today, most of the land adjacent to the existing rural road network has already been cleared, and it now becomes a matter of either fertilizing or clearing land some distance away from the road. Use of modern inputs such as fertilizer and pesticides can therefore lead to more stable tenure relationships.

Another development which makes forecasting difficult is that in 1974 agricultural inputs costs increased at a much faster rate than

agricultural product market prices. Thus, in many areas farmers are beginning to wonder seriously whether they will be able to invest in fertilizer at current price and get their investment back from increased production, at today's market prices. This becomes even of greater concern when consideration is given to the fact that sometimes crops are lost due to circumstances beyond the farmers' control.

Input-output price relationship for most imported factors of production suggest that adequate incentives exist for more intensive use of variable inputs at the current margin of use. Under normal production conditions, farmers can expect to receive adequate returns to almost all purchased inputs. However, input-output price relationship for fertilizer and certain other agrochemical inputs are less favorable now than they have been previously (over the period of 1968-1972 for example), and farmers with a history of a high variance in yields will and should be much more cautious in their management decisions to use high cost agrochemical inputs at present price ratios. While prices of other inputs - such as hired labor, improved seed varieties, better livestock strains, irrigation facilities, selected types of machinery and other management techniques, have increased, higher product prices have served to maintain and in some cases enhance the feasibility of using such purchased inputs. With the possible exception of reduced incentives to fertilizer use on cereal crops, we do not see unfavorable factor-product price ratios as being a constraint to continued use of purchased inputs for production of the commodities being contemplated.

Adequate information with respect to demand projections is seen as the major factor which influences the volume of agricultural inputs which are imported. Accordingly, improved demand forecasting is one of the functions which will be further addressed as part of the Mission's assistance program to improve sector management and planning under the Agricultural Sector Loan and the companion technical assistance project which is also being instituted in the current fiscal year.

For the present the information that additional credit is being made available for the small farm sector should influence importers to expand spot inventory orders somewhat.

Given the apparent willingness of the private sector to import and distribute inputs in both the large and small farm sectors, the Mission does not see that non-availability of inputs will be a major constraint to the success of this project.

C. Farm Labor Availability

While seasonal labor shortages have resulted in serious problems at harvest time for cotton and sugar cane in the Santa Cruz lowlands in recent years, it is not expected that labor availability will be a limiting consideration for the commodities which will be produced under this loan. First, most small farmers have a diversified enterprise mix which diffuses the farm labor requirements over a longer period of time and permits fuller utilization of family labor resources. Second, with the exception of rice harvesting and to a lesser extent wheat harvesting, most crops do not have a critical labor requirement which must be met in a short period of time. Corn for example can be stored on the stalk and harvested over a period of several weeks as the farm family's labor resources permit. Similarly, potatoes can be stored in situ over a period of time if labor is not immediately available for harvest. Third, sufficient underutilized labor resources generally can be mobilized within most communities to meet peak labor requirements for planting and harvesting. The major exception to this is rice harvesting in the Santa Cruz lowlands which requires that the crop be harvested within a few days of optimum ripeness. Migrant labor generally has been used to supplement family and community labor during this period which also overlaps with the cotton picking season and to a lesser extent with the sugar cane harvest. But most rice is produced in the small farm sector, and the experience of recent years indicates that previous ties to highland communities which supply migrant labor has generally helped to mitigate seasonal labor shortages among small rice producers. Moreover, there are indications that capital labor substitution is beginning to occur in the cotton production sector which should ease the demand for labor at critical harvest period in the lowland area.

LOGICAL FRAMEWORK

Project Title & Number: Basic Foods Production

NARRATIVE SUMMARY

Program Goal: The broader objective to which this project contributes:

- To reduce Bolivia's food gap by meeting the projected growth in basic food requirements through domestic production.

