

FINAL  
 DRAFT

5110364-8

**I. PROJECT IDENTIFICATION**

1. PROJECT TITLE: Basic Foods Production and Marketing  
 PD-AAA-100-A1

APPENDIX ATTACHED  
 YES  NO

2. PROJECT NO. (M.O. 1095.2)  
 511-11-190-364.6

3. RECIPIENT (specify)  
 COUNTRY Bolivia  
 REGIONAL  INTERREGIONAL

4. LIFE OF PROJECT  
 BEGINS FY 1975  
 ENDS FY 1981

5. SUBMISSION  
 ORIGINAL October 7, 74 DATE  
 REV. NO. \_\_\_\_\_ DATE  
 CONTR./PASA NO. \_\_\_\_\_

**II. FUNDING (\$000) AND MAN MONTHS (MM) REQUIREMENTS**

A. FUNDING BY FISCAL YEAR	B. TOTAL \$	C. PERSONNEL		D. PARTICIPANTS		E. COMMODITIES \$	F. OTHER COSTS \$	G. PASA/CONTR.		H. LOCAL EXCHANGE CURRENCY RATE: \$ US (U.S. OWNED)		
		(1) \$	(2) MM	(1) \$	(2) MM			(1) \$	(2) MM	(1) U.S. GRANT LOAN	(A) JOINT	(B) BUDGET
1. PRIOR THRU ACTUAL FY												
2. OPRN FY 75	1,258	603	180	60	60	45	550	603	180			
3. BUDGET FY 76	813	603	180	-	-	20	190	603	180			1,000
4. BUDGET +1 FY 77	824	583	174	-	-	10	241	583	174			1,100
5. BUDGET +2 FY 78	767	563	168	-	-	-	204	563	168			1,300
6. BUDGET +3 FY 79	783	523	156	-	-	-	260	523	156			1,500
7. ALL SUBQ. FY	1,197	563	168	-	-	-	634	563	168			1,700
8. GRAND TOTAL	5,648	3,438	1,026	60	60	65	2,079	3,438	1,026			9,330 *

9. OTHER DONOR CONTRIBUTIONS

(A) NAME OF DONOR	(B) KIND OF GOODS/SERVICES	(C) AMOUNT
UNDP, IDB	To be determined later	

**III. ORIGINATING OFFICE CLEARANCE**

1. DRAFTER M. Santoker/A. Diaz/A. Moffett	TITLE Ag. Econ/Dep. Prog. Off./Ag. Officer	DATE 10/7/74
2. CLEARANCE OFFICER PR [Signature] CON [Signature] John R. Oleson	TITLE Mission Director	DATE 10/7/74

**IV. PROJECT AUTHORIZATION**

1. CONDITIONS OF APPROVAL:  
 \* Expressed in U.S. dollars.

**2. CLEARANCES**

BUR/CFF.	SIGNATURE	DATE	BUR/OFF.	SIGNATURE	DATE

**3. APPROVAL AAS OR OFFICE DIRECTORS**

SIGNATURE	DATE

**4. APPROVAL A/AID (See H.O. 1025.1 VI C)**

SIGNATURE	DATE

ADMINISTRATOR, AGENCY FOR INTERNATIONAL DEVELOPMENT

## BASIC FOODS PRODUCTION AND MARKETING

### I. Statement of Sector Goal

- A. The Goal: To increase the per capita income of rural people and improve their standard of living based on increased production and productivity in the agricultural sector.

While expressed in economic terms, the goal encompasses concern for an improved standard of living including improved health, education, and other basic needs of the rural population, which are necessary to achieve and sustain increasing productivity.

The goal is concerned with integrating the relatively large but poor campesino sector into the market economy in order to broaden and deepen the internal market and to improve the standard of living of a majority of rural people. The production potential of the small farm sector is of significance as a basis for more efficient economic growth given the very large size of this sector. Moreover, a greater sharing of productivity gains with the poorest segment of the economy may help to minimize the possibility of political and social unrest and simultaneously provide a more stable environment for sustained development.

By addressing increased production and productivity in the small farm sector, it is hoped that improved standards of living can be achieved simultaneously for the relatively large and poor campesino sector.

Naturally, achievement of this broad GOB sector goal depends not only on this USAID project, but also on the combined inputs and resources of other foreign donors, the Government of Bolivia and private investors.

- B. Measurements of Goal Achievement: The GOB's sector goal will be considered met if the following conditions are realized:
1. That per capita income (GDP) of rural people in the small farm sector increases from approximately \$45 during 1971-73 to about \$55 in 1982, or at a rate of about 2.1 percent per year. This is compared to a decline in per capita income during the period 1961-65 to 1971-73 from \$49 to \$45 or at a rate of .8 percent per year;
  2. The share of production of the small farm sector that is marketed increases from about 47 percent in 1971-73 to 67 percent by 1982; and

3. Production of agricultural crops and livestock produced principally in the small farm sector increases at the rate of 4 percent per year in 1975-82 compared to only 1.5 percent per year during 1961-65 to 1971-73.
- C. Basic Assumptions about Goal Achievement: The important assumptions which are necessary for achieving the sector goal targets are:
1. That the GOB will provide essential public services for agricultural development;
  2. That farmers will be responsive to incentive programs;
  3. That the GOB policy matrix will induce increased agricultural production and motivate small farm operators to produce more; and
  4. That there will be no major downturn in general economic conditions and favorable cost-price relations for agricultural products will prevail.

## II. Statement of Sector Sub-Goal

- A. The Sub-goal: To increase production and factor productivity 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.

The focus of the sub-goal on the intermountain valleys and new agricultural areas in the lowlands is dictated by two basic facts. First, the crops and livestock produced in these temperate and sub-tropical zones are of major importance in the diets of most Bolivians, both rural and urban; and such products have generally been in short supply, especially during the last three years. These include cereals, oilseeds, vegetables, and animal protein which are generally produced in the small farm sector of these regions. (Data do not exist to apportion production of these products by size of farm.) Second, approximately 35 percent of Bolivia's small farm population live in these regions with the large majority under severe minifundia conditions, and levels of productivity and family income are low by Latin America standards. This portion of the population has received relatively little assistance in attempting to improve its welfare. Thus the sub-goal is concerned both with increased production and an improved standard of living.

The achievement of this sub-goal will contribute to the realization of the major goal by bringing about increases in income for a significant number of rural people, by providing technological packages useable by people outside the area of focus, and by improving the ability of the Ministry of Agriculture to serve the needs of the sector.

B. Measurements of Sub-goal Achievement: The sub-goal will be considered met if the growth rates for 1971-73/1982, and targets for 1982 are met for agricultural production -yields and land in production. These agricultural production rates and targets are contained in Tables 1, 2, and 3.

1. TABLE 1. Current and Target Production and Growth Rates for Principal Crops and Livestock of the Valleys and Lowlands

<u>Crop</u> <sup>a/</sup>	<u>1971-73 Production</u>	<u>1982 Production</u>	<u>Annual Rates of Growth</u>	
	Metric tons	Metric tons	1971-73/1982	1963-65/71-73
Wheat	52,563	108,171	7.48	.80
Corn	280,307	428,870	4.34	.20
Barley	69,400	94,303	3.12	2.63
Rice	73,824	123,131	5.24	5.72
Soybeans	1,933	27,709	30.51	-
Peanuts	7,560	15,748	7.61	2.61
Potatoes	710,000	1,243,346	5.76	3.00
Cassava	240,333	379,283	4.67	6.74
Vegetables <sup>b/</sup>	191,533 <sup>c/</sup>	236,960	2.15	1.88
Pork	18,000	29,018	4.89	1.48
Milk	114,000	147,615	2.62	-
Forages <sup>d/</sup>	-	-	-	-
Poultry <sup>d/</sup>	-	-	-	-

Source: MACAG, Office of Economics and Statistics.

<sup>a/</sup> These crops are produced principally in the small farm sector (data do not exist for determining the exact distribution) in the regions of focus except for the oilseeds. The oilseeds have a significant potential for being produced in the small farm sector and targets are for that sector.

<sup>b/</sup> Sweet corn, onions, tomatoes, and green peas.

<sup>c/</sup> 1970-72 data.

<sup>d/</sup> Data are not available.

2. TABLE 2. Current and Target Yields and Growth Rates for Principal Crops and Livestock of the Valleys and Lowlands

<u>Crop</u>	<u>1971-73 Yields</u> Kg./Hectare	<u>1982 Yields</u> Kg./Hectare	<u>Annual Rates of Growth</u>	
			1971-73/1982	1963-65/1971-73
Wheat	821	1,544	6.52	3.95
Corn	1,280	1,788	3.40	.10
Barley	687	934	3.12	.37
Rice	1,643	1,643	0	.94
Soybeans	1,611	1,611	0	-
Peanuts	1,204	1,204	0	.86
Potatoes	6,567	11,500	5.76	3.53
Cassava	13,109	13,109	0	2.02
Vegetables	a/ 3,563 b/	3,563	0	1.33
Pork	32.4 c/	44.4 c/	3.20	-
Milk	7.8 c/	10.1 c/	2.62	-
Forages	d/ -	-	-	-
Poultry	d/ -	-	-	-

Source: MACAG, Office of Economics and Statistics.

a/ Sweet corn, onions, tomatoes, green peas.

b/ 1970-72 data.

c/ Kg. per animal-dressed weight for pork.

d/ Data are not available.

