PD-ABD-399

UNCLASSIFIED

UNITED STATES INTERNATIONAL DEVELOPMENT COOPERATION AGENCY
AGENCY FOR INTERNATIONAL DEVELOPMENT
Washington, D. C. 20523

BOLIVIA

PROJECT PAPER

COCHABAMBA REGIONAL DEVELOPMENT

AID/LAC/P-663

PROJECT NUMBER: 511-0617

UNCLASSIFIED

PD-ABD-399

AGENCY FOR INTERNATIONAL DEVELOPMENT

PROJECT DATA SHEET

1. TRANSACTION CODE	Amendment Number	DOCUMENT CODE
A (A = Add, C = Change, D = Delete)		3

2. COUNTRY/ENTITY: USAID/BOLIVIA

3. PROJECT NUMBER: 511-0617

4. BUREAU/OFFICE: LATIN AMERICA AND THE CARIBBEAN [05]

5. PROJECT TITLE (maximum 40 characters): COCHABAMBA REGIONAL DEVELOPMENT

6. PROJECT ASSISTANCE COMPLETION DATE (PACD): MM 09 DD 30 YY 96

7. ESTIMATED DATE OF OBLIGATION (Under "B." below, enter 1, 2, 3, or 4): A. Initial FY 91 B. Quarter 4 C. Final FY 95

8. COSTS ($000 OR EQUIVALENT $1 =)

A. FUNDING SOURCE	FIRST FY 91 B. FX	C. L/C	D. Total	LIFE OF PROJECT E. FX	F. L/C	G. Total
AID Appropriated Total	4,290	2,990	7,280	28,366	51,634	80,000
(Grant)	(4,290)	(2,990)	(7,280)	(28,366)	(51,634)	(80,000)
(Loan)	( )	( )	( )	( )	( )	( )
Other U.S. 1.						
Other U.S. 2.						
Host Country	- . -	2,640	2,640		40,000	40,000
Other Donor(s)						
TOTALS	4,290	5,630	9,920	28,366	91,634	120,000

9. SCHEDULE OF AID FUNDING ($000)

A. APPROPRIATION	B. PRIMARY PURPOSE CODE	C. PRIMARY TECH. CODE 1. Grant	2. Loan	D. OBLIGATIONS TO DATE 1. Grant	2. Loan	E. AMOUNT APPROVED THIS ACTION 1. Grant	2. Loan	F. LIFE OF PROJECT 1. Grant	2. Loan
(1) ESF	263	230		-.-	-.-	62,000	-.-	62,000	-.-
(2) ARDN	253	210		-.-	-.-	18,000	-.-	18,000	-.-
(3)									
(4)									
TOTALS						80,000		80,000	

10. SECONDARY TECHNICAL CODES (maximum 6 codes of 3 positions each): 540 560 043 060 090 250

11. SECONDARY PURPOSE CODE: 283

12. SPECIAL CONCERNS CODES (maximum 7 codes of 4 positions each)

A. Code	BR	BL	R/AG	INTR	LAB	PART	PVON
B. Amount							

13. PROJECT PURPOSE (maximum 480 characters)

To develop alternative sources of income and employment for people within the Department of Cochabamba and its area of influence.

14. SCHEDULED EVALUATIONS: Interim MM 06 YY 94; Final MM 06 YY 96

15. SOURCE/ORIGIN OF GOODS AND SERVICES: [X] 000 [ ] 941 [X] Local [ ] Other (Specify)

16. AMENDMENTS/NATURE OF CHANGE PROPOSED (This is page 1 of ___ page PP Amendment)

The USAID/Bolivia Controller has reviewed the budget amounts contained in their project paper, performed reviews of the capabilities of the implementing institutions and prepared the Payment Verification Policy Statement. It is our opinion that costs contained herein are reasonable and that the implementation arrangements are sufficient to assure that project objectives will be met.

John R. Davison
Controller

17. APPROVED BY

Signature: Carl H. Leonard

Title: Carl H. Leonard, Mission Director, USAID/Bolivia

Date Signed: MM 07 DD 03 YY 91

18. DATE DOCUMENT RECEIVED IN AID/W, OR FOR AID/W DOCUMENTS, DATE OF DISTRIBUTION: MM DD YY

AID 1330-4 (8-79)

PROJECT AUTHORIZATION

Name of Country: Bolivia

Name of Project: Cochabamba Regional Development

Number of Project: 511-0617

1. Pursuant to Section 102 and 531 of the Foreign Assistance Act of 1961, as amended, I hereby authorize the Cochabamba Regional Development Project (The Project) for Bolivia (The Cooperating Country) involving planned obligations of not to exceed Eighty Million United States Dollars ($80,000,000) in grant funds over a five year period, subject to the availability of funds, in accordance with the A.I.D. OYB/allotment process, to help in financing foreign exchange and local currency costs (in accord with paragraph 4 below) for the Project. The planned life of the Project is approximately five years from the date of initial obligation, until September 30, 1996.

2. The Project will provide resources to develop alternative sources of income and employment for people within and adjacent to Bolivia's Department of Cochabamba, thereby increasing investment, productivity and employment in licit activities as Bolivia's economy transforms its coca-based economy.

3. The Project Agreement(s), which may be negotiated and executed by the officer(s) to whom such authority is delegated in accordance with A.I.D. Regulations and Delegations of Authority, shall be subject to the following essential terms and covenants and major conditions, together with such other terms and conditions as A.I.D. may deem appropriate:

a. Source and Origin of Commodities, Nationality of Services

Commodities financed by A.I.D. under the Project shall have their source and origin in the Cooperating Country or in the United States, except as A.I.D. may otherwise agree in writing. Except for ocean shipping, the suppliers of commodities or services shall have the Cooperating Country or the United States as their place of nationality, except as A.I.D. may otherwise agree in writing. Ocean shipping financed by A.I.D. under the project shall, except as A.I.D. may otherwise agree in writing, be financed only on flag vessels of the United States.

b'

b. Transfer of CRDP Goods and Equipment

The GOB will covenant to utilize all materials, equipment and vehicles purchased under the previous Chapare Regional Development Project, which were titled to the GOB but which have not been expended, for similar activities to be continued within this follow-on Cochabamba Regional Development Project.

c. Chapare Community Conditionality

Prior to being eligible for consideration for project funding of a community-identified immediate impact activity, a community in the Chapare must provide a DIRECO Certificate indicating that the community as a whole has eradicated a significant amount (at least one quarter) of the hectares of coca in production in 1988.

d. Chapare Farmer Conditionality

Prior to being eligible for consideration for partially-granted farm inputs or credit provided by the project, each individual farmer in the Chapare must provide a DIRECO Certificate indicating that the farmer has eradicated at least 10% of hectares of coca he or she had in production in 1988.

e. Land Titling

The GOB shall accelerate, improve, and continue its efforts to deliver correct and complete land titles to farmers and other owners of land in the Chapare Region and Associated High Valleys during the Life of the Project, and shall effectively utilize technical assistance provided under the Project for this purpose.

4. Authorization of Local Cost Financing; Waiver

Based on the cost estimates, financial plan and justification included in the Project Paper, Section IV, and the description of project activities and implementation arrangements in Sections II and III of the Project Paper, waiver to permit local cost financing for local staff personnel costs in the aggregate amount of $12.895 million is hereby granted, provided that the cost of each transaction does not exceed $5 million. The other local costs identified as necessary for the Project are under A.I.D. Buy America guidance exempt from the waiver requirement, in accordance with Section IV of the Project Paper.

James H. Michel 7/31/91

James H. Michel
Assistant Administrator
Bureau for Latin America
and the Caribbean

C

Clearances

LAC/DR/SA:LLucke		Date	7/1/91
LAC/DR/RD:JFasullo	Draft	Date	6-28-91
LAC/DR/E:JHester	Draft	Date	6-27-91
LAC/SAM:BBlackman	Draft	Date	6-27-91
LAC/SAM:SOlds	Draft	Date	6-28-91
LAC/DP:BSchouten	Draft	Date	6-28-91
LAC/GC:TGeiger	Draft	Date	6-20-91
LAC/TI:MBeth Allen	Draft	Date	6-27-91
PPC/PB:TBarker	Draft	Date	6-27-91
ARA/AND:MSanchez	Draft	Date	6-27-91
INM:JChampagne	Draft	Date	6-28-91
SAA/LAC:KHarbert	Draft	Date	6-28-91

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ACRONYMS AND ABBREVIATIONS

AA/LAC	Assistant Administrator/Latin America and Caribbean Bureau
AHV	Associated High Valleys
AID	Agency for International Development
AMIS	Agricultural Marketing Systems Improvement Strategies
ARD	Office of Agriculture and Rural Development
ASAR	Asociación de Servicios Artesanales y Rurales
ASOHFRUT	Asociación de Horticultores y Fruticultores Afiliada a la C.A.O.
BAB	Banco Agrícola de Bolivia
CDF	Centro de Desarrollo Forestal
CARE	Catholic Assistance Relief Everywhere
CCH	Community and Child Health (Salud Comunitaria Infantil)
CORDEP	Cochabamba Regional Development Project
CERES	Centro de Estudios de la Realidad Económica y Social
CIFA	Centro de Investigaciones Fitoecogenéticas-Pairumani
CONALID	Consejo Nacional Contra el Uso Indebido y Tráfico Ilícito de Drogas
CORDECO	Coorporación de Desarrollo de Cochabamba
CEDEAGRO	Centro de Desarrollo Agropecuario
CRDP	Chapare Regional Development Project
DIRECO	Dirección Nacional de Reconversión Agrícola
DAI	Development Alternatives, Inc.
DP	Office of Development Planning
E.I.	Experience Incorporated

ELFEC	Empresa de Luz y Fuerza Cochabamba
ENDE	Empresa Nacional de Electricidad
ESF	Economic Support Fund
EXO	Executive Office
FENACRE	Federación Nacional de Cooperativas de Ahorro y Crédito
FRUTIBOL	Compañia Frutícola-Boliviana
FSRE	Farming Systems Research & Extension
GOB	Government of Bolivia
GEOBOL	Servicio Geológico de Bolivia
H.	Hectares
HCOLC	Host Country Owned Local Currency
HHR	Health & Human Resources Office
IBTA	Instituto Boliviano de Tecnologia Agropecuaria
LC	Local Currency
MACA	Ministerio de Asuntos Campesinos y Agropecuarios
MIS	Management Information System Sistema de Informacion Administrativa
NGO	Non-Governmental Organization
NRECA	National Rural Electrification Cooperative of America
NSD	National Security Determination
OE	Operating Expenses
PDAC	Programa de Desarrollo Alternativo Chapare (Former name of PDAR)
PL-480	Public Law 480
PDAR	Programa de Desarrollo Alternativo Regional
PD&I	Office of Project Development and Implementation

PROCIPLA	Programa Contra Insectos y Plagas
PROINPA	Proyecto de Investigacion de la Papa
PROSEMPA	Proyecto de Semilla de Papa
PSC	Personal Services Contract
RCO	Regional Contracting Officer
RLA	Regional Legal Advisor
RFP	Request for Proposals
SNC	Servicio Nacional de Caminos
SUBDESAL	Subsecretaria de Desarrollo Alternativo
TI	Trade & Investment Office
TA	Technical Assistance
UDAPE	Unidad de Analisis para la Politica Economica
UN	United Nations
UNCDF	United Nations Capital Development Fund
UNIDO	United Nations Industrial Development Program
UNFDAC	United Nations Fund Drug Abuse Control
UNDP	United Nations Development Program
USAID	United States Agency for International Development
USAID/B	USAID/Bolivia
USAID/C	USAID/Cochabamba (Branch office of USAID/B set up to monitor the Cochabamba Regional Development Project)
USG	United States Government
USPSC	United States Personal Service Contract
WFP	World Food Program

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INTRODUCTION AND SUMMARY

The Cochabamba Regional Development Project (CORDEP) is central to USAID's overall alternative development efforts in Bolivia, and is a key part of the overall U.S. Mission-wide counter narcotics strategy. The U.S. Government has three primary goals in Bolivia, which include assisting the generation of sustained, economic growth, the strengthening of democratic institutions, and the elimination of illicit narcotics production and related activities. This project is, of course, primarily aimed at the U.S. and GOB's overall counternarcotics efforts, but it contains elements supportive of other U.S.G. goals as well.

"Alternative development" has been used to encompass a broad range of activities, developmental in nature and fully justifiable in terms of economic criteria. What the "alternative" replaces through this project is income and employment which would be otherwise gained from the production and sale of illicit coca and its derivatives. The overriding precondition to success in fostering an alternative economy in Bolivia's coca-producing areas of the Chapare and in other "magnet" areas of the Department of Cochabamba is a depressed price for the coca leaf. What past and current alternative development project activities have demonstrated is that so long as the price remains low, alternative crops are not only viable but preferred by many farm families who want to make a decent income through lawful means. The success of CORDEP, is, therefore, largely dependent upon the success of the GOB's eradication and interdiction efforts, which, when effective, have kept the price of coca low.

The totality of USAID activities aimed at providing alternative income and employment in the Department of Cochabamba is not included in CORDEP. Other USAID-financed projects will complement CORDEP to bring electrification, child health, drug awareness and prevention, export promotion, and microenterprise development into the overall project area. Such activities will be coordinated with CORDEP to ensure a unified, cohesive development effort.

This project will require $120.0 million, including $80 million of appropriated resources (of which $28.4 million is foreign exchange) and $40 million in local currency counterpart to finance a 5-year effort to develop alternative sources of income and employment in the Department of Cochabamba and its areas of influence. This is a project driven by market opportunities and access for alternative agricultural activities. The project will concentrate on improving and developing new domestic and export markets for processed and non-processed farm produce, thereby increasing incomes and employment. In support of the marketing focus, the project will provide 1) assistance to farm production and the rational utilization of the natural resource base, and 2) capital resources in the form of community improvements, cash grants and credit to stimulate income and employment-generating activities in the project area.

The project will be supported by an institutional contractor, located in the departmental capital of Cochabamba, who will coordinate and monitor all technical assistance and assist GOB and NGO implementing activities. AID will actively monitor project implementation from its regional office in Cochabamba which will be staffed by PSC personnel.

Shown below are two summary budget tables which reflect total project costs. Table I presents the budget according to the four basic components described in the paper, while Table II presents the budget according to the project elements that will be accounted for in the Mission Accounting and Control Systems (MACS):

TABLE I ($000)

Component	AID	Counterpart	Total
Marketing	5,867	29,923	35,790
Capital Resources	11,000	5,000	16,000
Sustainable Ag Production	50,715	--	50,715
Project Management	12,418	5,077	17,495
TOTAL	80,000	40,000	120,000

TABLE II ($000)

Element		AID	Counterpart	Total
I.	USAID/B Project Costs	4,995	--	4,995
II.	Implementation Assist.	22,529	--	22,529
III.	Subprojects	49,439	29,423	78,862
IV.	SUBDESAL/PDAR Oper.Costs	287	5,077	5,364
V.	Agricultural Loan/Grant Program and Private Sector Incentive Fund	--	5,500	5,500
VI.	Audits/Evaluation	2,750	--	2,750
		80,000	40,000	120,000

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I. PROJECT RATIONALE AND DESCRIPTION

A. Background

CORDEP builds on the progress made under the original Chapare Regional Development Project (CRDP) of 1983 and the significant project amendment of 1987 which expanded both the scope and the geographic area of the project. The original Chapare project was designed to "modify and improve the agricultural and forestry production system of the farmers in the Chapare to respond better to diverse, profitable marketing opportunities provided under sustained, environmentally compatible, medium technology production models." The original undertaking suffered from delays in its start-up and erratic implementation, in part due to external political factors. The 1987 amendment recognized that development in areas associated with the Chapare was necessary to stop or slow the outmigration of workers who supplied the labor in the Chapare for coca harvesting and processing. Therefore, the project was widened to include the "Associated High Valleys" in the Department of Cochabamba, introducing a pilot effort to stabilize the populations in areas contiguous to the Chapare.

As the project evaluation and observations indicate, many of the farm production goals of the original project have been met. The AID-funded IBTA experimentation stations and extension services in the Chapare are in place and are meeting a growing demand for services from farmers. The stations are producing and placing improved planting materials. Fruit crops have been developed which are marketable and which, therefore, are finding receptivity among farmers of the area. Likewise, the High Valleys component of the project has achieved many of its goals. A number of small, community-built irrigation/domestic water systems have been built, increasing the amount of irrigated land in that semi-arid region. Natural resource conservation and land management complement the irrigation efforts necessary to the sustained increased production of both livestock and agriculture in the High Valleys.

In both regions, A.I.D. has funded infrastructure which has improved transportation and increased the access of farmers to farm inputs, as well as local and regional markets. Highways and access roads have been improved and bridges built; in the High Valleys A.I.D. has financed major improvements in the electrical systems of two communities. Until recently, major road-building and improvements have not taken place under A.I.D. funding in the Chapare due to fears the narco-traffickers would benefit from such roads and because of conditionality that limited USAID's activities in coca-producing areas. Recently, with striking successes in interdiction efforts and a corresponding relaxation of USAID's conditionality, selected road improvements have been started in parts of the Chapare.

B. The Project Area

The project's locus is the Department of Cochabamba, although contiguous areas of other departments (Santa Cruz, Potosi and Chuquisaca) may eventually be included. While most activities will focus on the rural area of Cochabamba, the project includes the entire Department. Urban, and peri-urban areas of the city of Cochabamba are, also, included within project's geographic focus.

The Department of Cochabamba is divided into two regions: the Cochabamba tropics (parts of Chapare, Carrasco, and Tiraque provinces), the region where most of the illegally processed coca is grown and processed, and the Cochabamba valleys and highlands (the provinces of Mizque, Campero, Punata, Arani, Esteban Arce, Jordan, Omereque, and portions of Tiraque Carrasco and Chapare), a readily available source of much of the labor needed for picking, transporting, and processing the coca into paste.

Migration studies indicate that most of the farmers and workers in the coca growing areas of the Chapare came from different areas of the Department of Cochabamba. These studies also indicate that the majority of the migration out of the valleys has gone, at least temporarily, to Chapare. This migration results from the inability of farmers to meet ever increasing demands on their economy with only their resources at the farm level. Therefore, migration decisions must be understood in the light of the farmers' limiting factors, such as access to land, water, labor, capital equipment, credit, service organizations, and local support institutions.

The Cochabamba tropics, stretching north from the foothills of the easternmost chain of the Andes Mountains (which run from northwest to southeast in that area) consists mostly of tropical lowlands characterized by meandering rivers, high annual rainfall, poor to fair soils and, except in the foothills, second growth forest.

The Cochabamba highlands and valleys, south of the Andes, consist of high valleys and their surrounding mountains. The area is dry and mostly deforested. Rivers provide some irrigation potential but most of the farming still depends on rainfall.

C. Project Rationale

1. Alternative Development

a. Background

The search for the means to combat the illegal cocaine industry in Bolivia has gone through an evolution which can be summarized as follows:

--Initial USG efforts were aimed at encouraging Bolivia to eliminate all coca production. Since enactment of the Bolivian coca and controlled substances law of 1988 (law 1008), the USG has supported a Bolivian Government program based upon phased elimination of coca grown in the Chapare (the main source of coca destined for illegal processing of cocaine). This has been executed through voluntary, compensated eradication supplemented by reduction of cultivation in the Yungas area of La Paz department, defined as a "traditional" area of production, which produces in excess of licit domestic demand (conventionally accepted as about 10-12,000 hectares). (Coca cultivation outside these two zones has been illegal since the coca control law took effect, and is estimated to be of relatively small significance.)

--Subsequent programs were initiated to develop alternative crops to coca in the Chapare Region. The goal of the program was to gradually substitute coca with other economically viable crops.

--Several lessons were learned from the second stage: 1) no crop could compete with coca's prices, markets, and added value, unless prices paid to primary producers of coca leaf were driven down by effective law enforcement; 2) successful technical assistance cannot be effectively provided, or received by target populations until such law enforcement takes place; and 3) it is critical that viable economic opportunities be available outside of the Chapare for labor presently employed in the coca sector (particularly non-landowning labor), along with alternative agricultural inputs to transitional coca growers remaining on the land.

--As a result of lessons learned, the scope was broadened to support Alternative Development in areas outside of the Chapare (i.e. Associated High Valleys) which export labor to the Chapare. At the same time, project activities continued in the Chapare region to support the Bolivian Government's agricultural research, extension and credit programs in that area.

--Currently, USAID's strategy is to continue with economically viable interventions in the Chapare, in the associated labor-surplus high valleys, as well as in areas with growth potential, but in conjunction with a broader and more concerted program as described below.

b. <u>USAID's Alternative Development Program</u>

The USAID Alternative Development Program is part of an overall USG-GOB effort to reduce and ultimately eliminate the production and processing of illegal coca in Bolivia. Other joint US-GOB programs are directed at the eradication of transitional and illegal coca and the suppression of coca processing and trafficking; a series of incentive programs to get coca farmers to eradicate voluntarily their existing stands of "transitional" coca 1/; and a drug awareness program designed to heighten awareness in Bolivia of the fact that coca production, trafficking, and use are as much a Bolivian as a U.S. problem.

The objective of the USAID Alternative Development Program is the progressive transformation of the Bolivian economy from reliance on illegal cocaine production to a diversified, sustainable, and growing economy that does not depend on coca. The rationale for chosing the strategy proposed by the Mission is based upon the following considerations.

--We need to compensate for foreign exchange losses; assist the GOB in maintaining economic stabilization and reactivation of the economy; generate jobs/employment opportunities for those actually or potentially engaging in coca cultivation or its illegal processing; support GOB narcotics awareness/prevention efforts; combat domestic abuse and build political support for counternarcotics objectives; and strengthen incentives for private sector investment that will allow the expansion of income and employment opportunities.

1/ Law No. 1008 of 19 July, 1988, the Law Governing Coca and Controlled Substances, allowed a specific period - at least through 1993 - for the phasing out of coca produced in the Chapare and elsewhere except in the traditional coca growing area in the Yungas and a small area of the Chapare. The latter is "legal". Coca grown in the rest of Chapare, provided it was planted prior to the date of law 1008, is "transitional" which means it is not illegal. The transitional period comes to an end after 1993, and at some point all transitional coca in the Chapare will be declared illegal.

--Economic growth has lagged and exports have declined and both will decline further if coca production is eliminated. Our economic assistance package beginning in FY 1991 is designed to spur sustained economic growth, diversify Bolivia's export base to increase foreign exchange earnings, create jobs necessary to attract people from illicit cocaine production, and meet the basic needs of Bolivia's poorest population. Our resources and efforts, in conjunction with the GOB and the donor community, must create the conditions for sustained growth that will permit the transition from a cocaine led economy to one with a stable, legitimate, and diversified economic base.

--The range of target groups for USG assistance has been expanded in order to meet the primary objectives. In addition to activities which will affect men and women directly involved in coca cultivation and illegal cocaine processing, programs will serve the chronically and seasonally unemployed, as well as the underemployed population which are potential sources of replacement labor. Additionally, efforts will be made to foster domestic foreign investment and with an emphasis on increasing international trade and exports. The success of the project depends on continued agricultural research, extension, credit, marketing, and infrastructure activities in the Chapare and adjacent high valleys. In addition, balance of payments support, rural roads, electrification, export promotion, and micro enterprise development activities will be executed there and throughout the country. Social and productive infrastructure will be expanded in coordination with other donors to make these regions economically attractive for alternative economic activities as law enforcement continues to depress the illegal market for coca.

--There must be an incentive to move out of coca. The Mission's rationale is based on the premise that continuing, strong demonstration of GOB political commitment to effective counternarcotics law enforcement is essential to keep coca prices sufficiently depressed so that alternatives are attractive to growers. Only under such conditions will the economic activities under the alternative development program succeed in drawing people away from illegal cocaine production and prevent further migration to the Chapare region.

2. Rationale for a Market-Led Approach

The CORDEP project builds on and refines the CRDP focus. The evaluation of the current project, independent studies, and perhaps, most important of all, a U.S. Mission seminar on alternative development held in Santa Cruz, Bolivia, with the entire country team and many of USAID's consultants involved in alternative development, have concluded that markets for alternative crops are fundamental to the success of alternative development. Other goals under the existing CRDP project are well advanced, hence the focus and driving force under CORDEP will be improved markets and market access. There have been some notable successes in marketing under the existing project, including a sizeable banana contract for export to Chile and sales of tumeric, pineapple, passion fruit, and other products. Thus, the rationale to put market enhancement and access in the forefront, driving and integrating the other activities so as to maximize employment and farm income, is a logical extension and development of the current project.

Despite some important successes under the existing project, implementation experience convinced the Mission that an adjustment of approach was needed:

-- Marketing factors had to play a bigger role in decisions about whether to promote particular crops. i.e., research, extension, and credit should be directed to a given crop only after assuring that adequate distribution channels and end markets exist.

-- More assistance had to be focussed on the marketing end of the equation. In addition to direct assistance in the sale of individual crops, efforts needed to be devoted to improvement of private marketing channels.

-- An overly-narrow focus on small farmers and their produce is counterproductive. Assistance to higher-level intermediaries (processers, transporters, distributors) can often have a major impact on farm family income; this impact is no less real for being indirect. Further, such assistance tends to be easier to administer efficiently than direct assistance to large numbers of small farmers.

-- Markets and intermediaries are moving targets. Effective marketing assistance, at whatever stage in the distribution chain, requires agility and flexibility. Thus, the marketing component of the new project will not be housed in a governmental unit, and will not be forced in the the straight-jacket of an overly rigid project design.

Success in Bolivia's war against drugs will mean the elimination of one of the country's largest sources of foreign exchange, thus limiting its capacity to import and grow. ESF balance-of-payments support provides a temporary offset in this respect; but, for reasons outlined in its recent Action Plan, the Mission is convinced that the only long-term solution lies in expanded international trade, including especially an increase in the volume and range of legal non-traditional exports.

Thus, promoting international trade and investment is a key element in the Mission's overall alternative development strategy, and is addressed by various activities in the Mission's portfolio. Within the CORDEP, special attention will be devoted to export market possibilities. However, the project's primary focus is family incomes, not foreign exchange. A true market-led approach dictates that the project should focus on efficient responses to markets wherever they can be found, whether inside or outside Bolivia's boundaries. The existing CRDP project has demonstrated that there are viable opportunitiues in both internal and external markets.

D. Project Strategy

1. Background

Within this global approach to the problem of significantly reducing the supply of cocaine entering the U.S. and other markets, this project is aimed at providing non-coca related household economic strategies to coca growers and laborers (actual and potential) which they will adopt because they see them as preferable. The approach suggested here is a refinement of, but is based essentially on, the strategy followed and progress made under previous USAID/B programs directed at this same objective.

While the focus of the project is rural family income, the driving force to achieve increased income through this project will be the market-led design approach leading to increased economic activities. Therefore, the project goal is to increase investment, productivity, and employment in licit activities as Bolivia's economy transforms its coca-based economy. The purpose is to develop alternative sources of income and employment for people within the project area. This will be achieved by focusing on both those engaged in coca production as well as those involved in non-coca activities and by developing a social and organizational environment at the local level to guarantee permanency of the changes achieved.

The focus of this project, both for programming and evaluation, is, as indicated, individual rural family income. The Socioeconomic Analysis (Annex F1) indicates why the family was chosen as the project focal point. The family is the basic production and decision making unit in the area covered by this project, and through the project we propose to influence their decisions regarding choice of economic strategies. This approach identifies the family unit to be women and men as joint family leaders, income earners and decision-makers, and eliminates the definition of family as male household head plus dependents.

Given the focus on rural family income, special attention will be provided to the role of women in the implementation of the project as data show that in the primary unit of the project focus, the family income is generated by both women and men and economic decision-making is shared between husbands and wives. Consequently, the project reflects these shared responsibilities by recognizing male and female roles in production, processing and marketing, as well as in the need and possibilities of off-farm employment for both men and women.

While it is clear that at some price for coca, a coca-related economic strategy will be preferable for most families in the Department of Cochabamba, relative prices between coca and alternative crops are not the sole determining factor in rural families' decisions. Research has demonstrated that Chapare rural families prefer crops that can be grown and harvested without outside labor. They also prefer not to subject themselves to "hassling" by the police. People in the valleys and highlands do not like the Cochabamba tropics and, indeed, would prefer not to have to migrate at all (and will not if their incomes are high enough to obviate the necessity to do so). Even if they do have to migrate, they will not go to the Chapare if other migration destinations can provide comparable opportunities for employment.

Thus, if coca prices can be kept low enough, as they were during 1990, rural families in both zones will prefer non-coca related strategies. Therefore, it should be reiterated that the success of this project and indeed USAID's Alternative Development Strategy, is absolutely dependent on keeping farmgate coca prices low by the continued successful implementation of the GOB's law enforcement and interdiction program.

2. Strategy

All project components are tightly tied to this rural family income focus. Baseline data on rural family's productive activities and incomes will be gathered as this project starts and used as the basis for evaluation. Products to be tested in the agricultural experimental stations will be selected on the basis of their marketability and likely return to farmers. These estimates will include an assessment of their impact on present time use by each of the members of the rural family (men, women, children) and will be checked by on-farm research to be carried out by farm systems research extensionists to be added to IBTA/Chapare and the new

IBTA/Valleys under this program. Farm management para-professionals, to be trained under this project, will help rural families draw up production plans. These plans will serve as a basis for loans and/or grants under the capital resources component and to assist in increasing farm income. Post harvest training and assistance will be aimed at getting farmers higher returns on what they offer for sale, partly by improving the marketing chain and partly by helping them up-grade the quality of what they produce. In the Cochabamba valleys and highlands, small irrigation projects will increase the land available for intensive, higher value production and range management and reforestation. Both of which will protect water sources and help upgrade forage for livestock. To the extent possible, particularly in the Cochabamba valleys and highlands, infrastructure works carried out by contract will be scheduled so as to coincide with the agricultural slack period, thus providing the maximum amount of off-farm income to rural families in the subproject areas. Assistance will be provided to strengthen market intermediaries (processors, transporters, and distributors). Natural resource management activities are designed to provide future income activities from the planting of nut, fruit, and forest trees and, in the Cochabamba valleys and highlands, to increase the availability of surface water for irrigation.

As a necessary complement to these activities, the coordinating mechanism for this program will be strengthened through management technical assistance and operational agility. Application of the criteria developed in the design of this project, starting with the focus on marketing and on rural family income, also will help the implementing agencies do a better, more effective job of project implementation.

E. Summary Project Description

This project is comprised of three closely interrelated components. The components include:

1) Marketing

This component is designed to remove bottlenecks and increase efficiency in the whole market chain from the producer to the ultimate consumer. It will attempt to move producers as far as possible into the marketing chain, thus increasing their margins and establishing closer links with the entrepreneurs and markets. It will also seek to facilitate investment in agroindustrial endeavors opened up by project activities. In addition, all project planning will be based on market considerations.

2) Capital Resources

Capital resources will be provided to producers in order to take maximum advantage of market opportunities. Individual farmers who have eradicated may receive, in addition to the $2,000 provided by the GOB, a partial grant of farm inputs. A program of in-kind grants to coca eradicators in the Chapare will ease their transfer to licit activities. Communities that have eradicated at least thirty percent of their coca may select an immediate impact community construction activity, a second activity at 70% reduction, and a third activity when 100% of the coca has been eradicated. Finally, credit will be available though on a more disciplined basis than in the past. Credit-worthiness will be determined by farm plans which will take into account total farm income and repayment prospects. Credit also will be provided to truckers, marketers, processors, exporters, and investors in related agroindustrial enterprises through arrangements with local banks or other institutions.

3) Sustainable Small Farm Production

This component is designed to increase rural family farm production, to address market demands, and, thereby, increase family income. Market-linked research and extension activities will be carried out by IBTA/Chapare and a parallel unit - IBTA/Valleys - to be created under the project and by some NGO's, notably ASAR. Products selected for experimentation will be selected on the basis of preliminary market research and estimates of probable profitability to rural families. These factors will be rechecked, through on-farm trials, before the products are recommended to farmers. In addition, sustainable agriculture will be assured by integrating into the production program a set of irrigation, watershed, and natural resource management activities in the Cochabamba valleys and highlands. These activities will reduce erosion and loss of soil fertility by improved medium technology practices and measures designed to protect surface and ground water resources.

4) Project Management

Extensive review has been carried out to assure that the Project will have sufficient monitoring covering the above components. USAID's management of this project will be strengthened by increased staff in both La Paz and the Cochabamba office. The Project will also rearrange some of the institutional arrangements, especially reducing some of the management responsibilities of PDAR. As a result, AID will reduce its financing of operational costs for this unit. The management changes are reflected in other parts of the paper.

II. PROJECT IMPLEMENTATION AND INSTITUTIONAL ARRANGEMENTS

A. Summary

The Project will be implemented through the current project's implementation mechanisms with some modifications to take into account changes which the Mission believes are necessary. The most significant of these changes represents a refocused role for PDAR; a more proactive role in planning and monitoring for the USAID project office in Cochabamba and a slight expansion of personnel to accomplish this; the consolidation of the current multiple contracts for TA into one overall contract, with clear lines of USAID authority and contractor responsibility; an expanded role for NGOs, funded through an NGO coordinating mechanism; the operation of a private sector, a project funded, independent marketing unit; and the gradual change over to a private sector agricultural credit mechanism.

B. USAID/Bolivia

USAID/Bolivia will provide comprehensive management related to AID'S requirements for the CORDEP project through appropriate direct hire and contract staff in the Mission's offices in La Paz and the Project office in Cochabamba.

1. La Paz Office

CORDEP will be managed by the current USDH project officer and FSNDH project manager in the Office of Agriculture and Rural Development (ARD) in USAID/La Paz. However, the CORDEP is a considerably more ambitious and larger project than the current CRDP; therefore, in order for USAID to effectively manage this larger, multifaceted project, an assistant project manager/public relations expert will be required. Also, an engineer will be added to the engineering division. Both these PSCs will be project funded. In addition, a Management Informations System (MIS)/monitoring expert, funded from other sources, will provide USAID monitoring of project activities within the overall Alternative Development Program.

Secondly, other Mission offices will be providing regular backstopping: 1) Controller - financial management; 2) HHR - active, close coordination with the CARE and CCH projects which have major components in Cochabamba; 3) TI - close technical involvement in the marketing and credit components and coordination of the Micro & Small Enterprise project; 4) EXO - administration, contracting and granting, and security assistance; 5) PD&I - engineering services for construction activities and close coordination of the Rural Roads and Rural Electrification projects; 6) ARD - coordination of all PL-480 and environmental activities; and 7) DP - coordination of all PVO activities.

Finally, as indicated in the introductory section of the Project Paper, the CORDEP is one of many projects within the Mission's Alternative Development Program. Mission projects that will directly impact on CORDEP beneficiaries in the Department of Cochabamba are listed in the table below. While these projects tend to have a national focus, activities identified in the Cochabamba region will receive implementation priority.

TABLE OF PROJECTS WITHIN THE ALTERNATIVE DEVELOPMENT PROGRAM

Export Promotion	511-0585
Micro/Small Enterprise Development	511-0596
Private Agricultural Organizationa	511-0589
National Rural Household Survey	511-0612
Drug Awareness and Prevention	511-0613
Community and Child Health	511-0594
CARE Community Development	511-0618
Child Survival PVO Network II	511-0620
Innovative Radio Learning	511-0619
Alternative Development Electricity	511-0614
Farm to Market Roads	511-0622 (FY 92)
Natural Resources Management	511-0621 (FY 92)
PL 480 Title II Food for Work Programs	

USAID/Solivia's Alternative Development Steering committee, chaired by the Deputy Mission Director, oversees the planning and coordination of all alternative development activities. In order to insure priority attention to activities to be coordinated and implemented in the Department of Cochabamba, the Alternative Development Steering Committee will meet in Cochabamba once each quarter. The Steering Committee, made up of at least one member from each technical office (ARD, TI, and HHR) and support offices (CONT, EXO, ECON, DP, PD&I, and RLA) will review the status of activities in Cochabamba of each project and will determine additional needs in Cochabamba as appropriate.

2. Cochabamba Regional Office

The USAID office in Cochabamba will be expanded slightly from its current size to provide close oversight of the long-term contractor and frequent programmatic interaction with the GOB organizations involved in the Project, the NGOs, the marketing mechanism, and the credit program. The personnel will be hired by USAID as PSCs and report to the Project Regional Coordinator, who in turn reports to the Project Manager in La Paz. This office will be structured to assume as much of the day-to-day implementation burden as is possible, referring only those decisions or actions to USAID/La Paz that require Mission level input.

Currently, the Cochabamba office has direct coordination with the PDAR, of all road activities carried out by SNC, the electrification activities, IBTA, and the TA contracts. The new project assumes a reduced role for PDAR and a corresponding larger role for the Cochabamba office through direct management of some six or seven NGOs. In addition, although the number of separate TA contracts will be reduced, there will be a considerable increase in TA personnel. All of these considerations argue for a larger office in Cochabamba.

Thus, the current staffing pattern of the Cochabamba Office will be maintained with some additional staff to manage the increased coordination responsibilities (see proposed organizational charts). It is anticipated that the following staff will be required: a regional coordinator and assistant regional coordinator, both USPSCs, an administrative officer, a public relations expert, 2 financial analysts/accountants, 2 engineers, 2 secretaries and 3 drivers.

AID MANAGEMENT ASSISTANCE BUDGET
($000)

	1	2	3	4	5	Total
Technical Assistance (FX)						
Regional Coordinator	270	270	270	270	270	1,350
Assistant Regional Coord.	240	240	240	240	240	1,200
Subtotal	**510**	**510**	**510**	**510**	**510**	**2,550**
Commodities (FX)						
2 Vehicles	50	-	-	-	-	50
3 Computers	10	-	-	-	-	10
Office Furniture	10	-	-	-	-	10
Subtotal	**70**	**--**	**--**	**--**	**--**	**70**
Other Costs (LC)						
PSC Engineer Coch x 2	100	100	100	100	100	500
PSC Engineer La Paz	50	50	50	50	50	250
PSC Assistant Manager/La Paz	30	30	30	30	30	150
PSC Accountant/Coch x 2	80	80	80	80	80	400
PSC Secretary/Coch x 2	40	40	40	40	40	200
PSC Drivers/Coch x 3	45	45	45	45	45	225
Office Rent/Supplies & Operating	40	40	40	40	40	200
Subtotal	**385**	**385**	**385**	**385**	**385**	**1,925**
TOTAL	**1,055**	**985**	**985**	**985**	**985**	**4,995**

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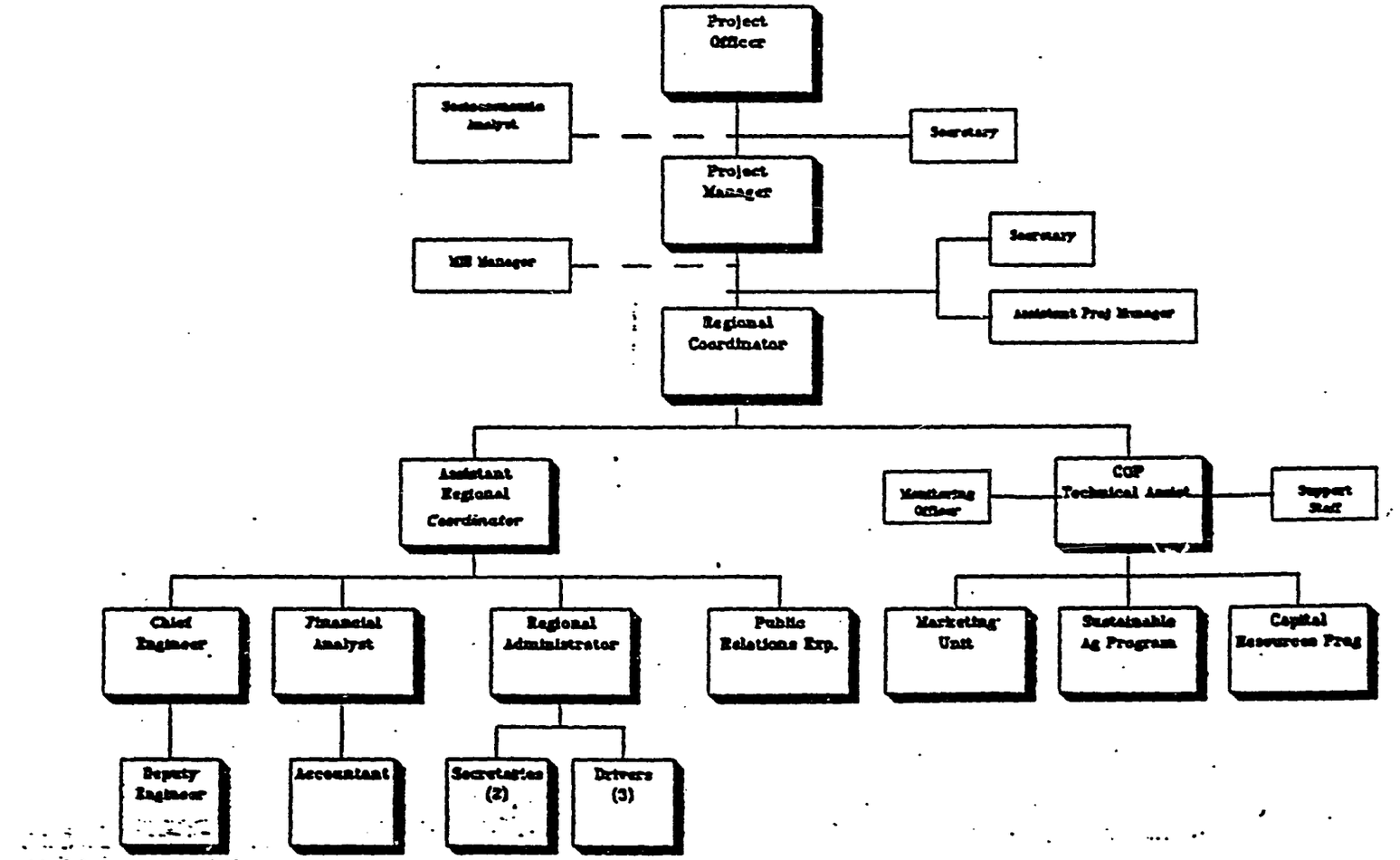
COCHABAMBA REGIONAL DEVELOPMENT



C. TA Contractor

1. Background

A contract will be awarded to a firm or institution, under fully competitive procedures, to provide and manage all technical assistance required for the Project with the exception of the Capital Resources component and for AID management support. The contractor will provide U.S., third-country, and Bolivian personnel for the long- and short-term technical and administrative requirements of implementation of the Project.