OBJECTIVELY VERIFIABLE INDICATORS

Measures of Goal Achievement

1. Domestic production of basic foods will increase as follows:

(in 000 '000 tons)

(increases additional to previous year)

	71-73 Base	Year 1	Year 2	Year 3
Cereals *	422	21.0	22.0	22.1
Oilseeds	5	3.0	3.5	3.5
Potatoes & Tubers	685	33.0	34.0	36.0
Dairy Products	105	9.3	9.7	11.0
Pork	20	1	1.1	1.1
Poultry meat	3.5	.4	.4	.5
Eggs (dozens)	16x10 ⁶	.9x10 ⁶	1x10 ⁶	1.1x10 ⁶

* wheat, corn, rice, quinoa

2. Imports of basic foods will level off as follows:

(000's tons)

	71-73 Base	Year 1	Year 2	Year 3
Cereals	200	200	200	200
Edible Oils & Fats	18	18	18	18
Dairy Products	45	45	45	45

3. By the end of the third year, the daily per capita calorie availability will increase by 20 calories (from the current estimate of 1,834) and per capita protein availability will increase by 2 to 2.5 grams per day (from the current estimate of 49).

MEANS OF GOAL VERIFICATION

IMPORTANT ASSUMPTIONS

Means of Goal Verification:

- Statistics of Central Bank Implementation Unit.
- Import Statistics.
- MACAG Production Data.
- Review of reports and special studies to be conducted under other USAID Agriculture projects.
- Data, reports and special studies of MACAG offices of Planning, Economics, and Statistics.
- National account data of the Ministry of Planning.

Assumptions for achieving goal targets:

1. GOB increased allocations of credit for basic foods production will be obtained.
2. Farmers will be responsive to the price system and price incentives for food production will continue to be favorable.
3. Farmers actually seek and obtain agricultural credit.
4. There will be no major downturn in economic conditions and favorable cost-price relations for agricultural products will prevail.

NARRATIVE SUMMARY

OBJECTIVELY VERIFIABLE INDICATORS

Project Purpose:

1. To achieve within three years significant increases in the production of basic food commodities by a target group of small farmers for whom credit is the major production constraint.

2. To strengthen and institutionalize a commercial credit system that will be responsive to the continuing credit needs of its target small farmer clientele, and thereby broaden the participation of the small farm sub-sector in the credit market.

3. To bring about an increase in the amount of credit the domestic banking system makes available for the production of foodstuffs.

Conditions that will indicate purpose has been achieved: End of Project status.

1. Incremental production response of recipient farmers is as follows:

(In XXX's (ms))
(increases additional to previous year)

	<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>
Cereals	5.0	5.1	5.1
Oilseeds	.7	.8	.8
Potatoes & tubers	8.0	8.0	9.0
Dairy Products	2.0	2.1	2.1
Pork	.25	.25	.25
Poultry meat	.1	.1	.1
Eggs (cozens)	.2x ₆ 10	.2x ₆ 10	.2x ₆ 10

2. a) number of small farm families, either as individuals or in groups, participating in commercial credit market under the project is as follows:

<u>Year 1</u>	<u>Year 3</u>
3,000-4,000	8,000-10,000

b) an established rediscount line in the Central Bank channelling credit only to farmers meeting the small farmer eligibility criteria.

c) off-farm sales for project credit recipients increase as follows:

	<u>Present</u>	<u>Year 3</u>
Off-farm sales	\$1,000-\$2,000	\$2,000-\$4,000

NARRATIVE SUMMARY

OBJECTIVELY VERIFIABLE INDICATORS

3. a) Banking system credit for basic foods increases along the follow lines:

	<u>Outstanding Balances</u> (millions of \$b)	<u>(End of Year)</u>
	Total Ag.Credit	Total Food Credit with Loan & GOB Com- mitments
Current	1,350	150
Year 1	1,700	318
Year 2	2,023	438
Year 3	2,420	602

b) Ratio of food credit to total domestic private sector credit will increase from 4% (1974) to 9% by the end of the third year.

MEANS OF VERIFICATION

- Central Bank statistics on credit program.
- Central Bank records on banking systems loan portfolios.
- MACAG Production estimates.

IMPORTANT ASSUMPTIONS

Assumptions for achieving purpose:

- Increased Food Production remains GOB priority.
- That the local marketing and pricing mechanism will provide incentives for increased agricultural production.
- That favorable climatic conditions prevail.
- That the Banking system has or will develop adequate capacity to place additional loans.

NARRATIVE SUMMARY

OBJECTIVELY VERIFIABLE INDICATORS

Outputs:

1. Loan applications approved.
2. Recuperations (new loans).
3. Development Division of Central Bank staffed with sufficient economic statisticians.
4. Field offices of Central Bank.
5. Special Fund for Economic Development allocating substantial portion of portfolio to agriculture.
6. Coordination meetings regularly held between Central Bank, Central MACAG, Wheat Institute, Regional Extension Service, NCDS, and USAID to discuss goals, responsibilities, and logistics for crop campaigns.
7. Marketing studies.