3. TABLE 3. Current and Target Land Area (or Animal Numbers) and Growth Rates for Principal Crops and Livestock of the Valleys and Lowlands

Crop	1971-73 Land Area	1982 Land Area	Annual Rates of Growth	
	Hectares	Hectares	1971-73/1982	1963-65/71-73
Wheat	64,059	70,059	.90	4.55
Corn	219,060	239,860	.91	.10
Barley	100,967	100,967	0	2.24
Rice	44,943	74,943	5.25	4.279
Soybeans	1,200	17,200	30.51	-
Peanuts	6,280	13,080	7.61	3.54
Potatoes	108,117	108,117	0	.52
Cassava	18,333	28,933	4.67	4.62
Vegetables <sup>a/</sup>	53,750 <sup>b/</sup>	66,506	2.15	.54
Pork	555,555 <sup>c/</sup>	653,555	1.64	-
Milk	40,042 <sup>c/</sup>	40,042	0	-
Forages <sup>d/</sup>	-	-	-	-
Poultry <sup>d/</sup>	-	-	-	-

<sup>a/</sup> Sweet corn, onions, tomatoes, green peas.

<sup>b/</sup> 1970-72 data

<sup>c/</sup> Animals.

The economic rationale for selection of these targets as measures of goal achievement is as follows. Arable land for crop and livestock production in the inter-mountain valleys is fully utilized. Thus, increases in production in that region must come from adoption of technologies which save the scarce land and raise its productivity, i.e., chemical-biological innovations. For this reason, we assume that land area devoted to crops in the central valleys does not increase between 1971-73/1982. Further, although yields of only two crops produced principally in the valleys, (wheat and potatoes), have increased substantially during the last decade, we assume that yields of such crops in the valleys can increase to levels realized in neighboring countries or to those achieved in full-size field demonstrations in Bolivia.

In contrast land is relatively abundant in the new lands areas near Santa Cruz. Since labor is the limiting factor, technical changes should save the scarce labor and

raise its productivity, through mechanical innovations that increase the amount of land in production. Thus, we assume all increases in production in the low lands crops are due to increases in land in production, and that yields in the low lands will remain constant between 1971-73/1982. The increased land area in crop production is a proxy measure of increased labor productivity if we assume that additional land is brought into production by mechanical innovations. (Direct benchmark data do not exist on labor productivity in the low lands).

Expected increases in the population of new land areas plus recent trends such as increased immigration into new lands and increased utilization of new crop lands in the Santa Cruz area were used to calculate expected increases in crop land. The expected changes in yields in the valleys and in crop land in the low lands are utilized to calculate production targets in 1982 (Table 1). When crops are grown in both regions, yields data represents the weighted average yields between the two regions.

Data on pork and milk yields, and on production of these products were used to infer respective animal numbers.

4. Target group impact by the end of the three year disbursement period for the Agricultural Sector Loan I and by the end of the T.A. Project:

	<u>Present</u> <u>Estimates/year</u>	<u>End of Third year</u> <u>Loan Project</u>	<u>End of T.A.</u> <u>Project (1982)</u>
Gross off-farm sales	\$250	\$600	\$1,000
Per family income	225	350	580
Per capita income	45	70	116

The above represents average per family sales and income increases for the 30,000 and 120,000 beneficiaries expected by the end of the loan project and technical assistance project respectively.

- C. Assumptions for Achieving Sub-goal targets: Achievement of the sub-goal targets rest on the following assumptions:

1. The GOB will provide essential public services (especially in research and extension) for supporting increased production of agricultural products.
2. Farmers will be responsive to such public services programs and adopt more modern techniques.
3. The GOB policy matrix will encourage and stimulate investment in agriculture, encouraging the small farm sector to increase production.

4. There will be no major downturn in economic conditions and favorable cost-price relations for agricultural products will prevail.
5. That adequate markets exist, and that increased public investment in market infrastructure occurs so that market efficiency is maintained and improved in the face of increased agricultural production.
6. That climatic conditions will be favorable.
7. That farmers in target areas will have access to adequate credit.

### III. Statement of Project Purpose

#### A. The project has three purposes:

1. To develop improved technologies and more modern management practices germane to the small farm sector of the intermountain valleys of Central Bolivia and the newly developing agricultural areas of the lowlands of Eastern Bolivia near Santa Cruz (Technology Development).
2. To extend to small farm operators in the regions of interest the improved technologies and more modern production practices (Technology Extension).
3. To develop the capability of MACAG's Offices of Economics and Statistics, Marketing, and Planning to generate basic data, analyze problems and opportunities, formulate and implement coordinated policies and programs for the sector, including improved organization and administration of public services (Sectorial Management).

#### B. Conditions Expected at the End of the Project

##### 1. Purpose 1 - (Technology Development)

- a. A set of improved technologies that resolve basic production problems in the target areas and specific recommendations for adopting these at the farm level in target areas.
- b. Three regional agricultural research stations located in the target areas staffed with ten trained professionals and planning, executing, and managing research programs relevant to specific production problems.
- c. MACAG's Division of Research staffed with four trained professionals, and identifying critical problem areas requiring research as evidenced by the number and types of problems proposed for research.
- d. Two local universities involved in researching critical regional production problems, and offering expanded agri-

cultural programs relevant to requirements of the target areas.

2. Purpose 2 - (Technology Extension)

- a. Central MACAG Department of Extension staffed with four trained professionals developing, planning, and managing improved extension programs.
- b. Three extension centers located in the target areas staffed with 40 additional trained agents and ten subject matter specialists planning, executing, and managing regional extension programs.
- c. Extension agents conducting at least three adult education programs per year for farmers in each of the target areas.
- d. MACAG Extension Division extends results of research studies directly to at least 20% of farmers in target areas as follows:

<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>Total</u>
2,000	3,500	4,500	5,500	6,500	8,500	9,500	40,000

- e. Recommended technologies actually accepted through direct and indirect channels by at least 60% of the farmers in target areas as follows:

<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>Total</u>
6,000	10,500	13,500	16,500	19,500	25,500	28,500	120,000

- f. Annual sales of fertilizers to small farmers in target areas increase by 300% by 1982 which represents about 22 percent increase per year.
- g. Distribution of improved seed by MACAG among small farmers increases by 300% by 1982, which represents about 22 percent increase per year.
- h. Purchase of modern agricultural equipment by small farmers in target areas increase by 100% by 1982 or about 10.4 percent per year.

3. Purpose 3 - (Sectorial Management)

- a. MACAG's Office of Economics and Statistics with four trained professionals collecting, analyzing, and publishing basic socio-economic and production data on a continuing basis.

- b. MACAG's Office of Marketing with an established and operating Market Information Service staffed with four trained professionals collecting, analyzing, and publishing basic marketing data relevant to farmers in target areas on a continuing basis.
- c. A strengthened MACAG Planning Office staffed with at least five trained professionals carrying out planning, programming, project analyses, and special studies at a competence level meeting professional standards as attested by professional agricultural planners.
- d. The above offices operating in concert to develop and implement rational agricultural policies leading to increased food production by farmers in target areas.
- e. Office of Economics and Statistics publishing timely data series on agricultural production, crop forecasts and and outlooks, and consumption of agricultural products.
- f. The MACAG Marketing Office publishing annually at least four series on prices and marketings of agricultural products and inputs.

3. Basic Assumptions about Achievement of Purpose

1. Purpose 1 - (Technology Development)

- a. That GOB will make available adequate funds to hire and retain qualified research staff, and to provide the necessary research budget.

2. Purpose 2 - (Technology Extension)

- a. Small farmers in target areas will be responsive to economic incentives and adopt technological changes.
- b. Adequate credit will be available to target group to acquire modern inputs (fertilizers, seed, equipment).
- c. An effective marketing system to allow farmers to dispose of increased production will be created.
- d. GOB will make available adequate funds to retain and support the field efforts of the extension agents.

3. Purpose 3 - (Sectorial Management)

- a. That GOB will make available adequate funds to hire and retain qualified staff for the offices of Planning, Economics and Statistics, and Marketing and to provide the necessary operating budget.



<u>Outputs</u>	<u>FY 1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>Total</u>
g. Students trained by advisors in formal University courses in agronomy, horticulture, plant and animal science, and agricultural economics	240	240	240	240	240	240	240	1,680

TABLE 5. Purpose 2 - Technology Extension - Project Outputs and Magnitudes during the Life of the Project

<u>Outputs</u>	<u>FY 1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>Total</u>
a. Field demonstrations on variety trials, improved management practices, and other research results	8	8	8	8	8	8	8	56
b. Short courses for campesinos on research results, improved management practices, use of credit, farm management techniques, fertilizers, equipment, etc.	30	30	30	30	30	30	30	210
c. Research and extension bulletins distributed in target areas	48	48	48	48	48	48	48	360
d. Department of Extension personnel trained:								
1) M.S.	-	2	2	2	2	2	2	12
2) PhD	-	-	-	-	-	2	-	2
3) In-service training	-	40	40	40	40	40	40	-
4) Short-term courses	-	20	20	20	20	20	20	120

**TABLE 6. Purpose 3 - Sectorial Management - Project Outputs and Magnitudes during Life of Project**

<u>Outputs</u>	<u>Magnitude of Outputs</u>							<u>Total</u>
	<u>FY 1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>	
a. Offices of Planning, Marketing, and Economics and Statistics personnel trained in Agricultural Economics and Statistics, Marketing and Planning								
1) M.S.	-	1	2	2	2	2	2	11
2) PhD	-	1	2	-	-	2	-	4
3) In-service training	-	30	30	30	30	30	30	
4) Short-term courses	-	15	15	15	15	15	15	90
b. Manuals and procedures developed to guide the operation of MACAG's Offices of Economics and Statistics, Marketing, and Planning	1	1	-	-	-	-	-	2
c. A special study on the organization and administration of public services for agriculture	1	-	-	-	-	-	-	1
d. An internal coordinating mechanism to increase effectiveness of above MACAG offices	1	-	-	-	-	-	-	1



<u>Full Time Adv.</u>	<u>FY 1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>Total Cost</u>
13. Ag. Economist Data (LP)	12	12	12	12	12	-	-	201.0
14. Ag. Economist Marketing (LP)	12	12	12	12	12	12	12	281.4
15. Chief of Party (LP)	<u>12</u>	<u>12</u>	<u>12</u>	<u>12</u>	<u>12</u>	<u>12</u>	<u>12</u>	<u>282.3</u>
TOTAL	180	180	174	168	156	108	60	\$3,438.0

The average basic cost per technician including salaries, post differential, personal benefits and overhead is estimated at \$40,200/year.

