

**AIRGRAM**

**DEPARTMENT OF STATE**

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FROM - LA BAZ

SUBJECT - Noncapital Project Paper (PROP)  
Cereals Development Project, 511-11-190-364.5

REFERENCE - M.O. 1025.1

Country: BOLIVIA

Project N° 511-11-190-364.5

Submission Date:

Original X Revision N° \_\_\_\_\_

Project Title: CEREALS DEVELOPMENT

U.S. Obligation Span: FY 1970 through FY 1974

Physical Implementation Span: FY 1970 through FY 1974

Gross life-of-project financial requirements:

U.S. dollars	\$817,000
U.S. owned local currency	5,000,000
Cooperating country cash contribution	2,800,000
Other donor	<u>1,232,000</u>
<b>Total</b>	<b>\$9,849,000</b>

OTHER AGENCY

State  
Agric

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### A. SUMMARY DESCRIPTION

In line with the overall agricultural sector plan, a significant number of USAID rural development projects in the past have contributed to increasing cereal production. Bolivia has become self-sufficient in rice and corn production. Recent developments - the introduction of Mexican dwarf varieties, favorable fertilizer response tests and the initiation of a national fertilizer promotion program - have proven it practical to attempt self-sufficiency in wheat production.

In order to meet USG and GOB development objectives, it is imperative for Bolivia to increase cereal production. This alone would represent significant savings of foreign exchange and provide a substantial stimulus to the economy.

The project is expected to result in a saving of about \$100 million in foreign exchange over 10 years and introduce an equal amount of local currency to the rural sector to be shared and re-spent by some 100,000 families.

Joint studies by the Ministry of Agriculture and USAID since 1967 have indicated the feasibility of achieving at least 50 percent of self-sufficiency in wheat production by 1975, and producing 70 percent of consumption requirements by 1978, as compared to 20 percent of self-sufficiency in 1968. The benefit cost ratio for the project is 3.5 through the first five project years, 10 for the first 10 and 16 for the first fifteen project years.

This will be a vertically integrated project with a campaign-type organization and direction. It is to be guided by a Cabinet-level policy group and by a small staff of senior professionals. All Bolivian institutions controlling relevant resources will participate in the execution of the project. Likewise, USAID, Peace Corps (PC), British Tropical Agriculture Mission (BTAM) and United Nations (UN) technical assistance will be concentrated on the cereals project. There are, however, no non-AID resources available to finance the overall project.

Seed in sufficient quantity to plant 10,000 hectares will be sold to growers in package deals including soil tests, fertilizer and marketing assistance. The area will be increased by 10,000 hectares each year through FY 74. In this time reliable sources of seed, fertilizer and credit should have been established and the project should be self-sustaining. The project itself should continue to about 1978, although no U.S. assistance is foreseen beyond FY 74.

NONCAPITAL PROJECT FUNDING (OBLIGATIONS IN \$000)

Table 1  
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COUNTRY: BOLIVIA

Project Title: CEREALS DEVELOPMENT

Mo/Day/Yr  
PROP DATE  
Original X  
Rev. N°  
Project N° 511-11-190-364.5

Fiscal Years	Ap	L/C	Total	Cont 1/	Personnel Serv.			Participants		Commodities		Other Costs	
					AID	PASA	CONT.	US	CONT	Dir	CONT	Dir &	CONT
								Ag		US Ag		US Ag	
Prior through Act. FY 68													
Oper. FY 69													
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Budg. FY 70	AG	G	221	213	-	-	175	8	3		35		
B + 1 FY 71	AG	G	191	183	-	-	175	8	3		5		
B + 2 FY 72	AG	G	189	183	-	-	175	6	3		5		
B + 3 FY 73	AG	G	116	108	-	-	100	8	3		5		
All Subs.	<u>AG</u>	<u>G</u>	<u>100</u>	<u>93</u>	-	-	<u>85</u>	<u>7</u>	<u>3</u>		<u>5</u>		
Total Life	AG	G	817	780			710	37	15		55		

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Table 1

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Project N° 511-11-190-364.5

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Fiscal Years	AID-controlled Local Currency		Other Cash 1/ Contribution Cooperating Country	Other 2/ Donor Funds (\$Equiv.)	Food for Freedom Commodities		
	US owned	Country owned			Metric Tons (000)	CCC Value & Freight (\$000)	World Market Price (\$000)
Prior through Act. FY <u>68</u>							
Oper. FY <u>69</u>							
Budg. FY <u>70</u>	1,000,000		560,000	286,000			
B + 1 FY <u>71</u>	1,000,000		560,000	286,000			
B + 2 FY <u>72</u>	1,000,000		560,000	264,000			
B + 3 FY <u>73</u>	1,000,000		560,000	264,000			
All Subs.	<u>1,000,000</u>		<u>560,000</u>	<u>132,000</u>			
Total Life	5,000,000		2,800,000	1,232,000			

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1/ Includes YFPB fertilizer market development

2/ British Tropical Agriculture Mission, and U.N.