Within this multicomponent project, the key to coordination and follow-up of project implementation activities with various implementing entities will be the annual project planning sessions. The annual planning session will be coordinated by the TA contractor with technical and programmatic guidance from the Project Regional Coordinator. It will be attended by all project implementing and financing entities, as well as entities that may undertake complementary activities in the Department of Cochabamba under separate projects. The first annual planning session will develop 1) a life of project implementation plan; and 2) a two year rolling plan, in which the first year is a detailed implementation plan and budget and the second year is a less detailed plan which provides the basis for the following year's detailed plan and budget. The results of these planning sessions will be forwarded to AID and SUBDESAL for approval prior to initiation of implementation by each project implementing agency. The TA contractor will also carry out quarterly reviews of implementation with a designated oversight sub-group including the Project Regional Coordinator.

2. Management Assistance

Within other TA components (Marketing and Sustainable Small Farm Production) up to $10.0 million in project funds is set aside for 5 long-term specialists (a total of 26 person-years) and some 175 person months of short-term assistance. In addition, the TA contractor will provide overall project management functions. These functions include the supervision of all component TA, assistance in overall project planning, monitoring, budgeting, financial management systems, project coordination, monitoring, and reporting. The contracting firm will also be responsible for procurement of commodities, support services, and training. The TA contractor will report directly to USAID/Cochabamba. The TA management team is expected to include a long-term international Chief of Party for 5 years, plus a locally hired staff of about 13 individuals. This local staff should probably include: a Deputy Chief of Party who would also serve as the project monitoring specialist/Social Scientist, an administrative officer, two accountants, three secretaries, and drivers, all contracted for the five year life of project. In addition to providing technical assistance, the TA contractor will exercise oversight, reporting to USAID for agricultural, infrastructure, marketing, and natural resources technical assistance. This will insure participation in and coordination with all activities related to project planning and implementation, and overall coordination of those activities consistent with the project multi-year and annual work plans.

The TA contractor will be required to rent office space and obtain office equipment, supplies, and vehicles to become operational. The contractor will also manage some assets purchased under the predecessor CRDP. On an annual basis, the TA contractor will organize and finance a one-week session with all alternative development planning and implementing agencies to set out two year rolling plans and to define annual operating budgets of each participating implementing entity.

The contractor's evaluation/monitoring specialist will help design and implement an on-going monitoring of the progress made towards the project's targets and goals as identified in the long term plan, two year plan and the yearly work plans. The evaluation system will be an integral part of the planning process to be installed under this project.

In addition to the funds provided for TA in each component, project funding for the TA contractor management assistance is provided in the following table.

TA CONTRACTOR BUDGET FOR PROJECT ADMINISTRATION
($000)
(Excluding TA for 3 Technical Components)

	1	2	3	4	5	Total
Technical Assistance (FX)						
Chief of Party	270	270	270	270	270	1,350
Subtotal	270	270	270	270	270	1,350
Commodities (FX)						
Vehicles x 5 x 25	125					125
Computers x 6	18					18
Xerox x 2	8					8
Office Furniture	50					50
Subtotal	201					201
Other Costs (L.C.)						
Office Rental	100	100	100	100	100	500
Vehicle Operating & Mainten.	50	50	50	50	50	250
Office Utilities/Supplies	50	50	50	50	50	250
Office Equipment & Mainten.	7	7	7	7	7	35
Annual Planning Session	100	100	100	100	100	500
Local Staff (13 x 20,000 per year)	260	260	260	260	260	1,300
Subtotal	567	567	567	567	567	2,835
TOTAL	1,038	837	837	837	837	4,386

D. Executing Agencies

USAID has learned by experience thus far under the previous project that a coordinated but decentralized operational mode is crucial to successful project implementation. Accordingly, each implementing unit or organization will control implementation decisions for its assigned tasks based on the year's work plan and budget. All agreements and subcontracts with public and private implementing agencies will be revised to reflect each respective organization's participation in the multi-year planning process and the annual work plan.

The principal agencies incorporated in CORDEP with which AID will directly interface are:

1. SUBDESAL

The Subsecretario de Desarrollo Alternativo (SUBDESAL) within the Ministry of Agricultural and Farmers Affairs (MACA) is responsible for coordinating all activities related to Alternative Development. This includes all GOB funded activities as well as other donor activities. Under the current CRDP, SUBDESAL is completely funded with PL 480 Title III funds.

Because of SUBDESAL's key role, it will, concurrently with AID, approve the life-of-project implementation plan and the two year rolling plan, and will be responsible for the GOB's role in plan implementation. USAID will work directly with SUBDESAL in providing guidance on the project implementation plans, and will also approve these plans. Up to ten of SUBDESAL's staff working on CORDEP matters will be funded with GOB counterpart funds. Since SUBDESAL works with many donors on a variety of alternative development activities, the remaining staff will be funded with mutually programmed local currency resources and will not be considered as part of the counterpart to the CORDEP.

2. PDAR

PDAR (Programa de Desarrollo Alternativo Regional) is the Coordinating/Monitoring arm for SUBDESAL's Alternative Development Program. During the implementation of the CRDP, PDAR's role was expanded out of necessity at the time, to include implementation activities such as the immediate impact projects and micro irrigation. During the design of the CORDEP it was found that the Alternative Development Program has matured to a point where organizations have been identified for implementation activities. Therefore, PDAR can return to its original role of coordinating/monitoring GOB activities in alternative development.

PDAR will coordinate/monitor GOB field activities in the project area and provide relevant information to both USAID and the prime TA contractor. PDAR will also serve as a point of contact for project beneficiaries or potential beneficiaries to request GOB assistance in alternative development activities. A reduced PDAR workforce of approximately 30 individuals will be financed with GOB counterpart funds. PDAR will attend annual project planning sessions where they will be able to provide GOB priorities in response to beneficiaries requests. The monitoring effort by PDAR will provide necessary input to the CORDEP MIS which will be linked to the AID/W counter-narcotics MIS.

3. IBTA/Chapare

IBTA/Chapare has demonstrated a high level of competence in its research and extension activities. The expanded agency staff and facilities have provided improved training, extension, and adaptive research services and organization assistance in the tropics.

4. IBTA/Valleys

Based on the success of the separation of IBTA/Chapare from IBTA/Cochabamba regional offices, a condition to financing IBTA activities in the valleys will be the establishment of an IBTA/Valleys office. Once IBTA/Valleys is created the project will provide resources which will permit appropriate research in additional crops as well as expanded training and extension programs to provide support to farmers and NGO sub projects in the zone. Activities undertaken by both IBTA's will be implemented and funded through PDAR with assistance from USAID/Cochabamba.

5. NGOs

A selected number of NGOs with substantial experience under the CRDP and a demonstrated capacity for implementing CORDEP subprojects will be a vital part of the project's effort to respond to local needs and expectations to increase and diversify production geared to raising incomes in the project area. Implementation of NGO activities will be through coordination with the TA Contractor. Key NGOs and their specific roles may be:

ASAR	-	Agriculture Technology transfer and small farmer credit management.
DESEC/ICE	-	Community organization and small farmer credit systems organization and management.
CUMAT/CDC	-	Land use planning and river basin management.
CARE	-	Possibly will implement micro irrigation activities, potable water and watershed protection.
Radio Esperanza	-	Radio programming for improved agricultural practices and market price information as well as small scale potable water, reforestation, promotion and training.
CEDEAGRO	-	Fruit Silviculture and Reforestation.

Other NGOs will be recruited to manage specific subprojects according to their respective capabilities. Special efforts will be made to encourage NGOs in the Tropics where few have operated previously. In addition, NGOs will be solicited to undertake immediate impact activities in the Tropics.

6. Servicio Nacional de Caminos (SNC)--(Roads and Bridges)

SNC's farm to market roads program will be funded under the marketing comlponent of this project. SNC will participate at the annual planning sessions to develop project priorities for the next two years. SNC activities will be implemented and funded through PDAR with assistance from USAID/Cochabamba.

7. NRECA, ENDE, AND ELFEC

Rural electrification will be undertaken through a separate AID Rural Electrification Project. Participating entities will be invited to the CORDEP annual planning sessions.

8. Cochabamba Regional Development Corporation (CORDECO)

CORDECO operates a long-term forestry support project which will contribute research results and tree stock for reforestation to those areas requiring natural resource conservation and forest management. CORDECO activities will be implemented and funded through PDAR with assistance from USAID/Cochabamba.

GOB Planning & Administrative Budget Assistance

($000)

	1	2	3	4	5	Total
SUBDESAL Planning	200	200	200	200	200	1,000
PDAR Coordination/Monitoring	1,044	757	758	759	1,046	4,364
TOTAL	1,244	957	958	959	1,246	5,364

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III. PROJECT COMPONENTS

A. Marketing Component

1. Objectives

In keeping with the CORDEP market-led strategy, the primary objective of this component is to facilitate processing and marketing functions for the products of the rural families in the project area. The Capital Resources and Sustainable Small Farmer Production components will take advantage of marketing opportunities identified as a result of the Marketing component.

These marketing functions will be carried out by new or existing private sector organizations, including producers' associations, and individual entrepreneurs such as exporters, truckers, processors, market vendors, etc. The project will seek to encourage the expansion in numbers of such actors and their increasingly efficient operations. These enterprises will help form links in the marketing chain essential to the accomplishment of the project goal of raising incomes of rural families in the project area by producing improved quality produce with a major focus on the export market. Small and medium enterprises including producers' associations will focus on domestic markets, particularly in the early stages of the project. Larger enterprises, like successful present exporters of pineapples to Argentina, will also help increase rural families' incomes and employment opportunities. The CORDEP marketing component will be carried out by a small team of contracted foreign specialists working with Bolivian specialists, and will provide the primary source of information for planning annual and long-term project activities.

2. Strategy to Remove Marketing Constraints in the Project Area

It is apparent that improvements in production technology and supporting infrastructure will not effectively raise family incomes in the project area unless they are guided by marketing considerations and combined with marketing assistance. Experience in the previous project indicates that the marketing end of the equation will require even more emphasis than it has received in the past.

The proposed project will be market driven. This means that before farmers are advised to plant particular crops, one of the following two requirements will have been satisfied: (a) an investor, processor, or purchaser has been found who is willing to commit himself or herself to purchase or sell the product at a price profitable to the farmer; or (b) a feasibility study involving the particular product or products has been carried out which not only covers the feasibility and cost of producing the product(s) in particular areas of the Tropics, but has also proceeded to explore all subsequent stages, including packing, processing, shipping, and sale through identified distributors or exporters to identified buyers, either at home or abroad, at a price that provides a profitable return to the farmer.

Another lesson from the previous project, and from many projects elsewhere, is that effective marketing assistance requires great agility. Markets are moving targets. Marketing effectiveness will best be served by a project structure which allows maximum flexibility to respond to changing circumstances and evolving experience, especially in the case of international markets.

Therefore, it must be clearly understood that the following description of the project's marketing component is intended to be an illustrative description, reflecting the best present thinking. The implementation documents -- project agreements, contracts, etc. -- will to the maximum extent possible allow the managers of this component to make rapid adjustments in the mix of different marketing activities, the number and kinds of personnel, organizational structure, budget line items, etc. The bureaucratic documentation requirements for such adjustments will be kept to a reasonable minimum. The measure of success of this component will be increases in jobs and annual incomes attributed to the unit's work.

In practice, and given the special nature of the marketing challenge, the success of this component will depend much more on the recruitment of one or two top-flight individuals to manage it than on any ex ante analysis of the various possible mixes of activities. Thus, the contracting of this component will be based primarily on the identity of the key personnel proposed, and their track record of demonstrated success in similar efforts.

This marketing support is not intended to be perpetuated in the form of a permanent marketing-assistance institution in the region. Rather, its long term contribution will come in the form of new, self-sustaining business activities established, and improvements in the effectiveness of the various actors in the marketing chain.

Within the overall project technical assistance contract, a Project Marketing Unit will be established to assist farmers and private marketing entities in realizing the economic benefits of alternative crops and income producing opportunities. Key functions of this unit include market information, promotion, sales, logistics, and technical assistance to other private sector implementing units and producers groups. This marketing unit will necessarily be a lead agency in a continuous process of identifying alternative crops with the best market potential and working with researchers, extensionists, and farmers and intermediaries to develop products that will satisfy market requirements, particularly for exports. This crop market identification will be one of the key elements which shape the direction of IBTA's work within the Sustainable Small Farm Production Component.

3. Proposed Project Marketing Activities

An illustrative list of types of functions the marketing unit will carry out includes the following:

a. Market Research and Information

i. Price Information and Publication

The Project Marketing Unit will ascertain and regularly report ongoing commodity prices. In the valleys, this effort will focus on prices for such commodities as onions, garlic, tomatoes, potatoes, corn, peanuts, anise, beets, cattle, sheep, and goats in local fairs and in markets in Sucre, Aiquile, Arani, Cochabamba, and Santa Cruz. Export market prices will, for example, be tracked for cochineal, flowers, berries, essential oils, and other promising export commodities.

In the tropics, price research for local markets will focus initially on achiote, milk, dairy cattle, beef cattle, cassava, maracuya, papaya, and citrus. Prices will be reported for pineapples, bananas, pepper, and avocados for both export and local markets.

The research will seek to identify actual prices on specific dates, by commodity and by grade where possible. This information will be tabulated and reported on a regular, timely basis in a format easy for both men and women producers and intermediaries to understand. Commodity prices for major markets like Cochabamba, Santa Cruz, etc. will be reported on a daily basis by radio through the project area. Special efforts will be made to reach women because of their key role in marketing crops from family farms.

ii. Production Statistics

The Project Marketing Unit will identify and quantify areas under crop, yields, and estimated quality, by commodity and by production zone, in the project area. The unit will disseminate the resulting information frequently and keep it updated.

iii. Certification of Planting Materials and Products

To increase yields and quality of commodities, the Marketing Unit will develop standards for grading planting materials and produce. These standards will be applied to materials and products entering the market and certificates issued to items of appropriate quality. These efforts will complement ongoing work by CEDEAGRO in Mizque and by several bilateral donors in Aiquile working with private enterprises producing seeds and planting material.

iv. Directories

The Marketing Unit will produce directories which list known marketing participants ("rescatistas," processors, exporters, importers) for major markets locally, regionally and overseas for products from the project area, as well as international grades and standards and minimum quantities required by product and by market.

v. Linkage between Research and Agroindustry

Another key role of the marketing unit is to strengthen the link between agricultural research and the requirements of agroindustry. Traditionally, IBTA researchers have focused almost exclusively on production and productivity, without adequate consideration for cost of production data. They also seek out the particular needs of the industries which use raw agricultural products as inputs. This results in production which does not necessarily have the most desirable characteristics in that particular market, and translates into lower prices for producers. The unit will fill this critical void by facilitating research-industry interaction, and by recommending training programs and the upgrading of research facilities where required.

b. Training in Marketing and Related Skills

i. Training Workshops

The Marketing Unit will conduct workshops for rural families, farmers associations, entrepreneurs, and individual farmers, exporters and other entrepreneurs, on topics such as the following:

- crop management for market-tailored quality;
- harvest procedures;
- product grading and international packing;
- post harvest handling and treatment;
- local storage and delivery to transporters;
- sales, domestic and foreign;
- use of marketing information,;
- administrative controls; and
- financial management;

ii. Demonstrations

The Marketing Unit will establish pilot demonstrations and training in processing technologies for spices, garlic, onion, dried fruits, dyestuffs, etc. The demonstrations will assist small and medium processing and marketing associations in upgrading their technology and skills to perform value added activities efficiently at the household and small processing levels. Training activities will be designed to focus on women as they have a leading role in the marketing of farm products and in selecting seeds. They thus form a key link in tailoring farm production to the requirements of the market.

c. Linking Farmers to Marketing Opportunities

i. Farm-to-Market Access

One of the major constraints to marketing agricultural produce in Bolivia is the lack of dependable, all weather access to markets. Without such access farmers are reluctant to invest in expanded crop production for fear of losses when attempting to market their produce or when waiting for intermediaries to come and purchase their harvest at the farm gate. This situation is further exacerbated in the Department of Cochabamba where farmers are being encouraged to invest in new and/or exotic crops for new, unfamiliar markets and where potential private sector investors are being encouraged to develop agro processing plants in the face of unreliable infrastructure for the delivery of raw products.

Within the component up to $5.0 million will be available per year, to improve farm-to-market roads within the Department of Cochabamba. These roads will be selected based on marketing potential criteria. The Servicio Nacional de Caminos (SNC) is responsible for expanding the national road network and set priorities for road activities in the Department of Cochabamba. The Caminos Vecinales (Rural Roads) department within SNC's Cochabamba district (District 4) is responsible for insuring that bridges and road improvements and cobbling identified in the rolling two year plan are undertaken each year. As such, SNC will be invited to annual planning sessions to identify road improvement priorities within the Department of Cochabamba. SNC will contract out to design of all bridges and road sections. SNC will then develop RFPs for the construction of all bridges and major road drainage structures. Initially, SNC may use force account and later contracting methods to improve road sections. Private contractors will be contracted to build all bridges and major drainage works. SNC will also contract all street cobbling projects with private sector contractors with the requirement that contractors use local labor whenever practical.

Initially, SNC may use heavy equipment purchased under the predecessor project as well as heavy equipment provided by JICA to construct some roads. However, SNC will gradually shift the use of this

machinery to road maintenance and predominantely use private sector contractors to undertake the initial construction or improvement of Project farm-to-market roads. Private sector contractors will be required to use local manual labor for labor intensive portions of the road construction whenever appropriate. Two PSC engineers in the USAID/Cochabamba Office, with support from the Engineering Division of USAID/La Paz, will monitor all farm-to-market road activities.

ii. Matching Entrepreneurs to Marketing Opportunities with Incentive Payments

Upon identifying specific buyers, prices, and volumes for specific commodities, the Marketing Unit will seek to find producers and sellers to match these opportunities. For the valleys promising prospects exist for exporting berries, flowers, asparagus, and cochineal. Export prospects look good for pineapples, bananas, pepper, and palm heart from the tropics. Prospects for alternative products in the local markets have been surprisingly strong as in the case of pineapple and passion fruit.

On an experimental basis, the Marketing Unit will have the capability to enter into incentive agreements with businesses willing to install or to expand their capacity to process or market products from the project area. These incentive payments will be provided through a special fund of ESF-generated host country-owned local currency (HCOLC), set up for this purpose, planned at $100,000 per year or $500,000 over the 5-year project life. Incentive payments will be available on a one-time basis per exporter per item exported. The fund will be administered by the Marketing Unit, but subject to approval by both USAID/Cochabamba and PDAR for each agreement and each payment.

By way of example, as an incentive to encourage a private company to establish a fruit processing facility in the region, a contract could be signed with the company in which (a) the company would guarantee a certain level of investment with its own funds, and (b) the project would commit to pay the company a "premium" of (e.g.) X cents for every kilo of product actually processed and sold during the first Y years, subject to an overall limit of Z. Exports could be "rewarded" higher since the initial export companies would have higher cost and risk, but the project would benefit from the creation of new markets and introduction of Bolivian products.

Such an incentive will have substantial advantages. The usual donor assistance to a business project (e.g. special credit lines, grants, technical assistance, etc.) tends to <u>reduce</u> the level of upfront commitment required from the investor; this mechanism, on the other hand would motivate an <u>increased</u> upfront investor commitment. Project expenditures would be completely tied to results. If (a) no companies can be found to take on new commitments under such an arrangement, or (b) companies which sign contracts do not achieve meaningful levels of sales, then no significant HCOLC funds are disbursed, and there is no loss other than the staff time which went into identifying or negotiating such deals.

Of course, no such incentive arrangement will be considered except in cases of products which would have a meaningful impact on family incomes in the target area -- e.g. products which are grown on small farms, or products which are grown on larger farms which create substantial new employment opportunities in the area.

iii. Satisfying Requirements of Importing Countries

The Marketing Unit will work with Bolivian export companies and marketing associations on meeting importation procedures into

the United States, Argentina, Chile, Brazil, and other industrial countries, as appropriate. This effort will likely concentrate on products that have high value and low weight and volume like cochineal and essential oils from the valleys, and black pepper and palm heart from the tropics. Detailed information will be obtained through the Bolivian Commercial Attaches in the countries indicated. As part of this activity, the unit will also look into possibilities for preferential treatment importing countries may offer to Bolivia as an underdeveloped country. The unit will share any information on preferences to producers, intermediaries and exporters.

This activity will also be coordinated with the USAID/Bolivia Export Promotion and Private Agricultural Organizations Projects as well as UNFDAC processing activities. The Marketing Unit will emphasize to Bolivian exporters the importance of establishing a good reputation in international markets and the danger of losing markets either through negligence or irresponsibility. Special efforts will be made to avoid difficulties with phytosanitary requirements of importing countries, especially the United States.

Another possibility is the participation of multinational traders, like United Fruit Company in Chile and the Central American countries, to market the produce directly. Under this alternative, the companies involved might even provide technical assistance to the farmers, through IBTA or directly. Similarly, the marketing unit could explore through Project SUSTAIN any opportunities to link farmers to importers.

iii. Transport Upgrading and Coordination

Because it is essential to upgrade transport services, the Marketing Unit will offer training to truckers as to appropriate equipment and handling technology. In addition to improving transport, with attendant price benefits to producers and sellers, this service is expected to increase truckers' income. Highway and access road improvements in the project zones will further reduce transport costs. The Marketing Unit's input will be given great weight in identifying road segments for upgrading.

d. Agribusiness Feasibility Studies

The Project will help interested entrepreneurs to prepare, refine or update feasibility studies for investment opportunities in activities that will add value to products produced in the project area. These feasibility studies will facilitate decisions as to whether to implement or reject particular marketing, processing, or export ventures in the project area. If the enterprise appears to be feasible, the study will assist the interested private sector entity to obtain financing for the enterprise.

For the Valleys, feasibility studies will be focussed on such topics as cochineal, flowers, essential oils, berries, nurseries, grafting services, animal traction implements, corn planters, fertilizer spreaders, forage choppers, dairy goat cheese, corn and potatoes seeds, low lift treadle pumps, fruit processing, jams, jellies, honey processing, yogurt mix, orchard equipment, fruit dryers, etc.

For the Tropics, feasibility studies will relate to such areas as pineapple, banana, black pepper, palm heart, fertilizer pellet manufacturing, orchard ladders, pruning tools, ice making, annatto paste

processing, fruit processing (yogurt mix, jams, and jellies), tropical floral production, and pork production. Studies will be undertaken preferably with the full involvement of real prospective investors with appropriate management capacity.

4. Institutional Organization and Coordination

In order to ensure that the public sector entities involved in the project are truly centering their activities to properly support identified marketing oportunities, the Marketing Unit will play the lead role in the development of all project work plans, including the LOP plan and the 2 year rolling plan. With the exception of the soil conservation and forestry, all GOB and NGO programs will have to be justified in terms of their direct support to the realization of marketing opportunities. The Marketing Unit, based on its direct contact with the current and potential buyers and processors of the products from the project area, will be in a far better position than traditional types of planners to guide the public sector investments necessary to effectively support private sector activities. The foreign and domestic market research conducted by this group will be a valuable source of medium and long term guidance in planning research, production and infrastructure activities.

To implement the CORDEP Marketing Component activities a team will be contracted with two international experts who would set up the Marketing Unit for four years. The Team would be headed by a marketing specialist. The Unit will also have one tropical products marketing specialist, one valley area marketing specialist, and one support services specialist. An Advisory Board representing producers, banks, transporters, wholesalers, retailers, agribusiness enterprises, and a PDAR marketing expert, will provide input to the marketing unit. The Marketing Unit will have also available up to 100 person months of short term technical assistance.

An illustrative list of activities the Marketing Unit short term specialists will carry out includes: spice drying, instant quick frozen products, commodity grading, packing, canning, price forecast analysis, marketing communication and reporting, marketing enterprise organization, letter of credit negotiation, ice making, high quality corn and potato seeds production, cochineal processing, peanut processing, fruit processing, livestock feeds, annatto paste processing, essential oil extraction, tropical products drying, and dolomite crushing and distribution.

The Marketing Unit will continue certain marketing activities currently underway in the project area through the CRDP. It will expand upon these activities to eventually perform the full range of actions set out in the above component description. Some priority activities will require implementation during the transition from the present CRDP marketing functions to the proposed new Project Marketing Unit. One current activity carried out by the CRDP consists of selling Chapare products on behalf of farmers at their request. This service will be phased out as soon as possible by creating the capability within the farmers' associations and enterprises to sell their products by themselves.

Marketing Component Budget

		1	2	3	4	5	Total
I.	Implementation Assistance (F.X.)	1,479	1,337	1,097	1,097	857	5,867
	A. Technical Assist. (F.X.)						
	Marketing/Business Specialist	240	240	240	240	--	960
	Marketing Sales Specialist	240	240	--	--	--	480
	Short Term	400	400	400	400	400	2,000
	Subtotal	880	880	640	640	400	3,440
	B. Training (F.X.)						
	Local Training (L.C.)	15	15	15	15	15	75
	Seminars (L.C.)	10	10	10	10	10	50
	Overseas Short Courses	30	30	30	30	30	150
	Subtotal	55	55	55	55	55	275
	C. Commodities (F.X.)						
	Vehicles x 5	125	--	--	--	--	125
	Office Equipment (computers, fax, furniture)	15	--	--	--	--	15
	Subtotal	140	--	--	--	--	140
	D. Other Costs (L.C.)						
	Bolivian Marketing Personnel x 3	90	90	90	90	90	450
	Marketing Infrastr.	300	300	300	300	300	1,500
	Office Rent Equip. & Telephone Line	14	12	12	12	12	62
	Subtotal	404	402	402	402	402	2,012
II.	Other Costs (L.C.)						
	Farm-to-Market Roads	5,423	6,000	6,000	6,000	6,000	29,423
	Incentive Payments	100	100	100	100	100	500
	Subtotal	5,523	6,100	6,100	6,100	6,100	29,923
	TOTAL	7,002	7,437	7,197	7,197	6,957	35,790

B. Capital Resources

A modest program of credit for coca eradicators was launched under the CRDP in late 1988. As of April 30, 1991, this program had approved 1044 loans amounting to about $5.3 million (average loan size of just over $5,000 or about $2.1 million per year) and had disbursed some $4.4 million. This program has been administered by the PL-480 Executive Secretariat, as none of the private or public banks could be induced to operate the program because of the perceived high risks. In addition, in mid 1990 the program began granting loans to qualified borrowers in the "Associated High Valleys" through an agreement with the Agricultural Bank of Bolivia (BAB). Under the component, only very modest amounts have been lent due to the lack of appropriate land and identity documents and the unwillingness of the BAB to lend even small amounts on the basis of crop and/or livestock collateral. The absence of suitable institutional arrangements to enforce their claims on such collateral forms an understandable basis for their reluctance.

After a brisk start the demand for loans eased off in early 1990 following the collapse of coca prices. A variety of reasons are given for this: lack of the required land titles, self financing of alternative crops with eradication payments, eradicators opting to abandon their holdings and leave the Chapare, the unwillingness of farmers to take on a quite burdensome debt (13% interest with maintenance of value against the US$), and the reduction of farmer cash flows to serve debt in a very slack market for coca leaf. Because obtaining title to land required the personal signature of the Bolivian President, very few titles have been issued.

While it is recognized that shortages of capital may be a significant restraint to the adaptation of alternative crops identified by the marketing component, institutional credit under the terms described above many not effectively relieve that constraint. The rapid adoption of coca in the Chapare during the 70s and 80s was accomplished without the benefit of formal credit programs. Many of the crops that have been adapted to the environment of the Cochabamba tropics have not been grown there under market conditions and their price prospects are unknown. Further, many of the loans granted so far have looked to continuing sales of coca leaf for debt service during the maturation of the alternative crops/enterprises being financed. (Farmers were only required to eradicate a portion of their coca plantings to qualify for loans.) Despite several years now of relative political stability and rather enlightened economic policies, Bolivia has not experienced significant levels of private investment in the productive sectors. One of the reasons for investor reluctance is the perception of continuing high risk levels associated with ventures in Bolivia. The coca growing areas are perceived by Bolivian business people to be areas of especially high risk and unattractive for investment.

The case for credit for farmers in the Valleys is a little more easily made. In the Valleys there are reasons to suspect that loans of modest amounts for such on-farm investments as water pumps, improved seed, fertilizers, water distribution facilities, improved livestock handling facilities, even home improvements for control of Chagas disease, etc. could go a long way in opening the way for these families to dramatically improve their lives. Although credit has been very late in coming into the picture in the AHVs, it has not moved very rapidly due to institutional difficulties. The utilization of NGOs to retail credit to their cooperators may be the best available mechanism to put improved technology in reach of valley families.

In such an uncertain environment, the Mission feels that it is best to proceed with a flexible, experimental type of program that will allow those willing to make the transformation to alternative activities identified

by the marketing unit to have access to the necessary resources without either unduly burdening them with debt nor further damaging a lending environment that has already been made toxic by donor-sponsored credit programs that seldom seem to be repaid.

Recognizing that it is in the interest of the USG to assist people to get into the longer maturing alternative crops to break their dependence on coca, it is proposed to use TA contractors or specialized NGOs for the development of community funds and credit channels to manage grants of host country owned local currency to communities that have eradicated a percentage of their coca crops to construct immediate impact infrastructure projects selected by the communities. Infrastructure projects known as "immediate impact projects" include productive infrastructure construction, such as storage sheds, drying platforms, and market collection points. These small infrastructure projects (each one less than $20,000) will provide improved marketing potential for these rural communities. Each community in the Chapare would be eligible for one of these projects when they have eradicated approximately 30%, 70% and 100% of their coca. PDAR will contract out for these community selected infrastructure projects once the community can provide a DIRECO certificate showing percentage of community erradication. Unlike the immediate impact projects of the predecessor CRDP, these infrastructure works will emphasize economically productive activities.

In addition, partial grants will be given to individual farmers who have eradicated a portion of their coca crops to finance necessary planting materials and other selected purchased inputs. Under this approach a coca eradicator would work out his/her farm plan with the technicians from IBTA and on the basis of his/her eradication certificate from DIRECO will receive input supply coupons good for, say, 80% of the cost of the inputs called for in the plan and redeemable at any private, community or IBTA nursery or input supply house in the area. Cash needs for land preparation and crop care during the gestation period would be lent on the basis of repayment from the revenues of the whole farm as worked out in the farm plan and associated cash flow analysis and not on the basis of land titles. PL 480 Executive Secretariat would control the disbursements of cash from a special fund to reimburse farm input suppliers for coupons received from farmers. The farmers will receive coupons from IBTA once farm plans are received. These grants are not reimbursement for erradication of coca (which farmers receive from the GOB), but discretionary grants for purchase of inputs needed to plant alternative crops.

During the implementation of the predecesor CRDP, it was found that land titling was, and continues to be, a bottleneck to obtaining credit. Within the Chapare, three different types of processes were used to provide residents with legal documents of land ownerships: 1) the Titulo Ejecutorial, or official land title obtained through the Reforma Agraria or the Instituto Nacional de Colonizacion and signed by personally by the President of Bolivia; 2) Titulos Civiles de Transferencia, Donacion o Herencia, or civil titles written between interested parties for the sale, granting or inheritance of land, or 3) Minutas Protocolizadas or notarized minutes issued by the Instituto Nacional de Colonizacion. All of these three documents must be registered with the Bolivian Derechos Reales.

The three processes described above are painfully slow. While we will keep pushing the GOB to improve the politically sensitive titling process, we will also seek to review for lending criteria in the project area to require an IBTA-approved farm plan only, and (in the Chapare) the DIRECO eradication certificate. At the same time, the AID Mission will continue a policy dialogue with the GOB to expedite the land titling process. To assist this process, a covenant on land titling will be included in the project agreement stating that the GOB must accelerate and improve its efforts to

deliver correct and complete land titles to farmers and other owners of land in the Chapare Region and Associated High Valleys during the life of the Project. It is worthy to note that, as result of AID's dialogue, the GOB handed out 3,000 land titles to Chapare farmers on May 17, 1991.

Since we have found no currently recognized ICI willing to undertake this type of lending in the existing institutional and financial environment at the time, the Mission intends to seek the assistance of an NGO who will work with community based savings and credit societies as credit channels capable of servicing the borrowers and collecting their loans. The Mission feels, on the basis of consultant reports and considerable discussion that credit granted by a committee of community leaders, with the repayment of principal and interest to become a community development fund controlled by the community, is, in contrast to the usual smallholder credit experience, more likely to be collected and to reinforce good credit discipline. Accordingly, a major portion of the small holder credit program proposed here will be channeled through community based savings and credit societies with any amounts lent out and subsequently collected becoming part of the capital of the society. Existing societies, of which there are several in the project area, would be strengthened and supported with technical assistance in the preparation of farm plans and cash flow analyses. In order to further reinforce the will to repay, only societies with significant levels of member resources at risk will be utilized.

The facilities of the project credit program as well as other Mission credit programs (e.g. Export Promotion and Market Town Capital Development) will be utilized to satisfy the capital requirements of firms and other private entities assisting in the marketing and/or processing of products identified by these entities or the Project marketing program.

The institutional contractor will be called upon to develop detailed arrangements for the program of grants of inputs and planting materials to coca eradicators. This same entity or an NGO will assist the Mission in working out the credit channels in conformity with Bolivian laws and regulations and assist the savings and credit societies and private firms as they come forward to establish sound credit granting and administration practices. The approaches suggested above will provide a point of departure for the contractor who will present his/her own approaches which will probably include some combination of the above for Mission review and approval.

It is important enough to repeat that this is to be run as an experimental program with maximum flexibility for the implementors to modify the program to respond to experience, local expectations, and changing conditions. If the potential borrowers do not see fit to come forward, efforts will be made to ascertain the reasons and address them to the extent possible.

The Capital Resources component will likely be granted to an NGO with a proven record of successful experience in the operation of credit/capital assistance programs in third world settings, using a colaborative mode of project development and implementation. This NGO would provide local staff support, both in Cochabamba and in the Tropics and Valleys to permit effective operation and monitoring of the programs.

Initially, the NGO will undertake studies to further refine credit demands and credit institutions and mechanisms currently operating in the Department of Cochabamba. As a result, the final staffing, structure, and financing of the Capital Resources program will be worked out and modified as appropriate, in close consultation between the Mission, the NGO and the GOB.

With an estimated credit demand in the Chapare of about $2.1 million per year (based on 2-1/2 years of experience) and a possibly slightly higher credit demand in the Valleys since farmers do not have access to $2,000 coca eradication payments or partial farm input grants, approximately $5.0 million will continue to be required per year in farm credit. GOB PL 480 counterpart will be provided as necessary to address this credit demand. However, for budgetary purposes an assumed first tranche of $5.0 million is listed in the illustrative component budget for farm credit. When these credit funds have been lent out, the GOB will provide additional PL 480 local currency to recapitalize the fund as needed. Agribusiness credit will be provided under other AID credit programs. An additional $1.0 million per year will be provided for partial granted farm inputs to Chapare farmers.

CAPITAL RESOURCES
ILLUSTRATIVE BUDGET
Year ($1000)

		1	2	3	4	5	TOTAL
1.	NGO Cooperative Agreement (FX)	700	700	700	700	700	3,500
2.	Funds for Grants (LC)	1,000	1,000	1,000	1,000	1,000	5,000
3.	PDAR Small Infrastructure Projects (LC)	1,500	1,500	1,500	1,500	1,500	7,500
4.	Loan Funds*	5,000	*				
	TOTAL	3,200	3,200	3,200	3,200	3,200	16,000

* Loan Funds will come from PL 480 resources and, therefore, will not be counted as part of the counterpart to this Project. Additional HCOLC will be jointly programmed when required.

C. Sustainable Small Farmer Production

1. Description of the Project Component

As a complement to marketing which will increase incomes and employment in the project area, sustainable agriculture and its forward and backward linkages, is a critical component. Agriculture is one engine of economic growth in developing countries, including Bolivia, and provides not only food, fiber, and fuel, but also income, savings and raw materials, capital, and additional resources for development of other sectors. Yet, the present and future capabilities of Bolivia for providing income, adequate livelihood and food security are threatened by a lack of developed markets and marketing information, by rapid population growth, debt and degrading natural resources. Sustainable agricultural development is an essential element to resolve these problems.

The proposals to augment the absorptive and productive capacity of agriculture in Bolivia are viewed in the light of the harsh conditions of soils, climate, and ecological problems inherent throughout the area. They differ greatly from one region to another but all pose severe risks to sustainable production and increases in rural family income. The objective of the component is to enable farm families to successfully grow adapted, marketable, licit crops that will give sustainable yields and thus increase incomes immediately and in the long term. The component's long term success and sustainability depend on the full and appropriate implementation of the other components in the CORDEP (marketing and capital resources) as well as the overall Alternative Development Program.

The progress obtained during the implementation of the predecessor CRDP demonstrates that there are opportunities to increase incomes from consumption, local market, and potential export crops. Livestock production, although slower in showing results, also offers important increases in consumption and for locally marketable products. The adaptive research in crops, livestock, and their management methods has made the early gains possible and its continuation will further that progress. Production of adapted crops and improved livestock is moving rapidly. Extension has made great strides in teaching farmers and their families about the developed enterprise potentials; farmers accept and respect the advice of the extension personnel. Small scale irrigation coupled with watershed management in the Valleys has provided additional income and employment to residents, thereby reducing the need for seasonal migration.

The early efforts to furnish results from practical research in crop substitution, the production of improved materials, and the diffusion of the information to farmers in the Chapare and in the Valleys have laid a sound base for this component of the Cochabamba Regional Development Project.

The sustainable small farm production component has three subcomponents, two of which operate in the major geographic areas:

a. The Cochabamba Tropics (Tropics)

1) Crop and livestock research
2) Production of new and improved varieties and strains
3) Extension of the results to individuals and groups of farm families based on marketing and production research results.

b. The Valleys and Highlands (Valleys)

1) Crops, forage, and livestock research
2) Production of new and improved varieties and strains
3) Extension of the results to individuals and groups of farmers and their families
4) Improved livestock and forage supply management.
5) Watershed management and small scale irrigation.