Short-term Advisors (\$000)

Short-term advisors in the areas of research, animal science, plant science, economics, extension, and administrative reform will be loan-funded under the Agriculture Sector Loan I. The following short-term advisors at an average monthly cost of \$5 each are contemplated:

a. 3 m/m in FY 1975	\$ 15
b. 32 m/m in FY 1976	160
c. 25 m/m in FY 1977	125
d. 13 m/m in FY 1978	<u>65</u>
Total	\$365

2. Participant Training (\$000)

- a. All new Participants will be loan-funded under the Agriculture Sector Loan I which provides \$1.0 million for this purpose. (See Logical Framework and IRR for above loan).
- b. This Project provides \$60 in FY 1975 to cover extensions of MACAG participants presently in training status.

3. Commodities (\$000)

Vehicles, office equipment and supplies for contractor support:

FY 1975	\$ 45
FY 1976	20
Total	<u>\$ 65</u>

It is estimated that additional funds which may be required under this component will be loan-funded.

4. Other Costs (\$000)

The estimated additional grant-funding to cover the project's other costs is shown below:

<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>Total</u>
550	190	241	204	260	221	413	2,079

The above components include international travel and per diem, excess baggage, acquisition and transportation of HHE, transportation of POV local travel and per diem, housing and education allowances, local help (\$50/year) such as secretaries and administrative assistance, etc. to support the contract technicians and about \$85 to finance in FY 1975 an ADP agricultural study currently being undertaken by Utah State University.

B. GOB Contribution (\$000)

The GOB contribution related to both this Project and the complementary Agriculture Sector Loan I is estimate as follows:

<u>Component</u>	<u>GOB Contribution T.A. Project (7 years)</u>	<u>GOB Contribution Loan Project (3 years)</u>	<u>Total GOB Contribution</u>
<u>1. Technology Development and Extension</u>			
<u>a. Agricultural Research</u>			
1) Salaries and operating expenses	3,000	1,000	4,000
2) Participant Training	-	130	130
<u>b. Agricultural Extension</u>			
1) Salaries and operating expenses	3,000	600	3,600
2) Participant training	-	20	20
<u>c. Seed Improvement</u>			
1) Salaries and operating expenses	610	200	810

<u>Component</u>	<u>GOB Contribution T.A. Project (7 years)</u>	<u>GOB Contribution Loan Project (3 years)</u>	<u>Total GOB Contribution</u>
2) Seed Multi- plication Fund	50	400	450
<u>d. Campesino Training</u>			
1) Salaries and operating ex- penses	730	300	1,030
2) Participant training	-	20	20
<u>e. Marketing Development</u>			
1) Feasibility studies	-	100	100
<u>f. Agricultural Credit (Directed &amp; Cooperative)</u>			
1) Loan Capital	-	800	800
2) In-kind credit	-	700	700
3) Salaries and operating ex- penses	-	800	800
4) Participant training	-	20	20
<u>2. Sector Management</u>			
<u>a. Ag. Data and Marketing Information</u>			
1) Salaries and operating ex- penses	1,100	500	1,600
2) Participant training	-	20	20
<u>b. Policy &amp; Planning Development</u>			
1) Salaries and operating ex- penses	840	300	1,140

<u>Component</u>	<u>GOB Contribution T.A. Project (7 years)</u>	<u>GOB Contribution Loan Project (3 years)</u>	<u>Total GOB Contribution</u>
2) Participant Training	-	40	40
3. <u>Ag. Education (University)</u>			
1) Salaries and operating expenses	-	50	50
TOTAL	9,330	6,000	15,330

Assuming that present MACAG budget would have <sup>remained</sup> fairly constant over the life of the project, the above expected GOB contribution represents a 53 percent increase (about \$3.3 million) over current GOB/MACAG allocations directly related to the activities described in this PROP. The \$6.0 million GOB loan-related contribution is also incremental.

C. Other Donor Inputs

See page 28 for discussion of possible participation by UNDP and/or IDB.

D. Summary of Project Contributions

	<u>\$(000)</u>	<u>Percent (%)</u>	<u>Percent (%)</u>
USAID *			
Grants	5,642	17.4	
Loan (Total Ag. Sector Loan I)	11,400	35.2	52.6
GOB			
Grant-related	9,330	28.8	
Loan-related	6,000	18.6	47.4
TOTAL	32,372	100.00	100.0

*What does this consist of*

\* As presently designed, loan-funded technical assistance related activities equal \$1,565 million, or 35% of the total technical assistance activities being financed by both the proposed loan and grant projects for the three year loan disbursement period. (The proposed grant assistance over the first three years totals \$2,895.)

E. Assumptions for Providing Inputs

- That AID, GOB, and other donors resources will be provided as proposed.
- That qualified Bolivians will be available for training.
- That qualified experts will be available on call.
- That additional funds from AID or other sources, to finance short-term advisors, participant training, and commodities will be made available on a timely basis after the termination of the Agriculture Sector Loan I disbursement period. These projects inputs will be loan-financed during the first three years of the project.

## VI. Rationale

- A. Problems in the Sector: 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 agricultural sector consists of about 3.8 million people or almost 70% of the population. The majority of rural people (approximately 85%) are concentrated in the Altiplano and intermountain valleys generally under serious minifundia conditions. The balance are located in the extensive land areas of the Oriente, mainly in the Santa Cruz region. Over 95% of the rural population belong to the small farm sub-sector with average farm incomes appearing to be among the lowest in Latin America. As a result of the Agrarian Reform activities of the mid-1950's, almost without exception rural dwellers of the Altiplano and Valleys belong to the small farm sub-sector. Additionally, the large majority (at very least, two thirds) of the rural people of the Oriente also belong to the small farm sub-sector, although their farm output and incomes tend to be higher than in the Altiplano and Valleys.

The production technologies in the small farm sub-sector can generally be described as very traditional. Most inputs are provided by the family including labor, seed saved from previous harvests, animal dung for fertilizer, etc. A large share of production is for subsistence consumption with the balance being bartered or sold for consumption in the urban sector. The land base is extremely limited in the highlands with increasingly serious minifundia problems and low and declining labor productivity. An inefficient "slash and burn" cycle dominates most small farm agriculture in the Oriente. The general backwardness of the small farm sector is complicated by ethnic, cultural and language constraints as a large majority of rural people, especially in the Altiplano and Valleys, are native Indians socially apart from the European population dominating the modern sector. Factor and product markets serving the small farm sector are poorly developed, especially factor markets in the highlands. Finally, public services to the farmers are skimpy, at best.

In contrast, there is a small but growing modern agriculture sector in the Santa Cruz area. The principal crops produced

in this sector are cotton, cane, and to a lesser extent, rice. This sector is mechanized, uses more modern factors of production, and factor and product markets are much better developed than in the small farm sector.

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

1. Inadequate research and extension activities necessary to develop and deliver a technological base to support development of an increasingly productive agricultural sector;
2. Absence of a sufficient number of well trained scientific and professional personnel in public agencies serving the sector;
3. Low skill levels in the rural labor force which limit its capacity for participating in the modernization process;
4. Limited availability and high cost of modern production inputs;
5. 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
6. 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 a limited but modern large scale agriculture 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 this small farm sector.

However, there are several positive factors (among others) highlighted in the Sector Assessment:

1. An emerging class of campesino producers with entrepreneurial talent who feed themselves and almost 1/3 of the urban population;

2. The responsiveness of farmers in all regions within the limits of their resource endowment to economic incentives as signaled by market forces;
3. A strong GOB interest in improving university programs related to agriculture;
4. A satisfying record of return to prior basic and adaptive research (when well staffed and financed) involving Bolivian scientists in diverse regions of the country for a limited number of selected crops;
5. Strong world demand for food and fiber products of all regions of Bolivia; and
6. A genuine movement within the GOB to consolidate and improve public sector services for agricultural and rural development.

B. Project Focus: This Technical Assistance Project principally addresses constraints (1) and (6) above and also constraints (2) and (3) as these relate to the two principal constraints. The latter two constraints are initially addressed in the project to facilitate attacking constraints (1) and (6), and not as primary project focus. However, it is envisioned that more emphasis will be placed on constraints (2) and (3) as the Mission's overall rural development program unfolds in future years. It should be noted, that the Complementary Agriculture Sector Loan I addresses all the major constraints listed under Section VI, A, above.

Given the scope of the sector's problems, we have determined that in order for the program to be manageable, initial activity should be focused on limited areas and selected crops. We should expect, however, that the progress made and lessons learned would be applied elsewhere. The initial focus is described below.