**D. SETTING**

A number of USAID rural development projects in the past, including colonization, land clearing and the rice project, have contributed directly or indirectly to increasing cereal production. Self-sufficiency in rice production has been achieved, with a declared surplus of 15,000 metric tons in 1968. At the present rate of utilization, the country has also achieved self-sufficiency in corn production. On the other hand, wheat production in general has declined since 1946. It has, however, increased since 1967 with the initiation of the wheat program.

Earlier studies (Cookcamp 1966, and Gardner 1966) concluded that for all practical purposes it would be impossible for Bolivia to ever achieve self-sufficiency in wheat production. The major reasons given were limited area of wheat land (the Upper Valleys) and the non-existence of improved varieties adapted to the limited area available.

Since then, three developments have changed the picture:

1. A seed and production program using a Min-Ag. developed, relatively high yielding semi-hard wheat strain, COPOSU, which although subject to one or more diseases, permitted uninhibited fertilizer tests as well as some commercial production. With assistance from the AID/North Carolina State (NCS) regional fertility project, the Min-Ag. got consistently favorable responses to fertilizer trials throughout the wheat zone and the farmers responded to the use of the improved seed.
2. In 1967, Yacimientos Petroliferos Bolivianos (YPFB) launched a fertilizer market development campaign with a view toward installing a domestic fertilizer manufacturing facility by 1978.
3. The Mexican dwarf varieties developed by the Rockefeller Foundation in 1966 and 1967 proved adaptable to the Upper Valleys. These high yielding strains produce stiff straws which add to their resistance to hail damage (50 percent salvaged after heavy hail, compared to 25 percent for COPOSU). Further, the Mexican varieties required 45 days less to mature, thus greatly reducing the chances of frost damage.

The average for the 1967-68 spring crop yield using COPOSU seed and fertilizer, was 2,350 kg/ha. compared to 600 kg/ha. for the Croole. The winter multiplication fields, using Ciano 67, averaged 4,500 kg/ha. with a low of 3,000 kg and a high of 6,000 kg/ha. The average net return on a six months investment in fertilizer was 300 percent.

All Min-Ag/USAID studies since 1967 have consistently indicated the feasibility of achieving at least 50 percent of self-sufficiency in wheat production by 1975 and producing at least 70 percent of consumption requirements by 1978. The benefit:cost ratio\* for the project is 3.5 through the first five years, 10 for the first ten years and 16 for the first fifteen project years.

Further analysis of the background of the Bolivian wheat industry as well as a statement of the propriety of domestic production project, from the economic viewpoint, is given in a paper prepared by USAID/Bolivia (Melvin Burke, Bolivian wheat and flour production versus importation: Once again. La Paz, Bolivia, USAID, Nov. 1968).

The paper's conclusions are:

- a. Bolivia can save \$100 million in foreign exchange over ten years.
- b. The project would return \$75 million to the rural sector above fertilizer costs. The multiplier effect should be near maximum in view of the rural sector's high propensity to consume.
- c. PL 808 Title I requires recipients to make serious efforts to attain self-sufficiency in food grain production.
- d. Other PL 808 requirements would stagnate the rural sector until self-sufficiency in wheat production is achieved. The rice industry would be damped at less than ten percent of its potential without access to foreign markets. (The 1968 crop produced a 15,000 MT surplus, while in the same year Peru imported 90,000).

## C. STRATEGY

### 1. Policy

The first step in the cereals project is for the GOB to establish a firm policy to achieve domestic self-sufficiency in wheat production. This was initiated in the 1969 PL 808 Agreement. The GOB has already launched a campaign, aided by the UN Special Fund, to develop a national fertilizer market. This activity is to be programmed jointly with the Min-Ag/USAID cereals project.

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\* Total benefits

(Development cost & Service Cost) 6% compounded

## 2. Organization

The campaign approach will be used, involving all relevant institutions and resources. The strategy is to establish a national policy-making body consisting of senior GOB ministry representatives, millers and farmers. In the case of wheat, the Min-Ag. will establish a permanent campaign staff to coordinate the activity. All agencies involved - Agricultural Bank, Federation of Credit Unions, Rural Cooperative Service, Experiment Station, Extension Service, Community Development, YPFB - will participate in operations planning and fully perform their respective roles in the implementation of the project. All supporting agencies--USAID's Rural Development and Community Development divisions, PC, UNISF, FAO, BID, and the British Technical Agricultural Mission (BTAM)--will program their resources into the project.

## 3. Finance

An effort will be made to achieve adequate availability of loan funds from the National Bank of Agriculture (BAB) to finance production.