Magnitude of Outputs:

	<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>
1.	3,000-4,000	5,500-6,000	8,000-10,000
2.	-	\$ 2-2.3 million	\$ 4.4-\$4.8 million
3.	An additional 2	-	-
4.	5 offices in Cochabamba, Sucre, Tarija, Potosi and Santa Cruz.		
5.	40% of total to ag.	40% of total to ag.	40% of total to ag.
6.	4/yr.	4/yr.	4/yr.
7.	Studies on potatoes, cereals, oilseeds, and animal proteins produced by small farmers completed.		

In addition, the following outputs will be measured annually: a) storage capacity for crops addressed; b) processing capacity for crops addressed; c) number of dairy, swine, and poultry operations assisted; d) on-farm employment generated; and e) degree to which value added in marketing increases and target group captures a greater share of consumers' expenditures.

MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
<ul style="list-style-type: none"> - Central Bank records and reports. - Min. Ag. Estimates. 	<p>Assumptions for achieving outputs:</p> <ul style="list-style-type: none"> - Increased Food Production remains GOB priority. - That the local marketing and pricing mechanism will provide incentives for increased agricultural production. - That favorable climatic conditions prevail. - That the banking system has or will develop adequate capacity to place additional loans.

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS																																																												
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MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
<ul style="list-style-type: none"> - USAID Controller's records. - Central Bank reports. <p>^{1/} Note: GOB contribution is to be derived from the Central Bank.</p>	<ul style="list-style-type: none"> - GOB contribution made in a timely manner.

BANCO CENTRAL DE BOLIVIA
STATEMENT OF PROJECTED SOURCES AND APPLICATION OF FUNDS
FRA-LOAN 511-L-042
(IN PESOS BOLIVIANOS)

<u>DETAIL</u>	1972	1973	1974 (2)	1975	1976	1977	1978	1979
Cash available at the beginning of the year	-	10,740,270	(35,133,649)	46,273,283	71,790,489	47,638,301	68,835,281	60,614,700
<u>SOURCE OF FUNDS</u>								
Loan 511-L-042	17,447,018	26,580,168	103,727,816					
Banco Central Contribution			34,461,019					
Interest & Principal:								
5% (until 1974)	20,620	420,009	3,349,813					
7% (since 1975 S.D. 11552) (1)				9,501,253	7,983,254	9,866,213	8,668,378	9,471,406
Repayments		3,619,324	46,483,329	67,757,273	40,357,966	57,145,592	45,628,655	57,362,239
TOTAL	17,467,638	41,359,709	153,368,628	123,531,914	120,631,709	114,650,106	123,192,214	126,049,045
<u>USE OF FUNDS</u>								
Refinancing (3)								
Short term	3,628,325	41,034,490	55,688,270	24,378,708	36,588,984	22,063,502	30,858,620	24,671,550
Medium term	2,418,883	27,356,327	37,125,513	16,585,805	24,392,656	13,891,708	20,572,413	16,447,700
Long term	671,912	7,598,990	10,312,643	4,607,168	6,775,738	4,085,797	5,714,359	4,568,806
Administrative Expenses (4)	8,248	168,004	1,539,925	2,714,644	2,280,930	2,818,918	2,476,322	2,706,116
Debt Service								
Interest to AID		335,817	2,448,994	2,955,100	2,955,100	2,955,100	2,955,100	2,955,100
TOTAL	6,727,368	76,493,618	107,115,345	51,741,425	72,993,408	45,814,825	62,577,514	51,349,275
Cash available at the end of the year	10,740,270	(35,133,649)	46,273,283	71,790,489	47,638,301	68,835,281	60,614,700	76,099,775

- (1) For simplification it has been assumed that the Supreme Decree 11552 interest raise starts in 1975.
(2) The projections for the 2nd semester, 1974 and following years have been made on the assumption that there are no bad debt losses. The ICI's carry the credit risk.
(3) Loan terms have been estimated according to past experience.
(4) The cost of opening and operating technical offices have been absorbed by the Banco Central.