Geographic Area: With the exception of the sector management component which is national in scope, the area of concentration of the proposed project will be the intermountain valleys of Central Bolivia and the contiguous newly developing agricultural areas in the lowlands of the Santa Cruz area. 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 extreme minifundia problems and a stagnant technology. Almost 30% of the rural population live 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 relatively overpopulated valley and Altiplano regions;
3. Many of the principal crops produced or capable of production in these regions are critical to improved nutrition of both urban and rural poor, while others are important in saving and earning foreign exchange;
4. These areas are a microcosm of the larger agricultural and rural development problems in Bolivia; and the experience gained under the proposed Project can be applied in 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; and
6. Both regions have major universities with agricultural faculties.

Target Group: The proposed Project's target group is the estimated 200,000 rural families in the small farm sector of the central Bolivian valleys and the developing areas of the lowlands. This group represents about 35% of the total small farmer population in Bolivia.

Of this group, 60,000 rural families are expected to adopt new technologies as a result of direct contacts with extension agents and another 60,000 as a result of demonstration effects and contacts between farmers in target areas.

Crop production, based on traditional production techniques, and largely for subsistence, is the principal activity of this group. Family labor is used intensively in land preparation, seeding, insect and pest control, harvesting and marketing. The level of investment in fixed capital is low. Common characteristics of farming practices in the area include primitive plows and digging tools, and the use of native varieties of seed and livestock breeds long indigenous to be continued. Crop yields and, consequently, resource productivity and farm incomes generally are low by Latin American standards.

While the obstacles to be overcome are formidable, there are reasons to believe that an effort to develop an improved technology and make available production inputs would lead to increased productivity and higher incomes to the target group. These reasons are: (i) a small portion of farmers have adopted improved varieties of seed; (ii) the benefits of fertilizer use and irrigation are beginning to be more widely recognized; and (iii) modern technologies generally have been proven to be adaptable to the resource base of the target farmer.

Within the target group, the proposed Project is expected to reach those marginally commercial family farm operators cultivating up to 10 hectares in the valleys and up to 25 hectares in the lowlands. Numerically, approximately 30,000 farm families are expected to be directly involved in the Project activities by the end of the three year disbursement period of the proposed Sector Loan. Thereafter, it is anticipated that the number of such families directly benefitting from the Project will increase to about 120,000 families by 1982 as shown under section III.B.2.e. of this PROP.

Commodity Focus: Emphasis will be given to commodities for domestic consumption that: (1) are currently or potentially important farm enterprises for the target farmer group, (2) contribute to satisfying the nutritional needs of both rural and urban consumers, and (3) offer significant potential for increasing farm incomes in rural areas. Four classes of commodities meet these criteria: cereals, potatoes and vegetables, oilseeds, and animal proteins. More specifically, primary attention will be given to methods of increasing production of corn, wheat, rice, soybeans, and peanuts, basic vegetable crops, and/or to management practices to increase the output of dairy products, poultry, and pork.

C. Relationship of Project to USAID and GOB Strategy

Recognizing that the above constraints are interrelated, the GOB's emerging long-run strategy for agricultural development has four principal components. The components are: First, 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 through increased utilization of modern production inputs; Second, 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 program providing more relevant agricultural information to larger numbers of rural people; Third, 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 Fourth, to improve the public services directed toward agriculture through reorganization and strengthening of government programs which affect rural people.

USAID/Bolivia agrees that the constraints identified in the Sector Assessment are highly interrelated (see the Sector Assessment, pp. 278-279), and thus is proposing a multifaceted but integrated technical assistance and loan program designed to address several bottlenecks simultaneously. This technical assistance project, along with the complementary proposed Agriculture Sector Loan I is directed at varying levels to all components of the GOB strategy, and to three of the four sets of priority development problems identified in both the DAP and the Sector Assessment as being of particular concern to the USAID/Bolivia program: (a) Sector Management, (b) Key Crops Production and Marketing; and (c) Agricultural Education.

The set of activities undertaken under this Project represents those programs which, in the judgement of the MACAG and Mission, can have a significant impact on resolving interrelated constraints noted above by effectively utilizing planned inputs. The phasing of future loans and grants to address additional problem areas such as small farmer organizations and farm to market access is discussed in the Sector Assessment (pp. 289-302). Inasmuch as this Project and the proposed Agriculture Sector Loan I are mutually supportive, it is assumed that these two elements of the Mission assistance program will go forward together.

## VII. Course of Action

### A. Project Structure and Organization

1. General Description: This technical assistance Project is designed to strengthen and improve: i) agricultural research; ii) agricultural extension; and iii) sector management, with the MACAG as the executing agency. One facet of the project will be to assist the MACAG to decentralize research and extension services and significantly expand them for the small farm sector in two principal geographic regions: the central valleys, and the lowlands near Santa Cruz. This will involve the creation of three strong departamental (geographical) units in the Cochabamba Valley, the Chuquisaca Valley (Sucre), and the Santa Cruz area, organized administratively into "Regional Service Centers". This project will assist such centers in: i) developing for the small farm sector improved technologies and related management practices and testing their economic viability (Technology Development); and ii) extending new technology packages to innovative farmers in the small farm sector (Technology Extension). Research capabilities of agricultural faculties of two local universities (San Simón at Cochabamba and Gabriel René Moreno at Santa Cruz) will be drawn upon and coordinated with research being carried out by the Service Centers. At the same time, the adult education activities of various semi-autonomous public groups and some private groups, such as the National Community Development Service (NCDS), the National Colonization Institute (INC), and United Churches, will be coordinated with related extension activities of the Service Centers. It is expected that research activities in each of the three geographic areas will be increased by four to six times, and the number of extension agents nearly doubled. In addition, an in-service training program for technical workers in research and extension agents, a participant training program for professionals (M.S. and Ph.D.'s), and assistance in teaching courses in the Universities of San Simón and Gabriel René Moreno critical to the research and extension problems in each region, and in advising students in their projects germane to regional agricultural problems are also part of this project.

The second major facet of this Project is to improve the capability of the MACAG to conceptualize, plan, and manage public services for the agricultural and rural sectors (Sectorial Management). This project will assist the MACAG in establishing: i) a Marketing Information Service which

collects and disseminates market information, and publishes price and quantum indexes on a regular basis; (ii) a Production Data Service with regular series on production and factor use; and (iii) a Sector Planning and Socio-Economic Analysis Service. An integral part of the development of a data base will be the completion of the rural production and urban consumption surveys carried out by MINAG/USU, in the Fall of 1972. The Project will assist in providing improved in-service training to technical personnel of the Offices of Marketing, Economics and Statistics, and Planning of MACAG, and participant training leading to the M.S. and Ph.D. degrees for professional personnel of these offices. Another aspect of the Project will be to study the organization of administration of public services for the sector and suggest needed reforms, especially in the MACAG and related institutions.

The Project is directly supported by a proposed loan (Agriculture Sector Loan I). The loan will provide the necessary physical facilities to support the Service Centers, and the research stations and extension agents with necessary equipment. In addition, it will help in developing an integrated delivery system for newly developed technological packages, by providing: a) a credit program for the small farm sub-sector, b) increased availability of modern factors of production, c) assistance to co-operatives, d) an expanded seed program; and e) equipment for strengthening and expanding an adult education program in each of the service centers. The loan will provide necessary data processing and other equipment to the Offices of Planning, Marketing, and Economics and Statistics to permit these to develop their services. Finally, the loan will provide funding of short-term advisors required by the Project and for participant training ( M.S. and Ph.Ds.) in the MACAG and the Universities of San Simón and Gabriel René Moreno. (With the exception of grant funds in FY 1975 to cover participants already in training status, it is contemplated that future participants will be loan financed).

2. Project Components: The proposed technical assistance Project builds on the positive factors and attacks the principal constraints set forth in the Rationale section. First, seven physical and biological scientists will advise the MACAG's field research and extension staff in the lowlands near Santa Cruz, and in the Cochabamba and Chuquisaca Valleys. (It is contemplated that four advisors will reside in Santa Cruz, and three in Cochabamba). They will advise on researching critical production problems, and on extending research results. An agricultural economist trained in production and resource use will be stationed in Cochabamba, but will help in determining the economic viability of research results in all three geographic regions, and in developing recommendations

for "sets" of new technology and management practices. It has been tentatively decided that all eight advisors will spend 1/2 time on research, and 1/3 time on extension. In addition, four of the eight will spend 1/6 time on adult education, and the other four will spend 1/6 time on teaching classes at the Universities of San Simón and Gabriel René Moreno advising students on thesis projects related to problems related to the key crops and collaborating with University staff on joint research projects.

The efforts of these eight advisors will be supported in La Paz by a research advisor and an extension advisor who will help the central administration of the Division of Research and Department of Extension to improve planning, management, and in-service training especially as they relate to the geographic regions. In addition, a resettlement advisor will help in coordinating extension activities as they relate to colonists in the new land areas north of Santa Cruz. Finally, a Chief of Party will spend 5/6 of his time on research and extension activities. This component is principally focused on helping improve the technology base in the small farm sector by improving research and extension in the three geographic regions.

The second component will be directed at two basic problems within the MACAG: poorly organized public services, and the need to improve sector management. Three agricultural economists will be stationed at the MACAG headquarters in La Paz to provide technical assistance in solving these problems. One will be involved mainly in helping the office of Economic Studies and Statistics to up-grade the quality and extent of data on production and factor use and other socio-economic phenomena in rural areas and to develop a data service leading to a census of agriculture. The second economist will advise the Office of Planning on development of agricultural plans and project analyses and, in coordination with the Office of Economics and Statistics, will advise on special socio-economic studies for policy formulation. The third economist will assist the Office of Marketing to develop a market reporting service. While this component will have a global focus in the sector, priority will be given to critical problems in the central Valleys and Oriente.