Even though the objectives for the component are the same across the project area, the diversity of the soils, climate, and land and water availability make it necessary to discuss the component actions separately for the two different regions.

a. Cochabamba Tropics

Implementation of the CORDEP is to be carried out by a special organization of the Bolivian Institute of Agricultural Technology (IBTA), a dependency of the Ministry of Agricultural and Farmer Affairs under the direction of the Subsecretariat for Alternative Development. The two IBTA Chapare experiment stations, Chipiriri and La Jota, have made significant strides in research, production, and extension. Their collaboration with some international projects (milk, tea, feed concentrates, yuca flour) further extend the development of the region. Their cooperation with the Canadian Vocational Agricultural School at Chimore helps enable the training of technicians for the region and other parts of Bolivia.

i. Research Actions

During the predecessor project, the stations concentrated on the adaptability to the area of several new crops: passion fruit, black pepper, macadamia, guanabana, coconuts, pineapples, pejivalles, palm hearts, ginger, and tumeric. All but the last two have demonstrated acceptable adaptability and probable profitability and there are still reasonable prospects for those two. Coffee and cacao varieties and cultural practices have been studied. Beginning trials have probed the possibilities of some tropical flowers and minor fruit trees. The dissemination of the crops has resulted in a substantial demand for most of the seed and planting materials. Interest on the part of buyers has sharpened recently.

Further, the stations have carried out substantive research on the improvement of varieties and strains of traditional crops important to the region: bananas, plantains, citrus, yuca, corn, and peanuts. They also added cowpeas, lentils, and beans, both for harvest and for ground cover and nitrogen fixation in the soil.

The livestock research activities include the improvement of native and new forage species and the introduction of legumes, especially kudzu, into the pastures. Feeding trials with plantains, yuca, and cut forage are in progress. Holstein-Gir crossbreeds (and a few with Brown Swiss) are being propagated for distribution to farmers as dual purpose animals. Crossbred hogs (including local animals) are being furnished to farmers for fattening and breeding enterprises. Poultry improvement is planned and will progress during this project.

The research subcomponent of the Cochabamba Regional Development Project will, in the Chapare Region:

- Continue probing research on potential new crops. Continue the adaptability research on all the introduced crops, especially through on farm trials to determine their suitability to the different soils and under variations of rainfall.

- Intensify the research into the applicability of leguminous cover crops between rows of tree and vine crops to ascertain the most practical species and methods for fixing nitrogen in the soil while allowing income and consumption potentials.

- Coffee and cacao will continue as a secondary line of research; the studies will concentrate on cultural practices, especially those related to shade, pruning, and post management.

- Strengthen the studies of cultural practices in the traditional crops and in some cases, the adaptability of additional varieties.

- Determine the most productive lines within the studies on dual purpose cattle, hogs, and poultry on the station and under varying on farm herd/flock care conditions in the several micro climatic areas.

- Increase the research on forage and other feeds in order to be able to recommend the best species and combinations for livestock in the tropics. Cooperate with MILKA and their cooperating farmers to ensure the most adaptable cattle, forage/feed crops, and care of dairy enterprises.

- Help provide the agricultural technologies needed to provide the bananas, plantains, kudzu or other protein rich materials, and other production enterprises to forward the work of the UN vinegar and feed concentrate projects.

Above all, the project will intensify its studies, including on-farm studies, into the profitability of all the enterprises, under local and other market potentials, to determine which should be recommended to farmers. In addition, these data will be supplied to the marketing unit as key variables in determining processing and marketing strategies for that effort. The Marketing Unit will likewise feed the researchers information from potential buyers/processors on product qualities, timing and volumes required so that products can be tailored to market needs.

A modified farming systems approaches to the research and extension in the Tropics will be installed during the first two years of the project. The key modification will be feed-back loops to buyers/processors of tropical products. Training and other assistance will be given to make this possible.

ii. Extension Activities

Extension made great strides under the first project; IBTA/Chapare gained the respect of a high proportion of the farmers and worked with them in achieving the introduction of new crops and the improvement of traditional crops and livestock. Extension concentrated its efforts by working with groups of farmers when possible and then giving attention to individual farm families as they progressed in their enterprises.

Two important vehicles were utilized in disseminating the information about the farm enterprises: (1) working with community farm leaders and (2) utilizing promoters to increase both the number and quality of contacts. During the last two years, extension added 11 women promoters to increase attention to small enterprises, home processing, and family well being; the number of women promoters will increase by 40% by 1994 and by 50% by the end of the project.

Extensionists, both men and women, will be trained to work directly with women farmers as well as men, especially in those areas for which women have primary or equal responsibility (seed selection, intercropping, introduction of non-traditional crops, demonstration farms, animal husbandry, health care of animals, domestic water management and water pollution and forestry conservation).

The stations will make every effort to recruit qualified female technicians and extension workers. Further, the stations will diligently seek qualified candidates from the Quechua speaking groups in research and extension; this is especially important for the Ichoa/Ivirgarzama area.

The present physical arrangement in which the extension agents and the research technicians work from the La Jota and Chipiriri stations, and from the Villa Tunari extension agency, is an inefficient arrangement. The distances are long, and the travel time is excessive due to bad roads or the lack of roads. Further, the communications of problems and requests for assistance are difficult, causing slow responses.

The CORDEP will, as appropriate, add additional farming systems research and extension offices. These will be strategically located to greatly enhance the delivery of services. Each agency will include a small office, a reasonable residence for the permanently stationed technician and dormitories for other extension and technical personnel as they work in that area. A communications facility (radio) will be installed in each. Appropriate transport will be provided.

The La Jota station has two communications specialists and some equipment to enhance the training and demonstration field days. That equipment will be augmented to allow them and the other staff members to prepare materials for use on the radio and TV if appropriate. The extension agencies will be furnished simple, basic equipment for use in their own area.

b. <u>The Valleys</u>

In the first project, the "Associated High Valleys" agricultural improvement efforts, although done well, tended to be fragmented: IBTA San Benito and Maira, PDAR, PROCIPLA, ASAR, and several other small NGOs were all involved in an uncoordinated way. All of these performed some extension tasks; the IBTA station and substation, PDAR, PROCIPLA, and sometimes ASAR, conducted applied research. The construction of irrigation and other water systems was primarily done by the engineering units of PDAR and to a lesser degree NGOs. Soil conservation activities were carried out by a DAI specialist in conjunction with a PDAR counterpart and with the help of some ASAR technicians.

i. Research Actions

Under the CORDEP, consolidation and coordination of sustainable agricultural improvement efforts will be accomplished by forming an IBTA Valleys unit to serve as the primary implementing entity. It will be charged with overseeing all modified farming systems research and extensive work; PDAR employees in forage, soil conservation, watershed management, or irrigation, and crops and livestock will be transferred to this unit. IBTA/Valleys will broaden its present project mandate to cover applied research in all tree/vine crops and to any introductions of new crops or improved varieties of traditional crops (corn, potatoes, peanuts, e.g.). The IBTA/Valleys researchers will assist ASAR and other private and government organizations to improve their research activities.

The newly created IBTA Valley unit will not encompass all of the present IBTA San Benito and Maira research activities. Those will remain under government funding. The new arrangement will require, for this part of the project: 1 farm management specialist in each of San Benito and Maira stations, 1 post harvest marketing specialist in each station, 1 farm and home specialist in each, and 1 produce quality specialist to be stationed at San Benito.

The soil conservation team members in the first project will be transferred/seconded to work with IBTA Valleys for research in that field. A soil conservation specialist will be added to the team, primarily to work in the Esteban Arce, Arani, and Punata areas. Two assistants will be added to each of the soil conservation field teams. All of the soil conservation personnel, including the contractor specialist, are to primarily field personnel with a minimum of office time.

A vital task for the Valleys is the focus on of the capacity to work within the farming systems concept to increase rural family income. Appropriate training will be provided to enable this transformation of the research and extension personnel in all fields and in all the cooperating organizations.

ii. Extension in the Valleys

The major extension provider in the Valleys under CRDP was ASAR in the Mizque, Campero, and Carrasco Provinces. IBTA Maira and IBTA San Benito each had 3 extensionists. Some small NGOs also did extension work. There were also some bilateral and international projects working in specific crops or in special geographic areas and they, too, included extension. The supplies, however, were insufficient to cover the total Valleys area. This project for the Valleys will furnish: 3 additional extensionists to the San Benito station to more adequately serve the area surrounding the station, and 2 agricultural extension agents will be added to the Maira station, primarily to work in the newly introduced crops in the Mizque, Carrasco, and Campero areas.

ASAR will conduct extension in this project with staff trained under the previous project. The communications and training efforts carried out by Radio Esperanza will continue into the new project but be heightened by the addition of information on prices and markets; special programs will be prepared for all new crop introductions; TV programs, as appropriate, will be undertaken as the station reaches full operating capacity.

As noted under research in the Tropics, the marketing focused farming systems approach focusing on rural family income will be equally as important in extension.

iii. Project Promotion

In order to respond to local needs, practices, and established organizational patterns, as well as to improve the receptivity of farm families to income increasing technologies and improved natural resource management practices, the existing social science unit in PDAR will be transferred to IBTA/VALLEYS to become a part of the Farm Systems Research & Extension (FSRE) team. As part of this group, the sociologist/anthropologists will participate in all phases of the design and implementation of the development and transfer of improved crop and livestock technologies. The program will count on these individuals to provide crucial input to the natural resource management and forestry components to enhance the acceptability of those activities and enhance their chances of long term success. This social science group will be responsible for the coordination of work with selected NGOs and other local and governmental organizations to improve the social acceptability of their programs. This group will also provide essential input to the monitoring and evaluation program.

iv. Watershed Management in the Valleys

a) Watershed Conservation

The project will continue constructing and operating mini works in water capture, water storage, and water distribution. Farm families value the water supplied under the project and participate willingly in maintaining the structures and protecting catchment sources with fencing and plantings.

Farming and animal grazing are the main activities found within Cochabamba's valleys and highlands. Unlike the Cochabamba tropics, rainfall normally occurs during the annual rainy season (October through March) and in the recent past has been sporadic and insufficient. Without water, valley and highland farmers have tended to migrate on a temporary basis during the dry period to find seasonal employment. The Chapare is one of the main areas these seasonal labors have sought short term employment. However, with the introduction of mini irrigation systems on a pilot basis under the predecessor project, it was found that farmers tended to remain on their valley or highland farms to double crop or to grow new, more water sensitive crops, or just to expand current crop production in lieu of searching for seasonal employment in the Chapare.

Project funds will be provided to finance mini irrigation systems. Mini systems will involve providing simple gravity flow water from an existing river bed through open cement-lined channels to a community or perhaps to more than one community from dammed small rivers. Project funds will be used to provide construction materials such as iron reinforcing bars, cement, valves, water flow and rain measuring gauges; and tubing where necessary as well as to undertake feasibility studies, designs, and to finance technical assistance as required. The current practice in the predecessor project has been that PDAR directly implements the mini irrigation activities out of its engineering department. However, under the CORDEP, an NGO will be contracted directly by AID to undertake these irrigation activities. Participating communities will provide local labor and material such as sand, gravel and rocks as appropriate.

b) Soil Productivity and Soil Conservation

Stream bank erosion control and gully control under the project will continue current practices that involve simple technology and voluntary collaboration of farmers. These practices will not present any technical difficulties.

c) Agroforestry

The agroforestry activities which the project will undertake require operating a series of small scale nurseries to produce trees and perennial plants. Nurseries of the size and level of technology required are common in Bolivia and do not present any technical difficulties.

Agroforestry also entails planting trees and caring for them after they are planted. Again, the technology is simple and, even when innovative, well within the capacity of local farmers, especially if assisted by project technicians.

d) Range Management

Range management under the project consists of shifting from the current system of uncontrolled grazing to a system of controlled grazing. Fences, made from live plants, from cut brush and wood, or from stones, will form the technical basis for controlling grazing by providing areas from which animals can be excluded, thereby allowing vegetation to recuperate and become available for future grazing. Rotating livestock from one exclosure to another keeps the whole range productive.

Several other practices complement rotational grazing to round out the techniques applied to attain range management. These include elimination of burning from the rangelands, protection of sensitive areas like water intakes and canyons by permanent exclusion of livestock from these areas, and reforestation of some sensitive areas.

Simply from the point of view of technological capacity to build fences, range management presents no problems. Fencing materials are readily available at little or no cost and labor is also available. Fencing will probably progress well in the most intensively grazed areas close to settlements. Likewise, tree planting and controlling burning should progress well in these areas. But the Highlands and Valleys contain large expanses of steep lands at great distances from the settlements. These lands, which have very low productive capacity, are currently grazed communally. Whereas it is technically feasible to fence these lands and plant trees on them, it is also costly. Moreover, fencing and tree planting on these lands provide relatively lower benefits in increased forage as contrasted to the benefit from more productive lands closer to settlements. Therefore, the project is not anticipating range management activities on the more isolated lands.

e. Forestry

Forest management in the Valleys will entail operating nurseries at a somewhat larger scale than those for agroforestry. Forestry development will also rely upon some different species of trees. In general, however, the technology for forestry is similar to that for agroforestry, and should be equally feasible from a purely technical point of view.

In practice, forestry will present difficulties similar to those for range management. People will probably be willing to commit efforts to tree planting near their homes where the benefits of the plantations will be clear and direct and the labor investment relatively low. Planting trees in remote areas, however, will have less obvious and less direct benefits, and will require more labor. Therefore, its establishment and protection may be more difficult to attain under the project.

c. Environmental Monitoring

Sound environmental management to underpin sustained economic development constitutes a basic premise of the proposed project. Consistent with that premise, the technical assistance contractor will provide environmental monitoring expertise. The environmental monitoring unit of the TA contractor will have responsibility for making continuous field observations on environmental conditions in project working areas.

In particular, the unit will monitor environment and environmental impacts in a broad sense. To illustrate: personnel working in the watershed conservation subcomponent will perform environmental analyses of specific micro works undertaken by the subcomponent; the environmental monitoring unit will monitor overall water balances in macro watersheds.

The environmental unit will collaborate with other project implementation units in assuring environmental soundness of project activities. The unit will prepare and issue an annual report on environmental conditions in the project area and on environmental impacts of project activities.

2. Technical Assistance Requirements

The attainment of the objectives for this component of the CORDEP will require the following technical assistance:

Long Term

-1 Agricultural Product Post Harvest Handling and Quality Specialist — 2 yrs

This specialist will work with Tropics and Valleys product quality specialists in setting up the laboratories and carrying out the analyses. This person will work on local and other processing, grading, packaging, train farmers on storage; work with the marketing to develop close links between it and the research and extension subsystems.

-1 semi-arid lands soil/water conservation specialist — 3 yrs

The tasks will include assistance and training for local staffs in the designs for soil/water conservation activities and supervising their installation in conjunction with the area IBTA programs.

-1 Environmental management/forestry specialist — 5 yrs

Short Term

Short term technical assistance is required in approximately 85 months in such fields as milk product processing, post harvest work with tropical fruit, preinspection for phytosanitary requirements, production and post harvest work with temperate fruit and other crops, assessment of improvements to existing irrigation systems, artificial insemination laboratory and operation, operation of zootechnics laboratory, and production/post harvest activities for new crops watershed management and environmental monitoring.

3. Training Requirements

a. Long-Term

It is anticipated that a high proportion of the training for the sustainable small farm production component will be conducted in country by the technical assistance specialists described. However, the assessment of the capacity of the implementation agencies indicates that the following must be furnished during the project:

1 MS in FSRE economics
1 MS in product quality testing
1 MS drylands ecologist;
1 MS watershed management;
1 MS hydrology;
1 MS soil conservation;
1 MS forestry;
1 MS in post harvest activities
1 year study/work on milk and dairy products probably with LEYDE, La Ceiba, Honduras

b. Short-Term

i. Research and Investigations

Short term training overseas will be necessary; these are likely to require one month study/work assignments to the US and/or third countries with similar conditions to those in the project areas. Those receiving this training will be existing or new staff members in any of the implementing agencies with special consideration for 1) private implementing agencies, and 2) women. The already identified topics for these short term studies include (some with suggestions for location):

- Banana/plantain research on diseases (Honduran Foundation for Agricultural Research, La Ceiba); post harvest work on introduced crops (macadamia, guanabana, black pepper, and others); home/farm processing of some products as value added activity (La Hermandad, San Marcos, Honduras); quality of fruit for canning (Kern Col., Guatemala); organization and operation of soils and plant disease laboratory.

ii. Watershed Management in the Valleys

(1) Short courses* for counterpart technicians working with the project:

- 3 short courses in land use capability analysis;
- 3 short courses in land use production systems;
- 2 short courses in watershed management;
- 2 short courses in range management;
- 2 short courses in forestry and agroforestry;

Seminars** for small farmers participating in the project:

- 4 seminars in land use capability analysis;
- 4 seminars in land use production systems;
- 4 seminars in watershed management;
- 4 seminars in range management;
- 4 seminars in forestry and agroforestry.

Undergraduate theses at local universities

- 2 theses in various topics related to the project

iii. Environment Monitoring

Short courses for counterpart technicians working with the project:

- 2 short courses in environmental planning and management;

Seminars for small farmers participating in the project:

- 4 seminars in environmental planning and management

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* A typical short course will have a duration of one to two weeks and will be attended by ten to twenty technicians.

** A typical seminar will last one or two days and will be attended by thirty to fifty farmers. Note that both men and women farmers will be interested in attending seminars and, therefore, most should be presented in two sections, one for men and one for women.

4. Estimated Costs

The following illustrative budget provides a breakdown of proposed uses of project funds.

SUSTAINABLE SMALL FARM PRODUCTION
COMPONENT BUDGET
($000)

Item	Years One	Two	Three	Four	Five	Total
I. Implementation Assistance (FX)						
A. Technical Assistance (FX)	1,060	1,060	820	580	580	4,100
B. Training (FX)	100	100	100	100	100	500
Local Training (LC)	30	50	50	50	30	210
Studies (LC)	180	260	335	40	20	835
C. Commodities (FX)	1,131	1,500	300	200	--	3,131
TOTAL	2,501	2,970	1,605	970	730	8,776
II. Local Implementation (LC)						
1) IBTA Subprojects	3,903	3,666	4,145	4,230	3,990	19,934
2) GOV Org.Subpr.	2,000	2,000	2,000	2,000	2,000	10,000
3) NGO Subprojects	1,505	2,000	2,500	3,000	3,000	12,005
TOTAL	7,408	7,666	8,645	9,230	8,990	41,939

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IV. COST ESTIMATES AND FINANCIAL PLAN

A. Project Financial Plan

In order to complete all activities within this 5-year project, $120 million in funding is required. This represents a mix of dollar costs, granted by AID and local costs, partially granted by AID and partially financed by ESF and PL 480 local currency counterpart funding. Approximately $91.6 million of the ESF, PL 480 and DA funds (or almost 76% of this project's funds) is for local costs. While host country counterpart is not required for ESF-funded projects, certain portions of the CORDEP are more appropriately financed by the cooperating country. These include GOB administrative costs, credit, and road construction for a total of the equivalent of about $40.0 million. About $28.4 million in AID funds will finance traditional activities such as foreign technical assistance, international training, and imported commodities. In addition, about $51.6 million in AID funds will be provided for local cost activities of the project's marketing, capital resources, and the small farm production activities. In total AID funds will provide $80.0 million to finance both foreign exchange and local costs of these project activities.

Table 1 presents the Summary Financial Plan, Requirements for Foreign Exchange and Local Currency, and Projected Disbursements by year.

AID grant funds for the project will be obligated through a bilateral agreement with the GOB. AID will undertake subobligating actions to contract the technical assistance contractor and to contract for Project PSC. staff in Cochabamba and La Paz as well as for operating costs of AID/Cochabamba's regional office.

B. Recurrent Cost Analysis

AID funds for the project come from two sources: $18.0 million from Development Assistance (ARDN) and $62.0 million from ESF provided as part of the NSD-18 initiative. The NSD-18 initiative is programmed for five years (FY 91-95) by which time it is felt that the problems which caused the initiation of the NSD-18 program will have been resolved. As such, the NSD-18 activities are to have a rapid impact on turning around the current international drug situation, and are not programmed for longer term institutional building or for recurrent costs beyond the life of the NSD-18 initiative.

The CORDEP project is designed for a rapid build up of activities that are programmed to continue for five years. Should some of these activities be of continued benefit to the Bolivian private sector (i.e. marketing information, community credit) and to the Bolivian public sector (i.e. agricultural research and extension) perhaps funds will be generated from other GOB, private sector, or donor resources to continue these activities. However, given the NSD-18 source of funding, identification of source of funding recurrent costs for the potential continuation of these activities is not part of the scope of work of this quick impact project.

CORDEP BUDGET
($000)

	Project Components	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	TOTAL	AID	COUNTERPART	TOTAL
I.	USAID/B Project Support	1,055	985	985	985	985	4,995	4,995	0	4,995
II.	Implementation Assistance	5,718	5,844	4,239	3,604	3,124	22,529	22,529	0	22,529
	Prime Contractor	1,038	837	837	837	837	4,386	4,386	0	4,386
	Tech. Assistance	270	270	270	270	270	1,350	1,350	0	1,350
	Commodities	201	0	0	0	0	201	201	0	201
	Operating Costs	567	567	567	567	567	2,835	2,835	0	2,835
	Marketing	1,479	1,337	1,097	1,097	857	5,867	5,867	0	5,867
	Tech. Assistance	880	880	640	640	400	3,440	3,440	0	3,440
	Training	55	55	55	55	55	275	275	0	275
	Commodities	140	0	0	0	0	140	140	0	140
	Operating Costs	404	402	402	402	402	2,012	2,012	0	2,012
	Capital Resources-NGO Cooperative Agreement	700	700	700	700	700	3,500	3,500	0	3,500
	Sustainable Small Farm Prod.	2,501	2,970	1,605	970	730	8,776	8,776	0	8,776
	Tech. Assistance	1,060	1,060	820	580	580	4,100	4,100	0	4,100
	Training	130	150	150	150	130	710	710	0	710
	Studies	180	260	335	40	20	835	835	0	835
	Commodities	1,131	1,500	300	200	0	3,131	3,131	0	3,131
III.	SUBPROJECTS	14,331	15,166	16,145	16,730	16,490	78,862	49,439	29,423	78,862
	PDAR/Immediate Impact Works	1,500	1,500	1,500	1,500	1,500	7,500	7,500	0	7,500
	IBTA	3,903	3,666	4,145	4,230	3,990	19,934	19,934	0	19,934
	Chapare	3,719	3,454	3,901	3,950	3,668	18,692	18,692	0	18,692
	Valles Altos	184	212	244	280	322	1,242	1,242	0	1,242
	Government Organizations	2,000	2,000	2,000	2,000	2,000	10,000	10,000	0	10,000
	Non-Government Organizations	1,505	2,000	2,500	3,000	3,000	12,005	12,005	0	12,005
	Road Construction	5,423	6,000	6,000	6,000	6,000	29,423	0	29,423	29,423
IV.	SUBDESAL/PDAR-Operational Costs	1,244	957	958	959	1,246	5,364	287	5,077	5,364
	PDAR	1,044	757	758	759	1,046	4,364	287	4,077	4,364
	SUBDESAL	200	200	200	200	200	1,000	0	1,000	1,000
V.	Agricultural Grant Program and Private Sector Incentive Fund	1,100	1,100	1,100	1,100	1,100	5,500	0	5,500	5,500
	Grants	1,000	1,000	1,000	1,000	1,000	5,000	0	5,000	5,000
	Incentive Fund	100	100	100	100	100	500	0	500	500
VI.	Audits/Evaluations	350	500	700	500	700	2,750	2,750	0	2,750
VII.	Contingency/Inflation(*)	0	0	0	0	0	0	0	0	0
	TOTAL	23,798	24,552	24,127	23,878	23,645	120,000	80,000	40,000	120,000

(*) Built into each line item.

C. Institutional Analysis, Audit and Payment Verification

The Project will continue to work with basically the same institutions as under the first project with some rearrangement of responsibilities and activities as previously noted. During implementation, the Mission has worked closely with PDAR, IBTA, and the National Road Service in implementing a series of management and financial controls, including inventory controls for the Road Service and the preparation of staffing pattern for PDAR and IBTA. At present, the Mission is preparing a major PIO/T to bring in management consultants to help implement the following:

1. Design additional inventory control systems for PDAR, IBTA and the road service.

2. Design and prepare personnel manuals and prepare job description for PDAR and IBTA.

3. Design and implement budget and financial control system that will assist the project in preparing annual financial plan.

4. Design a complementary (to MACS) financial information system that will permit the disaggregation of financial information by project component and where resources have been invested between the Chapare and Valleys.

As mentioned previously in the paper, one of the major responsibilities in the institutional arrangements is placing the NGO implementation activities with the AID Cochabamba office, thus relieving PDAR of this key input into the development process of the Valleys. Again, work has already begun to increase the capabilities of their institutions under the first project. Additional monitoring will be provided by the USAID staff in Cochabamba and the TA contractor will provide necessary assistance in further developing and expanding these activities.

Since 1989, the Project has contracted non-federal concurrent audits covering all Project activities. The reason for using the concurrent audit mechanism is to have the independent audit firm present periodically during the fiscal year. This has helped in identifying potential internal control and current ability problems during implementation and implementing corrective measures immediately. As a result, the auditors have provided clean audit opinion for all institutions for the calendar year ending 1989 and 1990. The non-federal audit for 1989 contained only light recommendation of which four have been closed. The non-federal concurrent audit will continue for the duration of the project.

The following is the Payment Verification Analysis with the corresponding methods of implementation and financing:

Project Input	Method of Implementation	Method of Financing	Amount
USAID/B Project Support	Direct Contract	Direct Payment	$4,995
Technical Assistance	Direct Contract	Direct Payment	22,529
Subproject	Host Country Agreements	Advance Payment	49,439
Audits/Evaluations	Direct Contract	Direct Payment	2,750

D. Local Source Procurement Justification

Local source procurement in Bolivia with appropriated funds will be necessary under the Project in order to successfully implement all three project components. Since the target groups of this Project are rural Bolivians, most mechanisms to reach them will be provided in a Bolivian context which will require Bolivian local currency to implement project activities.

Within the Marketing Component, the Bolivian staff at the marketing unit will be paid in local currency. The Unit's operating costs in Cochabamba will all be in local currency. Marketing information for the rural Bolivian audience will be distributed over Bolivian and through the Bolivian press both of which will require local cost financing.

Within the Capital Resources Component, local currency will be required to contract for the construction of community-identified, immediate impact infrastructure projects. All construction for each subproject will be undertaken with local building materials and local labor at an average of approximately $20,000 in local currency for each contract. Local farm inputs which will be partially granted to farmers, will be paid in local currency. In addition, credit provided within the Project will be provided to the rural beneficiaries in local currency to purchase items found in the local markets.

Under the Sustainable Small Farm Production Component all local research and extension activities will be financed in local currency. All watershed management, reforestation and irrigation activities will also be financed with local currency. And of course, all salaries of Bolivians undertaking these activities will be paid in local currency.

Therefore, under the Administrator's Buy America Policy ("ABAP"), as last restated in the final implementation guidance cable, 90 State 410442, para 8, a waiver authorizing local cost financing ("LCF") by categories of procurement transactions must be included in project authorization documentation, for non-exempt categories of transactions. An analysis of the Project budget and justification for the waiver included in the project authorization for such non-exempt categories of procurement transactions follows an explanation of the exemptions.

According to the final implementation guidance cable, 90 State 410442, paras 9-22, the following types of transactions are exempt from the ABAP, and no waiver is required to authorize or finance the following types of local costs:

1. Professional Service Contracts $250,000 or less in value;

2. Construction Service Contracts $5 million or less in value;

3. Locally available (local source), U.S. Origin goods, up to $100,000 per transaction;

4. Any transaction below $5,000 in value;

5. Handbook 13 Grants and Cooperative Agreements, including Grants to PIOs: no special waivers are required because the Standard Provisions state source and origin rules;

6. Fixed Amount Reimbursement (FAR) disbursements;

7. Intermediate Credit Institutions (ICIs).

8. Commodities and Services Available only Locally

No specific local source procurement waiver is required for the following items available only in the local economy:

a) Utilities: including fuel for heating and cooking, water disposal and trash collection;

b) Communications: telephone, telex, fax, postal and courier services;

c) Rental costs for housing and office space;

d) Petroleum, oils and lubricants for operating vehicles and equipment,

e) Newspapers, periodicals and books published in the cooperating country; and

f) Other commodities and services (and related expenses) that, by their nature or as a practical matter, can only be acquired, performed, or incurred in the cooperating country.

9. Participant Training

10. Host Country Counterpart Contribution

CORDEP BUDGET ANALYSIS UNDER ABAP

Component and Activity	Type of Transaction	AID Dollar Contribution (000)	Total LCF	Exempt	To be Waived
I. USAID/B Proj. Support		4,995	2,495	1,600	895*
	Local staff				
	Office rental			(500)	
	Utilities			(300)	
	Petrol			(500)	
	Office expenses			(300)	
II. Technical Assistance		22,529	0	0	0
III. Subprojects					
A. PDAR	Small construction Contracts $20-30,000	7,500	7,213	7,213 (all contracts below $5 million)	0

Component and Activity	Type of Transaction (000)	AID Dollar Contribution	Total LCF	Exempt	To be Waived
B. IBTA	Local staff	20,221	19,921	9,921	10,000*
	Utilities & Com.			(3,000)	
	Petrol			(4,000)	
	Office exp.			(2,921)	
C. Government Organiz.	Local staff	10,000	10,000	8,000	2,000*
	Utilities & Com.			(2,000)	
	Petrol			(3,000)	
	Office Exp.			(2,000)	
D. NGOs	Small scale irrigation constr. contracts	12,005	12,005	12,005 (as HB 13 grantees administering small constr. contracts)	0
E. Road Construction	Local construction contracts each below $5 million in value	0	0	0	0
IV. SUBDESAL/PDAR		0	0	0	0
V. Agricultural Loan, Grant & Incentive Fund		0	0	0	0
VI. Audit & Evaluations		2,750	1,500	1,500 (service contracts below $250,000)	0
TOTALS		80,000	53,134	40,239	12,895

* For local staff

Because procurement of these non-exempt local services in Bolivia would best promote the objectives of the Foreign Assistance Program, (HB 1B, Section 5D10a(1)(d)), a waiver permitting procurement of the services of local staff with nationality in Bolivia is included in the Project Authorization.

The total amount of this waiver is $12.895 million, but no individual service contract for local staff will exceed the $5.0 million limit per transaction of the waiver authority delegated to Regional Assistant Administrators under DOA 405. By signing the Facesheet and Project Authorization or this Project, the authorizing official approves this authorization and waiver to permit local cost financing for the categories of transactions described above and determines that the prices of indigenous and locally available imported goods and services are reasonable (HB 1B, Section 18A.1.6.(1).

E. Procurement Procedures

It is anticipated that a single T.A. contractor will be obtained though full open competition for implementation of the CORDEP including marketing, capital resources and sustainable small farm production. In addition, a Cooperative Agreement with an NGO may be executed to support the capital resources component. The project management function will include overall supervision of the technical components, assistance to USAID & PDAR in overall project planning, evaluation, budgeting, financial management systems, project-coordination, monitoring and reporting as well as responsibility for designated procurement of commodities, project support services & training. A summary of the prospective Technical assistance inputs by component is set forth as follows:

1. Management Category

	Person-Years
Chief of Party	5
Local Staff (Professionals)	50
Support Staff	60
Commodities	
Office Rental	
O&M/Utilities/ Equipment/Supplies/Maintenance	

2. Sustainable Small Farmer Production

	Person-Years
Post Harvest Spec.	2
Semiarid lands, Soil, Water Conservation Specialist	3
Environmental Management Forestry Specialist	5
Short-term TA	85 person/months

Training:

1 MS FSRE economics
1 MS Product quality testing
1 MS Post Harvest activities
1 Year work/study
1 MS drylands ecologist
1 MS watershed management
1 MS hydrology
1 MS forestry
1 Year Study/Work
Dairy Products.

3. Marketing

	Person-Years
Marketing/Business	4
Marketing/Sales	2
Local hire professional:	
General Marketing/manager	5
Manager local markets	5
Tropical products	5
Marketing officer valleys	5
Marketing support officer	5

Short-term TA	100 person/months
Training/local "overseas"	$ 275,000
Commodities	$ 200,000

4. Capital Resources

NGO	3,500
Funds for Grant Program	5,000
Infrastructure Projects	7,500

Analysis

Based upon the magnitude and complexity of the components to be contracted under this project it was not considered appropriate to set aside this contracting activity for a SBA 8 (a) firm or a Gray Amendment set aside. The size and complexity of the 3 components may require a prime contractor with sub-contracting and/or consortium approach. The opportunity for USAID/Bolivia and GOB to evaluate the best proposals will require a full and open competition mode of technical services of contracting leading to a cost-reimbursement contract format. AID/W mandated 10% subcontracting to Gray Amendment firms will be complied with. During the scope of work development phase, following approval of the PP, precise TA (LT and ST) inputs including position descriptions, training, support and commodities procurement lists will be defined.

5. Commodity Procurement

The project paper sets forth a comprehensive list of a wide variety of commodities necessary to adequately support each project component. Analysis of this list seems to group the commodities into the following distinct groups with a designated/recommended responsible procurement agent:

	Commodity Item	Action Agent	Contract type
I.	Vehicles: Single drive 4 wheel drive Pickups Motorcycles	USAID/RCO	Direct Contract/AID
II.	Technical LAB equipment Office furniture Tools Processing equipment Computers Fax equipment Office space/equipment	U.S. TA contractor	Sub-contract or procurement services agent
III.	Residential furniture for LT TA Staff	USAID/Bolivia	GSA Contract
IV.	Communication Radios	USAID/Bolivia	GSA Contracts

The rationale for the above category designation establishes reponsibility based upon which organization is able to implement the procurement in the most effective and efficient manner. Vehicles have long been procured by USAID/Bolivia on a direct basis. The advantage here is that USAID/Bolivia can initiate procurement of vehicles prior to arrival of the prime contractor which will save on lead time for obtaining those vehicles. Also USAID /Bolivia will insure that buy -American Provisions are adhered to as well as provide necessary consideration of spare parts, maintenance and fleet compatibility-.

Category II: Technical Equipment is best procured by the TA contractor who will be best positioned to define and development requisite specifications and who will have a strong motivation to insure precise and timely delivery of materials necessary for project implementation. All prospective offerors' procurement systems will be reviewed and evaluated as a part of the RFP during the Technical Evaluation Process.

Category III: The USAID/Bolivia procurement office has been procuring furniture sets for both OE and Project of LT personnel. Although purchases in the past have been obtained funded through a combination of direct contracts with furniture suppliers and GSA schedule suppliers, we expect to meet requirements through existing GSA or Dept. of State contract suppliers. This would eliminate the need for direct contracting by USAID/Bolivia and requires only a requisition to the designated suppliers. This will also give USAID/Bolivia the option to do Bulk Orders which could include OE and/or other project needs.

Category IV: USAID/Bolivia may wish to retain the responsibility for procurement of communications equipments for CORDEP to insure systems compatibility with the present Cochabamba equipment. This equipment can be obtained through GSA suppliers and requires coordination with AID/W IG/SEC.

V. MEASURE OF EFFECTIVENESS

Pursuant to tracking requirement of NSD-18 activities, the following project implementation plan is provided to be included in the overall counterdrug program implementation program.

CORDEP PROGRAM ELEMENTS AND MEASURES OF EFFECTIVENESS MATRIX

MEASURE OF EFFECTIVENESS

Program Element	Year One (4/1/91-3/31/92	Date of Implementation	Year Two to Five (4/1/92-3/31/96)	Beyond Five Years (Strategic Objectives)
CORDEP	-Designed	05/91		1) Ratio of coca-related to non-coca to be reduced
	-Approved	06/91		
	-Obligated	07/91		
	-FX Commodities purchased	09/91		2) Ratio of coca exports to non coca exports reduced.
	-TA Contracted	11/91		
	-TA on board	01/92		
	-FX Commodities arrive	01/92		To non-coca jobs reduced
	-CY 92 Operating plan approved	01/92	CY 93, 94, 95 Plans approved	
	-First Immediate impact activities initiated.	02/92	Continuing	
	-First mini-irrigation activities initiated.	02/92	Continuing	
	First ag extension activities initiated.	02/92	Continuing	
	-First Marketing Seminar held	03/92	Continuing	
	-First credit given	03/92	Continuing	

Planned Funding Levels (In US$000)

	FY 91		FY 92	
Project/Activity	**Obligate**	**Disburse**	**Obligate**	**Disburse**
CORDEP	7,280	0	20,300	18,000

* Year One of Andean Counterdrug Implementation Plan

TENTATIVE DATA SOURCES FOR INDICATORS

Goal	Indicators	Data Source
Increase investment productivity, and employment in licit activities.	1) Investments made in agro-related enterprises 2) Production in agro-related enterprises increased. 3) Employment in licit activities increased.	1) AID-financed baseline and end of project study
Purpose		
To develop alternative sources of income and employment for people within the project area.	1) Increased licit sources of income and employment within the project area.	1) National Rural Household Survey in Year 1 and Year 5.
	2) Migration trends coca growing areas are reduced.	2) Periodic migration surveys
	3) Increased number and effectiveness of local institutions to support new production, marketing and infrastructure systems.	3) Project reports/ evaluations

VI. MONITORING, EVALUATION AND AUDIT PLAN

The Cochabamba Regional Development Project is complex with numerous organizations involved in its implementation. Constant monitoring is required to assure timeliness of actions and to provide the information necessary for mid course corrections when necessary. Similarly, internal and external audits are required to assure that the project is implemented prudently and within the limits of U.S.G. regulations.

A. Monitoring Plan

The Project Monitoring Plan is designed to measure the timely progress and accomplishment of the project and to collect the data necessary for effective evaluation of project success and impact. It should serve as an effective early warning system, alerting project management of problems that need to be addressed.

1. Management of the Monitoring Function

The overall project monitoring function will be the responsibility of the Project Manager, a direct hire representative of USAID/Bolivia's ARD office. When major changes in project activities are proposed, or other issues that may have a significant effect on project strategy, implementation or outputs, a Mission project committee will meet. The committee will be comprised of representatives from ARD, DP, PD&I, CONT, T&I, HHR and other offices as appropriate.

Day-to-day project monitoring will be the responsibility of the Regional PSC Project Coordinator stationed in Cochabamba. He will also be the focal point for the collection and consolidation of all project monitoring data and other information. He will report directly to the direct hire Project Manager.

2. Development and Implementation of the Monitoring System

The major institutional contractor will be responsible for developing, installing and administering a project monitoring system for all project components. The contractor will work with cooperating implementing agencies such as NGOs and GOB entities to develop objective and relevant baseline data and data collection systems. The system will produce data on an ongoing basis that will be regularly fed through the institutional contractor to the Regional Coordinator, who then reports to the Project Manager. The Scope of Work for the institutional contractor should include monitoring responsibilities, and should allow for a specialist in this field. A complete monitoring system, including all data collection, should be in place within six months of the institutional contractor's arrival at post.

The monitoring specialist will:

(1) Collect, tabulate, evaluate and update as needed base line data which is related to project targets and goals as described in the long term plan. The baseline data will be established no later than six months from project initiation. The data will be computerized for ease of reference.

(2) Collect and tabulate data concerning project and subproject targets on an annual basis in a format consistent with the base line data throughout the life of the project.

(3) Analyze data on Project targets and accomplishments.

(4) Provide all participating units and agencies with an analysis on Project progress on an annual basis.

(5) Insure that any recommended corrective action indicated by the data analysis and/or evaluations is referred to the implementation committee for resolution and/or is fed back into the planning process and report to SUBDESAL and USAID on all corrective action taken.

(6) Report the results of all progress reports and evaluations to SUBDESAL and USAID on regular and timely basis.

3. Reports

The institutional contractor is responsible for coordinating and submitting to the Regional Project Coordinator reports on a monthly basis. The reports should include consolidated data, an analysis of the data, and a narrative summarizing project progress and problems.

The monitoring reports of the Mission and the prime contractor will constitute a permanent record of inspections, recommendations, and of follow up actions taken. They will be reviewed quarterly to ensure that every activity and organization has been appropriately monitored. All implementing institutions are responsible, however, for calling attention immediately to any matter requiring correction.

B. Auditing Arrangements

Financial auditing of accounting, in consonance with the approved program actions, will be conducted in the following modes:

Each cooperating institution will prepare complete and accurate financial reports and submit them to the Mission annually. Those will be examined by the Mission and the prime contractor. The findings will be noted and recommendations for any corrective action listed.

At the end of each project year, all involved institutions will provide an annual, audited statement of accounts. These must include indications of the project activities that pertain to the monies received and spent.

The TA contractor will furnish annual, audited reports of all financial activities carried out under the contract. Those reports will tie the monies received and the expenditures to the appropriate project activity.

Mission and regional auditors will examine all the submitted internal and external audit reports and recommend any necessary corrective actions and follow up reexaminations required.