## 4. Seed

Fifty-one tons of Mexican wheat seed (50 tons of Jarral 66 and one ton of Ciano 67) were imported and planted under contract for multiplication in 1963-69. This stock will be multiplied and released for commercial production through CY 1974. Private commercial seed handling facilities will be established, starting in late CY 1969.

The certified seed program will be institutionalized, first to supervise the increase of Mexican wheat seed and then to promote improved seed for barley, corn, soybeans, alfalfa and quinoa. The Rockefeller Foundation is expected to cooperate in this effort.

## 5. Mobilization of Growers

Farmers in the project area will be enlisted into the program through concentrated organization-promotion efforts. They will function as cooperatives or agrupaciones (pre-cooperatives). This will facilitate the dissemination of information, seed, fertilizer, credit and mobilization, using the Community Development Program, Min-Ag. efforts and the Federation of Savings and Credit Coops.

## 6. Research

The experiment stations in the present wheat zone will continue to carry on variety and fertility work. In addition, current Rockefeller releases will be tested for tropical adaptability in the Santa Cruz Department.

## light-

In the event that one or more of the highly/insensitive varieties prove adaptable, land presently planted to surplus rice production will be diverted to wheat until such time that the wheat deficit is removed. Routine milling and bake- testing will be established.

7. By-Products Utilization

A sub-project will be launched to develop a domestic market for the by-products of wheat, sugarcane and oilseed, balanced with corn and improved forage.

D. TARGETS

The first priority of this project is to increase wheat production and reduce import requirements, as follows:

(1000 MT)

Year	Projected Consumption	Domestic Production Milled	Imports Needed	Percent Domestic of Total
1969	233	52	181	22
1970	242	64	178	26
1971	252	78	174	31
1972	262	93	169	35
1973	273	110	166	40
1974	284	130	154	46
1975	295	151	144	51
1976	308	176	132	57
1977	319	203	116	64
1978	332	234	98	70

Efforts will be made to increase the demand for feed grain and crop by-products simultaneously with the increase in wheat production. This calls for the development of a market of the following proportions:

(1000 MT)

Year	Wheat by-Products	Oilseed Meal	Total Feed Protein available	Molasses & Corn to mix*	Total milled feed	Projected Meat output**
1969	13	3.6	16.6	25.0	41.6	7.0
1970	16	3.6	19.6	30.0	49.6	8.3
1971	19	3.6	22.6	34.0	56.6	9.4
1972	23	3.6	26.6	37.5	64.1	10.7
1973	28	3.6	31.6	47.0	78.6	13.2
1974	32	3.6	35.6	55.0	90.6	15.2
1975	38	3.7	41.7	63.0	104.7	17.6
1976	44	3.8	47.8	77.0	124.8	20.0
1977	51	3.9	54.9	88.5	143.4	23.7
1978	59	4.0	63.0	94.5	157.5	26.3

\* Based on a 40% protein source; 60% carbohydrate source.

\*\* Based on generalized conversion rate of 6:1 from an unspecified mix of poultry, hogs and lambs. Figures would be reduced by feed going to milk and egg production.

## E. COURSE OF ACTION

### 1. Accomplishments to Date

Feasibility studies covering the traditional wheat areas of the upper valleys have been completed. Fifty tons of Jarral 66 seed were imported by USAID and contracted out for multiplication in 1968-69. The 500 hectares planted should produce enough seed to plant 10,000 ha. in 1969-70.

All relevant groups are committed to the active support of the project.

### 2. Organization

Early in 1969, all groups concerned will form an organization to carry out the project campaign, likely to be called the National Wheat Institute. The Institute will include a Policy Making Group, a Planning and Implementation Group, and a Management and Operations Office. External donor support is expected from the sources referred to in Section C above.

### 3. Policy

The policy group will reaffirm and maintain a policy favorable to domestic cereal production and utilization. This group will be expected to be instrumental in the collection of campaign operations funds and production credit.

### 4. Administration and Implementation

The major task of administration will be to keep all parties involved informed of the nature and progress of the campaign and the exact role of each in carrying it out. Completing the project organization is the first order of business. The first round of orientation and training for commercial wheat production took place in early 1969. This ~~year~~ began with a congress for national leaders. The congress will be followed in the Departments with orientation and practical training for provincial level workers and leaders. These people will in turn convene farmers' groups for orientation and enlistment in the campaign.

### 5. Research

New Rockefeller developments will be tested in the wheat zone as they become available. In addition, adaptation trials will be extended in the Department of Santa Cruz., Fertilizer response and trials will be expanded each year through 1974. Results will be correlated with soil samples.

### 6. Seed Multiplication

A thousand metric tons of clean seed should be available from the 500 hectares of Jarral 66 planted in December 1968. Arrangements were made with millers and cooperatives to buy this seed in May 1969 and resell it to growers in November 1969. At least 1,000 metric tons are expected to be bought and resold for new expansion each year through 1974.

As superior varieties prove themselves through the research activity, they will be multiplied to replace Jarral 66.

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