Another agricultural economist, stationed at USU campus, will direct the evaluation and analysis of data from the 1972 Rural-Urban Surveys during FY 1975. Selected MACAG professionals from the Office of Planning, and Economics and Statistics will participate in this process, which will result in estimates of agricultural production, consumption of agricul-

tural products, domestic disappearance of agricultural products, and supply and demand projections.

In addition, a loan funded TDY team comprised of a public administration expert, an agricultural scientist, and an agricultural economist will study the organization and administration of all public services for agriculture. The recommendations from their study will provide a basis for reforms necessary for more efficient public program for agriculture.

Finally,<sup>a</sup> participant training loan funded program will be implemented to train physical, biological and social scientists at both the Master's and Ph.D. level to occupy positions in the Department of Extension, Division of Research, Universities of San Simón and Gabriel René Moreno, and Offices of Planning, Marketing, and Economic Studies and Statistics. This component is designed to permit the phase-out of contract advisors toward the end of the period (See Table 8). At the same time contract advisors will help in developing and providing in-service training for counterpart in the same agencies.

In order to meet possible budgetary restrictions, before any proposals are sought for the provision of the technical assistance set forth in this PROP, we shall attempt to obtain the agreement of the UNDP and/or the IDB to provide some of the advisors listed above. Our thought would be that because of the interest of these organizations in livestock they might be willing to supply the two livestock advisors. We also believe that one of <sup>these</sup> organizations might be able to supply the advisor in agriculture machinery and irrigation. In addition, if the IDB in fact has decided to prepare and support a national research and extension program in the near future, it might be possible to use members of that program for the positions of research and extension advisors under our program. Of course, given the importance of these positions to the overall effort; if the other organizations were not able to provide the people required on a timely basis, we should request the contractor funded under this PROP to do so.

3. Commodities: Several classes of commodities will be required to support the activities of advisors. These include: (1) vehicles and related equipment; (2) radio communication equipment for linking advisors in Santa Cruz, Cochabamba, and Sucre with La Paz; (3) office equipment in each of the three regions; (4) equipment and supplies for research activities

including experiment station tractors and attachments, seeds, fertilizers, pesticides, etc.; and (5) office supplies.

4. Commitments to be Sought from the GOB: As part of USAID's negotiations with the GOB for the proposed Loan and other sectoral programs, the following commitments will be obtained:
- a. An increase in salaries for professional and technical personnel in the MACAG to levels comparable with other public agencies by December 31, 1975. Salaries of senior scientists (those with Masters and Ph.D.) would be increased in phases to levels substantially competitive with the international job market by December 31, 1977;
  - b. An increase in the agricultural sector budget to levels adequate to provide for necessary salary increases for existing personnel, hiring new personnel (e.g. extension agents and research staff), A.I.D. program counterpart requirements, and program operations beyond the termination of A.I.D. assistance;
  - c. A reorganization and strengthening of the sector's public services designed to eliminate duplicative efforts, improve operational efficiency, and insure that a larger allocation of the sector's budget goes to field activities of direct benefit to small farmers. The basic elements of the reorganization would involve decentralization of operational elements, relocation of personnel to field offices, and consolidation of central level sectoral planning activities;
  - d. Agreement to analyze on a continuing basis the various policies (pricing, taxation) which affect agriculture, and, where appropriate, to take the necessary policy decisions to provide greater incentives for agricultural production.

Agreements in principle (including budget projections through 1980) to the above commitments would be embodied in the T.A. Agreement. Detailed plans and schedules to carry out the commitments would be required as conditions precedent and an annual review of progress would be built into the implementation of the Project.

- B. Timing of Technical Assistance: The timing and staffing patterns of technical assistance are illustrated in Table 7. Assuming PROApproval and allocation of funds during the second quarter of FY 1975, a technical assistance host country contract (both

**TABLE 7 - Timing and Staffing Pattern of  
Contract Advisors**

	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>
	<u>(man-months)</u>							
<b>A. Full-time advisors- Grant-funded</b>								
1. Agronomist Oil seeds (SC) -		12	12	12	12	12	12	-
2. Agronomist - Crops - SC	3	12	12	12	12	12	12	3
3. Livestock Spe- cialist - Swine & Beef (SC)3		12	12	12	12	-	-	-
4. Ag. Engineer Machinery & Irrigation (SC) -		12	12	12	12	12	12	12
5. Agronomist - Cereals (CB) -		12	12	12	12	12	12	-
6. Agronomist - Crops - CB	3	12	12	12	12	12	12	3
7. Ag. Economist Production & Resources (CB) -		12	12	12	12	12	-	-
8. Livestock Spe- cialist - Poultry & Dairy (CB) -		12	12	12	12	12	12	-
9. Research Adv. (LP)	3	12	12	12	12	9	-	-
10. Extension Adv. (LP)	3	12	12	12	12	9	-	-
11. Resettlement Adv. (SC)	6	12	12	0	-	-	-	-
12. Ag. Economist Planning (LP)		12	12	12	12	12	12	12

TABLE 7 - (Cont.)

	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u> <u>(man-months)</u>	<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>
13. Ag. Economist Data (LP)	3	12	12	12	12	9	-	-
14. Ag. Economist Marketing (LP)	-	12	12	12	12	12	12	12
15. Chief of Party (LP)	6	12	12	12	12	12	12	6
B. TDY Advisors - Loan-funded								
1. Research Adv.	-	1	1	1	3	-	-	-
2. Animal Science	-	6	6	3	-	-	-	-
3. Plant Science	1	4	4	2	-	-	-	-
4. Economics	-	2	2	1	-	-	-	-
5. Extension	2	10	12	6	-	-	-	-
6. Ad. Reform	-	9	-	-	-	-	-	-

loan and grant funded) is expected to be negotiated and signed during the third quarter of FY 1975, and the Chief of Party is expected to arrive during the fourth quarter of FY 1975 to make administrative arrangements for offices, housing, etc. for a small team of advisors who will arrive shortly after the Chief of Party and for the rest of the full time advisors who will arrive about July 1, 1975. (A separate contract will be negotiated with Utah State University to assist and advise MACAG in reducing and analyzing data from the 1972 survey, and publishing results).

Between April 1 and July 1, the Chief of Party, the Research Advisor, the Extension Advisor, two agronomists, and the Agricultural Economist concerned with data system will develop the plan of work for the following two year period. This will include; (i) identification of counterparts; (ii) a research plan concentrating on the most serious production problems in the region; (iii) a plan for assisting the extension service to improve its delivery system in the region of focus; (iv) a plan for in-service training of technical workers in research and extension, and MACAG's Offices of Planning, Marketing, and Economics and Statistics; (v) a model for evaluating the economics of research results and developing recommended technology packages; (vi) a plan for developing the data, planning and market information services of the MACAG; and (vii) a plan for assisting with adult education and integrating the Universities of San Simón and Gabriel René Moreno into research activities on a limited basis. (Classes taught at these Universities plus intensive courses taught by TDY advisors for the MACAG and University students will provide a basis for selecting individuals for participant training). Also, this team will develop a benchmark with which to measure progress in each of the work areas, and a method for self-evaluation of advisor efforts.

Shortly after July 1, 1975 the rest of the team will arrive and begin to carry out the job descriptions developed by the Chief of Party, the Project Manager and GOB Counterparts. Contract advisors will be replaced as appropriate by Bolivians who have been trained to the M.S. or Ph.D. level (See Table 8). Such replacements will, however, be preceded by an overlapping period of time during which the newly trained participant will work alongside the contract advisor in order to get on-the-job experience. In some cases, the contract advisor will be replaced by two trained participants. Further, many of the participants trained at the M.S. level will be employed in other positions in the Division of Research and Extension and Universities, not directly related to Contract staffing patterns.



TABLE 8 - (Cont.)

	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>
10. Extension Advisor (LP)	[Redacted]										
	Ph.D. Ext. Education & Programs										
11. Resettlement Advisor (SC)	[Redacted]										
	M.S. Rural Sociology										
12. Agricultural Economist - Planning (LP)	[Redacted]										
	Ph.D. Int. Devel. & Plann.										
13. Agricultural Economist - Data (LP)	[Redacted]										
	M.S. Data Systems & Statistics										
14. Agricultural Economist - Marketing (LP)	[Redacted]										
	M.S. Marketing										
15. Chief of Party (LP)	[Redacted]										
Code:	Contract Advisor										
	Replacement from Participant Training Prog.										