All agreements and contracts will contain the specific clause(s) relating to the submission of internal and external audit reports, the agencies which are to have access to accounting records of the institution. Such institution will give full and complete cooperation to the auditing agents, including direct access to internal accounting.

C. Evaluation Arrangements

The evaluation plan for the Cochabamba Regional Development Project is designed to provide two kinds of information:

Interim data and process information that will allow the Mission to improve the efforts toward accomplishment of the its goals and objectives.

The evaluations are closely linked to the monitoring and audit plan. The monitoring efforts give frequent findings on process, problems encountered and their resolution, and modifications made in the implementation activities. The audits, their recommendations, and mid course corrections add the final dimension as linked to the program activities.

Follow-on projects inherit sets of circumstances, conditions, and previous actions that become an important part of the framework within which the new project operates. Documents that describe the original project (in this case, the Chapare Regional Development Project), therefore become useful in establishing the base from which the present project (Cochabamba Regional Development Project or CORDEP) undertook its efforts. The project paper and its amendments, reports on accomplishments, interim and final evaluations, and audits must be included within the evaluation review tasks for the present project.

1. Interim Evaluations

There will be a mid-term evaluation between 18 and 24 months after project activities begin. The evaluation will focus on preliminary impact and performance indicators, and will be used to validate the basic strategy and approach of the program and to recommend modifications.

As this is a follow-on project, the project should be able to demonstrate impact and results within the first year of implementation. There will be many groups, including U.S. agencies, the GOB and other donors that will expect regular reports on project impact. Therefore, it is essential that the data collected will be directly related to project outputs and indicators for each of the project elements listed below. The absence of such data was a nagging problem during the initial project, and required that project impact information be collected and reported on a frequent, ad hoc basis.

The components in the CORDEP, while they all contribute toward the attainment of the goals and objectives, are all unique. To assure adequate attention to the findings and mid term results of each, the interim evaluation will address each component separately. However, the scopes of work for these evaluations will be interrelated so that, taken together, they enable USAID to review results in the larger project context. The separate interim evaluation elements, therefore, will be:

a. Marketing is to be the driving sector of this project. Project success or failure will largely depend on what happens in marketing. In evaluating the efficacy of project marketing, efforts need to be taken of the fragile business environment in Bolivia and the special risks inherent in alternative development where so much depends on such outside forces as coca interdiction and resultant farm gate prices for coca leaf.

As in all of the interim component evaluations, an examination of the implementing institutions and their effectiveness in carrying out their tasks must be examined.

b. **Agribusiness** (processing, marketing) will be studied at mid term to determine the effectiveness of the mechanisms set up and of the institutions managing them; loan documentation; and the profitability of lending within the marketing or agroindustry activities undertaken. Measures of quantities of product moved and numbers of jobs created as a result of investments undertaken with the credits issued also will be reported. A thorough comparison of the borrowers will be made to determine whether there has been a process or other bias that prejudiced the access of women and the different language groups to credit.

c. **Rural Household Incomes** will be the basic measure of project success. A National Rural Household Survey, about to get underway, will provide this baseline data. Both the tropics and the Cochabamba valleys will be over-sampled in carrying out this survey. The survey will be repeated at least at the project's mid-term and again at the end of the project.

d. **Agricultural Production** will serve as a base which will complement other components: credit, processing, marketing, and agribusiness. Production will be examined in three ways:

i. The increases in production as a function of the efforts to increase yields;

ii. The relative profitability of the use of an agricultural enterprise within the context of the enterprise combinations on the farm and the farm family: the cost of credit, alternative cultural practices, processing, transportation, and marketing as a function of profit - increases in family income; and

iii. Agricultural Practices.

Production includes three subcomponents: research on the experiment stations and the on-farm research trials; reproduction of materials on the stations and farms; and the extension of the information on crops and livestock to the farm families.

The inclusion in the Cochabamba project of cost determination and resource demands of each enterprise as an alternative and the returns from it as a factor in farm family income, is an important step in assessing the viability of any introduction or improved crop, animal enterprise, or practice before attempts are made to extend such innovations to farm families.

e. **Credit** will be examined primarily in its function to facilitate the financial resources necessary to carry out agricultural enterprises that contribute positively to increases in family incomes. The examination of small farmer production credit will focus on how the necessary financial resources are being made available to this sector and the effectiveness of project efforts in increasing the availability of small farmer financing.

f. Participating project entities will be studied to assess their capacity to conduct activities in support of project objectives. The entities will include USAID/Bolivia (including the project office in Cochabamba), the prime contractor, and implementing institutions such as IBTA Chapare and IBTA/Valleys, PDAR, SNC, US & local NGOs, and any other government or non-government agencies that have direct participation in the project.

An assessment of their relative achievement of their part in the goals and objectives will be done to ascertain their effectiveness and efficiency, and to provide information for any mid course corrections that need to be taken.

Finally, the interim evaluations will include an examination of beginning efforts toward economic progress and social benefits. The AID special targets - farm families, women, and the language groups - will be studied to determine probable final benefits to them and whether or not they have had access to the project implementation and benefits.

The interim evaluations will include recommendations for the improvement of the institutional arrangements, modifications in their contracts or agreements to forward the accomplishment of the goals and objectives, and any changes in actions or strategies required to enhance the results of the project.

3. Final Evaluation

The primary purpose of the final evaluation is to determine the impact of the project as measured in terms of the goals and objectives of the project. Baseline data will be the foundation for the calculation of quantifiable variables and the description of the processes employed. A study of the participating institutions, their processes, and their relative effectiveness as project participants will be assessed.

An important facet of the final evaluation processes is that of differentiating between actions that should have produced impacts and those that are still at a development stage. The latter will be described and estimates of their probable impacts provided.

The final evaluation will assess each of the components and its expected benefits and beneficiaries. It will include the appropriateness of the technical application, the processes employed, and the impact results. This evaluation will examine all of the components' contributions to the project as a whole. It will integrate the findings from the components into an assessment of the entire Cochabamba Regional Development Project. The minimum topics to be addressed are:

Changes in Farm Family Income in the Project Area.
Effectiveness of Agricultural Research and Extension
Effectiveness of Marketing and other Agribusiness Endeavors
Effectiveness of Small Farmer Production Credit
Effectiveness of Credit for Marketing and Other Agribusiness

These will follow the outlined tasks and their definitions as described in the interim evaluation section except that their major concentration will be on the findings of the final characteristics and data. The final evaluation will take into consideration the audits provided by the Mission and the RIG.

All of these, and the project as a whole, will also be assessed in terms of their contributions in light of the soundness of:

Financial arrangements and supply of funds
Economic impact, particularly on the target groups
Social impact, especially on the target groups
Administrative arrangements for the conduct of the project

A separate analysis will be made of any improvements the actions effected on the environment and any of their prejudicial impacts on it.

4. Evaluation Arrangements

The interim and final evaluations will be undertaken by USAID and supported as needed by private institutions or individuals. The Mission and all cooperating organizations will provide full access to the information needed and will facilitate the access to data and to the beneficiaries of their programs within the project.

The evaluators will furnish a draft of the reports to the Mission, participate in the review of the documents, and make those changes that are required to make them complete and accurate within the framework of the scopes of work for the studies. When the necessary modifications have been made, the evaluators will provide a final version of the evaluations to USAID/Bolivia. All of the drafts, data, and the final versions of the reports are the property of the Mission until they are released as public information.

The final evaluation exercise will provide a thorough examination of the lessons learned from carrying out the project. It will include both process and impact findings and appropriate recommendations for improved effectiveness of this project and for future projects of the same or related nature.

VII. CONDITIONS AND COVENANTS

A. Conditions

1. Prior to being eligible for consideration for project funding of a community-identified immediate impact project, the community in the Chapare must provide PDAR with a DIRECO Certificate indicating that the community as a whole has eradicated approximately 30%, 70% and 100% of the hectares of coca in production in 1988, respectively.

2. Prior to being eligible for consideration for partially-granted farm inputs and/or credit provided by the project, each individual farmer in the Chapare must provide PDAR with a DIRECO Certificate indicating that the farmer has eradicated approximately 10% of hectares of coca he/she had in production in 1988 and has a plan approved by DIRECO for eradication of the remaining coca.

B. Covenants

1. The GOB covenants to provide all materials, equipment and vehicles purchased under the CRDP for similar activities to be continued within the follow-on CORDEP.

2. The GOB covenants to accelerate and improve its efforts to deliver correct and complete land titles to farmers and other owners of land in the Chapare and the Associated High Valleys during the life of the Project.

3. The GOB covenants to vigorously pursue, in accord with Law 1008 and other agreements with the USG, the eradication of transitional and illegal coca.

4. The GOB covenants to present a plan for the management of the Amboro/Carrasco Park, and the resolution of the problem of the settlements within the boundries of the park.

VIII. SUMMARIES OF PROJECT ANALYSES

The market-led CORDEP is necessarily complex because of the broad objective of increasing family income across very different climatic and ecological areas. These areas produce a variety of different agricultural products, harvested at different times and prepared for different markets. As would be anticipated, then, the actions proposed by USAID/Bolivia are many and varied. A summary of each project analysis is presented but they should not be viewed purely as individual components because they come together to form a strategy for improvement of the family incomes across the project area.

A. Social Soundness

The analyses highlight two concerns:

1. Focus on Family Income:

Project success depends on a comprehensive and sustained focus on family income. This concept is thoroughly built into all components so that the primary beneficiaries of project activities are the family households above. Examples include:

a. Agricultural experiment stations will aim their work toward crops and techniques that will raise the income level of project families. New crops will be promoted only after careful market and on-farm production studies.

b. Marketing studies will take into account the functioning of local market systems and the roles of women and men as they actually function in these systems. Externally-generated models lead to misconceptions of regional market dynamics and risks and to the implementation of inappropriate market strategies.

c. Marketing proposals will be aimed at increasing the margin of profit on products grown by rural families. Consequently, products will normally be selected for marketing if (i) there is a viable market and (ii) if the product will produce a higher margin of profit for rural families, including income to rural families through remittance from members who have temporarily or permanently migrated to other areas.

2. The Socioeconomic Realities of Women as Farmers, Processors, and Marketers:

The project organizes appropriate marketing and production activities around the socioeconomic roles of women farmers and marketers that will help women increase their income. Without this integration of women beneficiaries in project planning and implementation, the project could not achieve success.

Evaluation of the project will assess the increase of family incomes, women's contributions as well as men's. It will also assess the number of small farm, credit, marketing, and natural resource project activities that include or exclude women.

As described above, the project will hire staff members, from planners to technicians and promoters, who are knowledgeable about farm women's economic roles and able to communicate with women farmers in order to carry out the planning, implementation, and evaluation of project activities that involve women and the farm economy.

B. Economic Feasibility

There are regions in the Chapare that have the requisite soil and climatic conditions to permit a substantial expansion of areas planted in alternative crops, assuming the provision of lime, credit or other forms of material support, and technical assistance in marketing, processing, packing and transportation. IBTA and AID studies have shown that particular crops or crop mixes can be grown very profitably in certain areas. For large scale shifts out of coca certain conditions clearly must be met. These include (1) continued effective interdiction efforts, (2) relatively low coca prices (i.e. not too far above the cost of production), and (3) continuing cash payments to coca eradicators.

The various components of this project, including technical assistance, marketing, credit, training, and provision of agricultural inputs, are designed for the purpose of facilitating the gradual shift from coca to alternative crops. Assuming continuing success in the areas of interdiction and the maintenance of a relatively low average coca price, the proposed project will play a crucial role in promoting the transition out of coca in the Chapare, and the stemming of migration from the adjoining regions toward that area.

C. Technical

Four separate technical analyses were undertaken in order to develop the final three-component project. They include: 1) Marketing and Agribusiness; 2) Credit in the Project; 3) Agricultural Research and Extension, and 4) Natural Resources Management. A summary of each analysis is provided below.

1. Marketing and Agribusiness

The vast majority of farmers throughout the project area market their products through truckers and intermediaries. Studies have shown that the margins gained by these entrepreneurs are not excessive. There is a well developed system of market centers, especially in Aiquile, Arani, Punata, and Santa Cruz, as well as a more general market in Cochabamba. A number of producer groups have established their own marketing organizations. Several of the smaller groups require considerable training to improve their post harvest handling. Little local processing occurs anywhere in the area. Agribusiness is scarce in the main producing areas of the project; the few which exist are small and offer incomplete services.

2. Credit in the Project

Until recently, nearly all credit for small farmer production was through the informal system: family, friends, and intermediaries. Beginning in late 1989, PL 480 funds were made available for small farmer production credit through two mechanisms: PL 480 in the Chapare and Banco Agricola in the Valleys. Lending conditions included a land title or certificate of coca eradication, a certificate of no lien on the property, and a farm plan prepared by the area extension agent. Nearly 1,200 loans were made with a delinquency rate of above 30%.

The CORDEP intends to develop a credit system which will work with rural savings and credit societies of producer and community groups. The credit program will require coca eradication certificates in the Chapare. The advancement of credit will depend on a farm plan developed by credit agents (and IBTA extension when additional technical advice is needed).

3. Agricultural Research and Extension

IBTA Chapare carries out the research and extension activities in the tropics and adds the valuable service of the reproduction of the plant materials and animals needed for the introduction of high value new and improved crops and animals. Research and propagation of these new crops has been technically well done: black pepper, passion fruit, pineapples, coconuts, pejivalles, palm heart, guanabana, and tropical chirimoya. Extension has provided planting materials of these and information on the growing practices to farmers. IBTA/Chapare has been successful in fostering a local industry of private and community owned/operated nurseries to carry the increasing burden of supplying planting materials.

Improved livestock - cattle and hogs - has been developed and there is a larger demand than can be supplied. The livestock station lacks sufficient installations and breeding animals to further the research and provide the needed base herds to farmers. Reproduction of poultry, in large demand, is hampered by incomplete facilities and lack of breeding flock.

Within the valleys are located the San Benito Experiment Station near Punata, and a substation at Maira in Mizque. Both work primarily in peaches, grapes, and chirimoya but their work should be broadened to include additional local market crops. IBTA/Valleys will assume responsibility for all of the research, begin the production of planting materials, and coordinate the extension work of ASAR, a non government organization.

4. Natural Resource Management

Because of the geographical and ecological differences between the two zones in which the project operates, the natural resource management analysis is broken into two areas (Valleys and Tropics).

The subcomponent in the Valleys will concentrate on watershed management. This will be undertaken through a four- part strategy that (1) concentrates production on the best lands, (2) provides adequate water for production activities and domestic use, (3) stabilizes water supply and supports increased productivity through natural resources conservation and restriction of land use on poor quality lands, and (4) protects existing wild natural resources.

The subcomponent in the Tropics will (1) enhance the limited capacity of the tropical lowlands for agricultural production, and (2) build on existing land use practices that are compatible with forest management. These strategic aims will be built on the recognition that in its natural condition, the area supports forest characterized by high density of trees and high diversity of species. This subcomponent also will be supported by technical assistance and training.

D. Institutional Analysis

This analysis reviewed the mandate and actual functions of four governmental agencies (SUBDESAL, PDAR, IBTA/Chapare, and CORDECO) and eight NGOs, four in the Chapare (Cooperativa Multiactiva Eterazama, TROPICOOP, FENACRE, and the Swedish Pentacostal Church) and four in the high valleys (ASAR, CEDEAGRO, PROCIPLA, and Radio Esperanza). The anlysis also reviewed the role of the Universidad de San Simon of Cochabamba in the CRDP.

Below is a summary of individual analyses:

1. SUBDESAL — Plan approval, project monitoring, high level interagency support and problem solving as well as information sharing and advocacy for resources are key functions through which SUBDESAL can make a significant contribution to the success of the new CORDEP.

2. PDAR — Within the CRDP, PDAR was effective in implementing small immediate impact projects for communities. PDAR was much less effective in dealing with NGOs. The CORDEP will rely upon PDAR's strengths to continue managing immediate impact projects and avoid its weaknesses by working directly with NGOs.

3. IBTA/CHAPARE — This agency is a wholly USAID-funded agricultural research and extension unit. It is extremely well run and effective and will continue to play an important role in the CORDEP.

4. COCHABAMBA REGIONAL DEVELOPMENT CORPORATION (CORDECO)

Under the predecessor CRDP, CORDECO, with initial assistance from the Swiss Development Corporation, implemented a reforestation campaign. CORDEP also established community nurseries near Aiquile and Mizque. The analysis indicates the CORDECO is a resource for future CORDEP reforestation activities.

CHAPARE NGOs

1) Cooperativa Multiactiva Eterazama

This cooperative was formed in June 1990 with 900 members. It has established a plant nursery, built a school, and now is developing a demonstration farm. The cooperative could become a credit channel for its members.

2) Cooperativa de Ahorro y Credito del Tropico Cochabambino (TROPICOOP)

This coop was organized in march 1991 as a savings and loan cooperative with about 200 members. The coop could potentially provide CORDEP credit to its members in the future.

3) National Federation of Savings and Loan Cooperatives (FENACRE)

FENACRE just recently became active in providing training courses for S&L coops in the Chapare. FENACRE's continued involvement in the Chapare may assist the CORDEP credit program.

4) Swedish Pentacostal Church (SPC)

This NGO operates an UNFDAC sponsored Dairy Project in the Chapare. Without a marketing study and still awaiting the first 1000 milk cows, it is too early to assess the viability of the project or SPCs implementation abilities.

HIGH VALLEYS NGOs

1) Asociacion de Servicios Artesanales Rurales (ASAR)

ASAR specializes in agricultural technical support and in mobilizing savings and managing credit programs. In 1990 ASAR implemented 4 CRDP agricultural projects and plans to implement another 6 CRDP agricultural projects in 1991. Given its successful track record, ASAR will be important in assisting in the implementation of CORDEP activities in the Valleys.

2) Centro de Desarrollo Agropecuario (CEDEAGRO)

This NGO has worked for 9 years in the Mizque area of the Valleys in agricultural projects. Currently CEDEAGRO implements one CRDP component in soil conservation.

3) PROCIPLA

This NGO began in 1985, and supports an active and useful program in integrated pest management.

4) Radio Esperanza

Covering 70% of the Valley's population, this NGO cooperated with CRDP in a small radio program in agricultural extension. Radio Esperanza has gradually increased its cooperation under the present CRDP and will be an assest to the follow-on CORDEP.

UNIVERSIDAD MAYOR DE SAN SIMON OF COCHABAMBA

Some CRDP research has been conducted through UMSS. However, internal UMSS politics and related personnel changes have negated the usefulness of the research. CORDEP does not presently anticipate financing an active research program with UMSS.

E. Environmental Assessment

In lieu of undertaking an Initial Environmental Examination in order to determine if further environmental analyses would be required, an Environmental Assessment was undertaken as an initial step. The conclusion of the Environmental Assessment is that the proposed Cochabamba Regional Development Project conforms to USAID environmental regulations. The proposed project is superior, from an environmental point of view, to other development alternatives for the the project area, especially the alternative of no action. The project includes direct actions in conservation of tropical forests and biodiversity, thereby complying with the 1986 amendments to the Foreign Assistance Act which mandate attention to such conservation.

The proposed project, under its sustainable small farm production component, includes several activities which are designed to reduce adverse environmental impacts and maintain or enhance environmental quality. Watershed management, agroforestry and forest management, and soil and water conservation measures constitute the most important of these activities. In order to avoid environmental problems, the project will fully implement these measures. To ensure complete environmental implementation, the project contains financing for continuous environmental monitoring to ensure that all project activities are implemented in an environmentally sound manner.

1235L

VIII. ANNEXES

A. NPD Approval Message

B. Log Frame Matrix

C. Statutory Check List

D. Addendum

E. FAA, Section 611(e) Certification

F. Project Analyses

1. Socioeconomic and Social Soundness

2. Economic

3. Technical
   A. Small Farm Production
   B. Natural Resources Management
   C. Marketing and Agroindustry
   D. Small Farmer Production and Agroindustrial Credit

4. Institutional

5. Environmental

3631P

ANNEX A

NEW PROJECT DESCRIPTION APPROVAL
CORDEP PROJECT No. 511-0617

1237L

A N N E X "A"

1/5 UNCLASSIFIED STATE 135513/01

AID AMB DCM ECON

Rec'd 4/27

File: PD&I

VZCZCLPO773
RR RUEHLP
DE RUEHC #5513/01 1170225
ZNR UUUUU ZZH
R 270213Z APR 90
FM SECSTATE WASHDC
TO AMEMBASSY LA PAZ 5584
BT
UNCLAS SECTION 01 OF 05 STATE 135513

AIDAC

Action: DP 2
Info: D/DD
EXO
CONT
PD&I
C
RF 3
SF

LOC: 177 368
27 APR 90 0223
CN: 20883
CHRG: AID
DIST: AID

Copies -> PS
HHR
HRD
ECON

Reply due 5/7

Action tkn Noted

4/30

E.O. 1236: N/A
TAGS:
SUBJECT: BOLIVIA FY 1991-92 ACTION PLAN REVIEW

1. A REVIEW OF THE USAID/BOLIVIA FY 1991-92 ACTION PLAN WAS HELD ON WEDNESDAY, APRIL 4, 1990. THE MEETING WAS CHAIRED BY THE LAC BUREAU ACTING ASSISTANT ADMINISTRATOR, FREDERICK SCHIECK. USAID/BOLIVIA WAS REPRESENTED BY RAY VAN RAALTE, MISSION DIRECTOR, ED KADUNC, PROJECT DEVELOPMENT OFFICER, AND WAYNE TATE, PROGRAM OFFICER. ARA/AND AND ECP OFFICES WERE ALSO REPRESENTED. THE ACTING AA COMPLIMENTED THE MISSION ON ITS RECENT EFFORTS TO FOCUS ITS PROGRAM AND CONSOLIDATE ITS PORTFOLIO AND ON THE QUALITY OF ITS ACTION PLAN.

2. IN HIS OPENING REMARKS, MR. VAN RAALTE NOTED THE CHALLENGES THAT THE GOB FACES IN REPLACING THE COCA ECONOMY AND BROADLY DISCUSSED HOW THE PROGRAMS DESCRIBED IN THE FY 91-92 ACTION PLAN WILL ASSIST THE GOB TO MEET THAT CHALLENGE. ALTHOUGH THE GOB HAS SUCCESSFULLY ACHIEVED STABILIZATION, ECONOMIC GROWTH HAS BEEN MODEST IN THE PAST FEW YEARS, AND THE ECONOMY IS SUFFERING FROM A SERIOUS LIQUIDITY CRISIS. COLOMBIAN EFFORTS AGAINST DRUG TRAFFICKERS AND BOLIVIAN PROGRESS ON INTERDICTION, INCLUDING THE FORCIBLE ERADICATION OF SEEDBEDS, HAVE PRODUCED AN ALL TIME LOW IN THE PRICE OF THE COCA LEAF, AND CAUSED RECORD NUMBERS OF COCA GROWERS TO JOIN THE VOLUNTARY ERADICATION PROGRAM. GIVEN THE IMPORTANCE OF THE COCA ECONOMY, IT IS NECESSARY TO ADDRESS ALTERNA IVE DEVELOPMENT NEEDS BOTH AT THE MACRO-LEVEL (REPLACING FOREIGN EXCHANGE REVENUES) AND AT THE LEVEL OF THE COCA FARMERS (PROVIDING THEM WITH ALTERNATIVE EMPLOYMENT AND INCOME SOURCES). PROVIDING ALTERNATIVE DEVELOPMENT, INCOME AND EMPLOYMENT TO REPLACE THE COCA ECONOMY WILL BE COSTLY AND COMPLEX. FOR THE LONG TERM, INVESTMENT IN AND GROWTH OF THE PRIVATE SECTOR IS REQUIRED. IN THE SHORT TERM, IMMEDIATE ALTERNATIVE EMPLOYMENT AND INCOME OPPPORTUNITIES ARE REQUIRED AT THE CAMPESNO LEVEL. THE ACTION PLAN ADDRESSES THESE NEEDS. IT FOCUSSES ON SIX OBJECTIVES. FOUR OF THE OBJECTIVES RELATE TO ALTERNATIVE DEVELOPMENT, ONE ON HEALTH AND THE OTHER ON STRENGTHENING OF DEMOCRATIC INSTITUTIONS.

511-0584 TRAINING & DEVELOPMENT	255	6,5[illegible]	PROGRAMMATIC APPROVAL
511-0618 CARE RURAL WATER AND SANITATION II OPG	500	15,000	PROGRAMMATIC APPROVAL
FY91			
511-0615 RURAL ELECTRIFICATION III	5,000	20,000	DELEGATE PID APPROVAL TO MISSION
511-0616 RURAL ROADS III	3,000	20,000	DELEGATE PID APPROVAL TO MISSION
311-0502 ECONOMIC STABILIZATION AND RECOVERY	66,000	66,000	APPROVED-CONCEPT PAPER TO AID/W
511-0617 ALTERNATIVE DEVELOPMENT	15,000	60,000	APPROVED-PROJECT PAPER TO AID/W
511-0585 EXPORT PROMOTION (AMENDMENT 1)	5,000	28,900	APPROVED-PP AMENDMENT TO AID/W
511-0598 STRENGTHENING FINANCIAL MARKETS (AMENDMENT 3)	2,580	28,500	APPROVED-PID TO AID/W
511-0571 POLICY REFORM (AM.1)	888	6,400	PROGRAMMATIC APPROVAL
511-0611 CARIBBEAN AND LATIN AMERICAN SCHOLARSHIP (CLASP II)	396	3,500	APPROVED-SIF TO AID/W
511-0501 CHILD SURVIVAL PVO NETWORK OPG AMEND.	3,323	5,000	PROGRAMMATIC APPROVAL
511-0619 RADIO HEALTH OPG	500	3,000	PROGRAMMATIC APPROVAL
FY92			

ANNEX B
LOGICAL FRAMEWORK

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Assumptions
Goal: To increase investment, productivity, and employment in licit activities as Bolivia's economy transforms its coca-based economy.	a. Investments made in licit enterprises.	a. Conduct baseline study of new licit enterprises, including income and employment by gender.	a. Continued COB and USG priority attached to counternarcotics initiative.
	b. Incomes from licit enterprises increased.	b. Collect data on same measures in out years.	b. Efficient COB interdiction and eradication of coca will continue.
	c. Sustainable employment in licit activities increased.		c. The price of coca will remain low (below $50 per 100 weigth).
	d. New licit growth poles emerging in Bolivia.		
Purpose To develop alternative sources of income and employment for people within the project area.	Conditions that will indicate purpose achieved:		
	a. Increasingly people within the project area will have licit sources of income and employment.	a. Conduct national rural household survey in Year 1 and Year 5.	a. Project will effectively induce substantive changes in employment and income.
	b. Reduced numbers of people migrating to the Chapare due to more sustainable ag systems in their places of origin.	b. Ongoing data (monitoring and evaluation) done under project.	b. Improvement of rural and urban economies and increased ability of farmers to meet their basic needs will reduce migration to coca producing area.
	c. Local, civic, communal and economic organizations will guarantee permanency and sustainability of new agricultural systems (production, marketing, infrastructure).	c. Periodic migration surveys.	

Outputs	Magnitude of Outputs	Means of Verification	Assumptions
a. Increased marketing of agricultural and related products in the project area.	$534.0 million in products exported and/or marketed in domestic markets.	M&E Plans.	Market conditions remain satisfactory.
b. Sustainable jobs created jobs created in licit activities.	48,000 jobs created in licit activities.	M&E Plans.	An increase in employment in licit activities will decrease employment in illicit activities.
c. Infrastructure and local institutions functioning in support of envolving economic opportunities.	740 infrastructure projects in use. 50 local institutions supporting new ag. system.	Physical, social economic impact analyses conducted.	1/
d. Pattern of environmental degradation under control.	8,500 Has. of land reforested. 4,500 Has. of arable land using soil conservation practices. 400,000 Has. of land using watershed management practices.	Project reports	1/
Inputs			
Technical Assist.	$13.9 million	Project impact evaluations.	Sufficient quantities of financial resources available and high quality human resources dedicated to project.
Training	1.0 million		
Commodities	3.5 million		
Infrastructure & Subprojects	61.6 million		
TOTAL:	80.0 million		

1/ Aside from specific output assumptions, the entire success of the project is predicated upon an effective countermarcotics program, beyond USAID's control, which will ensure that production of coca is not an attractive economic option for farmers.

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ANNEX "C"

BOLIVIA

Cochabamba Regional Development Project - 511-0617

5C(1) - COUNTRY CHECKLIST

Listed below are statutory criteria applicable to the eligibility of countries to receive the following categories of assistance: (A) both Development Assistance and Economic Support Funds; (B) Development Assistance funds only; or (C) Economic Support Funds only.

A. COUNTRY ELIGIBILITY CRITERIA APPLICABLE TO BOTH DEVELOPMENT ASSISTANCE AND ECONOMIC SUPPORT FUND ASSISTANCE

1. Narcotics

a. **Negative certification** (FY 1991 Appropriations Act Sec. 559(b)): Has the President certified to the Congress that the government of the recipient country is failing to take adequate measures to prevent narcotic drugs or other controlled substances which are cultivated, produced or processed illicitly, in whole or in part, in such country or transported through such country, from being sold illegally within the jurisdiction of such country to United States Government personnel or their dependents or from entering the United States unlawfully? No.

b. **Positive certification** (FAA Sec. 481(h)). (This provision applies to assistance of any kind provided by grant, sale, loan, lease, credit, guaranty, or insurance, except assistance from the Child Survival Fund or relating to international narcotics control, disaster and refugee relief, narcotics education and awareness, or the provision of food or medicine.) If the recipient is a "major illicit drug producing country" (defined as a country producing during a fiscal year at least five metric tons of opium or 500 metric tons of coca or marijuana) or a "major drug-transit country" (defined as a country that is a significant direct source of illicit drugs significantly

affecting the United States, through which such drugs are transported, or through which significant sums of drug-related profits are laundered with the knowledge or complicity of the government):

(1) does the country have in place a bilateral narcotics agreement with the United States, or a multilateral narcotics agreement?

(1) Yes, such a bilateral narcotics agreement was last amended on May 9, 1990.

(2) has the President in the March 1 International Narcotics Control Strategy Report (INSCR) determined and certified to the Congress (without Congressional enactment, within 45 days of continuous session, of a resolution disapproving such a certification), or has the President determined and certified to the Congress on any other date (with enactment by Congress of a resolution approving such certification), that (a) during the previous year the country has cooperated fully with the United States or taken adequate steps on its own to satisfy the goals agreed to in a bilateral narcotics agreement with the United States or in a multilateral agreement, to prevent illicit drugs produced or processed in or transported through such country from being transported into the United States, to prevent and punish drug profit laundering in the country, and to prevent and punish bribery and other forms of public corruption which facilitate production or shipment of illicit drugs or discourage prosecution of such acts, or that (b) the vital national interests of the United States require the provision of such assistance?

(2) (a) Yes.

c. Government Policy (1986 Anti-Drug Abuse Act of 1986 Sec. 2013(b)). (This section applies to the same categories of assistance subject to the restrictions in FAA Sec. 481(h), above.) If recipient country is a "major illicit drug producing country" or "major drug-transit country" (as defined for the purpose of FAA Sec 481(h)), has the President submitted a report to Congress listing such country as one: (a) which, as a matter of government policy, encourages or facilitates the production

(a) No.

or distribution of illicit drugs; (b) in which any senior official of the government engages in, encourages, or facilitates the production or distribution of illegal drugs; (c) in which any member of a U.S. Government agency has suffered or been threatened with violence inflicted by or with the complicity of any government officer; or (d) which fails to provide reasonable cooperation to lawful activities of U.S. drug enforcement agents, unless the President has provided the required certification to Congress pertaining to U.S. national interests and the drug control and criminal prosecution efforts of that country?

(b) No.

(c) No.

(d) No.

2. Indebtedness to U.S. citizens (FAA Sec. 620(c): If assistance is to a government, is the government indebted to any U.S. citizen for goods or services furnished or ordered where: (a) such citizen has exhausted available legal remedies, (b) the debt is not denied or contested by such government, or (c) the indebtedness arises under an unconditional guaranty of payment given by such government or controlled entity?

(a) No.

(b) No.

(c) No.

3. Seizure of U.S. Property (FAA Sec. 620(e)(1)): If assistance is to a government, has it (including any government agencies or subdivisions) taken any action which has the effect of nationalizing, expropriating, or otherwise seizing ownership or control of property of U.S. citizens or entities beneficially owned by them without taking steps to discharge its obligations toward such citizens or entities?

No.

4. Communist countries (FAA Secs. 620(a), 620(f), 620D; FY 1991 Appropriations Act Secs. 512, 545): Is recipient country a Communist country? If so, has the President: (a) determined that assistance to the country is vital to the security of the United States, that the recipient country is not controlled by the international Communist conspiracy, and that such assistance will further promote the independence of the recipient country from international communism, or (b) removed a country from applicable

No.

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restrictions on assistance to communist countries upon a determination and report to Congress that such action is important to the national interest of the United States? Will assistance be provided either directly or indirectly to Angola, Cambodia, Cuba, Iraq, Libya, Vietnam, Iran or Syria? Will assistance be provided to Afghanistan without a certification, or will assistance be provided inside Afghanistan through the Soviet-controlled government of Afghanistan?	N/A
5. Mob Action (FAA Sec. 620(j)): Has the country permitted, or failed to take adequate measures to prevent, damage or destruction by mob action of U.S. property?	No.
6. OPIC Investment Guaranty (FAA Sec. 620(l)): Has the country failed to enter into an investment guaranty agreement with OPIC?	No, Bolivia signed an agreement with OPIC in 1986.
7. Seizure of U.S. Fishing Vessels (FAA Sec. 620(o); Fishermen's Protective Act of 1967 (as amended) Sec. 5): (a) Has the country seized, or imposed any penalty or sanction against, any U.S. fishing vessel because of fishing activities in international waters? (b) If so, has any deduction required by the Fishermen's Protective Act been made?	(a) No. (b) N/A.
8. Loan Default (FAA Sec. 620(q); FY 1991 Appropriations Act Sec. 518 (Brooke Amendment)): (a) Has the government of the recipient country been in default for more than six months on interest or principal of any loan to the country under the FAA? (b) Has the country been in default for more than one year on interest or principal on any U.S. loan under a program for which the FY 1990 Appropriations Act appropriates funds?	(a) No. (b) No. See 91 State 146917.
9. Military Equipment (FAA Sec. 620(s)): If contemplated assistance is development loan or to come from Economic Support Fund, has the Administrator taken into account the percentage of the country's budget and amount of the country's foreign exchange or other resources spent on military equipment?	Yes.

(Reference may be made to the annual "Taking Into Consideration" memo: "Yes, taken into account by the Administrator at time of approval of Agency OYB." This approval by the Administrator of the Operational Year Budget can be the basis for an affirmative answer during the fiscal year unless significant changes in circumstances occur.)

10. Diplomatic Relations with U.S. (FAA Sec. 620(t)): Has the country severed diplomatic relations with the United States? If so, have relations been resumed and have new bilateral assistance agreements been negotiated and entered into since such resumption?

No.

11. U.N. Obligations (FAA Sec. 620(u)): What is the payment status of the country's U.N. obligations? If the country is in arrears, were such arrearages taken into account by the A.I.D. Administrator in determining the current A.I.D. Operational Year Budget? (Reference may be made to the "Taking into Consideration" memo.)

Not in arrears.

12. International Terrorism

a. Sanctuary and support (FY 1991 Appropriations Act Sec. 556; FAA Sec. 620A): Has the country been determined by the President to: (a) grant sanctuary from prosecution to any individual or group which has committed an act of international terrorism, or (b) otherwise support international terrorism, unless the President has waived this restriction on grounds of national security or for humanitarian reasons?

(a) No.

(b) No.

b. Airport Security (ISDCA of 1985 Sec. 552(b). Has the Secretary of State determined that the country is a high terrorist threat country after the Secretary of Transportation has determined, pursuant to section 1115(e)(2) of the Federal Aviation Act of 1958, that an airport in the country does not maintain and administer effective security measures?

No.

13. Discrimination (FAA Sec. 666(b)): Does the country object, on the basis of race, religion, national origin or sex, to the presence of any officer or employee of the U.S. who is present in such country to carry out economic development programs under the FAA? No.

14. Nuclear Technology (FAA Secs. 669, 670): Has the country, after August 3, 1977, delivered to any other country or received nuclear enrichment or reprocessing equipment, materials, or technology, without specified arrangements or safeguards, and without special certification by the President? No.

Has it transferred a nuclear explosive device to a non-nuclear weapon state, or if such a state, either received or detonated a nuclear explosive device? No.

If the country is a non-nuclear weapon state, has it, on or after August 8, 1985, exported (or attempted to export) illegally from the United States any material, equipment, or technology which would contribute significantly to the ability of a country to manufacture a nuclear explosive device? No.

(FAA Sec. 620E permits a special waiver of Sec. 669 for Pakistan.)

15. Algiers Meeting (ISDCA of 1981, Sec. 720): Was the country represented at the Meeting of Ministers of Foreign Affairs and Heads of Delegations of the Non-Aligned Countries to the 36th General Assembly of the U.N. on Sept. 25 and 28, 1981, and did it fail to disassociate itself from the communique issued? Yes.

If so, has the President taken it into account? Yes.

(Reference may be made to the "Taking into Consideration" memo.)

16. Military Coup (FY 1991 Appropriations Act Sec. 513): Has the duly elected Head of Government of the country been deposed by military coup or decree? No.

If assistance has been terminated, has the President notified Congress that a democratically elected government has taken office prior to the resumption of assistance? N/A.

17. **Refugee Cooperation (FY 1991 Appropriations Act Sec. 539):** Does the recipient country fully cooperate with the international refugee assistance organizations, the United States, and other governments in facilitating lasting solutions to refugee situations, including resettlement without respect to race, sex, religion, or national origin? Yes.

18. **Exploitation of Children (FY 1991 Appropriations Act Sec. 599D, amending FAA Sec. 116):** Does the recipient government fail to take appropriate and adequate measures, within its means, to protect children from exploitation, abuse or forced conscription into military or paramilitary services? No.

B. COUNTRY ELIGIBILITY CRITERIA APPLICABLE ONLY TO DEVELOPMENT ASSISTANCE ("DA")

1. **Human Rights Violations (FAA Sec. 116):** Has the Department of State determined that this government has engaged in a consistent pattern of gross violations of internationally recognized human rights? No.

If so, can it be demonstrated that contemplated assistance will directly benefit the needy? N/A.

2. **Abortions (FY 1991 Appropriations Act Sec. 535):** Has the President certified that use of DA funds by this country would violate any of the prohibitions against use of funds to pay for the performance of abortions as a method of family planning, to motivate or coerce any person to practice abortions, to pay for the performance of involuntary sterilization as a method of family planning, to coerce or provide any financial incentive to any person to undergo sterilizations, to pay for any biomedical research which relates, in whole or in part, to methods of, or the performance of, abortions or involuntary sterilization as a means of family planning? No.

C. COUNTRY ELIGIBILITY CRITERIA APPLICABLE ONLY TO ECONOMIC SUPPORT FUNDS ("ESF")

Human Rights Violations (FAA Sec. 502B): Has it been determined that the country has engaged in a consistent pattern of gross violations of internationally recognized human rights?	No.
If so, has the President found that the country made such significant improvement in its human rights record that furnishing such assistance is in the U.S. national interest?	N/A.

5C(2) - ASSISTANCE CHECKLIST

Listed below are statutory criteria applicable to the assistance resources themselves, rather than to the eligibility of a country to receive assistance. This section is divided into three parts. Part A includes criteria applicable to both Development Assistance and Economic Support Fund resources. Part B includes criteria applicable only to Development Assistance resources. Part C includes criteria applicable only to Economic Support Funds.

CROSS REFERENCE: IS COUNTRY CHECKLIST UP TO DATE?

Yes.

A. CRITERIA APPLICABLE TO BOTH DEVELOPMENT ASSISTANCE AND ECONOMIC SUPPORT FUNDS

1. Host Country Development Efforts (FAA Sec. 601(a)): Information and conclusions on whether assistance will encourage efforts of the country to: (a) increase the flow of international trade; (b) foster private initiative and competition; (c) encourage development and use of cooperatives, credit unions, and savings and loan associations; (d) discourage monopolistic practices; (e) improve technical efficiency of industry, agriculture, and commerce; and (f) strengthen free labor unions.

The purpose of the project is to develop alternative sources of income and employment; as such the project will encourage international trade, foster private initiatives and competition, discourage monopolistic practices, improve technical efficiency. It will not directly impact on the development of cooperatives, credit unions or labor unions.