- C. Advisory Personnel: The following is a preliminary brief job description for the full-time technical advisors expected to provide technical assistance to the GOB under this project:
1. A Chief of Party is expected to act as counterpart to the Directors General of Agriculture and Livestock and Deans of Agriculture at San Simón and Gabriel René Moreno. He will: a) assist the Directors General (MACAG) and Deans (Universities) in their program planning and management as it relates to Research or Extension in the regions of focus, and to sectorial management, and coordinate technical assistance with the MACAG's and Universities' needs; and b) manage and monitor the three Project components and the contract advisors to ensure that outputs are produced in a professional and timely fashion. (In this regard, it is expected that the Chief of Party will have a local administrative assistant to free him from routine administrative tasks).
  2. The Research Advisor will have the Director of Research as his counterpart. His principal task will be to advise the Division of Research on developing a research program and a staff training program (both in-service and participant training). Also, he will manage and monitor the research activities of contract advisors in the three geographic regions, and assist in developing a list of priority problems and experimental designs for resolving such problems.
  3. The Extension Advisor will act as counterpart to the Director of Extension. His principal task will be to advise other Departments of Extension in developing a more effective delivery system and a program for training staff both in-service and full-time at professional levels. Also he will monitor and manage the extension activities of contract advisors, and will assist in developing a program for streamlining the extension of improved technologies to small farm operators in the regions of focus.
  4. The Resettlement Advisor will act as counterpart to the Regional director of the NCI, the United Churches, and the Regional Research and Extension directors in Santa Cruz. His principal task will be to develop a coordinated program for assisting colonists in the new lands area north of Santa Cruz to obtain access to improved technologies and related production inputs including credit. This position was called for by the CAP for AID Loan 511-T-050 , New Land Development.

5. An Oilseeds Agronomist will be assigned to the regional Division of Research and Department of Extension in Santa Cruz. His principal task will be to research critical problems related to oilseeds production, and to assist in developing programs to extent this new knowledge. Time will also be devoted to advising on related adult education programs.
6. A Crops Agronomist will be assigned as counterpart to the Station Manager in the Santa Cruz area. His principal task will be to advise on research programs of the stations, and assist in researching problems related to cereals and forage crop production. He will also assist in developing extension programs related to research results. Finally, he will teach one class each year at the University Gabriel René Moreno, collaborate with University professors on joint research, and advise students on theses related to the key crops work.
7. A Livestock Specialist in Swine and Beef will be assigned to the Division of Research and Department of Extension in Santa Cruz. His main job will be to research problems limiting production of swine and beef and to help develop viable extension programs related to his findings. He will also assist in adult education programs.
8. An Agricultural Engineer will be assigned to the Division of Research and Department of Extension in Santa Cruz. His principal job will be to research ways to increase labor productivity through mechanical innovation and to develop related extension programs. Also he will conduct research on irrigation and water management. Finally, he will teach one class per year at the university Gabriel René Moreno, collaborate with the university professors on joint research, and advise students on thesis research.
9. A Cereals Agronomist will be assigned to the Division of Research and Department of Extension in Cochabamba and Sucre. His principal task will be to research critical problems and develop related extension programs. Also he will advise in developing related adult education programs.
10. A Crops Agronomist will be assigned as a counterpart to the research station manager in Cochabamba and Sucre. His principal task will be to advise on the research of each of the stations, and assist in researching problems critical to vegetable, potatoes, and forage crops production, and in developing related extension programs. Also he will

teach one course per year at the University of San Simón, collaborate with university professors on research projects, and advise students on thesis research.

11. An Agricultural Economist will be assigned to the Division of Research in all three geographic locations, but he will be stationed at Cochabamba. His principal job will be to develop a model for testing the economic viability of research results and to recommend improved technologies and management practices for general distribution via the Extension Service. Also he will teach one course per year at the University of San Simón, collaborate with university professors on research, and advise students on thesis research.
12. A Livestock Specialist will be assigned to the Division of Research in Cochabamba. His principal task will be to research critical problems in the production of poultry and dairy animals, and assist in developing related extension activities. Also, he will advise on related adult education activities.
13. An Agricultural Economist will be assigned as counterpart to the Director of the Office of Planning. His main task will be to advise in the development of agricultural plans, programs, and project analysis. Also, he will assist in developing an in-service training program, and will work in coordination with the technical advisors in the offices of marketing, and economic studies and statistics.
14. An Agricultural Economist will be assigned as counterpart to the Director of the Office of Economics and Statistics. His main task will be to advise on the development of systems for collecting, reducing, analyzing and publishing basic production and socio-economic data concerning the agricultural sector. Also, he will help in developing an in-service training program, and will collaborate with other technical matters in the Offices of Planning and Marketing in advising on special economic studies.
15. An Agricultural Economist will be assigned as counterpart to the Director of the Office of Marketing. His principal task will be to develop a market information service and price and quantity indices in both factor and product markets. Also, he will develop an in-service training program, and will collaborate and advise on marketing studies necessary for policy formulation in the Planning Office.

VIII. Evaluation Plan

This Project and the Agriculture Sector Loan I will be evaluated annually starting one year after initiation of actual field implementation. Progress will be measured against the indicators at the sector goal, sub-goal, purpose, and output levels as contained in the attached Project Logical Framework. In addition, during the preparation of the CAP for the above mentioned loan, other indicators and measures will be developed to cover one loan component (Agricultural Credit) which is not directly addressed by the T.A. Project.

It is hoped that after the first year of project implementation, we will have enough project experience to test the validity, soundness, relevance, and practicability of the project design and its indicators of progress all at levels of the project. In addition, we hope to refine and add or delete target indicators, as necessary and appropriate. Baseline data will be further developed and refined during the early stages of the project.

The annual evaluation will be carried out by a team composed of the Project Manager, up to five project counterparts, a USAID Loan Officer, a representative from the USAID Controller's Office, the USAID-financed contract advisors and the USAID Evaluation Officer. Any required assistance from AID/W or other which may be required to conduct the annual evaluation will be determined shortly before the evaluation. Also, it is anticipated the possible need of outside evaluators and experts to conduct special, in depth project evaluations outside the regular, annual internal evaluation process. The need for this assistance will depend on the specific problems and status of project implementation as determined during the actual implementation process.

PROJECT DESIGN SUMMARY  
LOGICAL FRAMEWORK

Project Title & Number: Basic Foods and Marketing - 511-11-190-364.6

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS																																										
<p>Program or Sector Goal: The broader objective to which this project contributes:</p> <p><u>Sector Goal:</u> To increase per capita income and standard of living of rural people.</p>	<p>Measures of Goal Achievement:</p> <p><u>Sector Goal:</u></p> <p>a. Per capita income of rural people in the small farm sector increases from about \$45 in 1971-73 to at least \$55 by 1982.</p> <p>b. The share of production of the small farm sector that is marketed increases from 47% to 67% by 1982.</p> <p>c. Production of agricultural crops and livestock produced principally in the small farm sub-sector increase at the rate of 1% per year in 1975-82 compared to only 1.5% per year during 1961-65 to 1971-73.</p>	<p>1. <u>Goal Verification</u></p> <ul style="list-style-type: none"> <li>- MACAG State Rural Production and Consumption Survey.</li> <li>- Records of INC and SNDC.</li> <li>- Censuses, samples, and reports of INE.</li> <li>- Review of reports and special studies of contract advisors.</li> <li>- Data, reports, and special studies of MACAG offices of Planning, Economics and Statistics.</li> <li>- National account data of the Ministry of Planning (CONEPLAN).</li> </ul>	<p>Assumptions for achieving goal targets:</p> <ol style="list-style-type: none"> <li>1. The GOB will provide essential public services for agricultural development.</li> <li>2. Farmers will be responsive to incentive programs.</li> <li>3. Government policies will motivate small farmers to produce more.</li> <li>4. There will be no major downturn in economic conditions and favorable cost-price relations for agricultural products will prevail.</li> </ol>																																										
<p><u>Sub-sector Goal:</u> Increased production and increased factor productivity 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.</p>	<p>Measures of Sub-goal Achievement:</p> <p>a. Production of key crops of the Central Valleys and Lowlands increases as follows:</p> <table border="1" data-bbox="582 987 1017 1379"> <thead> <tr> <th>Crop</th> <th>1971-73 Prod. metric tons</th> <th>1982 Prod. metric tons</th> </tr> </thead> <tbody> <tr><td>Wheat</td><td>52,563</td><td>108,171</td></tr> <tr><td>Corn</td><td>280,307</td><td>428,870</td></tr> <tr><td>Barley</td><td>69,400</td><td>94,303</td></tr> <tr><td>Rice</td><td>73,824</td><td>123,131</td></tr> <tr><td>Soybeans</td><td>1,933</td><td>27,709</td></tr> <tr><td>Peanuts</td><td>7,560</td><td>15,748</td></tr> <tr><td>Potatoes</td><td>710,000</td><td>1,243,346</td></tr> <tr><td>Yuca</td><td>240,333</td><td>379,283</td></tr> <tr><td>Vegetables<sup>a/</sup></td><td>191,533</td><td>236,960</td></tr> <tr><td>Pork</td><td>18,000</td><td>29,018</td></tr> <tr><td>Milk</td><td>114,000</td><td>147,615</td></tr> <tr><td>Forages</td><td>-</td><td>-</td></tr> <tr><td>Poultry</td><td>-</td><td>-</td></tr> </tbody> </table> <p><sup>a/</sup>Sweet corn, onions, tomatoes, and green peas.</p>	Crop	1971-73 Prod. metric tons	1982 Prod. metric tons	Wheat	52,563	108,171	Corn	280,307	428,870	Barley	69,400	94,303	Rice	73,824	123,131	Soybeans	1,933	27,709	Peanuts	7,560	15,748	Potatoes	710,000	1,243,346	Yuca	240,333	379,283	Vegetables <sup>a/</sup>	191,533	236,960	Pork	18,000	29,018	Milk	114,000	147,615	Forages	-	-	Poultry	-	-	<p>2. <u>Sub-goal Verification</u></p> <ul style="list-style-type: none"> <li>- MACAG State Rural Production Survey.</li> <li>- Review of reports and special studies of contract advisors.</li> <li>- Data, reports and special studies of MACAG offices of Planning, Economics and Statistics.</li> </ul>	<p>Assumptions for achieving sub-goal targets:</p> <ol style="list-style-type: none"> <li>1. The GOB will provide essential public services for agricultural development.</li> <li>2. Farmers will be responsive to incentive programs.</li> <li>3. Government pricing policies will motivate small farmers to produce more.</li> <li>4. There will be no major downturn in economic conditions.</li> <li>5. That adequate markets exist and function properly to absorb increased agricultural production.</li> <li>6. That climate conditions will be favorable.</li> <li>7. That farmers in target areas will have access to adequate credit.</li> </ol>
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LOGICAL FRAMEWORK

Life of Project:  
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Total U. S. Funding \$5,642,000  
Date Prepared: October 7, 1974

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Poultry	-	-																																															
	Present End of 3rd. End of T.A. Estimate/Year Loan Proj. (1982)																																																
	Year	Project																																															
Gross off farm sales	\$250	\$600	\$1,000																																														
Per family income	225	350	580																																														
Per capita income	45	70	116																																														
<p>1. <b>Technology Development:</b> To develop improved technologies for use by the small farm sector of the intermountained valleys of Central Bolivia and the Eastern agricultural lands.</p>	<p>Conditions that will indicate purpose has been achieved: End of project status</p> <p>1. <b>Technology Development</b></p> <p>a. A set of improved technologies that resolve basic production problems in the target areas and specific recommendations developed for adopting these at the farm level in target areas.</p> <p>b. Three Regional Agricultural Research Stations located in the target areas, staffed with 10 trained Bolivians planning, executing, and managing research programs relevant to specific production problems.</p> <p>c. The MACAG Research Division with four trained Bolivians, identifying critical problem areas requiring research as evidenced by the number and types of problems proposed for research.</p> <p>d. Two universities involved in researching critical regional production problems and offering expanded agricultural programs more directly related to Bolivian requirements.</p>	<p>1. <b>Technology Development</b> Actual observation by agricultural experts and records of MACAG's Research Division.</p> <p><b>NOTE:</b> The benchmark data on types of research to be conducted will be established by contractor in concert with USAID and the MACAG.</p>	<p>Assumptions for achieving purpose:</p> <p>1. That GOB will make available adequate funds to hire and retain qualified research staff, and to provide the necessary research budget.</p>																																														

PROJECT DESIGN SUMMARY  
LOGICAL FRAMEWORK

Life of Project: From FY 1975 to FY 1981  
Total U. S. Funding 35,642,000  
Date Prepared: October 7, 1975

Project Title & Number: Basic Foods Production and Marketing - 511-11-190-364.6

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS																																	
<p>Project Purpose:-</p> <p>2. <u>Technology Extension</u>: To extend to small farm operators in target areas the improved technologies and more modern production practices.</p>	<p>Conditions that will indicate purpose has been achieved: End of project status (Cont.)</p> <p>2. <u>Technology Extension</u>:</p> <p>a. Central MACAG Extension Service staffed with four trained extension programmers, developing and planning and executing improved extension programs.</p> <p>b. Three Extension Centers located in the target areas staffed with 40 additional trained agents and 10 subject matter specialists planning, executing and managing regional extension programs.</p> <p>c. Extension agents conducting at least 3 training programs per year for farmers in each of the target areas.</p> <p>d. MACAG Extension Division extends results of research studies to at least 20% of farmers in target areas, as follows:</p> <table border="1" data-bbox="611 760 1067 823"> <tr> <td></td> <td>1977</td> <td>1978</td> <td>1979</td> <td>1980</td> <td>1981</td> <td>1982</td> <td>Total</td> </tr> <tr> <td>75</td> <td>1,000</td> <td>1,000</td> <td>1,000</td> <td>1,000</td> <td>1,000</td> <td>1,000</td> <td>40,000</td> </tr> </table> <p>e. Recommended technologies actually accepted by at least 60% of the farmers in target areas, as follows:</p> <table border="1" data-bbox="611 885 1067 948"> <tr> <td></td> <td>1976</td> <td>1977</td> <td>1978</td> <td>1979</td> <td>1980</td> <td>1981</td> <td>1982</td> <td>Total</td> </tr> <tr> <td>100</td> <td>1,500</td> <td>1,500</td> <td>1,500</td> <td>1,500</td> <td>1,500</td> <td>1,500</td> <td>10,500</td> </tr> </table> <p>f. Annual sales of fertilizers to small farmers in target areas increase by 200% by 1982.</p> <p>g. Distribution of improved seed by MACAG among small farmers increases by 200% by 1982.</p> <p>g. Purchase of modern agricultural equipment by small farmers in target areas increase by 100% by 1982.</p>		1977	1978	1979	1980	1981	1982	Total	75	1,000	1,000	1,000	1,000	1,000	1,000	40,000		1976	1977	1978	1979	1980	1981	1982	Total	100	1,500	1,500	1,500	1,500	1,500	1,500	10,500	<p>2. <u>Technology Development</u></p> <ul style="list-style-type: none"> <li>- Importers and distributors' records of fertilizer sales to farmers.</li> <li>- Records of MACAG's Department of Extension.</li> <li>- Importers and distributors' records of equipment sales.</li> <li>- Observation and inspection by agricultural experts.</li> <li>- Records of contractor.</li> </ul>	<p>Assumptions for achieving purpose:</p> <ol style="list-style-type: none"> <li>1. Small farmers in target areas will be responsive to economic incentives and adopt technological changes.</li> <li>2. Adequate credit will be available to target group to acquire modern inputs (fertilizers, seed, equipment).</li> <li>3. Existence of an effective marketing system to allow farmers to dispose of increased production.</li> <li>4. That GOB will make available adequate funds to retain and support the field efforts of the extension agents.</li> </ol>
	1977	1978	1979	1980	1981	1982	Total																													
75	1,000	1,000	1,000	1,000	1,000	1,000	40,000																													
	1976	1977	1978	1979	1980	1981	1982	Total																												
100	1,500	1,500	1,500	1,500	1,500	1,500	10,500																													

PROJECT DESIGN SUMMARY  
LOGICAL FRAMEWORK

Page 6 of 11

Life of Project:

From FY 1975 to FY 1981

Total U. S. Funding \$5,642,000

Date Prepared: October 7, 1974

Project Title &amp; Number: Basic Foods Production and Marketing - 511-11-190-364.6

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
<p>Project Purpose:</p> <p>3. <u>Sectoral Management</u>: To develop the capability of MACAG's offices of Economics and Statistics, Marketing, and Planning to generate basic data, analyze problems, formulate, and implement coordinated policies and programs for the sector.</p>	<p>Conditions that will indicate purpose has been achieved: End of project status (Cont.)</p> <p>3. <u>Sectoral Management</u></p> <p>a. MACAG's Office of Economics and Statistics with four trained professionals collecting, analyzing, and publishing basic socio-economic and production data on a continuing basis.</p> <p>b. MACAG's Office of Marketing with an established and operating Market Information Service staffed with four trained professionals collecting, analyzing, and publishing basic marketing data relevant to farmers in target areas on a continuing basis.</p> <p>c. A strengthened MACAG Planning Office staffed with at least five trained professionals carrying out planning, programming, project analyses, and special studies at a competence level meeting professional standards as attested by professional agricultural planners.</p> <p>d. The above offices operating in concert to develop and implement rational agricultural policies leading to increased food production by farmers in target areas.</p> <p>e. Office of Economics and Statistics publishing timely data series on agricultural production, crop forecasts and outlooks, and consumption of agricultural products.</p> <p>f. The MACAG Marketing Office publishing annually at least 4 series on prices and marketings of agricultural products and inputs.</p>	<p>3- <u>Sectoral Management</u></p> <ul style="list-style-type: none"> <li>- Observations and records of MACAG's Offices of Economics and Statistics, Marketing, and Planning.</li> <li>- Experts' judgements on market information service, data service, plans, and analyses produced by above offices as well as on policies enunciated and implemented.</li> </ul>	<p>Assumptions for achieving purpose:</p> <p>3. <u>Sectoral Management</u></p> <ul style="list-style-type: none"> <li>- That GOB will make available adequate funds to hire and retain qualified staff for the offices of Planning, Economics and Statistics, and Marketing, and to provide the necessary operating budget.</li> </ul>

PROJECT DESIGN SUMMARY  
LOGICAL FRAMEWORK

Page 7 of 11  
Life of Project:  
From FY 1975 to FY 1981  
Total U. S. Funding \$5,642,000  
Date Prepared: OCTOBER 1, 1974