2. U.S. Private Trade and Investment (FAA Sec. 601(b)): Information and conclusions on how assistance will encourage U.S. private trade and investment abroad and encourage private U.S. participation in foreign assistance programs (including use of private trade channels and the services of U.S. private enterprise).

The project encourages international trade and investment in providing alternative sources of income and employment.

3. Congressional Notification

a. General requirement (FY 1991 Appropriations Act Secs. 523 and 591; FAA Sec. 634A): If money is to be obligated for an activity not previously justified to Congress, or for an amount in excess of amount previously justified to Congress, has Congress been properly notified (unless the notification requirement has been waived because of substantial risk to human health or welfare)?

A Congressional Notification will be sent to the Congress once the Project Paper has been approved by AID/WASH. No funds were obligated until AID/W advises USAID/Bolivia that the CN has expired without objection.

b. Notice of new account obligation (FY 1991 Appropriations Act Sec. 514): If funds are being obligated under an appropriation account to which they were not appropriated, has the President consulted with and provided a written justification to the House and Senate Appropriations Committees and has such obligation been subject to regular notification procedures?

N/A.

c. Cash transfers and nonproject sector assistance (FY 1991 Appropriations Act Sec. 575(b)(3)): If funds are to be made available in the form of cash transfer or nonproject sector assistance, has the Congressional notice included a detailed description of how the funds will be used, with a discussion of U.S. interests to be served and a description of any economic poolicy reforms to be promoted?

N/A.

4. Engineering and Financial Plans (FAA Sec. 611(a)): Prior to an obligation in excess of $500,000, will there be: (a) engineering, financial or other plans necessary to carry out the assistance; and (b) a reasonably firm estimate of the cost to the U.S. of the assistance?

(a) Yes.

(b) Yes.

5. Legislative Action (FAA Sec. 611(a)(2)): If legislative action is required within recipient country with respect to an obligation in excess of $500,000, what is the basis for a reasonable expectation that such action will be completed in time to permit orderly accomplishment of the purpose of the assistance?

Not required.

6. Water Resources (FAA Sec. 611(b); FY 1991 Appropriations Act Sec. 501): If project is for water or water-related land resource construction, have benefits and costs been computed to the extent practicable in accordance with the principles, standards, and procedures established pursuant to the Water Resources Planning Act (42 U.S.C. 1962, et seq.)? (See A.I.D. Handbook 3 for guidelines.)	Yes.
7. Cash Transfer and Sector Assistance (FY 1991 Appropriations Act Sec. 575(b)): Will cash transfer or nonproject sector assistance be maintained in a separate account and not commingled with other funds (unless such requirements are waived by Congressional notice for nonproject sector assistance)?	N/A.
8. Capital Assistance (FAA Sec. 611(e)): If project is capital assistance (e.g., construction), and total U.S. assistance for it will exceed $1 million, has Mission Director certified and Regional Assistant Administrator taken into consideration the country's capability to maintain and utilize the project effectively?	Yes.
9. Multiple Country Objectives (FAA Sec. 601(a)): Information and conclusions on whether projects will encourage efforts of the country to: (a) increase the flow of international trade; (b) foster private initiative and competition; (c) encourage development and use of cooperatives, credit unions, and savings and loan associations; (d) discourage monopolistic practices; (e) improve technical efficiency of industry, agriculture and commerce; and (f) strengthen free labor unions.	The purpose of the project is to develop alternative sources of income and employment; as such the project will encourage international trade, foster private initiatives and competition, discouraged monopolistic practices, improve technical efficiency. It will not directly impact on the development of cooperatives, credit unions or labor unions.
10. U.S. Private Trade (FAA Sec. 601(b)): Information and conclusions on how project will encourage U.S. private trade and investment abroad and encourage private U.S. participation in foreign assistance programs (including use of private trade channels and the services of U.S. private enterprise).	The project encourages international trade and investment in providing alternative sources of income and employment.

11. **Local Currencies**

a. Recipient Contributions (FAA Secs. 612(b), 636(h)): Describe steps taken to assure that, to the maximum extent possible, the country is contributing local currencies to meet the cost of contractual and other services, and foreign currencies owned by the U.S. are utilized in lieu of dollars.

a. The Government of Bolivia provides local currency to all AID-GOB projects in conjunction with the Balance of Payment Program. The U.S. does not own Bolivian currency.

b. U.S.-Owned Currency (FAA Sec. 612(d)): Does the U.S. own excess foreign currency of the country and, if so, what arrangements have been made for its release?

b. No.

c. Separate Account (FY 1991 Appropriations Act Sec. 575). If assistance is furnished to a foreign government under arrangements which result in the generation of local currencies:

(1) Has A.I.D. (a) required that local currencies be deposited in a separate account established by the recipient government, (b) entered into an agreement with that government providing the amount of local currencies to be generated and the terms and conditions under which the currencies so deposited may be utilized, and (c) established by agreement the responsibilities of A.I.D. and that government to monitor and account for deposits into and disbursements from the separate account?

(1) Yes. The 1991 ESF Agreement, and procedures approved by USAID thereunder comply with all these requirements.

(2) Will such local currencies, or an equivalent amount of local currencies, be used only to carry out the purposes of the DA or ESF chapters of the FAA (depending on which chapter is the source of the assistance) or for the administrative requirements of the United States Government?

(2) Yes.

(3) Has A.I.D. taken all appropriate steps to ensure that the equivalent of local currencies disbursed from the separate account are used for the agreed purposes?

(3) Yes.

(4) If assistance is terminated to a country, will any unencumbered balances of funds remaining in a separate account be disposed of for purposes agreed to by the recipient government and the United States Government?

N/A.

12. Trade Restrictions

a. Surplus Commodities (FY 1991 Appropriations Act Sec. 521(a)): If assistance is for the production of any commodity for export, is the commodity likely to be in surplus on world markets at the time the resulting productive capacity becomes operative, and is such assistance likely to cause substantial injury to U.S. producers of the same, similar or competing commodity?

a. and b. Section 559(a)(3) of the FY 91 Appropriations Act provides a waiver of Section 521 restrictions for Bolivia, for the purpose of reducing dependence upon the production of crops from which narcotic and psychotropic drugs are derived.

b. Textiles (Lautenberg Amendment) (FY 1991 Appropriations Act Sec. 521(c)): Will the assistance (except for programs in Caribbean Basin Initiative countries under U.S. Tariff Schedule "Section 807," which allows reduced tariffs on articles assembled abroad from U.S.-made components) be used directly to procure feasibility studies, prefeasibility studies, or project profiles of potential investment in, or to assist the establishment of facilities specifically designed for, the manufacture for export to the United States or to third country markets in direct competition with U.S. exports, of textiles, apparel, footwear, handbags, flat goods (such as wallets or coin purses worn on the person), work gloves or leather wearing apparel?

13. Tropical Forests (FY 1991 Appropriations Act Sec. 533(c)(3)): Will funds be used for any program, project or activity which would (a) result in any significant loss of tropical forests, or (b) involve industrial timber extraction in primary tropical forest areas?

(a) No.

(b) No.

14. Sahel Accounting (FAA Sec. 121(d)): If a Sahel project, has a determination been made that the host government has an adequate system for accounting for and controlling receipt and expenditure of project funds (either dollars or local currency generated therefrom)?	N/A.
15. PVO Assistance	
a. Auditing and registration (FY 1991 Appropriations Act Sec. 537): If assistance is being made available to a PVO, has that organization provided upon timely request any document, file, or record necessary to the auditing requirements of A.I.D., and is the PVO registered with A.I.D.?	Yes.
b. Funding sources (FY 1991 Appropriations Act, Title II, under heading "Private and Voluntary Organizations"): If assistance is to be made to a United States PVO (other than a cooperative development organization), does it obtain at least 20 percent of its total annual funding for international activities from sources other than the United States Government?	Yes.
16. Project Agreement Documentation (State Authorization Sec. 139 (as interpreted by conference report)): Has confirmation of the date of signing of the project agreement, including the amount involved, been cabled to State L/T and A.I.D. LEG within 60 days of the agreement's entry into force with respect to the United States, and has the full text of the agreement been pouched to those same offices? (See Handbook 3, Appendix 6G for agreements covered by this provision).	USAID/Bolivia will comply with the Case-Zablocki Act in full when the Project Grant Agreement is signed.
17. Metric System (Omnibus Trade and Competitiveness Act of 1988 Sec. 5164, as interpreted by conference report, amending Metric Conversion Act of 1975 Sec. 2, and as implemented through A.I.D. policy): Does the assistance activity use the metric system of measurement in its procurements, grants, and other business-related activities, except to the	

extent that such use is impractical or is likely to cause significant inefficiencies or loss of markets to United States firms? Are bulk purchases usually to be made in metric, and are components, subassemblies, and semi-fabricated materials to be specified in metric units when economically available and technically adequate? Will A.I.D. specifications use metric units of measure from the earliest programmatic stages, and from the earliest documentation of the assistance processes (for example, project papers) involving quantifiable measurements (length, area, volume, capacity, mass and weight), through the implementation stage?	Yes. Yes. Yes. The metric system will be used for all procurements from non-U.S. sources.
18. Women in Development (FY 1991 Appropriations Act, Title II, under heading "Women in Development"): Will assistance be designed so that the percentage of women participants will be demonstrably increased?	Yes.
19. Regional and Multilateral Assistance (FAA Sec. 209): Is assistance more efficiently and effectively provided through regional or multilateral organizations? If so, why is assistance not so provided? Information and conclusions on whether assistance will encourage developing countries to cooperate in regional development programs.	No. The project concerns a specific region within Bolivia, but relates to sectoring the production of coca throughout the Andean Region.
20. Abortions (FY 1991 Appropriations Act, Title II, under heading "Population, DA," and Sec. 525):	
a. Will assistance be made available to any organization or program which, as determined by the President, supports or participates in the management of a program of coercive abortion or involuntary sterilization?	a. No.
b. Will any funds be used to lobby for abortion?	b. No.
21. Cooperatives (FAA Sec. 111): Will assistance help develop cooperatives, especially by technical assistance, to assist rural and urban poor to help themselves toward a better life?	The project will work with former producer groups and organizations to assist them grow and market products other than coca.

22. U.S.-Owned Foreign Currencies

a. Use of currencies (FAA Secs. 612(b), 636(h); FY 1991 Appropriations Act Secs. 507, 509): Describe steps taken to assure that, to the maximum extent possible, foreign currencies owned by the U.S. are utilized in lieu of dollars to meet the cost of contractual and other services.

The U.S. does not own any significant amount of Bolivianos.

b. Release of currencies (FAA Sec. 612(d)): Does the U.S. own excess foreign currency of the country and, if so, what arrangements have been made for its release?

No.

23. Procurement

a. Small business (FAA Sec. 602(a)): Are there arrangements to permit U.S. small business to participate equitably in the furnishing of commodities and services financed?

Yes.

b. U.S. procurement (FAA Sec. 604(a)): Will all procurement be from the U.S. except as otherwise determined by the President or determined under delegation from him?

Yes.

c. Marine insurance (FAA Sec. 604(d)): If the cooperating country discriminates against marine insurance companies authorized to do business in the U.S., will commodities be insured in the United States against marine risk with such a company?

Yes.

d. Non-U.S. agricultural procurement (FAA Sec. 604(e)): If non-U.S. procurement of agricultural commodity or product thereof is to be financed, is there provision against such procurement when the domestic price of such commodity is less than parity? (Exception where commodity financed could not reasonably be procured in U.S.)

No provisions of agricultural commodities, other than plant genetic material, is planned under the project.

e. Construction or engineering services (FAA Sec. 604(g)): Will construction or engineering services be procured from firms of advanced developing countries which are otherwise eligible

under Code 941 and which have attained a competitive capability in international markets in one of these areas? (Exception for those countries which receive direct economic assistance under the FAA and permit United States firms to compete for construction or engineering services financed from assistance programs of these countries.)	No.
f. Cargo preference shipping (FAA Sec. 603)): Is the shipping excluded from compliance with the requirement in section 901(b) of the Merchant Marine Act of 1936, as amended, that at least 50 percent of the gross tonnage of commodities (computed separately for dry bulk carriers, dry cargo liners, and tankers) financed shall be transported on privately owned U.S. flag commercial vessels to the extent such vessels are available at fair and reasonable rates?	No.
g. Technical assistance (FAA Sec. 621(a)): If technical assistance is financed, will such assistance be furnished by private enterprise on a contract basis to the fullest extent practicable? Will the facilities and resources of other Federal agencies be utilized, when they are particularly suitable, not competitive with private enterprise, and made available without undue interference with domestic programs?	Yes. Yes.
h. U.S. air carriers (International Air Transportation Fair Competitive Practices Act, 1974): If air transportation of persons or property is financed on grant basis, will U.S. carriers be used to the extent such service is available?	Yes.
i. Termination for convenience of U.S. Government (FY 1991 Appropriations Act Sec. 504): If the U.S. Government is a party to a contract for procurement, does the contract contain a provision authorizing termination of such contract for the convenience of the United States?	Yes.

j. Consulting services (FY 1991 Appropriations Act Sec. 524): If assistance is for consulting service through procurement contract pursuant to 5 U.S.C. 3109, are contract expenditures a matter of public record and available for public inspection (unless otherwise provided by law or Executive order)?	Yes.
k. Metric conversion (Omnibus Trade and Competitiveness Act of 1988, as interpreted by conference report, amending Metric Conversion Act of 1975 Sec. 2, and as implemented through A.I.D. policy): Does the assistance program use the metric system of measurement in its procurements, grants, and other business-related activities, except to the extent that such use is impractical or is likely to cause significant inefficiencies or loss of markets to United States firms?	Yes.
Are bulk purchases usually to be made in metric, and are components, subassemblies, and semi-fabricated materials to be specified in metric units when economically available and technically adequate?	Yes.
Will A.I.D. specifications use metric units of measure from the earliest programmatic stages, and from the earliest documentation of the assistance processes (for example, project papers) involving quantifiable measurements (length, area, volume, capacity, mass and weight), through the implementation stage?	Yes.
l. Competitive Selection Procedures (FAA Sec. 601(e)): Will the assistance utilize competitive selection procedures for the awarding of contracts, except where applicable procurement rules allow otherwise?	Yes.
24. Construction	
a. Capital project (FAA Sec. 601(d)): If capital (e.g., construction) project, will U.S. engineering and professional services be used?	Most construction and engineering services under the project will be carried out by Bolivian firms because of their small value.
b. Construction contract (FAA Sec. 611(c)): If contracts for construction are to be financed, will they be let on a competitive basis to maximum extent practicable?	Yes.

28. **Expropriation and Land Reform (FAA Sec. 620(g)):** Will assistance preclude use of financing to compensate owners for expropriated or nationalized property, except to compensate foreign nationals in accordance with a land reform program certified by the President? Yes.

29. **Police and Prisons (FAA Sec. 660):** Will assistance preclude use of financing to provide training, advice, or any financial support for police, prisons, or other law enforcement forces, except for narcotics programs? Yes.

30. **CIA Activities (FAA Sec. 662):** Will assistance preclude use of financing for CIA activities? Yes.

31. **Motor Vehicles (FAA Sec. 636(i)):** Will assistance preclude use of financing for purchase, sale, long-term lease, exchange or guaranty of the sale of motor vehicles manufactured outside U.S., unless a waiver is obtained? Yes.

32. **Military Personnel (FY 1991 Appropriations Act Sec. 503):** Will assistance preclude use of financing to pay pensions, annuities, retirement pay, or adjusted service compensation for prior or current military personnel? Yes.

33. **Payment of U.N. Assessments (FY 1991 Appropriations Act Sec. 505):** Will assistance preclude use of financing to pay U.N. assessments, arrearages or dues? Yes.

34. **Multilateral Organization Lending (FY 1991 Appropriations Act Sec. 506):** Will assistance preclude use of financing to carry out provisions of FAA section 209(d) (transfer of FAA funds to multilateral organizations for lending)? Yes.

35. **Export of Nuclear Resources (FY 1991 Appropriations Act Sec. 510):** Will assistance preclude use of financing to finance the export of nuclear equipment, fuel, or technology? Yes.

36. **Repression of Population (FY 1991 Appropriations Act Sec. 511):** Will assistance preclude use of financing for the purpose of aiding the efforts of the government of such country to repress the legitimate rights of the population of such country contrary to the Universal Declaration of Human Rights? Yes.

37. **Publicity or Propoganda (FY 1991 Appropriations Act Sec. 516):** Will assistance be used for publicity or propaganda purposes designed to support or defeat legislation pending before Congress, to influence in any way the outcome of a political election in the United States, or for any publicity or propaganda purposes not authorized by Congress? No.

38. **Marine Insurance (FY 1991 Appropriations Act Sec. 563):** Will any A.I.D. contract and solicitation, and subcontract entered into under such contract, include a clause requiring that U.S. marine insurance companies have a fair opportunity to bid for marine insurance when such insurance is necessary or appropriate? Yes.

39. **Exchange for Prohibited Act (FY 1991 Appropriations Act Sec. 569):** Will any assistance be provided to any foreign government (including any instrumentality or agency thereof), foreign person, or United States person in exchange for that foreign government or person undertaking any action which is, if carried out by the United States Government, a United States official or employee, expressly prohibited by a provision of United States law? No.

B. CRITERIA APPLICABLE TO DEVELOPMENT ASSISTANCE ONLY

1. Agricultural Exports (Bumpers Amendment) (FY 1991 Appropriations Act Sec. 521(b), as interpreted by conference report for original enactment): If assistance is for agricultural development activities (specifically, any testing or breeding feasibility study, variety improvement or introduction, consultancy, publication, conference, or training), are such activities: (1) specifically and principally designed to increase agricultural exports by the host country to a country other than the United States, where the export would lead to direct competition in that third country with exports of a similar commodity grown or produced in the United States, and can the activities reasonably be expected to cause substantial injury to U.S. exporters of a similar agricultural commodity; or (2) in support of research that is intended primarily to benefit U.S. producers?	Section 559(a)(3) of the FY 91 Appropriations Act waives Section 521 for Bolivia.
2. Tied Aid Credits (FY 1991 Appropriations Act, Title II, under heading "Economic Support Fund"): Will DA funds be used for tied aid credits?	No.
3. Appropriate Technology (FAA Sec. 107): Is special emphasis placed on use of appropriate technology (defined as relatively smaller, cost-saving, labor-using technologies that are generally most appropriate for the small farms, small businesses, and small incomes of the poor)?	Yes.
4. Indigenous Needs and Resources (FAA Sec. 281(b)): Describe extent to which the activity recognizes the particular needs, desires, and capacities of the people of the country; utilizes the country's intellectual resources to encourage institutional development; and supports civic education and training in skills required for effective participation in governmental and political processes essential to self-government.	The will to produce alternative crops comes directly from the desire of the beneficiaries. Strengthened beneficiary groups will be in a better position for self-government.

5. Economic Development (FAA Sec. 101(a)): Does the activity give reasonable promise of contributing to the development of economic resources, or to the increase of productive capacities and self-sustaining economic growth?	Yes.
6. Special Development Emphases (FAA Secs. 102(b), 113, 281(a)): Describe extent to which activity will: (a) effectively involve the poor in development by extending access to economy at local level, increasing labor-intensive production and the use of appropriate technology, dispersing investment from cities to small towns and rural areas, and insuring wide participation of the poor in the benefits of development on a sustained basis, using appropriate U.S. institutions; (b) encourage democratic private and local governmental institutions; (c) support the self-help efforts of developing countries; (d) promote the participation of women in the national economies of developing countries and the improvement of women's status; and (e) utilize and encourage regional cooperation by developing countries.	a) The target group includes the poor. b) The project will work with local producer groups. c) Much of the community activities are self-help efforts. d) At least 50% of the target group are women. e) The success/failures of the alternative development program will be shared with other Andean countries.
7. Recipient Country Contribution (FAA Secs. 110, 124(d)): Will the recipient country provide at least 25 percent of the costs of the program, project, or activity with respect to which the assistance is to be furnished (or is the latter cost-sharing requirement being waived for a "relatively least developed" country)?	80% of AID's funding of the project come from ESF which does not require a 25% contribution. However, sufficient local currency will be made available by the GOB to complete the project, about 60% of total project costs.
8. Benefit to Poor Majority (FAA Sec. 128(b)): If the activity attempts to increase the institutional capabilities of private organizations or the government of the country, or if it attempts to stimulate scientific and technological research, has it been designed and will it be monitored to ensure that the ultimate beneficiaries are the poor majority?	Yes.

9. Abortions (FAA Sec. 104(f); FY 1991 Appropriations Act, Title II, under heading "Population, DA," and Sec. 535):

a. Are any of the funds to be used for the performance of abortions as a method of family planning or to motivate or coerce any person to practice abortions? No.

b. Are any of the funds to be used to pay for the performance of involuntary sterilization as a method of family planning or to coerce or provide any financial incentive to any person to undergo sterilizations? No.

c. Are any of the funds to be made available to any organization or program which, as determined by the President, supports or participates in the management of a program of coercive abortion or involuntary sterilization? No.

d. Will funds be made available only to voluntary family planning projects which offer, either directly or through referral to, or information about access to, a broad range of family planning methods and services? Yes.

e. In awarding grants for natural family planning, will any applicant be discriminated against because of such applicant's religious or conscientious commitment to offer only natural family planning? No.

f. Are any of the funds to be used to pay for any biomedical research which relates, in whole or in part, to methods of, or the performance of, abortions or involuntary sterilization as a means of family planning? N/A.

g. Are any of the funds to be made available to any organization if the President certifies that the use of these funds by such organization would violate any of the above provisions related to abortions and involuntary sterilization? No.

10. Contract Awards (FAA Sec. 601(e)): Will the project utilize competitive selection procedures for the awarding of contracts, except where applicable procurement rules allow otherwise?	Yes.
11. Disadvantaged Enterprises (FY 1991 Appropriations Act Sec. 567): What portion of the funds will be available only for activities of economically and socially disadvantaged enterprises, historically black colleges and universities, colleges and universities having a student body in which more than 40 percent of the students are Hispanic Americans, and private and voluntary organizations which are controlled by individuals who are black Americans, Hispanic Americans, or Native Americans, or who are economically or socially disadvantaged (including women)?	These organizations may bid for contracts or grants directly, or for subcontracts under the project.
12. Biological Diversity (FAA Sec. 119(g): Will the assistance: (a) support training and education efforts which improve the capacity of recipient countries to prevent loss of biological diversity; (b) be provided under a long-term agreement in which the recipient country agrees to protect ecosystems or other wildlife habitats; (c) support efforts to identify and survey ecosystems in recipient countries worthy of protection; or (d) by any direct or indirect means significantly degrade national parks or similar protected areas or introduce exotic plants or animals into such areas?	(a) Yes. (b) Other agreements provide for such protection. (c) Other agreements provide for such inventory. (d) No.
13. Tropical Forests (FAA Sec. 118; FY 1991 Appropriations Act Sec. 533(c)-(e) & (g)):	
a. A.I.D. Regulation 16: Does the assistance comply with the environmental procedures set forth in A.I.D. Regulation 16?	Yes.
b. Conservation: Does the assistance place a high priority on conservation and sustainable management of tropical forests? Specifically, does the assistance, to the fullest extent	Yes.

feasible: (1) stress the importance of conserving and sustainably managing forest resources; (2) support activities which offer employment and income alternatives to those who otherwise would cause destruction and loss of forests, and help countries identify and implement alternatives to colonizing forested areas; (3) support training programs, educational efforts, and the establishment or strengthening of institutions to improve forest management; (4) help end destructive slash-and-burn agriculture by supporting stable and productive farming practices; (5) help conserve forests which have not yet been degraded by helping to increase production on lands already cleared or degraded; (6) conserve forested watersheds and rehabilitate those which have been deforested; (7) support training, research, and other actions which lead to sustainable and more environmentally sound practices for timber harvesting, removal, and processing; (8) support research to expand knowledge of tropical forests and identify alternatives which will prevent forest destruction, loss, or degradation; (9) conserve biological diversity in forest areas by supporting efforts to identify, establish, and maintain a representative network of protected tropical forest ecosystems on a worldwide basis, by making the establishment of protected areas a condition of support for activities involving forest clearance or degradation, and by helping to identify tropical forest ecosystems and species in need of protection and establish and maintain appropriate protected areas; (10) seek to increase the awareness of U.S. Government agencies and other donors of the immediate and long-term value of tropical forests; (11) utilize the resources and abilities of all relevant U.S. government agencies; (12) be based upon careful analysis of the alternatives available to achieve the best sustainable use of the land; and (13) take full account of the environmental impacts of the proposed activities on biological diversity?

1) Yes.
2) Yes.
3) Yes.
4) yes.
5) Yes.
6) Yes.
7) Yes.
8) Yes.
9) Yes.
10) Yes.
11) Yes.
12) Yes.
13) Yes.

c. Forest degradation: Will assistance be used for: (1) the procurement or use of logging equipment, unless an environmental assessment indicates that all timber harvesting operations involved will be conducted in an environmentally sound manner and that the proposed activity will produce positive economic benefits and sustainable forest management systems; (2) actions which will significantly degrade national parks or similar protected areas which contain tropical forests, or introduce exotic plants or animals into such areas; (3) activities which would result in the conversion of forest lands to the rearing of livestock; (4) the construction, upgrading, or maintenance of roads (including temporary haul roads for logging or other extractive industries) which pass through relatively undergraded forest lands; (5) the colonization of forest lands; or (6) the construction of dams or other water control structures which flood relatively undergraded forest lands, unless with respect to each such activity an environmental assessment indicates that the activity will contribute significantly and directly to improving the livelihood of the rural poor and will be conducted in an environmentally sound manner which supports sustainable development?

1) No.
2) No.
3) No.
4) No.
5) No.
6) No.

d. Sustainable forestry: If assistance relates to tropical forests, will project assist countries in developing a systematic analysis of the appropriate use of their total tropical forest resources, with the goal of developing a national program for sustainable forestry?

N/A.

e. Environmental impact statements: Will funds be made available in accordance with provisions of FAA Section 117(c) and applicable A.I.D. regulations requiring an environmental impact statement for activities significantly affecting the environment?

Yes.

14. Energy (FY 1991 Appropriations Act Sec. 533(c)): If assistance relates to energy, will such assistance focus on: (a) end-use energy efficiency, least-cost energy planning, and renewable energy resources, and (b) the key countries where assistance would have the greatest impact on reducing emissions from greenhouse gases?

(a) Yes.

(b) N/A.

15. Sub-Saharan Africa Assistance (FY 1991 Appropriations Act Sec. 562, adding a new FAA chapter 10 (FAA Sec. 496)): If assistance will come from the Sub-Saharan Africa DA account, is it: (a) to be used to help the poor majority in Sub-Saharan Africa through a process of long-term development and economic growth that is equitable, participatory, environmentally sustainable, and self-reliant; (b) to be used to promote sustained economic growth, encourage private sector development, promote individual initiatives, and help to reduce the role of central governments in areas more appropriate for the private sector; (c) being provided in accordance with the policies contained in FAA section 102; (d) being provided in close consultation with African, United States and other PVOs that have demonstrated effectiveness in the promotion of local grassroots activities on behalf of long-term development in Sub-Saharan Africa; (e) being used to promote reform of sectoral economic policies, to support the critical sector priorities of agricultural production and natural resources, health, voluntary family planning services, education, and income generating opportunities, to bring about appropriate sectoral restructuring of the Sub-Saharan African economies, to support reform in public administration and finances and to establish a favorable environment for individual enterprise and self-sustaining development, and to take into account, in assisted policy reforms, the need to protect vulnerable groups; (f) being used to increase agricultural production in ways that protect and restore the natural resource base, especially food production, to maintain and improve basic transportation and communication networks,

N/A.

to maintain and restore the renewable natural resource base in ways that increase agricultural production, to improve health conditions with special emphasis on meeting the health needs of mothers and children, including the establishment of self-sustaining primary health care systems that give priority to preventive care, to provide increased access to voluntary family planning services, to improve basic literacy and mathematics especially to those outside the formal educational system and to improve primary education, and to develop income-generating opportunities for the unemployed and underemployed in urban and rural areas?

16. Debt-for-Nature Exchange (FAA Sec. 463): If project will finance a debt-for-nature exchange, describe how the exchange will support protection of: (a) the world's oceans and atmosphere, (b) animal and plant species, and (c) parks and reserves; or describe how the exchange will promote: (d) natural resource management, (e) local conservation programs, (f) conservation training programs, (g) public commitment to conservation, (h) land and ecosystem management, and (i) regenerative approaches in farming, forestry, fishing, and watershed management. N/A.

17. Deobligation/Reobligation (FY 1991 Appropriations Act Sec. 515): If deob/reob authority is sought to be exercised in the provision of DA assistance, are the funds being obligated for the same general purpose, and for countries within the same region as originally obligated, and have the House and Senate Appropriations Committees been properly notified? N/A.

18. Loans

a. Repayment capacity (FAA Sec. 122(b)): Information and conclusion on capacity of the country to repay the loan at a reasonable rate of interest. N/A.

b. Long-range plans (FAA Sec. 122(b)): Does the activity give reasonable promise of assisting long-range plans and programs designed to develop economic resources and increase productive capacities?	N/A.
c. Interest rate (FAA Sec. 122(b)): If development loan is repayable in dollars, is interest rate at least 2 percent per annum during a grace period which is not to exceed ten years, and at least 3 percent per annum thereafter?	N/A.
d. Exports to United States (FAA Sec. 620(d)): If assistance is for any productive enterprise which will compete with U.S. enterprises, is there an agreement by the recipient country to prevent export to the U.S. of more than 20 percent of the enterprise's annual production during the life of the loan, or has the requirement to enter into such an agreement been waived by the President because of a national security interest?	N/A.
19. Development Objectives (FAA Secs. 102(a), 111, 113, 281(a)): Extent to which activity will: (1) effectively involve the poor in development, by expanding access to economy at local level, increasing labor-intensive production and the use of appropriate technology, spreading investment out from cities to small towns and rural areas, and insuring wide participation of the poor in the benefits of development on a sustained basis, using the appropriate U.S. institutions; (2) help develop cooperatives, especially by technical assistance, to assist rural and urban poor to help themselves toward better life, and otherwise encourage democratic private and local governmental institutions; (3) support the self-help efforts of developing countries; (4) promote the participation of women in the national economies of developing countries and the improvement of women's status; and (5) utilize and encourage regional cooperation by developing countries?	1) The target group of the project is poor farmers in the Cochabamba Department. 2) The project will work with farmer producer groups. 3) Community self-help activities included. 4) At least 50% of the target group are women. 5) Bolivia will share its alternative development successes or failures under the project with other countries in the region.

20. **Agriculture, Rural Development and Nutrition, and Agricultural Research (FAA Secs. 103 and 103A):**

a. **Rural poor and small farmers:** If assistance is being made available for agriculture, rural development or nutrition, describe extent to which activity is specifically designed to increase productivity and income of rural poor; or if assistance is being made available for agricultural research, has account been taken of the needs of small farmers, and extensive use of field testing to adapt basic research to local conditions shall be made.

a, b, c - See detailed description of project activities in the Project Paper. All of these items are addressed.

b. **Nutrition:** Describe extent to which assistance is used in coordination with efforts carried out under FAA Section 104 (Population and Health) to help improve nutrition of the people of developing countries through encouragement of increased production of crops with greater nutritional value; improvement of planning, research, and education with respect to nutrition, particularly with reference to improvement and expanded use of indigenously produced foodstuffs; and the undertaking of pilot or demonstration programs explicitly addressing the problem of malnutrition of poor and vulnerable people.

c. **Food security:** Describe extent to which activity increases national food security by improving food policies and management and by strengthening national food reserves, with particular concern for the needs of the poor, through measures encouraging domestic production, building national food reserves, expanding available storage facilities, reducing post harvest food losses, and improving food distribution.

21. **Population and Health (FAA Secs. 104(b) and (c)):** If assistance is being made available for population or health activities, describe extent to which activity emphasizes low-cost, integrated delivery systems for health, nutrition and family planning for the poorest people, with particular attention to the needs of

N/A.

mothers and young children, using paramedical and auxiliary medical personnel, clinics and health posts, commercial distribution systems, and other modes of community outreach.

22. **Education and Human Resources Development (FAA Sec. 105):** If assistance is being made available for education, public administration, or human resource development, describe (a) extent to which activity strengthens nonformal education, makes formal education more relevant, especially for rural families and urban poor, and strengthens management capability of institutions enabling the poor to participate in development; and (b) extent to which assistance provides advanced education and training of people of developing countries in such disciplines as are required for planning and implementation of public and private development activities.

N/A.

23. **Energy, Private Voluntary Organizations, and Selected Development Activities (FAA Sec. 106):** If assistance is being made available for energy, private voluntary organizations, and selected development problems, describe extent to which activity is:

See portions of the Project Paper dealing with the substantial participation of Bolivian PVOs, and marketing systems for small producers in the Chapare Region.

a. concerned with data collection and analysis, the training of skilled personnel, research on and development of suitable energy sources, and pilot projects to test new methods of energy production; and facilitative of research on and development and use of small-scale, decentralized, renewable energy sources for rural areas, emphasizing development of energy resources which are environmentally acceptable and require minimum capital investment;

b. concerned with technical cooperation and development, especially with U.S. private and voluntary, or regional and international development, organizations;

c. research into, and evaluation of, economic development processes and techniques;

d. reconstruction after natural or manmade disaster and programs of disaster preparedness;

e. for special development problems, and to enable proper utilization of infrastructure and related projects funded with earlier U.S. assistance;

f. for urban development, especially small, labor-intensive enterprises, marketing systems for small producers, and financial or other institutions to help urban poor participate in economic and social development.

24. Sahel Development (FAA Secs. 120-21). If assistance is being made available for the Sahelian region, describe: (a) extent to which there is international coordination in planning and implementation; participation and support by African countries and organizations in determining development priorities; and a long-term, multidonor development plan which calls for equitable burden-sharing with other donors; (b) whether a determination has been made that the host government has an adequate system for accounting for and controlling receipt and expenditure of projects funds (dollars or local currency generated therefrom). N/A.

C. CRITERIA APPLICABLE TO ECONOMIC SUPPORT FUNDS ONLY

1. Economic and Political Stability (FAA Sec. 531(a)): Will this assistance promote economic and political stability?	Yes.
To the maximum extent feasible, is this assistance consistent with the policy directions, purposes, and programs of Part I of the FAA?	Yes.
2. Military Purposes (FAA Sec. 531(e)): Will this assistance be used for military or paramilitary purposes?	No.
3. Commodity Grants/Separate Accounts (FAA Sec. 609): If commodities are to be granted so that sale proceeds will accrue to the recipient country, have Special Account (counterpart) arrangements been made?	N/A.
4. Generation and Use of Local Currencies (FAA Sec. 531(d)): Will ESF funds made available for commodity import programs or other program assistance be used to generate local currencies? If so,	Yes.
will at least 50 percent of such local currencies be available to support activities consistent with the objectives of FAA sections 103 through 106?	Yes.
5. Cash Transfer Requirements (FY 1991 Appropriations Act, Title II, under heading "Economic Support Fund," and Sec. 575(b)). If assistance is in the form of a cash transfer:	Funds obligated in this project will not be cash transfer assistance. However, all of the concerns in this section are covered in the 1991 ESF Agreement and procedures developed to implement that Agreement.
a. Separate account: Are all such cash payments to be maintained by the country in a separate account and not to be commingled with any other funds?	N/A.

b. Local currencies: Will all local currencies that may be generated with funds provided as a cash transfer to such a country also be deposited in a special account, and has A.I.D. entered into an agreement with that government setting forth the amount of the local currencies to be generated, the terms and conditions under which they are to be used, and the responsibilities of A.I.D. and that government to monitor and account for deposits and disbursements? N/A.

c. U.S. Government use of local currencies: Will all such local currencies also be used in accordance with FAA Section 609, which requires such local currencies to be made available to the U.S. government as the U.S. determines necessary for the requirements of the U.S. Government, and which requires the remainder to be used for programs agreed to by the U.S. Government to carry out the purposes for which new funds authorized by the FAA would themselves be available? N/A.

d. Congressional notice: Has Congress received prior notification providing in detail how the funds will be used, including the U.S. interests that will be served by the assistance, and, as appropriate, the economic policy reforms that will be promoted by the cash transfer assistance? N/A.

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ANNEX D

ADDENDUM

Cochabamba Regional Development Project's (CORDEP) Impact on the GOB's Anti Narcotics Efforts in the Chapare and on Economic Development for Small Farmers in the Department of Cochabamba

CORDEP, the newly proposed project for alternative development in Bolivia, is funded in large part by NSD-18 funds especially appropriated by Congress for anti-narcotics activities in the Andean Region. CORDEP provides the resources which will make it economically possible for small coca producers to eradicate all transitional coca in the Chapare by 1993, the target set by Bolivian Law 1008. The Project, with the U.S. Balance of Payments support and other activities designed to enhance incomes, jobs and economic growth and reactiviation in the Cochabamba department and in areas of influence, are integrally related to the GOB's enforcement of the coca eradication plans promulgated pursuant to Law 1008. Without the resources which the U.S. is providing for alternative development, it is highly unlikely that the GOB would be able to enforce Law 1008 because of the severe losses of foreign exchange, income and jobs which must necessarily accompny the elimination of the coca industry in Bolivia. Therefore, CORDEP is designed to impact directly the anti-narcotics battle in the Chapare, and will be an indispensible component complementing the law enforcement, interdiction and eradication measures taken to implement Law 1008.

How will the project specifically support the enforcement of Law 1008? Its impact will be twofold: 1) First, it will serve to enhance income and employment opportunities for poor farm families and laborers as they move from coca production to licit crops in the Chapare. Additionally, it will bolster income and employment for poor farm families in the southern zone of the Department of Cochabamba and area of influence so that they can remain on their land, growing viable, licit crops. 2) Secondly, CORDEP will, in concert with the U.S. Balance of Payments program and other activities which directly impact on the project area, provide the political muscle necessary for the GOB to fully implement the phased eradication mandated by Law 1008. The goal of CORDEP is clearly to facilitate the conversion of Bolivia's coca based economy to a viable, licit economy through interventions which will have a direct impact on and a supporting role for the GOB's overall anti-narcotics scheme.

The following chart describes population, beneficiary and eradication statistics in the Chapare and non-Chapare regions of the Project area. It projects the principal project impacts on the eradicating farm families, as well as those who are not in coca production. While projections such as this are useful, a cautionary note should be sounded with respect to CORDEP. As the Project Paper makes clear, many of the project's outputs will be dependent on the efficiency of the GOB's law enforcement and erradication efforts which in turn will influence the price of coca. Given favorable results in these areas, the table projects CORDEP's impacts on the implementation of Law 1008. The attached illustrative table provides the magnitude of the outputs likely to be obtained from the project by the end of calendar year 1993 by all project beneficaries in the Department of Cochabamba.

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CRDP/CORDEP - Impact on Enforcement of Law 1008

	Actual				Estimate		
					CORDEP only		
	CY 89	CY 90	CY 91 First Half	CY 91 Total	CY 92	CY 93	LOP Total CORDEP
Population and Eradication in the Project Area							
CORDEP Farm families in the project area (in 000)					71	71	71
Chapare Beneficaries (in 000)					38.5	38.5	38.5
Chapare farm families who grew coca (in 000)					37.0	37.0	37.0
Chapare farm families that have reduced coca (cumm) (000)			10.0	16.0	26.0	37.0	37.0
Hectares to be erradicated (in accordance Law 1008)							
(per Year)	5,000	6,000		6,000	7,000	8,000	
(cumm)	5,000	11,000		17,000	24,000	32,000	32,000
Chapare farm Families with DIRECO certificates (cumm)	988	1388	1493	1600	2600	3700	3700

	Actual				Estimate CORDEP only		
	CY 89	CY 90	CY 91 First Half	CY 91 Total	CY 92	CY 93	LOP Total CORDEP
<u>CORDEP Benefits to Chapare Families</u>							
Chapare Families with credit (10% of erradicating families) (cumm)			1044	1600	2600	3700	3700
Credit provided to date ($million)	$2.0	$2.0	$1.0				
Credit Available (in $ millions)					$3.0	$3.0	$15.0*
Farm input grants (in $ millions)					$1.0	$1.0	$5.0
Marketing incentive fund (in $ 000)					$50	$50	$250
Rural Infrastructure (roads/bridges/markets/ community projects)					74	74	370
<u>CORDEP Benefits to Non-Chapare Families</u>							
Credit Available (in $ million)					$2.0	$2.0	$10.0*
Marketing incentive fund (in $ 000)					$50	$50	$250
Rural Infrastructue (roads/bridges/markets/ irrigation)					74	74	370
Reforested Land (Has X 000)					1.7	1.7	8.5
Land under soil conservation practices (Has X 000)					0.9	0.9	4.5
Land under watershed management practices (Has X 000)					80.0	80.0	400.0

* $25.0 million in credit is provided in addition to the $40.0 million GOB contribution to this project.

The attached Annex A demonstrates in narrative form the project's impact on a typical farm family in the Chapare, indicating specific benefits in the course of phased eradication under a typical farm plan pursuant to Law 1008. Annex B describes in some detail the types of subprojects in the project and the criteria for their selection. Annex C is a detailed implementation plan to supplement the plan provided in the PP. Annex D is a project budget which breaks out Foreign Exchange (FX) and Local Costs (LC). Annex E provides a listing of all subprojects, their implementing agencies and funding levels. Annex F provides corrections to the Project Paper.

WHERE WILL WE BE IN NINETY THREE ANNEX A

The story of a coca eradicator.

For purposes of illustrating the potential benefits of this project to the typical coca growing family in the Chapare, let us hypothesize that the family with some one and one-half hectares of coca on a ten hectare plot decides to begin eradication of its coca in July of 1991. Law 1008 stipulates that they be completely out of coca production by the end of 1993.

After signing up with DIRECO and having its coca measured, we assume the family decides to eradicate one half a hectare now with one half hectare to be eradicated next year and the remainder about this time in 1993. Upon eradicating this one-half hectare, the family would receive a cash payment from the GOB of $1,000. Since the family has heard of the technical assistance available from IBTA/Chapare and been in regular contact with their extension and out-reach technicians, it would then contact its neighborhood extension worker. with whom the family has exchanged farm visits several times in arriving at the decision to eradicate, to arrange for assistance in developing the individual farm plan. The farm plan developed with the IBTA extension worker will reflect the need of the farm family for regular cash inflows as early and steadily as possible as well as the ecological characteristics of the farm. A set of products will be recommended taking into account the best estimates of marketing prospects for alternatives adapted to the farm location (including accessability to existing and planned farm to market roads), cropping/fallow patterns on the farm and the fact that some crops require heavy fertilization if they are to survive and be productive on land from which coca has recently been eradicated.

The family head (assumed here to be male) having visited DIRECO to collect his certificate of eradication and with his farm plan in hand, goes to the local office of the Capital Resources unit where he receives coupons entitling him to collect sufficient planting materials and other needed inputs to plant approximately one and one half hectares of alternative crops. Under the provisions of the new program he would have to pay in cash a portion, say 20%, of the cost of these materials.
Characteristically, the farmer would select, from a project assisted nursery, a mix of the crops as suggested in the farm plan. Some wide spaced tree crop like papaya, banana, or macadamia, interplanted with peanuts, cowpeas or a forage legume would be planted on the plot from which the one half hectare of coca had been eradicated, with other tree or vine (like black pepper or passion fruit) crops interplanted with rice to be planted on an additional hectare or so of land from which the family would have to clear the existing cover of brush.
If adapted, the family might decide also to plant a small area to ginger, tumeric, achiote or similar spice or colorant crop. The

family might very well have a substantial part of their cropped land planted to passion fruit, pineapples or hearts of palm grown under a contract arranged by the marketing unit with a Cochabamba or Santa Cruz based processor or fresh fruit exporter. Some will also grow under contracts arranged through the new Marketing Unit of the project with Argentinian or Chilean firms.

The work of clearing and planting would likely occupy the farm family well into the beginning of the rainy season in October. They could begin cutting the interplanted forage legume areas in a continuing rotation to supplement their cow's nutrition and thus increase milk production for home consumption or sale. The rice and peanuts or cowpeas would shortly be ready for harvest as well. Soon there would be passion fruits that could be harvested every couple of weeks followed about one year after planting by bananas or papayas, also to be harvested in a similar pattern. The spice and colorant crops produce their harvests from one to two years after planting. With the exception of pineapples and such annual crops as rice, peanuts, cowpea, tumeric and ginger, the other tree and vine crops are for all practical purposes long-lived perennials which, once having reached bearing age, provide excellent protection to the fragile soils of the area from the torrential rains and very hot direct sunshine. These characteristics will result in a stable producing farm over the long run.

A similar program of eradication, cash payment, further elaboration of the farm plan, clearing and planting would occur in 1992 and 1993 with labor released from coca management and harvesting now devoted to the alternative, licit crops and livestock.

Late 1993 would find the farm family with some four and one half hectares in a mix of new high value crops and some five and one half hectares in a mix of pasture and second growth jungle or fallow. They would probably still require some seasonally hired and full time labor to supplement the family's efforts. Their new enterprise combination, while more complex and stable would require continuing assistance from the IBTA technicians. The family would likely have a more favorable distribution of labor demands than their former coca-based system. It would also have a more stable and higher income producing capacity based on newly aquired skills in the growing and marketing of high value licit crops processed or packed in project financed facilities and transported on project improved roads. The children might likely attend a neighborhood school, receive rudimentary medical treatment or inoculations in facilities provided under the predecessor project to the community as an incentive to meet the community level eradication targets certified to by DIRECO.

Provided that law enforcement and interdiction efforts pursuant to law 1008 continue and are effective in destabilizing and depressing coca prices, disencentives for the family to go back into coca production will be strong.

While the diversity of the farm enterprises will make the task of farm management more complex the family will be assisted by IBTA, the marketing unit and the purchasers of their products. Their lives will be more productive by reason of the licit nature of their activities and the long term sustainability of their new, mulitcrop, multi-story agroforestry/horticulture based farming system targeted on several reliable markets; local and domestic.

SUB-PROJECT SELECTION CRITERIA ANNEX B

The general nature of sub-projects will be worked out in the annual planning process along with the research and extension programs of the two IBTAs, the rural roads and bridges, activities of such related USAID projects as Rural Electrification, the CARE Community Water Project, Export Promotion and Private Agricultural Organizations, PL 480, etc. The plan will be developed at a week-long workshop to be organized by the USAID with assistance from the TA contractor. Representatives of collaborating USG agencies, such NAS, DEA, MIL GROUP and ECON/COM will be in attendance. Other donors such as the Governments of Japan and Germany and UNFDAC will also be invited to participate in the annual planning workshop to be sponsored by the project. All current and prospective GOB and NGO implementing entities will also be encouraged to participate. It is expected that the majority of sub-projects will be in a condition that decisions can be made at the workshops, planned for late august or early September. Based on the proposals presented and discussed at the workshop, the operating plan for the upcoming calendar year can be quickly finalized and approved. This annual plan will take into acount the planned and ongoing activities of the other actors but will be guided by the Marketing Unit with a view to making real the income and employment generating activities that they, through their surveys and analysis have identified.

In an activity that tries to take advantage of marketing opertunities it would be very naive to expect that all of the needs can all be foreseen a year or two in advance. Provision will have to be made in the planning and budgeting process for flexibility to respond to unforeseen problems and opertunities.

IN THE COCHABAMBA TROPICS

Sub-projects in the Chapare area will be undertaken under two general approaches: those, such as roads and drainage structures, that must be undertaken to permit the population to market products other than dry coca leaf and/or cocaine or intermediate products; and other socially productive activities offerred to communities to encourage them to eradicate their coca and bring social pressure on their less cooperative neighbors to also eradicate.

The principal types of infrastructure needed to give an area access to markets will be roads, bridges and other drainage structures. In addition two or three levels of local marketing facilities are necessary. For the traditionally produced cereals, pulses, roots and tubers, existing privately supplied services and facilities will probably suffice. For fresh tropical fruits like pineapple and banana aimed at export, fairly

sophisticated packing sheds, furnishing protection from the rain and sun and including washing cooling and dipping facilities are necessary. Such facilities, possibly utilising portable chilling equipment, are planned for several key locations in the region. These facilities need to be backed up by simple, pole structures with thatched roofs located along access roads feeding into the regional packing centers described above. In order to reduce to an acceptable level the damage that such products as bananas may sustain during transport from the field to the roadside, small tramways are sometimes used. Further, there appears to be a need for intermediate term cold storage facilities in two or three locations along the main highway in the Chapare to supplement existing private and publicly owned facilities in Cochabamba and Santa Cruz. The selection of any of these facilities to be constructed under the project will be based on the production potential of the sub-region, proximity to existing roads, market potential of products being grown and proposed to be grown in the sub-region and the expressed desire of the comunity to engage in the production and marketing of the suggested products.

Under the previous project small social projects of an individual value less than $20,000 were offerred to communities when they were certified by DIRECO as having eradicated 30% of the coca in the community. A similar offer was open on acheivement and certification of 70% eradication and on 100%. The preponderance of such facilities constructed heretofore have been of a purely social nature: schools, clinics, comunity social halls, mothers'clubs, etc. In some instances road segments have been improved, planting material furnished for community plant nurseries and simple facilities for the marketing of milk supplied. While the overwhelming majority of such comunity works have been well accepted and utilised, there are instances of under-utilisation and missuse of these facilities. It is proposed in this project to select high impact projects based soley on economic criteria. That is, we will strongly encourage the construction of productive facilities such as nurseries, packing sheds and refrigeration units, based on the production and marketing needs of the overall community.

IN THE VALLEYS

The community works in the valleys are preponderately in water development. This is not at all surprising considering the low level and high variability of rainfall throughout the valley area. The communities of the valleys tend to be tightly organized and have their own, community-based water development, distribution and maintenance organisations. The water projects undertaken to date have been characterized by a high degree of in-kind contribution of labor and local materials. This set of sub-projects has been very successful and serves as an entre to the community for undertaking the less obvious but badly needed soil and water conservation, livestock control and reforestation efforts. USAID will move ahead with these sub-projects with a variety of implementing agencies, GOB and NGOs, endeavoring to

obtain a higher degree of coordination between the water development activities and the conservation and reforestation efforts necessary to sustain them. A study currently underway of the ground and surface waters of the area will provide needed technical information for more intensive and effective on-farm water management programs.

There are some fairly large areas of poorly drained land in the upper Cochabamba Valley that are currently unusable due to improper irrigation and water management in the past. The Government of Germany has recently completed an excellent water supply project bringing high quality water from the high Andes to this area. A feasibility study will be undertaken to determine if a combination drainage and conjunctive ground and surface water irrigation program would be effective in reclaiming the areas that are now plagued by excessively high levels of salinity. Drainage activities, if found to be technically, environmentally and economically feasible, would be carried out during the dry season using labor intensive methods to enhance the off-season employment benefits in this chronic labor surplus area.

The sub-projects in the Valleys will be selected on the assessment of requests from the beneficiary communities. Factors that will be considered in deciding which solicitudes to pursue will be: the present and potential capability of the area to produce marketable products; the quality, volume and dependability of the proposed water source; proximity to existing and planned transportation and marketing facilities; perceived willingness of the community to undertake necessary water management, conservation, reforestation and livestock management activities; and level of local community contribution to the project.

Roads and bridges will be selected on the basis of their contribution to market access in existing and potential areas of production of marketable products. Roads and bridges connecting regional markets to major consuming centers and exports channels will also be improved as appropriate. To the extent that the availability of reliable price data permit, standard feasibility analyses will support road and bridge selection decisions. All road improvement activities will be preceded by appropriate environmental assessments and the necessary amelioration measures will be carried out as part of the road improvement process.

ANNEX C IMPLEMENTATION PLAN

CY 91

1	Project Paper Designed	May
2	Project Paper Approved and Authorized in A.I.D./W.	June
3	Project Bilateral Agreement Obligated	July
4	Initial Annual Planning Session	August
5	PIO/T for TA Issued	August
6	CBD RFP Notice Issued	August
7	PIO/C for A.I.D.-procurred Commodities Issued	Sept
8	Operating Plan for CY 92 Approved	Oct
9	TA Contracted	Nov
10	FY 92 Project OYB Available and Obligated	Dec

CY 92

1	TA On Board	Jan
2	Commodities begin arriving	Jan
3	FY 91 ESF BOP HCOC Available	Jan
4	First Ag Extension Activities Initiated	Jan
5	First Marketing Seminar Initiated	Feb
6	First Immediate Impact Project Completed	March
7	First Mini-irrigation Project Completed	April
8	First Road Section Completed	May
9	First Bridge Completed	June
10	Second Annual Planning Session	August
11	Operating Plan for CY 93 Approved	Oct
12	Annual Audit	Dec
13	148 Rural Infrastructure Projects Completed	Dec
14	$1.0 million in Farm Inputs Provided	Dec
15	1,700 Has Reforested, 900 Has of Soil Conservation 80,000 Has of Watershed Management	Dec

CY 93

1	Third Annual Planning Session	August
2	Operating Plan for CY 94 Approved	Oct
3	Annual Audit	Dec

CY 94

1	Mid-term evaluation	June
2	Fourth Annual Planning Session	August
3	Operating Plan for CY 95 Approved	Oct
4	Annual Audit	Dec

CY 95

1	Fifth Annual Planning Session	August
2	Operating Plan for part of CY 96 Approved	Oct
3	Annual Audit	Dec

CY 96

1	Final Evaluation	June
2	Final Audit	August
3	Project Close Out Report	Sept

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ANNEX D

CORDEP BUDGET

AID Contribution

(US$000)

Project Components	YEAR 1 FX	YEAR 1 L/C	YEAR 2 FX	YEAR 2 L/C	YEAR 3 FX	YEAR 3 L/C	YEAR 4 FX	YEAR 4 L/C	YEAR 5 FX	YEAR 5 L/C	TOTAL FX	TOTAL L/C
I. USAID/B Project Support	510	545	510	475	510	475	510	475	510	475	2,550	2,445
II. Implementation Assist.	5,718	--	5,844	--	4,239	--	3,604	--	3,124	--	22,529	--
Prime Contractor	1,038	--	837	--	837	--	837	--	837	--	4,386	--
Tech. Assistance	270	--	270	--	270	--	270	--	270	--	1,350	--
Commodities	201	--	--	--	--	--	--	--	--	--	201	--
Operating Costs	567	--	567	--	567	--	567	--	567	--	2,835	--
Marketing	1,479	--	1,337	--	1,097	--	1,097	--	857	--	5,867	--
Tech. Assistance	880	--	880	--	640	--	640	--	400	--	3,440	--
Training	55	--	55	--	55	--	55	--	55	--	275	--
Commodities	140	--	--	--	--	--	--	--	--	--	140	--
Operating Costs	404	--	402	--	402	--	402	--	402	--	2,012	--
Capital Resources-NGO												
Cooperative Agreement	700	--	700	--	700	--	700	--	700	--	3,500	--
Sustain.Small Farm Prod.	2,501	--	2,570	--	1,605	--	970	--	730	--	8,776	--
Tech. Assistance	1,060	--	1,060	--	820	--	580	--	580	--	4,100	--
Training	130	--	150	--	150	--	150	--	130	--	710	--
Studies	180	--	260	--	335	--	40	--	20	--	835	--
Commodities	1,131	--	1,500	--	300	--	200	--	0	--	3,131	--
III.Subprojects	--	8,908	300	8,866	--	10,145	--	10,730	--	10,490	300	49,139
PDAR/Immed.Impact Works	--	1,500	--	1,500	--	1,500	--	1,500	--	1,500	--	7,500
IBTA	--	3,903	300	3,366	--	4,145	--	4,230	--	3,990	300	19,634
Chapare	--	3,719	300	3,154	--	3,901	--	3,950	--	3,668	300	18,392
Valles Altos	--	184	--	212	--	244	--	280	--	322	--	1,242
Governm.Organizations	--	2,000	--	2,000	--	2,000	--	2,000	--	2,000	--	10,000
Non-Gov.Organizations	--	1,505	--	2,000	--	2,500	--	3,000	--	3,000	--	12,005
Road Construction	--	--	--	--	--	--	--	--	--	--	--	--
IV. SUBDESAL/PDAR-Oper.Costs	--	--	287	--	--	--	--	--	--	--	287	--
PDAR	--	--	287	--	--	--	--	--	--	--	287	--
SUBDESAL	--	--	--	--	--	--	--	--	--	--	--	--
V. Agric.Grant Program and Private Sect.Incent.Fund	--	--	--	--	--	--	--	--	--	--	--	--
Grants	--	--	--	--	--	--	--	--	--	--	--	--
Incentive Fund	--	--	--	--	--	--	--	--	--	--	--	--
VI. Audits/Evaluations	350	--	500	--	700	--	500	--	700	--	2,750	--
VII.Contingency/Inflation(*)	--	--	--	--	--	*Built	into	each	line	--	--	--
TOTAL	16,381		16,782		16,069		15,819		15,299		80,000	

OBLIGATION SCHEDULE	FY 91	FY 92	FY 93	FY 94	FY 95	TOTAL
ARDN	4,280	1,984	6,921	4,845	0	18,000
ESF	3,000	25,000	20,100	13,900	0	62,000
TOTAL	7,280	26,954	27,021	18,745	0	80,000

ANNEX E

CORDEP SUBPROJECTS

Types of Subprojects	Implementing Agencies	Proposed Funding Levels ($000)
Immediate Impact Projects	PDAR	7,500
Ag research/extension, seminars, workshops, on-farm trials, experiment stations, nurseries	IBTA	19,934
GOB subprojects including processing research, reforestation, hydrological studies, fisheries research and extension	MACA UMSS GEOBOL	10,000
Reforestaion, soil conservation, range and watershed management mini irrigation, nurseries farm management	Various NGOs	12,005
Roads, Bridges and cobbling	SNC with with private construction contractors	29,423

Note: Funding levels are based on actual funding approved for CY 1991 subprojects with revisions to emphasis a marketing focus.

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ADDENDUM ANNEX F

1) Page 10: The Alternative Development Steering Committee, chaired by the Mission Deputy Director, is normally made up of nine A.I.D. professionals. It is anticipated that these professionals will attend quarterly meetings as appropriate and depending on the subject matter to be discussed.

20 Page 20, item v. is rewritten as follows:
Another key role of the marketing unit is to strengthen the link between agricultural reseach and the requirements of agroindustry. Traditionally, IBTA researchers have focused almost exclusively on production and productivity, without adequate consideration for cost of production data. They need to also seek out the particular needs of the industries which use raw agricultural products as inputs. This will result in production which have the most desirable characteristics in that particular market, and translate into higher prices for producers. The unit will fill a critical void by facilitating research-industry interaction, and by recommending training programs and the upgrading of research facilities where required.

ANNEX E

Certification Pursuant to Section 611(e) of the Foreign Assistance Act of 1961, As Amended

I, Carl H. Leonard, the principal officer of the Agency for International Development in Bolivia, having taken into account among other factors the maintenance and utilization of projects in Bolivia previously financed or assisted by the United States, do hereby certify that in my judgement Bolivia has both the financial capability and human resources capability to effectively maintain and utilize the capital assistance provided within the Cochabamba Regional Development Project No. 511-0617. The capital assistance includes the construction of small immediate impact community infrastructure projects valued on the average at approximately $20,000, and the construction of community mini-irrigation systems. In both types of construction subprojects, the community is responsible for the operation and maintenance of the capital assistance provided by the project. Based on experience of the prior Chapare Regional Development Project, the Bolivian communities and the Government of Bolivia have the capabilities to maintain and utilize these small infrastructure and irrigation construction projects, the aggregate value of which may exceed $1,000,000, but each of which will cost far less than this amount.

Carl H. Leonard
Director, USAID/Bolivia

1179L

ANNEX F 1

SOCIO ECONOMIC AND SOCIAL SOUNDNESS

ANALYSES

SOCIOECONOMIC AND SOCIAL SOUNDNESS ANALYSES

I. SOCIO ECONOMIC CONTEXT OF THE PROJECT AREA

A. Background

The project encompasses the regions of the Department of Cochabamba in which human migration links the coca-growing areas of the Amazon-Basin Chapare with the high valley farming areas which provide seasonal labor for coca growers.

The purpose of the project is to develop alternative sources of income and employment for people within the project area.

Data show that in the primary unit of project focus, the income is generated by both women and men and that economic decision- making is shared between wives and husbands. Consequently, the project reflects these shared responsibilities in its objectives, strategies, and implementation recommendations, recognizing male and female roles in production, processing, and marketing. In addition, it addresses the needs and possibilities of off-farm employment for both men and women.

The following Section B. presents a brief geographic and demographic profile of the contrasting, but linked, regions of the project area. Section C. discusses the family as the primary unit of analysis of the project. Section D gives economic, ecological, and sociocultural descriptions of the three family types on which the project focuses:

Type I. The Subsistence Rural family
Type II. The Cash Market Rural family
Type III. The Small-Scale Entrepreneur Farmtown Family

Section F. analyzes the migration constraints and incentives faced by family members and projects the numbers of possible migrants during the years of the project. Finally, Section G. describes types of social organizations which link rural families and which are points of communication for development organizations working with these households.

B. Geography and Demography

1. See Natural Resource Management section for geographical and ecological data.

2. Data are presented for the six Cochabamba valley and highland provinces, as well as the relevant areas of the Cochabamba tropical region (the Chapare) which make up the project's socioeconomic area.

Population data vary, particularly in regard to the Chapare. However, using the best estimates available 1/ and calculating five persons to a family, project beneficiaries total 71,047 families (355,235 persons):

High Valley families	36,343
Chapare Families	34,704
Total	71,047 Families

The High Valleys data are derived from National Institute of Statistics data which show the following population breakdowns among the six highland provinces:

TABLE 1.

POPULATION OF THE COCHABAMBA HIGH VALLEYS

PROVINCE	SIZE IN SQ. KILOMETERS	PROVINCE TOTAL	POPULATION CAPITAL CANTON	RURAL CANTONS
Arani	570	15,449	8,125	7,324
Campero	5,550	38,011	17,970	20,041
Esteben Arze	1,245	30,526	3,422	27,104
Jordan	305	26,893	8,477	18,416
Mizque	2,730	35,192	16,479	18,713
Punata	850	35,623	9,096	26,527
TOTALS	11,250	181,694	63,569	118,125

1/ For High Valleys area: Instituto Nacional de Estadísticas (INE) and Centro de Investigación y Desarrollo Regional (CIDRE); Cochabamba en Cifras, Vol. 1. Cochabamba, 1990.

For Cochabamba tropical region: Centro de Investigación y Desarrollo Regional (CIDRE). Monografía de Cochabamba Tropical. Cochabamba 1989.

C. Direct Beneficiaries of the Project: The Family

The project area encompasses families living in a variety of ecological zones -- from dry, cold highlands at 10,000 feet to jungle wetlands, producing distinct agricultural products, and representing a range of sociocultural styles. Despite these differences, the families can be categorized according to a primary measure of the project: the source of household income. 2/

None of these types is "pure." All families have more than one kind of involvement in the marketplace and in agricultural production. All families participate to some degree in the cash economy; all grow some food for home use. (Even for Type I families, cash is necessary for items such as farm inputs, school costs, and health needs.)

Within the family each member is involved in a variety of enterprises. Although there are separate spheres of labor for men and for women, these are complementary and not rigidly divided. There is overlap and substitution. For example, a woman might plow during the time her husband has migrated to the Chapare, and a man might wash clothing during the time his wife is at a regional market. Finally, decisions about such important questions as who will migrate or what crops to plant are made by the family as a unit, not by individuals.

Using the source of household income as the primary indicator, three family types can be identified for both the Southern Zone and the Chapare.

D. Family Types: Economic, Ecological and Sociocultural Characteristics

Table 2. summarizes these three family types and their socioeconomic characteristics. More detailed data follow.

2/ Household income refers to any resources, cash or products, that come into the household. This is distinguished from household cash income, which refers specifically to monetary income.**

FAMILY TYPES AND SOCIOECONOMIC CHARACTERISTICS

TABLE 2.

HIGH VALLEYS

FAMILY TYPE AND NUMBER	REGION	SUBSISTENCE CROPS	CASH CROPS	ANIMALS	BASIC DIVISION OF LABOR	LANGUAGE USED AT HOME
I. Subsistence farm family 15746 families	dry highlands that comprise most of Mizque and Campero provinces	potatoes, corn, wheat, quinua, oca, broad beans	corn, wheat, seed potato	very large herds of goats and sheep; some chickens, oxen, burros	men raise crops and migrate; women raise animals and do domestic labor	Quechua; many men and most women are monolingual in Quechua
II. Cash market farm family 16353 families	fertile irrigated valleys of Cliza-Punata, Mizque, and Omereque	potatoes, corn, onions, small quantities of many types of vegetables and fruits	potatoes, onions, peanuts (Mizque), garlic (Tin Tin) tomatoes (Omereque)	sheep and goats, cows, chickens, ducks, turkeys, rabbits, pigs, oxen, horses, burros	men-primary crops, migrate; women-small crops, animals, chicha, market, domestic labor	Quechua; most young men and many young women also speak Spanish
III. Rural entrepreneur family 4240 families	in and near provincial capitals: Arani, Aiquile, Cliza, Mizque, Punata, Tarata	potatoes, corn, onions, fruits, vegetables	potatoes, corn, onions, peanuts; land is often cultivated by sharecroppers	chickens, pigs, ducks, turkeys; cows and sheep cared for by others in share arrangements	men-brokers, transportistas; women-market, run stores, chicherias, and restaurants	Quechua; most family members are also fluent in Spanish

CHAPARE

FAMILY TYPE	REGION	SUBSISTENCE CROPS	CASH CROPS	ANIMALS	DIVISION OF LABOR	LANGUAGE USED AT HOME
I Subsistence farm family	tropical colonies, especially isolated areas	rice, cassava, corn, bananas, citrus	coca leaf	chickens	men clear land; women pick coca and do domestic labor; both farm	mostly Quechua (70% are from Quechua-dominated Cochabamba)
II Cash market farm family	tropical colonies	rice, cassava, corn, bananas, citrus	coca leaf, bananas, pineapples	chickens, cows	men clear land; women pick coca, domestic; both farm	mostly Quechua, many know some Spanish
III Rural entrepreneur family	towns on the main road: Shinahota, Isinuta, Ivergarzama, Villa Tunari	rice, cassava, corn, bananas, citrus. some entrepreneurs buy much of their food	coca leaf	chickens	men-transport, taxis, brokers; women-market, run eat/drink establishments	Quechua for marketers, taxi drivers Spanish for restauranteurs, bar owners

1. Type I. The Subsistence Rural Family

a. Economic Description

The economic base of these families is primarily agricultural products produced for home use. Animals are maintained for their productive use, as well as a source of liquid capital, a "walking savings bank." Some agricultural crops are sold in the market for cash, and animals are sold when larger amounts of cash are needed.

These are the poorest of the beneficiary families.

b. Ecological and Sociocultural characteristics

(1) Chapare Families — No. of Families: See footnote 3/

The subsistence family in the Chapare does not occupy a different ecological zone from the Type II Chapare family, but rather has less access to roads and markets. The primary subsistence crops are rice, cassava, corn, some vegetables and beans, bananas, citrus, and pineapples. A few chickens and pigs are raised.

Men clear and burn forests; women cook for these activities. Otherwise, men and women collaborate in all agricultural activities.

Each family raises at least a little coca as a cash crop, and women and children generally harvest the leaves three or four times a year. Both men and women market it.

In general, these families have migrated from the highlands, and they maintain many highland traits: The first language is Quechua 4/, although there are some pockets of Aymara speakers, and most speak more Spanish than their highland cousins. Most women wear polleras 5/; preferred foods are rice, corn, and cassava.

3/ Current data for the Chapare do not allow breakdown by household type. Collection of this demographic information will be one of the activities of the Chapare household studies recommended for 1991.

4/ The DIRECO data show that 70% of the migrants are from the Cochabamba valleys; 12% from Potosi. Quechua is the primary language in both areas.

5/ A pollera is the gathered full skirt worn with an overblouse and some kind of hat which distinguishes a cholita from her more westernized sister.

(2) High Valley Families — No. of Families: 15,750

In the High Valleys, these families live in the ecologically marginal zones where rainfall is scarce. (Average altitudes of 8,000 - 10,000 feet.) For example, in the areas of Wara Wara in Campero Province and K'uri in Mizque Province. The primary subsistence crops are potatoes and corn. The primary cash crops are corn and wheat In this harsh environment, sheep and goats are the important animals.

Women are primarily responsible for animal care, cultivation of secondary crops, and the seed selection and processing of all crops. Men are responsible for primary crops. Children work in herding, agricultural tasks, and bringing water.

The first language of these families is Quechua, and many women are monolingual. Women wear polleras or more traditional clothing of homespun (bayetta). The preferred staple foods are potatoes and corn.

2. Type II. The Cash Market Rural Family

a. Economic Description

The economic base of these families relies much more on agropastoral production for the cash market. However, much of farm production is for subsistence.

These families have a higher cash income than those described above, and their household consumption and agricultural production also depends more on market-purchased goods, such as fertilizer, seeds, and insecticides.

b. Ecological and Cultural Characteristics

(1) The Chapare — NO. OF FAMILIES: See footnote 3.

This family grows the same subsistence crops as Chapare Type I, but in addition cultivates sizeable amounts of coca, bananas, and pineapples for the cash market. Their advantage over Type I is primarily in access to the market, not in size of landholding. Like Type I, some coca is also grown for the cash market.

The division of labor between men and women is similar to Chapare Type I.

In general, these families are more bilingual and have more sociocultural characteristics of the dominant Spanish- speaking population. The first language is usually Quechua, though they are often bilingual. Preferred foods are rice, cassava, and corn. (Corn was brought from the highland, as well as potatoes, but potatoes were not successful in the Chapare.)

(2) High Valleys Families — No. of Families: 16,353

In the High Valleys, these families live in fertile valleys where the altitude is lower and where water is more plentiful. (Average altitude of 6,600 feet.) For example, the valley regions of Mizque, Omereque, Pasorapa, Tipajara. The primary subsistence crops are potatoes and corn. The primary cash crops are potatoes, onions, and peanuts, as well as garlic (in Tin Tin) and tomatoes (in Omereque). The important animals are milk cows, oxen, sheep, and goats.

Women are primarily responsible for seed selection, crop processing, and marketing, as well as the cultivation of the secondary crops of vegetables for consumption and sale. As in most areas, they are also responsible for the daily care and health care of animals in addition to domestic responsibilities of cooking and child care. Men are responsible for the primary crops, oxen, and the training and supervision of range cattle. Children work at water carrying, herding, weeding, and protecting crops from birds.

In general, these families are more bilingual and have more sociocultural characteristics of the dominant Spanish- speaking population. Their first language is Quechua, but most men and some women speak or understand Spanish. Older women wear polleras; some younger women wear western skirts and pants. The preferred staple foods are potatoes and corn, complemented by purchased rice and macaroni.

2. Type II. The Cash Market Rural Family

a. Economic Description

The economic base of these families depends much more upon entrepreneurial activities than on agropastoral production. These activities include marketing, transport, services, small-scale retailing, and artisan production.

However, most of these families also engage in agropastoral activity for home use and marketing. Many share-crop out sections of their agricultural land to poorer families, who give one-half of the harvest to them as rent.

These families have the highest family income of the three types.

b. Ecological and Cultural Characteristics

(1) The Chapare — No. of Families: See footnote 3.

In the Chapare, these families live in towns such as Villa Tunari, Shinahota, Isinuta, Ivergarzama, and Eterazama. These are "frontier" towns, with immigrants from the Santa Cruz lowlands as well as the Chapare highlands. In addition to the farm-town enterprises described above, there is a range of "boomtown" enterprises, such as drinking establishments, prostitution, and the use of taxis to transport coca.

The families involved in small-scale marketing are primarily Quechua-speaking highlanders, many of whom still wear the pollera. The owners of bars and restaurants are generally from Santa Cruz, who speak only Spanish.

High Valleys Families — No. of Families: 4,240

In the High Valleys, these families live in towns such as Punata, Cliza, Mizque, and Aiquile. Their primary entrepreneurial activities center around the marketing of agricultural and manufactured products, trucking, and running eating and drinking establishments.

Women are primarily responsible for marketing and managing stores and restaurants. Men work as truckers, marketers of more expensive commodities, and marketing brokers or intermediaries.

In general, these families prefer Quechua but they speak Spanish as well. The preferred staple foods are potatoes, rice, macaroni, meat, and bread. Many women wear polleras, but their wardrobe includes elaborate and expensive ones, as well as heavy gold earrings (which are also considered investments).

E. Family Labor Cycles and Implications for Income-Generation

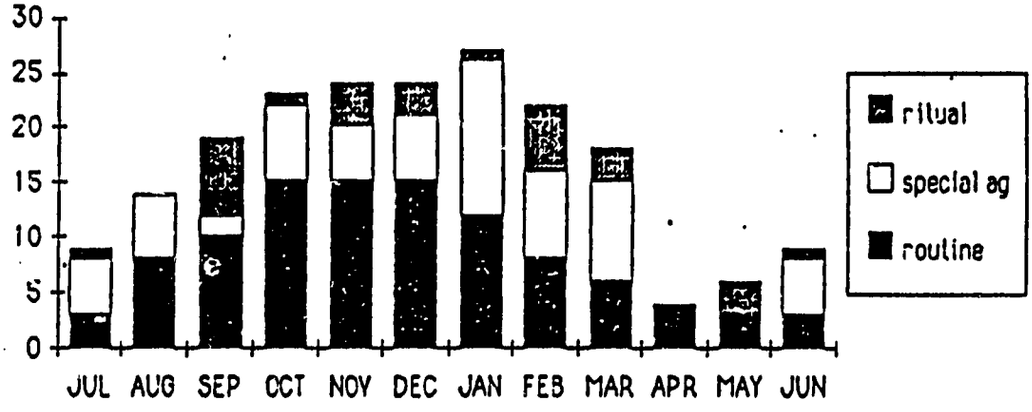
1. Tables 3. and 4. show labor cycles for men and women in both the irrigated valleys and the dry highlands. Data from the Chapare on labor cycles are not yet available. They are a part of the household studies recommended by the project for implementation in FY 1991.

2. The tables identify: (a) the types of on-farm labor demands on both men and women; (b) the amount of time given to these activities on a monthly basis; and (c) the cyclical changes throughout the year.

TABLE 3.

LABOR CYCLES OF MEN AND WOMEN IN IRRIGATED VALLEYS

Annual work cycle for men on medium sized irrigated farms in Mizque valley: average labor days per month dedicated to routine labor, special agricultural tasks and ritual obligations



Annual labor cycle for women on medium sized irrigated farms in Mizque valley: average labor days per month dedicated to routine labor, special agricultural tasks and ritual obligations

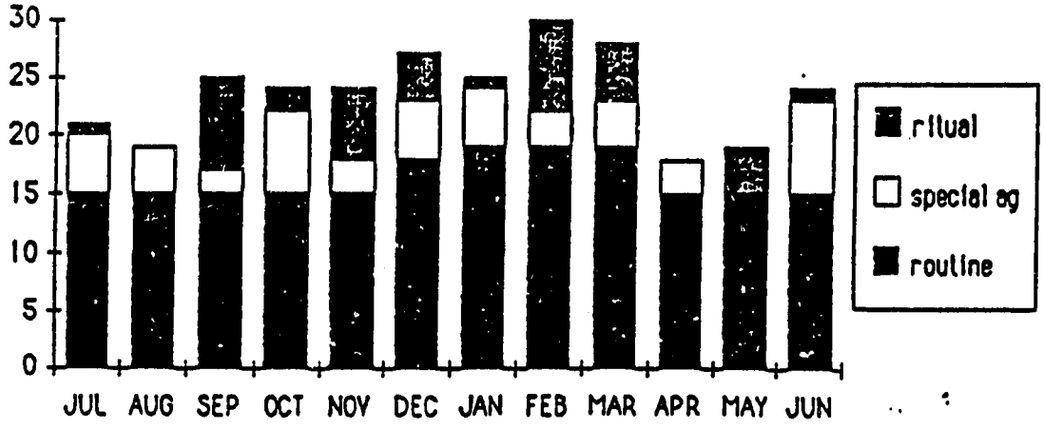
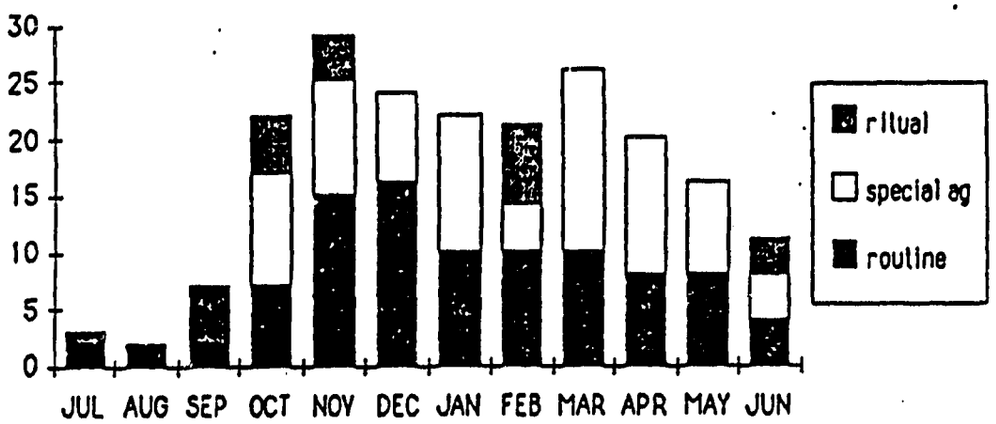


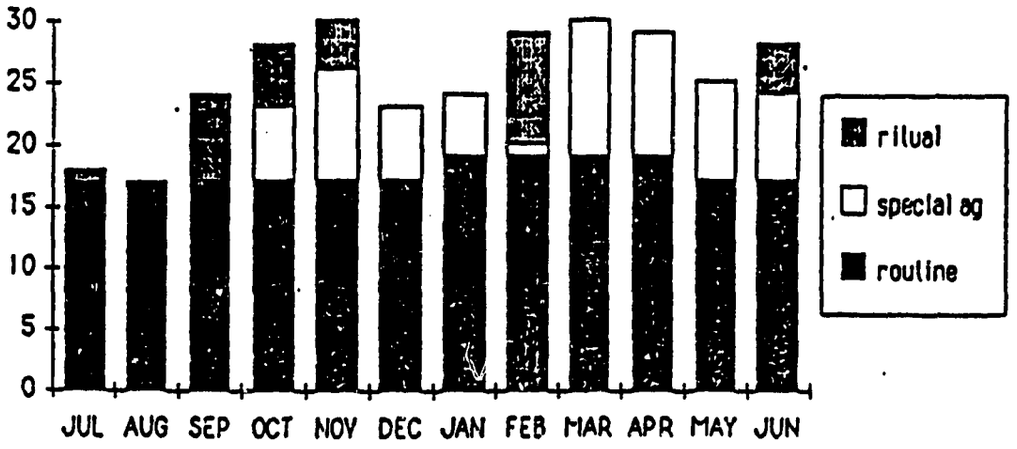
TABLE 4.

LABOR CYCLES OF MEN AND WOMEN IN NON-IRRIGATED HIGHLANDS

Annual labor cycle for men on medium sized farms without irrigation in Mizque highlands: average labor days per month dedicated to routine labor, special agricultural tasks and ritual obligations



Annual work cycle for women on medium sized farms without irrigation in Mizque highlands: average labor days per month dedicated to routine labor, special agricultural tasks and ritual obligations



3. These cycles have major implications for programs designed to improve income sources for men and women in these different ecological zones. First, significant differences between men's and women's cycles exist. Second are the differences between highland zones (Family type I) and irrigated valleys (Family Type II).

Women have more steady and routine labor and a higher percentage of time use which does not contribute directly to family cash income. Men have high daily labor demands at certain times of the year, particularly during planting season.

These differences are further emphasized in the non-irrigated highlands, where labor input is even higher. Women's daily work is more intense because of they have more animals, less access to water, and fewer purchased foods. Men must cultivate very intensely during the natural rainy season and have no crops in the ground the other half of the year.

4. Consequently, men are available for wage work off the farm at certain times of the year. Men from the highlands have even greater chunks of time free of agricultural labor demands. In fact, highland men tend to migrate for longer periods of time. Valley men tend to migrate and return several times a year.

Women have more daily work, and many activites must be carried on near the home or simultaneously with childcare. A woman may take two to three days to travel for marketing, but she takes her young children with her. New wage-earning or training programs must take these constraints into account. The Small Farm Production and Natural Resource Management project components of this paper identify possible types of activities.

4. To increase farm and off-farm income, a first step is to reduce existing labor demands in order to free up that time for other income-generating activity. For example, improved water systems can reduce the time men and women spend in watering their crops and, if spigots near the house are included, can reduce the time women and children spend in carrying water or washing clothing.