Project Title & Number: Basic Foods Production and Marketing - 511-11-190-364.6

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS								MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
	1976	1977	1978	1979	1980	1981	1982	Total		
<b>Outputs:</b>										
<b>1. Technology Development</b>										
a. Research studies on crop and live-stock production problems in the small farm sector.	24	24	24	24	24	24	24	168	- MACAG records. - USAID documentation.	Assumptions for achieving outputs: <b>Technology Development</b> a. That MACAG officers will be available for training. b. That University students will be available for training. c. University professors agree to cooperate with MACAG and advisors in conducting studies. d. That universities agree to implement revised, improved curriculums.
b. Research studies conducted in collaboration with professors of San Simón and Gabriel René Moreno universities.	4	4	4	4	4	4	4	28	- Observation and inspection by advisors and Project Manager.	
c. Thesis projects in agriculture at the universities of San Simón and Gabriel René Moreno related to production problems in target areas.	4	4	4	4	4	4	4	28		
d. Studies recommending improved University curriculums.	2	-	2	-	2	-	-	6		
e. New or substantially improved courses.	-	2	2	4	4	4	4	20		
f. Division of Research and University personnel trained:										
1) M.S.	-	8	8	4	4	4	4	32		
2) PhD	-	-	2	-	-	2	1	5		
3) In-service training	40	40	40	40	40	40	40	-		
4) Short-term courses	20	20	20	20	20	20	20	140		
g. Students trained by advisors in formal University courses in agronomy, horticulture, plant and animal science, and agricultural economics.	240	240	240	240	240	240	240	1,680		
<b>2. Technology Extension</b>										
a. Field demonstrations on variety trials, improved management practices, and other research results.	8	8	8	8	8	8	8	56	- MACAG records. - USAID documentation.	<b>Technology Extension</b> a. That MACAG extension agents will be available for training. b. That campesinos agree to enroll in courses to be conducted by extension agents. c. The MACAG extension service agents are adequately paid and supported to perform their functions.
b. Short courses for campesinos on research results, improved management practices, use of credit, farm management techniques, fertilizers, equipment, etc.	30	30	30	30	30	30	30	210	- Observations and inspections by advisors and Project Manager.	
c. Research and extension bulletins distributed in target areas.	48	48	48	48	48	48	48	360		

PROJECT DESIGN SUMMARY  
LOGICAL FRAMEWORK

Page 8 of 11  
Life of Project:  
From FY 1975 to FY 1981  
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Date Prepared: October 1, 1974

Project Title & Number: Basic Foods Production and Marketing - 511-11-190-364.6

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS								MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
	1976	1977	1978	1979	1980	1981	1982	Total		
Outputs:										
d. Department of Extension personnel trained:										Assumptions for achieving outputs:  3. Sectorial Management a. That MACAG's officers will be available for training. b. That manuals, procedures, and guidelines will be adopted.
1) M.S.	-	2	2	2	2	2	2	12		
2) PhD	-	-	-	-	-	2	-	2		
3) In-service training	-	40	40	40	40	40	40	-		
4) Short-term courses	-	20	20	20	20	20	20	120		
3. Sectorial Management										
a. Offices of Planning, Marketing, and Economics and Statistics personnel trained in Agricultural Economics and Statistics, Marketing and Planning.									- MACA records. - USAID documentation. - Observation and inspection by advisors and Project Manager.	
1) M.S.	-	1	2	2	2	2	2	11		
2) PhD	-	-	2	-	-	2	-	4		
3) In-service training	-	30	30	30	30	30	-	-		
4) Short-term courses	-	20	20	20	20	20	20	120		
b. Manuals and procedures developed to guide the operation of MACAG's Offices of Economics and Statistics, Marketing, and Planning	1	1						2		
c. A special study on the organization and administration of public services for agriculture.	1							1		
d. An internal coordinating mechanism to increase effectiveness of above MACAG offices.	1							1		

PROJECT DESIGN SUMMARY  
LOGICAL FRAMEWORK

Page 9 of 11

Life of Project:

From FY 1975 to FY 1981Total U. S. Funding \$5,642,000Date Prepared: OCTOBER 1, 1974Project Title & Number: Basic Foods Production and Marketing - 511-11-190-364.6

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
<b>Inputs:</b>	Implementation Target (Type and Quantity) US\$000		
<b>I. AID Financed Project Inputs</b>			
<b>A. Technical Assistance - Total</b>			
<b>1. Long-term - Grants</b>	<b>1. Long-term</b>		
(1) Agronomist - Oil Seeds (SC)	Each long-term advisor will cost about \$40,200/year calculated as follows:	- USAID records including Pro/Ags and PIO/Ts.	- That AID, GOB, and other donors' resources will be provided as proposed.
(2) Agronomist - Crops (SC)		- Inspection and review of MOE records and budget.	- That qualified Bolivians will be available for training.
(3) Livestock Specialist - Beef and Swine (SC)			- That qualified experts will be available on call.
(4) Agricultural Engineer - Machinery and Irrigation (SC)	a. Basic salary \$22,000		
(5) Agronomist - Cereals (CB)	b. Post differential (20%) 4,400		
(6) Agronomist - Crops - (CB)	c. Personal benefits (8.5% of 1) 1,870		
(7) Ag. Economist - Production and Resources (CB)	d. Overhead (50% of a + c) 11,935		
(8) Livestock Specialist - Poultry and Dairy (CB)			
(9) Research Advisor (LP)	The total cost for the listed advisors is as follows:		That additional funds from AID or other sources, to finance short-term advisors, participant training, and commodities will be made available in a timely basis after the termination of the Agriculture Sector Loan I disbursement period. These project inputs will be loan-financed during the first three years of the project.
(10) Extension Advisor (LP)	a. 4 will be required for 7 man/years \$ 1,126		
(11) Livestock Advisor (SC)	b. 2 will be required for 6 man/years 523		
(12) Agricultural Economist - Development and Planning (LP)	c. 3 will be required for 5 man/years 724		
(13) Ag. Economist - Data Systems (LP)	d. 4 will be required for 5 man/years 804		
(14) Ag. Economist - Marketing Policy and Statistics (LP)	e. 1 will be required for 4 man/years 161		
(15) Chief of Party (LP)	f. 1 will be required for 2.1/2 man/years 100		
	Total \$ 3,438		
<b>B. AID-Loan Financed S.T. Technical Assistance</b>	Under Agriculture Sector Loan I, the following TDY technical advisors will be required at an average monthly cost of \$5,000 each: (\$000)		
Short-term advisors in the areas of research, animal science, plant science, entomology, extension, and administrative reform will be loan funded. (See LFR for Agriculture Sector Loan I.)	a. 3 m/m in FY-75 \$ 15		
	b. 32 m/m in FY-76 160		
	c. 25 m/m in FY-77 125		
	d. 13 m/m in FY-78 65		
	73 m/m Total \$ 365		
<b>Participant Training</b>			
<b>1. Grant-Funded</b>			
Extensions of MACAG participants presently in training status.	FY-1975 \$ 60		

PROJECT DESIGN SUMMARY  
LOGICAL FRAMEWORK

Page 10 of 11  
Life of Project:  
From FY 1975 to FY 1981  
Total U. S. Funding \$5,642,000  
Date Prepared: October 1, 1975

Project Title & Number: Basic Foods Production and Marketing - 511-11-190-364.6

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS																					
Inputs: (Cont.)																								
2. <u>Loan-funded</u>	Implementation Target (Type and Quantity)																							
	All new participants will be loan-funded under the Agriculture Sector Loan I which provides \$1.0 million for this purpose.																							
D. <u>Commodities</u>																								
1. <u>Grant-funded</u>	<table border="1"> <thead> <tr> <th>FY-1975</th> <th>FY-1976</th> <th>Total</th> </tr> </thead> <tbody> <tr> <td>45</td> <td>20</td> <td>65</td> </tr> </tbody> </table>	FY-1975	FY-1976	Total	45	20	65																	
FY-1975	FY-1976	Total																						
45	20	65																						
Vehicles, office equipment, and supplies to support contract advisers.																								
2. <u>Loan-funded</u>	The Agriculture Sector Loan I provides to finance other project related commodities.																							
E. <u>Other Costs - Grant-funded</u>	<table border="1"> <thead> <tr> <th>1975</th> <th>1976</th> <th>1977</th> <th>1978</th> <th>1979</th> <th>1980</th> <th>1981</th> </tr> </thead> <tbody> <tr> <td>550</td> <td>190</td> <td>241</td> <td>204</td> <td>260</td> <td>221</td> <td>413</td> </tr> <tr> <td colspan="3">Total</td> <td colspan="4">\$2,079</td> </tr> </tbody> </table>	1975	1976	1977	1978	1979	1980	1981	550	190	241	204	260	221	413	Total			\$2,079					
1975	1976	1977	1978	1979	1980	1981																		
550	190	241	204	260	221	413																		
Total			\$2,079																					
This component includes international travel and per diem, excess baggage/transportation of HHE, transportation/F.C, local travel and per diem, housing and education allowances, local self help (\$50/year) to support the contract technicians and about \$85 to finance in FY 1975 an ADP agricultural study currently being undertaken by Utah State University.																								
<u>Summary of Grant-funded Project Inputs:</u>	(\$000)																							
<u>FY-1975-1981</u>	<u>Grant (1975-1981)</u>																							
Technical Assistance	\$ 3,438																							
Participant Training	60																							
Commodities	65																							
Other Costs	2,079																							
Grand Total	\$ 5,642																							
II. <u>GC3 Contribution (US\$000)</u>	Estimated contribution for the period 1975-1981																							
Salaries and operating expenses, participant training, and contribution to feasibility studies.	For details see Section IV of the PROP.																							
III. <u>Other Donors Inputs</u>	Possible participation of the UNDP and/or the IDB in financing some of the technicians proposed under this project will be determined at a later date.																							

PROJECT DESIGN SUMMARY  
LOGICAL FRAMEWORK

Page 11 of 11

Life of Project:

From FY 1975 to FY 1981

Total U. S. Funding \$5,642,000

Date Prepared: October 1, 1974

Project Title &amp; Number : Basic Foods Production and Marketing - 511-11-190-364.6

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS		MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
Inputs:				
IV. <u>Summary of Project Contributions</u> (\$000)	<u>Total</u>	<u>Percent (%)</u>		
USAIL:				
Grants	\$ 5,642	17.4		
Loans	11,400	35.2	52.6	
GOB:				
Grant-related	9,330	28.8		
Loan-related	6,000	18.6	47.4	
TOTAL	\$32,372	100%	100.0	