F. Migration

1. Background

Since the colonial period, members of High Valleys rural families have had to migrate periodically in order to supplement farm income. Initially these migration trails led to forced and wage labor in the colonial mines. Earlier in this century, the routes were primarily to Argentina and Chile and in the 1970s to commercial farms in Santa Cruz. In the 1980s, the main trail shifted to the Chapare, where the work for seasonal wage laborers was plentiful.

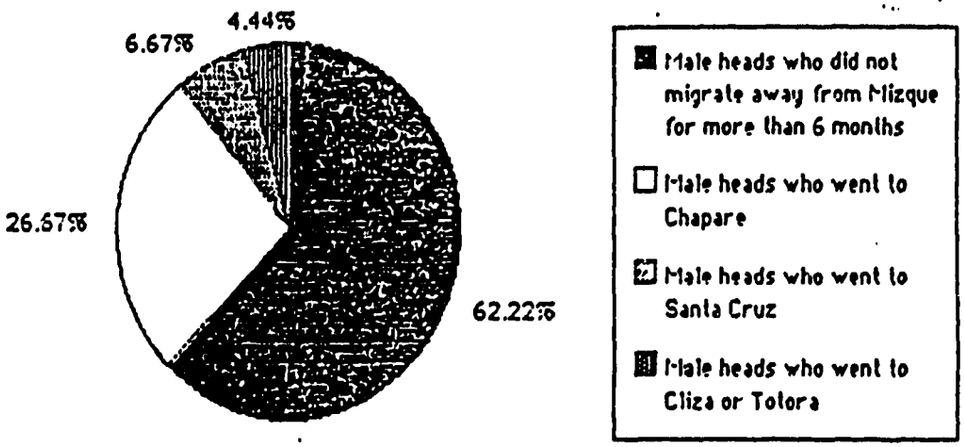
Reasons for migration have ranged from the need for cash to pay colonial taxes to periodic droughts which decimate High Valleys production. In the 1980s, pressures were intensified. Land was scarcer, cash needs were increasing, and ecological devastation and the severe droughts of 1983-84 and 1988-90 reduced production. The Chapare provided new temporary migration opportunities to earn cash. As the data in Table 5. show, more than 25% of male household heads from the Mizque Valley had spent more than a total of six months in the Chapare during 1988 and 1989.

TABLE 5.

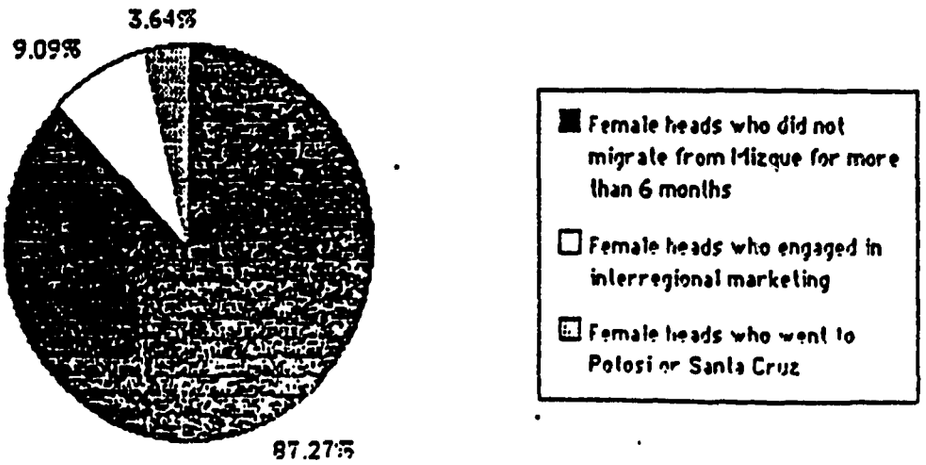
MIGRATION DESTINATIONS FOR VALLEY HOUSEHOLDS 1988-1989

The demographic group with the highest long-term migration frequency was men, usually married and between 20 and 29 years old. In the population shown below, almost 27 percent of male family heads migrated to the Chapare for more than six months in 1988 and 1989. Many married women traveled frequently for marketing but not for migration. Generally they stayed at home to run the family farm.

MIGRATION DESTINATIONS FOR MALE HEADS FROM 55 MIZQUE HOUSEHOLDS WHO MIGRATED FOR MORE THAN 6 MONTHS DURING 1988 AND 1989



MIGRATION DESTINATIONS FOR FEMALE HEADS FROM 55 MIZQUE HOUSEHOLDS WHO MIGRATED FOR AT LEAST 6 MONTHS DURING 1988 AND 1989



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However, the data also show that it is the inadequacies of their home farming regions more than the attractions held by the Chapare that cause people to migrate. In one study, 83% of Chapare migrants stated that they migrated because of the lack of economic opportunities at home rather than a "get rich quick" pioneer mentality.5/

This implies that the population that provides the bulk of the cheap labor force for coca production would not be there if their own farms could support the family or if alternative forms of employment were available.

2. Predictions of Migration and Employment Needs

Predicting the number of jobs that need to be created in order to provide alternative employment for these seasonal migrants is based on a number of variables, including alternate employment sources in the 1990s and the market for coca. However, a very rough estimate can be offered, based on current data for High Valleys populations and the percentage of male farmers that were migrating.

As Table 5. indicates, 26.67% of male household heads from the Mizque valley migrated to the Chapare in 1988-89. Table 6. shows that a cohort of 33,500 men between the ages of 15 and 34 (the ages when most men migrate) will be living in the High Valleys in 1995.

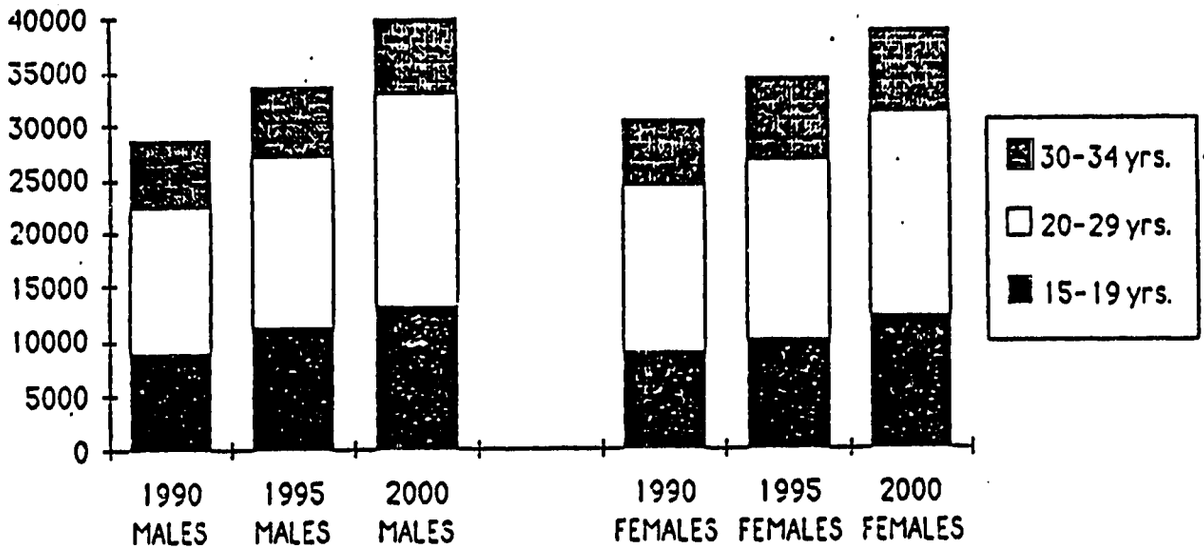
If the Mizque percentage is applied to this cohort of 33,500, approximately 8,950 part-time employment opportunities would need to be created in order to compensate for the work that was being offered in the Chapare in 1988- 89.

5/ Painter and Bedoya, p. 15.

TABLE 6.

POPULATION PROJECTIONS FOR SOUTHERN ZONE, 1995 AND 2000

PROJECTED POPULATIONS FOR PRIMARY MIGRATING COHORTS: MALES AND FEMALES AGES 15 TO 35



C. COMMUNITY SOCIAL ORGANIZATIONS: TYPES OF SOCIAL AND PRODUCTIVE ORGANIZATIONS THAT INTEGRATE RURAL HOUSEHOLDS

Throughout the High Valleys and the Chapare, the family is the major unit of production, consumption, and social organization. Nevertheless, these households are also dependent on various types of reciprocal relationships and larger social organizations. Each family cooperates with different groups of people on different levels, including networks of kin and reciprocal relations, irrigation groups, farmers' unions (sindicatos), producers associations, political parties, and various NGOs.

1. Reciprocal Kinfolk

For most households, the most immediate group is its own unique network of reciprocal relations or kinfolk. Reciprocal relations help each other in everything from planting potatoes and hosting fiestas to lending money and solving marriage problems. Many NGOs have started grassroots organizing by approaching a few motivated individuals who, in time, spread ideas to their relations and pulled them into specific projects.

The advantages of working through such networks lie in the efficiency of existing channels of communication and traditions of cooperation and the cohesion offered by a pre-existing group with more at stake than the project activity provides. The problems stem from the fact that reciprocal kinfolk groups are not named, permanent bodies with formal leaders and/or board of directors.

2. Farmers' Unions (Sindicatos)

Farmers' unions provide a stable and formally organized body which operate in almost all communities, although the character and organization of the unions vary widely between communities.

In areas such as Molinero Canton, Mizque, farmers' unions are strong and comprehensive organizations that control communal land, manage cooperative production, and determine infrastructural improvement and maintenance. In other areas such as Tarata, farmers' unions are virtually nonexistent.

One dilemma with farmers' unions is that all formal leaders are men, and most families are represented in the union by men. Nevertheless, in some unions, as many as a third of the affiliated households are officially represented by women and other women frequently attend meetings as family representative when their husband is away. The definition of women's role in the union often depends on whether it is from the point of view of the rural family or from an outsider. Although many outsiders see farmers' unions as "male-dominated," rural women generally see themselves as an integral part of the union. Even though women may not hold a formal voting position in the union, a man's vote comes only after discussions between men and women at home.

As an example of women's activities in a union structure, the women of a Mizque union organized all-female union meetings, raised money, and constructed a crop storage and childcare building. It is possible to work with women through farmers' unions if women's formal and informal political roles are understood.

Another problem with farmers' unions is that the local union is sometimes affected by the extra-communal politics at the federation or confederation level. If a local union has taken on this larger political agenda, it is sometimes hard to work with.

Because of the complexity and importance of farmers' unions and the lack of good information about potential roles in development, particularly in the Chapare, the project has recommended that a study be carried out in 1991 of farmers' unions in the project area.

3. User Groups, e.g., Irrigation Groups

These are usually subgroups of unions that share main irrigation infrastructure and work together to maintain the system and distribute water fairly. The groups are territorially based and have a clear-cut purpose. They tend to have fewer political agendas. They are easily clustered into larger units, with several adjacent groups working together. They also have a long tradition of organizing community work projects (obras comunales), in which each family is required to contribute both labor and money or other goods for a common project.

4. Mothers Clubs (Clubs de Madres)

Mothers Clubs are almost the only organizations specifically for women. In general, they have directed their activities toward women's domestic responsibilities, such as knitting or cooking, rather than toward economic development efforts. They have not assisted women in their agricultural and income-earning responsibilities. In addition, most clubs have serious operational and organizational problems.

5. Regional Differences

All of these rural organizations have different characters in the three major ecological zones of the project area. Highland communities tend to be more cohesive and self-conscious of their groupness, and unions often coincide with clusters of interrelated reciprocal relations networks. Some highland unions have long community histories, as they arose from groups of sharecroppers (colonos) on colonial haciendas.

Irrigation groups are only important in irrigated valleys, where reciprocal networks are very strong and serve to link diversified households to market and entrepreneur partners and where unions are quite varied.

Many Chapare unions are very strong and highly politicized, which poses obvious advantages and disadvantages for development projects.

II. SOCIAL SOUNDNESS ANALYSIS

A. Project Purpose and Beneficiaries

The purpose of the project is to develop alternative sources of income and employment for people within the project area. The specific beneficiaries of the project are the three types of rural families in the High Valleys and Chapare described above.

To carry out this purpose, project activities will focus on:

1. the promotion of sustainable increases in agropastoral income;
2. the promotion of activities to add value to agricultural production;
3. the improvement of marketing and processing activities and access to credit;
4. the promotion of natural resource activites which will increase agropastoral production;
5. the provision of seasonal off-farm income-earning activities such as construction projects and tree planting;
6. the introduction or expansion of irrigation and potable water systems; and
7. the improvement of infrastructure.

The project will be working with the three family types in both the High Valleys and the Chapare. Project activities will also be targeted as completely as possible toward both male and female family members to assure that the project addresses the fullest possible range of income enhancement possibilities.

B. Beneficiary Participation and Determination of Needs

To determine the needs of the six subcategories of rural families, the project will:

1. Work with appropriate community organizations of rural families to help members assess and determine the types of project activites which best meet their needs and the best means for carrying them out.

2. Design project activities around the separate but complementary production, processing, and marketing responsibilities which are carried out by men and women.

3. Recommend socioeconomic studies to help the project assess family time use in order to recommend labor saving activities for men and women and to tailor additional income producing opportunities to their possibilities.

Take into account the on-farm labor cycles of men and women and consider time-use implications for new crops, wage opportunities, and other projects.

C. Special Population Concerns

1. Rural Quechua Speakers

The project will give special attention to the identification and training of community leaders. In the current project, some farmers from the Chapare have been trained in Costa Rica. Similar training activities will continue, with Quechua-speaking community leaders, both men and women, targeted as special beneficiaries.

To the extent possible, the Andean Peace Scholarship Program (APSP) will support the project by helping to identify community leaders men and women, and supporting their training.

2. Women

Rural women's incomes will increase as a result of project operations. The project is not designed to segregate women and address them as separate beneficiaries. Rather, it Reflects the current socioeconomic reality of the area in which women are economically active as producers, processors, and marketers. The project will identify and enhance women's productive roles, and thereby increase female contributions to family income.

Women staff members will be recruited and trained to work in project planning and implementation. The participation of project implementors who are more knowledgeable about and better able to communicate with women as economic actors in the rural family is crucial to the attainment of the project goal.

D. Special Issues Affecting Project Success or Failure

1. Focus on Family Income

Project success depends on a comprehensive and sustained focus on <u>family income.</u> This concept must be thoroughly built into all components so that the primary beneficiaries of project activities are the three household types described above. Examples include:

a. <u>Agricultural experiment stations</u> should aim their work toward crops and techniques that will raise the income level of project families. New crops should be promoted only after careful market and on-farm production studies.

b. <u>Marketing studies</u> must take into account the functioning of local market systems and the roles of women and men as they actually function in these systems. Externally-generated models lead to misconceptions of regional market dynamics and risks and to the implementation of inappropriate market strategies.

c. <u>Marketing proposals</u> must be aimed at increasing the margin of profit on products grown by rural families, not by agribusiness. Consequently, products will be selected for marketing only if (i) there is a viable market and (ii) if the product will produce a higher margin of profit for rural families.

2. The Socioeconomic Realities of Women as Farmers, Processors, and Marketers

The project must organize appropriate activites around the socioeconomic roles of women farmers and marketers that will help women to increase their income. Without this integration of women beneficiaries in project planning and implementation, the project will not achieve success.

Evaluation of the project will assess the increase of family incomes, women's contributions as well as men's. It will also assess the number of small farm, credit, marketing, and natural resource project activities that included or excluded women.

As described above, the project must hire staff members, from planners to technicians and promoters, who are knowledgeable about farm women's economic roles and able to communicate with women farmers in order to carry out the planning, implementation, and evaluation of project activites that involve women and the farm economy.

E. Socioeconomic Issues and Recommendations

1. Identify types of income-producing activities that are compatible with women's and men's farm activities and that are complementary in terms of timing, resources, and labor. Use the data as a primary basis for project recommendations.

2. Identify and carry out types of operational social science research necessary for the planning, implementation, and evaluation of sub-projects.

3. Identify socioeconomic needs and strategies of men and women farmers and marketers in the Chapare, the project area for which socioeconomic data are particularly lacking. Determine appropriate research methods and strategies for incorporating the data in project planning and implementation.

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ANNEX F 2

ECONOMIC ANALYSIS

ECONOMIC ANALYSIS

COCHABAMBA REGIONAL DEVELOPMENT PROJECT (CRDP)

I. GOAL
   A. Means to Achieve this Goal
   B. Conditions which make this Objective Feasible

II. THE IMPACT OF THE ILLEGAL COCA ECONOMY IN BOLIVIA

   A. Estimates of the Size of the Coca Economy in Bolivia
   B. GOB and Donor Efforts to Replace the Coca Economy
   C. Non Quantifiable Costs Associated with the Coca Economy

III. THE CRDP AND THE ILLEGAL COCA ECONOMY

   A. Decreasing Coca's Comparative Advantage
   B. Likely Effects of Coca Abandonment
   C. Equity and Political Stability Considerations
   D. Displacement Effect

IV. AGRICULTURAL PRODUCTION AND POTENTIAL MARKETS IN THE CHAPARE AND THE SOUTHERN ZONE (SZ)

   A. Agricultural Production and Farm Modeling
   B. Potential Markets

V. ECONOMIC SOUNDNESS OF PROJECT

VI. CONCLUSIONS

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Introduction

The fight against illegal coca in Bolivia has gone through different stages, which can be summarized as follows:

a) GOB-USG efforts were initially aimed at eradicating illegal coca production in all areas of the country;

b) They were later modified to include only non-traditional coca growing areas, such as the Chapare area in the Cochabamba department;

c) The focus was then placed on the development of alternative crops in the Chapare region; and

d) The geographic area to support alternative development was expanded to include not only in the Chapare, but in other areas which supplied labor to the coca industry, such as the Southern Zone (SZ).

The current CRDP project falls into stage (d).

I. PURPOSE

To develop alternative sources of income and employment for people within the project area.

A. Means to Achieve this Purpose

Development of alternative sources of income and employment in non-coca activities will occur through increases in investment and productivity through a market-led strategy. Special emphasis will be given to the improvement of the quality of current production and the efficiency of marketing systems.

Production will be channelled to both internal and external markets. With regard to the internal market, the project will try to encourage import substitution of currently imported foodstuffs, provided they fit within the goal of raising rural household incomes in the Chapare and/or SZ.

With regard to the external market, the project will seek to expand (in both volume and scope) exports to neighboring countries (e.g., exports of pineapples to Argentina) and search for additional market outlets, particularly in neighboring countries.

The project depends, to a large extent, on the development of the necessary infrastructure to permit achievement of these objectives. To this end, other activities complementary to this project will include road construction, electrification and irrigation activities.

B. Conditions which make this Objective Feasible.

1) Low Price of coca: Although currently increasing1/, the decline of coca leaf prices since mid-1989 to levels close to, or below the cost of production, is a factor that has greatly contributed to the goals of the CRDP. Indeed, rural families are aware now that coca is as subject to the vagaries of the market as any other agricultural commodity. As a consequence, many producers have accepted eradication of coca plants. In 1990, according to DIRECO's data, 6,080 producers eradicated 7,806 ha under coca cultivation. This is the highest decrease in a single year, since the reduction program started in 1987.

2) Farmers Obtain Only a Small Share of the Total Income Generated by Cocaine Production: Although it is said that coca leaf producers are increasingly becoming producers of paste, and are therefore significantly expanding their incomes, it is well-known that coca leaf producers are getting only a small share of the revenues generated by the cocaine industry.2/ The major implication of this is that the alternative development program does not have to generate an income (i.e. direct value added) of $200 to $400 million per-year; more likely, an income stream in the range of $150 to $300 million.

3) Preference for Lawful Activity. Recent studies confirm what is also true in other countries: rural families prefer to remain in legitimate agricultural activities and in their area of origin as long as "economic opportunities" are available. These so-called opportunities are in turn defined as being able to "earn enough to cover their subsistence requirements close to home, even if the local wage was substantially lower than the Chapare wage rate." (Painter & Bedoya 1990:16). That is, the CRDP does not have to substitute dollar-for-dollar for income generated by coca. This conclusion applies to both the residents in the Chapare and the potential migrants from the SZ.

4) Reliance on Family Labor. Coca production is very labor-intensive and requires hiring outside wage labor at harvest time. At prices of coca close to production cost, producers prefer to rely solely on family labor. That is, rural families seem to prefer crops that would allow them to rely on their own family labor.

1/ The average nominal coca leaf price of a carga of 46 kg. approximately doubled between January and February 1991 (or from $26 to $53, followed by another increase to $68, in March). It is not known whether this represents a trend or simply a temporary "spike" in the price due to local factors.

2/ Direct value added per-capita in coca leaf production, using the USAID-Bolivia 1989 calculations which are the most conservative, is estimated at between $US 1,684 and $ 2,684 per family. This is a high income for a small family farm, but still relatively low in relation to that generated by cocaine producers.

5) Extreme Price Fluctuations of Coca. The extreme fluctuations in the price of coca - much greater than for alternative crops - cause coca products to be a highly risky activity. Thus, under conditions of equal profitability, other crops would be preferred.

6) Hazards of Chapare Living. The Chapare, as reported early in the 1980s (see Blanes 1983:18), is not really liked by migrants. Factors cited as annoyances include illnesses, hot climate, isolation, police and traffickers harassment, and lack of amenities. This is a consideration that Chapare residents and potential immigrants share about the Chapare.

II. THE IMPACT OF THE ILLEGAL COCA ECONOMY IN BOLIVIA

A. Estimates of the Size of the Coca Economy in Bolivia:

There have been several attempts at quantifying the overall size of the coca economy in Bolivia. UDAPE (the GOB's Economic Policy Unit), the U.S. Embassy and USAID have made efforts to estimate the role of coca production and narcotrafficking in the Bolivian economy in terms of export earnings, value added, total income and employment generated.

The validity of the estimates presented in this section are subject to a number of important constraints, and hence to a very substantial margin of error. Owing to the extreme fluctuation in the price of coca leaf and derivatives, the general absence of reliable statistics for yields, rates of return from the production of cocaine derivatives, and other uncertainties, we provide a range of estimates for each indicator, rather than single figures. Even the ranges do not reflect the actual range of the observations, but merely the most likely interval within which the average is expected to fall.

U.S. Embassy and USAID estimates for 1990 are very similar. This section presents ranges of different variables which encompass both calculations. The following table summarizes the results of the importance of the illegal coca activity in the Bolivian economy.

Table 1

Summary of Estimates on Importance of the Illegal Coca Activity for 1990*

1.	Total Direct Value Added (in Mill of $)	150 - 300
2.	Total Direct Value Added as a % of Total Legitimate GDP	3 - 7%
3.	Total Coca Exports (in Mill of $)	150 - 300
4.	Total Cocaine Exports as a % of Total Legitimate Exports	18 - 36%
5.	Export Proceeds Retained in Bolivia (in Mill of $)	100 - 175

* Assuming 38,000 has. of coca cultivated for illegal purposes (average for 1989 and 1990) and a yield estimate of 2.2 MT/Ha.; a range for the price of coca leaf of $30 to $50 per 100 lbs. (compared with an average coca leaf prices for 1989 and 1990 of $24 and $57, respectively); while prices for coca derivatives are based on Embassy price averages for these two years.

Since it can be safely assumed that the activity of the illegal coca economy (which excludes traditional consumption and legal use) is entirely exported, total value added by this activity and coca-cocaine exports are equal. It is estimated that, for each of the last two years (1989 and 1990), the illegal coca economy contributed to the legal or formal economy between $150 million and $300 million (see indicator No. 1). Although the same amount is estimated to have been generated in exports (see indicator No. 3), the export proceeds retained in the country in each of the two last two years (1989 and 1990) is estimated at only $100 million to $175 million. Therefore, the net economic benefit that accrued to the economy, excluding what remains abroad and does not enter and "benefit" the economy, is less than the total value added and/or total exports generated by the production, processing and exports of illegal coca and coca derivatives.

B. GOB and Donor Efforts to Replace the Coca Economy

During 1990, some 8,000 hectares of coca were eradicated. If one can assume the same eradication rate in future years, all illegal coca will have been eradicated by 1996, or over a period of six years.

As seen in the previous section, if all illegal coca production is eliminated, the Bolivian economy would have experienced the loss of an annual flow of exports (or direct value added retained in the country) of $100 to $175 million a year.

C. Non Quantifiable Costs Associated with the Coca Economy

While there are already some studies for Colombia and Peru on the costs of coca to society, those in Bolivia have not been analyzed in much detail. However, there is already evidence from other countries that indicates that there are indeed many costs affiliated with the illegal coca business.

One of the costs is the deterioration of the agricultural frontier because of the slash-and-burn cultivation and the deforestation related to extensive cultivation. Data from the Chapare show that for every one hectare under cultivation, six are deforested (Painter & Bedoya). Another cost is the contamination of the environment by the dumping of chemicals used in the production of coca into near-by rivers. Such chemicals include kerosene, sulphuric acid, and toluene. This practice destroys marine life, renders water undrinkable, and can kill other valuable wildlife.

Partly as a result of the rapid increase in coca production, the agricultural sector has suffered radical changes in its crop composition. Coca production has continuously increased its share in the agricultural sector (from 10.2% in 1980 to an estimated 28.5% in 1990) in detriment of other legal activities (see Table 2). In 1987 (and possibly in 1990, too), coca became Bolivia's most important crop.

Table 2

CROP COMPOSITION OF THE AGRICULTURAL SECTOR
(Value Added by Each Crop as Percent of Total Value Added by the Ag Sector)

Product	1980	1984	1987*
TOTAL	100.0	100.0	100.0
Coca	10.2	28.7	28.5
Tubers	28.8	21.5	19.8
Cereals	17.9	17.5	15.0
Fruits	12.5	9.2	10.8
Vegetables	11.7	8.7	8.4
Oil Seeds	3.9	3.9	4.8
Forage	4.4	2.8	4.3
Sugar Cane	5.8	4.5	4.2
Coffee & Cacao	3.5	3.1	3.5
Others	1.3	0.1	0.7

* Latest year available.
Sources: INE and UDAPE

Not only did the share of legal crops decline, but total value added product by the agricultural sector as a whole has also declined since 1985. Bolivia's current agricultural production level of foodstuffs in 1990 was already achieved in 1982. Even more importantly, per capita food production declined sharply since 1980, as shown in Table 3 below:

Table 3

PER CAPITA AGRICULTURAL PRODUCTION EXCLUDING COCA

	1980	1984	1987	1990*
Agricultural production excluding coca prod. (in mill of 1980 $b)	14,123	13,358	14,346	13,839
Bolivia's Total Population (In thousands)	5,579	6,203	6,740	7,322
Agricultural Production/ per capita (in 1980 $b)	2,531	2,153	2,128	1,890
Agricultural Production/ per capita index (1980=100)	100	85	84	75

* Coca's share of total agricultural production in 1990 is assumed to be the same as in 1987.

Source: INE

Clearly, per capita production of legal, consumable agricultural crops has been declining continuously since 1980. Part of the cost of the rapid increase in coca production is the decline in per capita foodstuff production to about three-fourths the level reached in 1980, and the corresponding increase in food imports from about 22,000 metric tons in 1975 to 310,000 metric tons in 1990.3/

Other unquantifiable costs related to the expansion of coca production include institutional deterioration, subversion of Bolivia's democratic institutions, and the undermining of public confidence in the country's political and economic systems. Moreover, drug addiction generally spreads with consequent deleterious social and economic effects.

3/ It should not be assumed that the decline in foodstuff production is attributable to the growth of coca alone. Other factors include droughts and floods, the deteriorating infrastructure, and the generally depressed condition of the Bolivian economy after 1982.

If the environmental, political and social costs associated with the illegal cocaine activity could be estimated, it might be possible to show that the "benefits" of illegal coca production are much less than the estimated generation of foreign exchange, income and employment would suggest, and might even produce more poverty for Bolivian society in the long-run.

III. THE CORDEP AND THE ILLEGAL COCA ECONOMY

A. Decreasing Comparative Advantage

The "Bolivian" or "Huanuco" variety of coca, has a high content of the cocaine alkaloid, and grows very successfully in the Chapare and in the Upper Huallaga and other valleys of Peru. The features which make up the "comparative advantage" of producing this variety in both countries are twofold: a) the ecological conditions, and b) the remoteness of these areas. This latter factor makes policing of illegal activity very difficult. The CORDEP will create conditions to diminish this comparative advantage since construction of roads, on the one hand, will make policing easier, and, on the other, since it would allow easier access to markets, it will very likely improve the profitability of the other crops vis a vis coca.

Coca leaf by-products, such as coca paste, are high value/low weight commodities which can cover very high transportation costs where transportation is primitive. Indeed, the cocaine business has been very successful without road infrastructure because the margins between the wholesale price of cocaine and the farmgate price of coca leaf are very wide (about 2,000 times in 1989). Furthermore, there are groups in the "Red Zone" which are fighting against the construction of roads. Finally, experience in other countries indicate that, at times, traffickers destroy the newly-constructed roads in order to discourage shifts to other crops.

B. Likely Effects of Coca Abandonment

It is hoped that, with the implementation of the Mission's Alternative Development Program, the illegal coca activity would decline gradually, either because of a "displacement effect" or market decline. The likely effects might be as follows:

1) At the producing areas level:

a) The substitution of alternative crops is likely to be gradual, particularly because the alternative crops are mostly perennial crops and require between 2 to 6 year periods to mature.

b) If markets for the new products can be found or developed, incomes in the Chapare may find an equilibrium level probably higher than in pre-coca times, but very likely lower than during the coca boom.

c) If markets for the alternative crops cannot be found, some Chapare farmers would have to migrate to another area.

2) At the national level:

a) The price of foreign exchange will gradually increase, since a significant source of foreign exchange is gradually dwindling - as long as exports of alternative crops are not sufficient to compensate for the net loss of coca exports.

b) Other export activities will be encouraged, but it would be unrealistic to believe that they would replace the coca economy. The illegal character of coca gives this industry "extra profits" which are unlikely to be present in other Bolivian exports.

c) Bolivia will have to find other activities which would replace the income, employment and foreign exchange generated by coca.

C. Equity and Political Stability Considerations

The CRDP will reach segments of the Bolivian population which are near the bottom of the income scale. In fact, on the basis of 1989-90 crop year figures, for the Campero and Mizque areas in the SZ, the annual income per-family was estimated at only $394 which, for a typical family of five members, meant $79 income per capita (PDAR/ASAR, 1991). This is a figure comparable to that for the least developed areas of Asia and Africa.

Rough estimates for the Chapare area, based on CERES (1990: Page 24) indicate an average annual income per-capita for 1990 in the range of $158 (in agricultural units smaller than 5 ha.) in the 14 de Septiembre area and $1,920 (for livestock holdings larger than 50 ha.) in the area of Bulo-Bulo. A close reading of the same data indicate that the annual income per-capita for landholding units between 5 and 20 ha., (within which the bulk of the family farm units in the Chapare is concentrated) falls within this range. Incomes for 1990 were particularly low because of the low prices for coca leaf in the producing areas.

Since the project will target low-income groups, potential causes for social upheaval are reduced. Hence, the project can be expected to promote the reduction of income inequality.

D. Displacement Effect.

One effect of interdiction (combined with alternative development) is to move the illegal activity to another area or country. Bolivia's experience in the Isiboro-Secure National Park is one example. Interdiction disrupts the illegal activity and, if the demand for the

illegal commodity is declining, may lead to the abandonment of the illicit activity altogether. We will probably contribute toward the displacement, and possibly, the eventual abandonment of this activity.

IV. AGRICULTURAL PRODUCTION AND POTENTIAL MARKETS IN THE CHAPARE AND THE SOURTHERN ZONE(SZ)

A. Agricultural Production

Given the difference in ecological conditions, the two regions under study can produce different types of agricultural produce and livestock.

Table 4 shows the type of crops and livestock raised in both areas for 1988 (latest available data) which are crucial in the generation of farm family income.

Table 4

AGRICULTURAL LAND USE
(In Has.)

	Chapare	Valleys
Coca	58,987	
Rice	19,958	
Banana	19,797	
Cassava	13,264	
Orange	5,115	
Corn	2,858	8,260
Mandarin	1,352	
Beans	118	
Avocado	115	
Papaya	104	
Wheat		3,724
Potato		3,384
Onion		290
Other	200	34,895
TOTAL	121,868	54,153

Source: PIDYS, Table 3-19 and GEFOIN

Data for 1980 and 1988 show that corn, wheat, and potatoes are the most important crops in terms of land use in the Southern Zone. They are basically subsistence crops. Fruits and vegetables, such as onions, tomatoes and fruits are produced to be sold as cash crops. The types of agricultural crops grown in the Chapare are different but follow a similar pattern of production. Most of the corn, yuca and rice produced is for farm consumption, while coca, citrus, banana and papaya are cash crops. Both SZ and Chapare family farms are commercial producers. They

need to sell some, or most, of their agricultural (pastoral) products in the market in order to be able to buy goods which they cannot produce at home, such as noodles, sugar, cooking oil, meats, kerosene, candels, schoool supplies, clothing and others.

Since 1986, IBTA has produced several reports on cost and production data and farm modelling in the Chapare area to develop a strategy for the adoption of alternative crops in the Chapare. Several farm systems have already been proposed for the seven micro-regions. However, data for crop budgets and the methodology to determine the different farming systems need improvement to assure sufficient reliability.

For instance, in micro-region 1, where the best lands of the Chapare are located and the basic land use is rice/ citrus/ banana/ coca/ yuca/ corn/ papaya, IBTA proposes three alternative systems: 1) macademina, ceibo, pepper, rice, bean, peanut and desmodium; 2) orange, papaya, and desmodioum; and 3) rice, corn, and banana. Economic Rates of Return and Net Present Values are estimated (illustrative examples are presented in Section V.), to assess the economic viability of some of these crops and systems.

B. Potential Markets

The produce grown in these areas can be marketed domestically as well as abroad. In the former case, the agricultural products can be marketed as new products (e.g. palm hearts, passion fruit), and as import substitutes (e.g. black pepper, milk). Non-traditional agricultural products, such as pineapples and improved varieties of oranges, could be sold in the external market.

Since neither updated disaggregated data for imports nor national food consumption surveys are available, it is not easy to assess the market potential for the products grown in these areas. It is clear, however, that if conditions were improved for marketing the Chapare's output, producers have a market in the Cochabamba City area (e.g. for bananas, papayas, oranges, maracuya, palm hearts), and even in the Santa Cruz area. If production were further processed as jams, jellies, bottled juices and other forms, these products could reach both the national and foreign markets.

Although import substitution is not usually an easy task in a small low-income country, a rough analysis of the import data for 1989 indicates a potential import substitution market of $25 million, including, in particular, milk ($12 million) and lard/vegetable oils ($8 million). An estimate for 1987 of the prospective agricultural commodities that might be produced for export amounted to $20 million (Pattie 1988: Pg.94). The list included pine nuts, peaches, grapes, apples, custard apples, strawberries, asparagus, pepper, paprika,

cochineal, annatto, peanuts and rabbit furs. If we assume that these calculations are still current, this would add $20 million to Bolivia's potential export market.

These data obviously need refinement, but they are presented here to give an idea of the magnitude involved. They indicate that just the potential market for additional exports and import substitutes amounts to about $45 million per annum.

V. ECONOMIC SOUNDNESS OF PROJECT

An overall benefit-cost or internal rate of return calculation for this project is clearly not possible for the following reasons:

1. The project consists of a large number of components, many of them of a non-quantifiable nature. Substantial sums will have to be expended on technical assistance in areas such as marketing, processing, packing, transportation and credit.

2. Even in the area of small farm production, a determination cannot be made at this point as to what crops, and what crop mixes, will be planted or expanded, and in what locations. Nor is it known exactly what infrastructure is going to be developed and where.

3. Even if all the above information were available, a separate IRR or benefit-cost analysis would have to be undertaken for each particular sub-project, which would obviously be impractical. Hence, a quantitative analysis undertaken at this point can be no more than illustrative.

Fortunately, a good deal of research on alternative tropical crops that can be grown in the Chapare was made by IBTA, the GOB agricultural research and extension institution. The results it obtained on six illustrative alternative crops 4/ and/or cropping patterns are summarized in Table 5, while the data supporting these results are summarized in the set of tables attached to this section.

4/ Its studies covered many more.

Table 5
SUMMARY OF IRR AND NET PRESENT VALUE (discounted at 13% p.a.)
OBTAINABLE PER HECTARE FOR SIX ALTERNATIVE CROPS OR CROPPING PATTERNS

Crop or Cropping Pattern	Internal Rate of Return	Net Present Value at 13% p.a.
Rice (Year 1), Banana (Year 2-6)	117.4%	$ 1,853
Passion Fruit (Maracuya)	81.8%	3,112
Rice (Year 1-4) and Citrus (Years 5-9)	38.5%	1,430
Pineapple (Years 2-4) and Gandul* (Year 3-4)	98.3%	11,740
Palm Heart (Palmito)	45.9%	4,532
Achiote**	38.1%	1,455

* Or pigeon pea, an African-Indian bean
** An organic vegetable dye.
Source: Computations by AID on the basis of data developed by the Instituto Boliviano de Tecnologia Agropecuaria (IBTA)

It is not known to what extent these high IRRs are representative of what can be obtained in the Chapare by average farmers. Clearly, they were obtained on relatively good soils in the Chapare by producers operating under the supervision of competent technical personnel. However, they indicate that, given the required credit, agricultural inputs and technical assistance, promising opportunities exist for alternative crops in the Chapare in the micro regions with good agricultural potential (found in Zone I and parts of Zones III and IV).

A related study was undertaken by the Mission Economist with the assistance of the Mission Agronomist.5/ That study had two closely related objectives: (1) to determine the relative profitability of alternative crops suitable for cultivation in the Chapare; and (2) to determine the price range of coca leaf within which our compensation and credit program could be expected to be effective in inducing coca eradication. On the basis of the best available estimates on prices and production costs for nine alternative crops suitable for cultivation in

5/ Study by Clark Joel drafted with the assistance of Hernán Muñoz on May 29, 1990 on subject: (1) At what Price of Coca is our Compensation and Credit Program Effective in Inducing Eradication; and (2) What Is the Relative Profitability of Alternative Crops?"

the Chapare 6/, it was determined that all nine would be competitive with coca after adding $2,000 per hectare in compensation payments to the net present value of the alternative crops, if the price of coca is at or below $40 per 100/pound "carga". Even if the coca price rises to $50, pineapple would still be a more profitable crop 7/. At a coca price above $50 per pound "carga", the alternative crops could not compete.

In fact, there is reason to believe that alternative crops could be competitive in the Chapare even at a coca price somewhat above $50 per "carga". A number of non-economic considerations appear to justify this conclusion. These include (1) the preference that farmers have for growing legitimate crops (to avoid police harassment and the need for payoffs), (2) the need for hired (and relatively expensive and undependable) labor to pick the coca at harvest time, (3) the unhealthy and unpleasant living conditions in the Chapare and, perhaps most importantly, (4) the fact that coca production entails unusually high risks owing to the very substantial and completely unpredictable price fluctuations of that crop.

Conversely, in the hypothetical case that the price of coca would decline significantly below the cost of producton (estimated at about $30 per "carga"), and that it remained at that level long enough to lead growers to believe that it was unlikely to recover, the $2000 per hectare compensation payment would no longer by necessary. This, however, is not a likely scenario at this time.8/.

Another conclusion of the Mission study relates to the determination of profitability of the alternative crops suitable for growing in the Chapare. The study indicated that at a 14% real annual discount rate, all nine alternative crops have a positive, and for the most part, relatively high net present value even without taking into account the $2,000 per hectare compensation payment. On the assumption of a ten-year projection period, the net present value was in the range of $2,000 to $3,500 per hectare for 5 out of 9 crops, and as high as $8,000 for pineapple. Next to pineapple in profitability were macademia nuts, black pepper, palm heart, oranges and coffee, in that order.

6/ Corn, macadamia nuts, cacao, coffee, black pepper, palm heart, pineapples, oranges and bananas.

7/ Again, with $2,000 added to the net present value of pineapple production.

8/ Note that while the price of coca leaf was in the range of only $10 to $30 between November 1989 and January 1991, it recovered to an average of $53 in February and $68 in March of 1991. Indications are that it is coming back down in April.

VI. CONCLUSION

There are regions in the Chapare that have the requisite soil and climatic conditions to permit a substantial expansion of areas planted to alternative crops, assuming the provision of lime, fertilizer, credit or other forms of material support, and technical assistance in marketing, processing, packing and transportation. IBTA and AID studies have shown that particular crops or crop mixes can be grown very profitably in certain areas. For large scale shifts out of coca certain conditions clearly must be met. These include (1) continued effective interdiction efforts, (2) relatively low coca prices (i.e. not too far above the cost of production), and (3) continuing cash payments to coca eradicators.

The various components of this project, including technical assistance, investment in infrastructure, training, credit, provision of agricultural inputs, and strengthening or implementing institutions, were designed for the purpose of smoothing and facilitating the gradual shift from coca to alternative crops. Assuming continuing success in the areas of interdiction and the maintenance of a relatively low average coca price, the proposed project could play a crucial role in promoting the transition out of coca in the Chapare, and the stemmming of migration from the adjoining regions toward that area.

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FEASIBILITY ANALYSIS FOR RICE (Yr.1), BANANA (Yr.2-6)

(In US$)

	Year 1	*Year 2*	*Year 3*	*Year 4*	*Year 5*	*Year 6*
GROSS FARM REVENUE	378	403	1,103	1,103	1,103	1,103
Yield	35	144	394	394	394	394
Price	10.8	2.8	2.8	2.8	2.8	2.8
TOTAL COSTS	808	187	225	214	214	214
Family Labor	312	111	177	201	201	201
Materials	433	59	31	0	0	0
Depreciation	62	17	17	13	13	13
NET FAMILY INCOME	-430	216	878	889	889	889
Internal Rate of Return (IRR)	117.4%					
Net Present Value at 13%	1,853	dollars				

FEASIBILITY ANALYSIS FOR PASSION FRUIT (MARACUYA)

(In US$)

	Year 1	*Year 2*	*Year 3*
GROSS FARM REVENUE	0	5,250	5,250
-Yield (Kg/Ha)	0	15,000	15,000
-Price ($0.35/Kg)	0.35	0.35	0.35
TOTAL COSTS	3,676	938	938
Family Labor	639	204	204
Materials	3,037	734	734
Depreciation	0	0	0
NET FAMILY INCOME	(3,676)	4,312	4,312
Internal Rate of Return (IRR)	81.8%		
Net Present Value at 13%	3,112	dollars	

FEASIBILITY ANALYSIS FOR RICE (Yr.1–4), CITRUS (Yr.5–9)

(In US$)

	Year 1	*Year 2*	*Year 3*	*Year 4*	*Year 5*	*Year 6*	*Year 7*	*Year 8*	*Year 9*
GROSS FARM REVENUE	291	291	291	291	236	673	2,356	2,356	2,356
Yield	35	35	35	35	143	400	1428	1428	1428
Price	8.3	8.3	8.3	8.3	1.7	1.7	1.7	1.7	1.7
TOTAL COSTS	973	209	264	289	436	524	647	724	677
Family Labor	254	78	60	57	141	152	330	321	336
Materials	514	113	173	202	252	328	274	360	298
Depreciation	65	18	31	30	43	43	43	43	43
NET FAMILY INCOME	-503	82	27	2	(200)	149	1,709	1,632	1,679
Internal Rate of Return (IRR)	30.5%								
Net Present Value at 13%	1,430 dollars								

FEASIBILITY ANALYSIS FOR ACHIOTE

(in US$)

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15
GR FARM REVENUE	0	0	405	468	810	810	810	810	810	810	810	810	810	810	810
(450kg/Ha)	0	0	450	520	900	900	900	900	900	900	900	900	900	900	900
e ($0.9/Kg)	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
AL COSTS	505	203	303	277	277	277	277	277	277	277	277	277	277	277	277
ily Labor	192	69	102	117	117	117	117	117	117	117	117	117	117	117	117
erials	292	113	165	139	139	139	139	139	139	139	139	139	139	139	139
reciation	21	21	26	21	21	21	21	21	21	21	21	21	21	21	21
FAMILY INCOME	-505	-203	122	191	533	533	533	533	533	533	533	533	533	533	533

nal Rate of Return (IRR) 38.1%

Present Value at 13% 1,455 dollars

FEASIBILITY ANALYSIS FOR PINEAPPLE (Yr.2-4), GANDUL* (Yr.3-4)

(In US$)

	Year 1	*Year 2*	*Year 3*	*Year 4*
GROSS FARM REVENUE	0	10,500	16,500	16,500
Pineapple	0	10,500	10,500	10,500
-Yield (units/Ha)	0	30,000	30,000	30,000
-Price ($0.35/unit)	0.35	0.35	0.35	0.35
Gandul	0	0	6,000	6,000
-Yield (units/Ha)	0	0	60,000	60,000
-Price ($0.1/unit)	0.1	0.1	0.1	0.1
TOTAL COSTS	8,026	1,383	1,542	1,542
Family Labor	756	354	534	534
Materials	7,234	966	945	945
Depreciation	36	63	63	63
NET FAMILY INCOME	-8026	9,117	8,958	8,958
Internal Rate of Return (IRR)	98.3%			
Net Present Value at 13%	11,740	dollars		

*Or Pigeon Pea, an African-Indian bean.

FEASIBILITY ANALYSIS FOR PALM HEART

(in US$)

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20
GROSS FARM REVENUE	0	2,200	2,200	2,200	2,200	2,200	2,200	2,200	2,200	2,200	2,200	2,200	2,200	2,200	2,200	2,200	2,200	2,200	2,200	2,200
Yield (Kg)	0	2,200	2,200	2,200	2,200	2,200	2,200	2,200	2,200	2,200	2,200	2,200	2,200	2,200	2,200	2,200	2,200	2,200	2,200	2,200
Price	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
TOTAL COSTS	2,408	1,014	1,133	1,129	1,129	1,129	1,129	1,129	1,129	1,129	1,129	1,129	1,129	1,129	1,129	1,129	1,129	1,129	1,129	1,129
Family Labor	282	261	381	381	381	381	381	381	381	381	381	381	381	381	381	381	381	381	381	381
Materials	2,102	729	715	715	715	715	715	715	715	715	715	715	715	715	715	715	715	715	715	715
Depreciation	24	24	37	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33
NET FAMILY INCOME	-2408	1,186	1,067	1,071	1,071	1,071	1,071	1,071	1,071	1,071	1,071	1,071	1,071	1,071	1,071	1,071	1,071	1,071	1,071	1,071
Internal Rate of Return (IRR)	45.9%																			
Net Present Value at 13%	4,532	dollars																		

ANNEX F 3

TECHNICAL ANALYSES

A. Small Farm Production
B. Natural Resources Management
C. Marketing and Agroindustry Analysis
D. Small Farmer Production and Agroindustrial Credit

ANNEX F 3

TECHNICAL ANALYSES

A. Small Farm Production

A focus of the Cochabamba Regional Development Project is the introduction and/or enhancement of agricultural and related enterprises and techniques that will provide a satisfactory income to the project area rural families. Three objectives are encompassed in this focus:

(1) increase rural family incomes;

(2) the successful accomplishment of the first will result in additional employment; and

(3) eradication of the remaining coca which necessitates agricultural practices that are designed to increase farm incomes in the Chapare and in the Valleys, where the labor force would prefer to stay since most of them own land there.

Two major thrusts are utilized within the overall effort. The first is the improvement of the existing crops and livestock enterprises in the project areas. The second is the introduction of new, higher value crops and animal enterprises which with soil conservation and management techniques, accompanied by facilitation of processing and marketing, will yield the desired higher incomes. More intensive farming practices will demand additional labor, too, processing and marketing also provide more opportunities for employment; the combination furnishes increased incomes to the under and unemployed in the project and adjacent areas. The conservation of soil, water, and forestry resources overlie all of these efforts to enhance the sustainability of the enterprises.

The original project faced three disparate but equally difficult agricultural problems. First, before about 1980, extensive, low technology agriculture was practiced in the Chapare. Second, the introduction of coca (and its rapid depletion of soil nutrients) changed the situation of those that planted it to intensive cultivation, processing, and marketing. The third problem, faced by families from the high valleys, was one of bare subsistence in good years and inadequate production to sustain the families during droughts and other disasters. These three conditions require projects to adopt substantial variations in their approaches to increased farm family incomes. Additionally, the greatly varying topography, soils, and climatic conditions have brought about other modifications tailored to each situation.

Considerable progress was achieved during the first project but many of the tasks are of long term nature, both in terms of the enterprises and the farmers' adaptations to the changing environment. The Cochabamba Regional Development Project builds on this progress and furthers the work more intensively.

The tasks of conducting agricultural research and extension to the project areas have been delegated to several implementing agencies. The main institutions active in the original project and their areas of specialization and geographic concentration include the following:

Bolivian Institute for Agricultural Technology: IBTA Chapare Crop and livestock production, research and extension plus production of animals and crop materials for farmers; all of the Chapare; experiment stations at La Jota and Chipiriri.

Bolivian Institute for Agricultural Technology: National IBTA. Fruit production (plus corn, onions, peanuts, and other consumption crops - not paid by the project); High Valleys; an experiment station at San Benito and a substation at Maira near Mizque

Association for Artisan and Rural Services (ASAR). This NGO conducts extension services and technical assistance to farmers in crops and livestock in the Province of Campero and a small portion of the Province of Mizque.

Regional Alternative Development Program (PDAR). Research, extension, propagation of forage, crop, and forestry materials, marketing (addressed in the technical analysis), small irrigation, and supervision/coordination; primarily in the Provinces of Mizque and Campero.

CEDEAGRO was formerly doing soil conservation work in the project but no longer participates.

Radio La Esperanza. Dissemination of agricultural and home information, announcements of meetings, assistance with training programs; most of the effort is in Campero Province but the programs are heard in Mizque Province.

CORDECO collaborates in larger river bank, watershed, and gully erosion activities; it is also to be involved in reforestation in the area.

Two technical assistance contracts assist the several research and extension components: Experience, Inc. and Development Alternatives, Inc. They provide both long and short term advisers. Experience, Inc., works primarily in the Chapare; Development Alternatives, Inc. assists with overall implementation in the High Valleys.

1. Agricultural Research and Extension

The Bolivian Institute of Agricultural Technology (IBTA) began work in the Chapare during the early 1960s with the installation of a small research station at Chipiriri. Its mandate was to effect overall agricultural development but with emphasis on the then major area enterprise, livestock. Some research was also conducted on consumption crops (mainly corn), rubber, cacao, and coffee. The small staff, including both researchers and extensionists, worked to improved forage, teach better livestock management, and introduce more productive breeds of cattle. Some efforts were made to improve and expand swine production to the agrarian reform settlers in the area.

As more and more settlers entered the region, additional resources were provided. The decline in the prices of coffee and cacao, and worsening general economic conditions, forced drastic reductions in resources for a period in the early 1970s. Further resources were obtained from outside donors and international loans late that decade and renewed emphasis on the agricultural production of the Chapare resulted.

A substation, La Jota, was added; its mandate was to concentrate on crops, leaving Chipiriri with more opportunities to work on livestock problems.

With the acceleration of coca production in the 1980s, safety conditions for the researchers and extensionists necessarily became paramount. Personnel were reduced to a bare minimum. The Chapare project brought new resources to bear on the problems and La Jota activities were increased dramatically. Later, the Chipiriri station resources were also augmented, allowing for greatly enhanced, although still insufficient, activities in forage improvement and livestock production.

The San Benito Experiment Station near Punata in the High Valleys was also founded in the early 1960s with the aim of improving consumption crops (mainly corn and potatoes) and to improve the incipient fruit culture (primarily peaches, grapes, and apples) in the areas apt for these crops. From the mid 1970s, the San Benito station extended its work area to include much of Mizque and some portions of Campero Province (Aiquile). A researcher was located at the station on a permanent basis and a few years later, an extensionist was added to the staff.

The Maira substation, near the town of Mizque, was established soon thereafter. From the beginning, peaches, grapes, corn, onions, and potatoes were studied. Chirimoya was added under the aegis of the first alternative development project. The work on all of the crops continues.

Extension activities are carried out by all four IBTA stations, by ASAR, and other government and non government organizations. In some cases, these institutions also collaborate with PDAR in the work of on farm research and in the propagation of planting materials and animals for reproduction.

2. <u>The Chapare Stations</u>

The Chipiriri and La Jota Experiment Stations are managed separately from the national IBTA organization; they depend directly from the Subsecretariat for Alternative Development (SUBDESAL) within the Ministry for Farmer and Agricultural Affairs (MACA). The Program for Alternative Development (PDAR) coordinates the work of the stations within the USAID/Bolivia project. A Cochabamba office of IBTA coordinates the implementation work of both stations.

Both stations are organized into three, interrelated components: research, extension, and production. The research conducted is entirely that of <u>application</u> - trials on adaptation of crops and animals to the diverse areas of the Chapare; experiments to increase production through better varieties, management, and soil improvement; improvement of existing varieties; and the introduction of adapted, profitable crop and animal enterprises to the region. The research work is conducted first on the research station properties, then on farms across the region in agreement with the farmers.

Extension is conducted as a team effort between the researchers and the extensionists. Crop and animal enterprises that show evidence of adaptability to the region are disseminated to private farmers on a demonstration basis with nearly constant supervision by the station staffs. Most of the early demonstrations are done in conjunction with farmers who have demonstrated a leadership in farming within their communities (in most cases, the communities are involved in choosing

these leaders). As promoters, these leaders receive a small amount of money to allow them to spend part of their time in taking short courses, participating in skill demonstrations, and in working with their neighbors to disseminate the new enterprises and methods more rapidly.

Classes, short courses, and demonstrations are offered to any interested farmer at the experiment stations and on the research trial and demonstration farms to hasten their adoption of the new enterprises and methods. The farm leaders/promoters assist the station staff with, and when properly prepared, conduct classes and demonstrations. The promoters are an important link in effecting rapid dissemination of the project's benefits to ever larger farm populations.

In order to disseminate the information more rapidly, the two IBTA stations, through their technician and extension teams, work with groups of farmers as often as possible. To do this, they assist clusters of farmers to organize themselves into "product" and "area" groups. These may take the form of informal groupings or through the more formal organizations of cooperatives, federations, and syndicates. This formation assistance includes general rules for the proper functioning of an association, cooperative, or pre-cooperative. The National Federation for Cooperatives (FENACRE) provides two kinds of help to the farm groups: classes on cooperatives and associations, and assistance in completing the requirements for status as a legal entity. The IBTA extensionists continue to assist these groups as they progress through the legal steps and afterward in improving the organizations.

During the last two years, IBTA, with consultant advice, has also trained women selected by their communities to serve as promoters in farming, housing, health, and small enterprises. The beginning group was taken to Costa Rica in two trips of a few women on each trip to learn from the long experienced women working in the extension service of that country. These women, in turn, are training other potential farm and home promoters that will forward the work with families in Chapare. The work of these leaders is vital to the general development and increased incomes of the families in the region. Their activities include improved livestock and crop care, gardens, and small processing ventures. They work with the entire family - men, women, and children.

The production component of the two stations consists of specialists in the reproduction of the crops and animals for distribution to farmers once these have been studied sufficiently so they can be recommended. Animal reproduction, and plant nurseries on the station is the first step. Subsequently, these are given trials, when needed, on special farms selected for adaptability research under differing conditions. The farming leaders, trained as promoters, are vital links in this process. When approved, these farmers and the research component multiple the breeding stock for distribution to other farmers.

The IBTA Chapare stations cooperate actively with several UNFDAC development efforts in the region - MILKA (dairy project); a tea plantation and processing plant; feed concentrates utilizing bananas, plantains, and kudzu; oil and vinegar from bananas. Some of the projects require a considerable amount of work from the extensionists with the farmers that supply the inputs. The stations also work closely with a Canadian Vocational Agriculture School, providing sites for study and instruction on farm. The University of San Simón has a nearby cattle operation; drastically reduced resources have brought about many requests for technical assistance.

a. The La Jota Station

The La Jota Experiment Station possesses 10 hectares of land devoted exclusively to the research on and propagation of crops suitable for the Chapare. The demands of research and production have exceeded the space available; on farm trials with local farmers expands the capacity to some degree; collaboration with the Chipiriri station allows for additional plantings for both research and propagation. The plant nursery at the IBTA extension agency near the town of Villa Tunari adds some land for that work. The La Jota personnel consists of 7 professionals in research, 11 extensionists, 8 in production, and 2 in communications.

The station buildings are mostly in reasonably good condition and are adequate for the work of the present staff. The laboratory complex has been constructed but necessary equipment (soils, analyses is insufficient for the tasks and must be upgraded as soon as possible. The transportation of samples to Cochabamba and other sites is long in distance and slow in results. A simple building for housing short term farmers and other family members for short courses and demonstrations is an immediate need for this station.

(1) Status of the Research

The analyses of the quality of the research undertaken by La Jota (much of the crop discussion also applies to Chipiriri - the details will be provided within the La Jota section and summarized within the Chipiriri section) showed properly developed trial plots and proper management. The crop lands were well tended; the experimental plots were correctly designed. Nearly no insect or disease damage was found in the crops: corn, yuca (cassava), bananas and plantains, chirimoya, pineapples, black pepper, coconuts, pejivalle and palm hearts, passion fruit, macadamia nuts, and citrus. The nurseries contained substantial stocks of these materials but some were still short of the demand and imports were anticipated. Nearly half the research trials on farms were inspected and with the exception of ginger and tumeric, were in excellent condition. Farmers interviewed demonstrated good knowledge of the plantings, their care, and their potential for production.

Two crops, coffee and cacao, had been under research for some years. Adaptable varieties had been recommended. Some additional work was required on pruning methods. The initial requests by farmers for both crops had not resulted in the purchase of all the plants and some nursery plantings would have to be destroyed. Lowered market prices appeared to be the primary reason for the reduced demand. Local markets can apparently absorb all of these products that will be ready for sale in the near future. Additional work will be necessary on their export, especially that of economic returns in light of the greater costs involved.

One crop in Chipiriri and La Jota and in on farm trials, tumeric, required a great deal more research before it could be released to farmers. This crop is very problematic at this time; the research trials to increase both quantity and quality of production had not yielded the desired plant material and cultivation methods. The quality emanating from the plantings is not yet adequate for export markets and local sales could absorb only a small part of the relatively small production from the trials. Tumeric has been produced on a small

scale in Bolivia for a long time and is available in every market. At this time, no additional planting materials of tumeric should be released pending successful completion of the research on the crop

The research trials on ginger (at both Chipiriri and La Jota stations) had yielded partially positive results but more work is required before private farmer plantings could be recommended. Marketing problems still remained as well.

(2) Prognosis for the New Project

The combination of lands at the La Jota station, the Villa Tunari extension agency, collaborative efforts at the Chipiriri station, and lands of private farmers that can be devoted to research trials gives the opportunity to forward the plant research and propagation adequately under present conditions. The high demands on land for the tree crops may require the acquisition of additional hectares to permit satisfactory conduct of the work.

The addition of the dormitory for short course participants, coupled with the now existing auditorium, will make it possible to adequately conduct the training work. Equipping the laboratory complex and providing the chemicals and other inputs necessary for appropriate testing will greatly enhance the ability of the station to conduct the necessary work on soils, plants, quality of produce, and disease analyses. Some additional field equipment, especially small, motor cultivators, will improve station cultivation. Sufficient vehicles to transport the personnel to the farms where they must work is absolutely necessary if the researchers and extensionists are to carry out their functions.

In addition, the station personnel must be augmented by a minimum of the following new positions to accomplish the new tasks involved in the future demands that follow:

(1) The new crops are now producing but the data needed on the quality of the products must be determined; a quality determination specialist is required.

(2) Similarly, the post harvesting handling (picking, grading, processing, packing) requires research and the preparation of information required for extension and farmers. A post harvest specialist is needed.

(3) Increased requirements exist now and will become more urgent to work with entire families to obtain added value via additional products, home/farm processing, and family welfare. A female farm/home specialist is needed now to train promoters and work with the post harvest specialist; at least two more will be needed early in the new project.

(4) The need to calculate costs of production under differing situations and to calculate the most profitable method or combination of crops and methods is an urgent need right now. As the activities expand, an additional farm management specialist must be employed.

The work with the entire family can be advanced by assuring that at least one other woman (in addition to the farm/home specialist, is employed on this team.

Further, the present personnel numbers (8 researchers and 11 extension agents) is insufficient for the tasks at hand. The numbers must be increased to meet the demands of the augmented geographic and specialization coverage to farmers.

b. The Chipiriri Station Program

In addition to the previously cited territories, the Chipiriri station working area had recently been enlarged to include a large portion of northern Chapare. Further, the Yapacan province of the Department of Santa Cruz has been suggested for inclusion in the near future.

(1) Status of Station Resources

Chipiriri has two areas of responsibility: (1) research and extension, as well as production, of the recommended livestock and the necessary forage, management, and genetic improvement methods throughout the Chapare; and (2) dissemination of the new and improved crops for the southern section of the Chapare (in collaboration with La Jota). In March 1991, the Chipiriri staff was composed of six professionals each in research, extension, and production; one veterinarian is also assigned to the station. Given the enormous territory and assigned tasks, additional staff is required.

The station contains 300 Has. in pasture, crops, buildings and corals, and waste land. The basic machinery for the crop and pasture seed work is available but the laboratories and auxiliary equipment are inadequate for the assigned tasks. Fewer than 100 cattle of all ages made up the dual purpose herd. About 120 swine, breeding stock, fattening animals, and small pigs for distribution to farmers were included.

The analyses of the quality of the research undertaken by Chipiriri showed it to be practical and geared to the level of implementation that can reasonably be expected for area farmers to implement. The crop research on the station and on cooperating farms demonstrated a high degree of planning and execution. The successful introductions were the same as for La Jota and the probabilities of profitability and sustainability are the same for Chipiriri as for La Jota. Similarly, those crops with unresolved problems (ginger and turmeric) exist also on the Chipiriri station and its cooperating research farm plots. The station also has an over supply of coffee and cacao plants - the demand for these fell among area farmers below that predicted and some plant materials will have to be destroyed. (The La Jota station is small, 10 H., thus many of the same crops must be planted on both stations to furnish adequate testing and propagation.)

The dual purpose cattle herd is composed of varying proportions of Holstein and Gir (an Indian breed from the wet tropics) to obtain parasite and disease resistance and at the same time increase the milk yield. The mature crosses have doubled the milk production of their separate dams. The cattle were in good condition on mixed native and improved grass - legume plantings on the station. Young breeding animals are distributed to farmers at cost to improve their herds. Costs of production and profitability studies are underway.

The swine kept for the production of pigs for farmers and for feeding research also utilize cross breeds, improving the locally adapted herds with faster growth crosses. Feeding trials using bananas, yuca, and grasses are an important feature of the work. The demand for pigs for fattening and for breeding animals far outstrips the supplies available, even though Chipiriri has brought several farmers into the pig production system.

Chipiriri also has a large demand for chicks. Dual purpose breeds and crosses are popular. The farmers' experiences with chicks brought from Cochabamba have not been satisfactory for Chapare conditions. The station should provide station produced chicks to farmers for broilers and for laying flocks. When that process is sufficiently far along, farmers will be brought into the poultry enterprise as reproducers for farm distribution.

As noted in an earlier context, the animal enterprises fostered on farms by Chipiriri have strong components of vaccination and other health care, proper feeding using local feeds, and adequate housing and stabling to enable profitable enterprises in Chapare. Pasture improvement, cut grass for stabled animals, utilization of locally grown foods such as bananas and yucca, and supplementing with a minimum of grains and purchased products is the key principle of the station.

(2) <u>Chipiriri in the Present Project</u>

The work in the dissemination of the new crops and the accompanying extension work with those farmers that plant them must necessarily increase from three main factors:

As the profitability and marketing studies show economically feasible enterprises for farmers, meeting the market needs will bring planting pressures.

Expansion of the crop program into the adjacent area of the Red Zone where the excellent soils and abundant water make the area ideal for traditional and the new crops being added.

As coca is eradicated at a faster rate as the deadline date of 1993 approaches, the demands for the new crops and the necessary extension that must accompany them will greatly increase.

These naturally imply that much more planting materials must be available from the station and from its cooperating propagation farmers. In addition, more farm leaders must be identified, trained, and incorporated into the propagation and extension work.

Equally important, the Chipiriri station work with farm animals adapted to the Chapare region, producing profitable levels of milk, meat, and eggs, and the consequent extension will increase tremendously. Greatly increased propagation facilities and breeding herds are required. One of the proposed subprojects to accomplish this vital propagation effort is that of assigning the defunct hog operation at Copacabana to the Chipiriri station. This substation would devote itself primarily to the breeding of adapted breeds and crosses of swine to provide the pigs requested by farmers for their fattening operations. Some farmers would also enter the breeding program with the intent of furthering the propagation while making an income. The crop land at the former Copacabana swine farm, recommended to become a part of Chipiriri, will be used to grow bananas, yuca, and grass for feeding the herds and research on their nutritional value.

The area presently served by IBTA Chipiriri for domestic animals has already grown exponentially: the Red Zone farmers are demanding improved cattle and hogs; the livestock area bordering the Department of Santa Cruz requires enormous efforts in the production of better and more forage and starting herds of cattle and hogs.

The total eradication of coca in all the areas served in animal production by Chipiriri will place still another strain on the capability of the station to serve the rural families. The present demands demonstrate the desire of farmers to increase their livestock enterprises as a basis for replacing the lost coca income in the near future (swine and poultry) and in the long term with cattle.

The UNFDAC MILKA dairy project will seek cooperating farmers and farmer groups all across the Chapare. While that organization has a veterinarian and livestock specialists, the demands on the Chipiriri personnel will increase a great deal. (Indeed, farmers were requesting training, technical assistance, and help with the acquisition of animals to meet the requirements of MILKA before it was in operation). As the plant goes into operation and if profitable results become obvious, the demands will far exceed the capacity of the Chipiriri livestock specialists and extension agents to cover them. Further, since MILKA expects to work primarily through farmer organizations, the Chipiriri staff will be needed to forward the formation of these groups and give counsel to them as they implement the enterprises.

Experience has shown that pure blood Holsteins that have not adapted to the humid tropics suffer many diseases; these will add to the burden of the Chipiriri staff since the MILKA personnel appears insufficient in number to handle the multiplicity of problems. Since the MILKA staff has little experience with dairying in the tropics, Chipiriri will have to help the farmers. MILKA should return to its funding sources and request more money for the complicated dairy project. It should also <u>not</u> undertake any new tasks until the dairy and the plant are operating well.

The station has necessarily concentrated its efforts in crops and livestock to the immediate attention to farmer needs. Four components must now be greatly strengthened as the pace of the project activities speeds up:

(1) Concentrated efforts in the collection of data and their analysis on costs of production and enterprise profitability for rural families.

(2) Post harvest research and extension must be augmented <u>on the station and with the cooperating farmers</u> (grading, processing, marketing) and as the link between the farms and the marketing unit in Cochabamba.

(3) The beginning efforts with the formation of the farm/home promoters have shown strong results; the Chipiriri and La Jota stations expect to increase their numbers during the next year but many more will be needed for the future operations. All of these tasks demand more highly trained personnel. Home processing of produce will become an important component in the work of these promoters. By 1994, each of the extension agencies will need a full time farm/home development specialist. The recruitment of women with degrees in agriculture, then training them for the work with the entire family must be carried out.

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(4) The demands of research and extension require more laboratory and processing facilities on the station; disease and parasite control in animals; disease and pest control for crops (shared facilities with La Jota); laboratory assistance to relieve the technical personnel of the routine labor will be required.

To fulfill these needs, the Chipiriri station will require additional personnel: specialists in the listed new and augmented tasks; increases in the number of technical and extension personnel; some additional facilities and equipment beyond those already authorized; vehicles to make it possible for the personnel to attend the farmers as they are needed.

c. Expansion Requirements for the Future

The personnel of the two experiment stations in the Chapare expend an enormous amount of time and effort in moving from one area of the Chapare to another. The arrangement of residences and offices is inefficient even for the present. The situation will be aggravated with the increased activities of the new project.

It is important that the two stations share some additional extension agencies. That will require, however, that small office/residence complexes be located strategically through the territory. The staff recommends, and the suggestions appear logical, the following:

(1) There are facilities at the Copacabana site; these need some renovation but they can serve not only for the operation there but also as agency points for that end of the Chapare.

(2) Another agency should be located in the far northern area, probably at Ivergazama; the intense activities in forage, livestock, and crops in that part of the Chapare require more immediate attention than can be given from the Chipiriri station.

(3) Isinota is another area with a growing demand for technical and extension services; an agency should be built there.

Small plots of land should be provided at the Ibergazama and Isinota agencies. The land should be adequate for plant nurseries.

One veterinarian now attempts to serve the entire Chapare although MILKA has one that will be devoted to the needs of that specific project. One additional should be located at Copacabana and another at Isinota (near Cooperativa Estrella).

In addition to the new staff discussed under a previous section, consideration must be given to increasing the extension staff now; the few allocated to the Chapare is woefully inadequate to accomplish the work. Further, the 17 extensionists now at the two stations must be doubled by the beginning of the new project and if coca eradication proceeds on schedule.

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3. The High Valley Institutions

Within the High Valleys agriculture is assisted by several institutions: an experiment station and substation of National IBTA, PDAR, ASAR, Radio La Esperanza, CEDEAGRO, and PROCIPLA. CORDECO has been involved on some tasks and has recently been contracted to do reforestation. Other government and non government institutions have worked in the area for some years but without project funds: PROINPA and PROSEMPA on seed potatoes, funded outside the project although cooperating on some elements important to it. Many small private voluntary agencies have their own programs and funding; they add to the development of the zone but are not related to the project.

a. The National IBTA Experiment Stations

The San Benito Experiment Station, near Punata, and its substation Maira, near the town of Mizque, have components within the project.

(1) The Present San Benito and Maira Work

The San Benito station has about 22 Has. in project fruit plantings. The research and extension personnel also work with many farmers, both in on farm research and demonstration trials. The goal for its first year of operation, 1990, was exceeded; many more farmers planted trees than were expected. The 1991 goal will be surpassed as well. The station also carries out work on many other crops, funds by the Governmet=nt of Bolivia. Three technicians and three extensionists have been paid by the project.

The Maira substation works with grapes, chirimoya, and peaches. Its 10 H. of research and propagation plantings, plus those on individual farmers' land, has progressed more rapidly than expected and the demand continues to grow. The station, with IBTA funds, also does concentrated work on onions, potatoes, peanuts, corn, and other consumption and for sale crops. Maira has 3 research and 3 extension specialists working under the project.

Both stations show high quality research work. The experiments are practical and well designed to provide information on the adaptability of the introductions to the areas, yields under differing management systems, and cost effectiveness of the plantings. Additional work is required on the individual farms to help determine profitability and to ensure post harvest quality. Three improvements are needed in peach production: pruning to give sunlight to the inner branches, thinning of the fruit, and selective picking. Only occasional insect and disease damage were found during the inspection and all of the infestations had been controlled.

The demands for grafted peaches in the influence area of Maira were greater than the substation could supply at that time so it obtained grafted trees from San Benito. The trip from San Benito to Mizque is long and rough. Some of the grafts did not survive the trip. The root stocks, however, survived very well and those will be grafted on site from scions available at the station. The propagation efforts at Maira have substantially increased and there should be no need to bring materials from other areas for some time.

Some of the project funded grape vines and chirimoya trees are bearing fruit for the first time this year. Interviews with the farmers showed them to be very satisfied with the plants furnished by Maira. The beginning harvests show promise of increased yields in comparison with older varieties that had been planted earlier.

(2) Promise for the Future

The station and substation, together with the farmers cooperating on propagation, give a bright future to fruit culture in the two areas. Increasing numbers of farmers are requesting plants, technical assistance, and attention from extensionists. The farmers visited obviously are confident in the ability of the personnel to assist them properly. The spread of the fruit culture from them to neighbors is increasing the demand. One additional researcher will be needed at San Benito and Maira. Two more extensionists will be required at San Benito and 3 at Maira to meet the demands as the stations augment the number of farmers with fruit plantings. Costs of production under different management systems and soils, yields, and relative profitability will require assistance of a farm management specialist to produce the data necessary for convincing other farmers to begin fruit production and to help the researchers test the varying methods under differing soil and rainfall conditions.

In both stations, the consumption and domestic market crops should be added to the contract for their work in the new project. The efforts in these crops (corn, habas, peanuts, onions, vegetables) should be expanded. Since the work on these is considerably advanced, one extensionist in each of the stations can, with the aid of the others already proposed, carry out the necessary work with farmers in conjunction with the ASAR staff in Mizque and Campero.

To consolidate and hasten gains in progress, the following staff members should be added to the two stations; each of these would, for the first two years of the project, devote half time to the areas of each of the stations:

(1) Farm management specialist with the specific task of assisting the other staff members in calculating cost of production and profits, and of forecasting the amount of produce that will probably reach the markets.

(2) Post harvest specialist to work on the sorting, grading, storage, and other care of products to enhance their market value; the specialist would also be the link between the field operations and the Cochabamba marketing unit.

(3) Farm and home specialist to help women increase family incomes and improve family well being, perform value added activities with the crops, gardens, and small animal production. Her early tasks will also include helping the communities/areas select women leaders as promoters and their training.

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Both San Benito and Maira have insufficient irrigation water. A pump has been put into operation at Maira and drilling is proceeding at San Benito. Irrigation water supply specialists should also work in both areas to seek increased supplies from surface supplies in order to keep the costs down. An irrigation specialist is required; that person could work at both stations in testing amounts and timing of irrigation in order to be able to recommend the best combination for the highest production while taking into the account the existing water supplies. This improvement work should be done under private contracting since the works are too large for the PDAR engineering staff.

Neither station works via promoters but directly with farm leaders. At this time, that is sufficient. Consideration should be given in the near future to adding the promoter component if the demand for services exceeds what can be given. Farm/home development with entire families is done to some extent by non government organizations. An arrangement should be made with one or more of them to forward this work much more rapidly, especially the added value processing that could be attained with the project fruit crops. One farm/home specialist should be employed to work at the beginning with both stations; later in the project, one should be assigned to each station.

Hand cultivation equipment is needed to promote best soil preparation and weed elimination processes. Vehicles to assure mobilization of the present and future personnel should be provided; the present vehicles, furnished by the Swiss Technical Mission, are becoming very worn and will need replacement during the new project.

b. <u>PDAR in Mizque and Campero</u>

The Regional Alternative Development Program carries out multiple functions in some sections of the High Valleys.

(1) General coordination of the efforts of the several organizations working there.

(2) Implementation, with the members of the communities, of small potable and irrigation water systems. (The irrigation works themselves are treated in a separate section in this technical analysis.)

(3) Research on forage, animal, and crop production.

(4) Propagation of forest and forage plants and of prickly pear cactus (nopal). The cacti will be innoculated with cochanil in the future, adding the resulting colorant to the market as well as the fruit of the cacti.

(5) Extension services to some portions of the project work with farmers in the areas.

(6) A soil conservation specialist with Development Alternatives, working with PDAR and ASAR assistants, constructs soil conservation structures in the field.

In addition, it cooperates with the ASAR technicians and extension workers in the dissemination of livestock and crop practices. PDAR and CORDECO will collaborate on the planting of forest trees, the former on the farmers lower grazing areas, the latter on those in the watersheds.

(1) Present Status of the Work

The overall view of the work being done by the PDAR field staff is of high quality. No unusual problems were revealed during the inspection; minor improvements, recognized by the staff, can be made.

Goats, sheep, and cattle are found in numbers too great for the forage capacity of the grazing areas during harsh times such as the drought of the last few years. Since the animals serve as a "savings" accumulation for the families, they are vitally important to family welfare. They are seldom consumed; they are sold to buyers on the hoof or to consumers in the local areas. Milk from goats and sheep is drunk and the common curd cheese is produced both for consumption and for sale. Wool is collected; its quality and quantity are low, suitable for matting and some rough garments; this is most commonly sold but some spinning was observed. Swine and poultry exist on many farms but in small numbers; the hogs are sold, as are the chickens and their eggs.

Sequenced Livestock Improvement Program: PDAR, in conjunction with ASAR, has designed a series of steps that must be taken if substantial improvement in livestock production is to occur. The first step is the improvement of the forage - improved grazing and browsing forage near the communities; second, and partially simultaneous, is animal management - section fences, castration of most if not all males; third, and also simultaneous when farmers can be convinced, is the construction of simple but practical stables to facilitate milking and other controls; fourth, still sometime in the future, is the introduction of higher producing males for crossing with the farmers' stock. Cooperation with health authorities can reduce the danger of Chagas disease by separating the stables at some distance from the home.

Forage Improvement: The ultra harsh conditions of the area demand a careful assessment of what forage plants can survive and do well. That assessment has been made; native varieties from the region are utilized. The propagation in the nurseries and the plantings in the grazing areas (animal constraints via live fences) is an excellent step. Dividing the grazing areas into sections among which rotation of animals can control over grazing is a vital link in the process.

Livestock Management: As noted in the earlier context, the management consists of stabling for control and for supplemental feeding when any fodder is available. This also allows more orderly milking and for castration, pest control, and vaccination. The recommended stables are inexpensive and practical. The animals are of extremely poor quality, small and malnourished. Additionally, a great deal of inbreeding occurs, further degrading the flocks. Castration thus is a must for any substantial improvement.

Genetic Improvement: Only a very few farmers have arrived at this stage of the sequence; most need two to three years before this can be accomplished since the introduction of finer blood lines would result in disaster - they could not survive the conditions there. ASAR has made the first step in this eventual work: it obtained improved lines of sheep and goats and is crossing these with the local animals to produce a sturdier animal. When a farmer has accomplished forage improvement, castration and other management steps, the crossbred males will be sold as sires on the farms. The ASAR veterinarian and livestock specialist interviewed stated that only one farmer was near this genetic improvement phase. In the future, the same improvement will be done with cattle. The ASAR livestock specialists have completed a diagnostic of the possibilities of improvements in that enterprise and are proceeding with the plan it generated.

It is important to recognize that this sequence will require a long time for most farmers, even if weather conditions allow a more accelerated improvement of the forage. A part of the difficulty will be convincing them that these steps must be taken. The present assumption is that an outright campaign to reduce the numbers of livestock would be in vain; no farmer can afford to risk his family's welfare by not having animals to sell in emergencies. The immediate goal of the subproject, then, is to produce more meat and milk from the same number of animals. It is postulated that as income from livestock grows, farmers may then recognize the desirability of feeding fewer animals well, with the concomitant production of higher incomes.

Swine activities in the project are few. Local feeds, other than corn needed for consumption and sale, are probably not available. There may be some waste from fruit and vegetable production but that, too, will be small in volume. Nevertheless, improvement is being sought in swine, primarily by their management under better conditions: care of the sow at farrowing, keeping the pigs in more sanitary conditions, and using every available scrap of waste products to get them to a salable size.

Poultry has been addressed by some of the non government organizations and some limited success has been achieved. Again, concentrates and grain are expensive; few are willing to make the investment needed in infrastructure to grow more than a few for occasional home consumption and for sale.

In general, then, the PDAR/ASAR approach to livestock production improvement appears to be reasonable and achievable. Huge increases will not be attained in the short run but the long run should show better production and higher incomes.

Crop Improvement: The very limiting factors of amount of land suitable for crops and water for irrigation severely limit what can be done in this phase of the work. The small irrigation systems are having an immediate and salutary effect; farmers are putting in corn, barley, wheat, and vegetables and those are paying dividends. The results of the irrigation projects are already recognized by the farmers and this accounts for the high number of applications for such projects. There is a very finite limit on how much can be done to introduce irrigation and to the land suitable for its application.

The project helps farmers locate better seed and furnishes some. The cultivation practices, mostly taught under ASAR, have been relatively easy to teach. The introduction of some vegetables for consumption and sale is somewhat more difficult because the farmers have little experience with them. The beginning trials, however, appear hopeful for some diversification into these crops that produce higher incomes when conditions permit and when prices are good. Transportation is relatively expensive so local markets are usually preferred.

A considerable amount of slash and burn agriculture is practiced on the hillsides, most of which are really too steep for cultivation. Most of the rotations are one or two years in grain crops and five to seven in brush. Soil erosion exacts a terrible toll on these plots, causing the fallow rotation to be longer and longer. No efforts are being made at this time to curb the problems except the soil conservation practices being introduced with a few farmers.

(2) Future Potentials

As emphasized previously, most of the improvements in agriculture in the Campero Province depend upon the construction of additional small irrigation projects, which then lead to some income increases through irrigated crops. Similarly, the livestock improvement sequence, as outlined, requires time; it, too, will produce results.

In the short run, the future is in continuing the efforts now being expended in increasing farm incomes. An objective of this work was to curtail the emigration of labor from these areas to the Chapare. Those communities with irrigation and some improvement in their production already report that they are migrating far less than before; some stated that no person had emigrated so far this year. This is due to increased income at home, making it unnecessary, as it was previously, to migrate in order to earn cash to buy food, clothing, and other necessities.

c. ASAR

Necessarily, much of the discussion on PDAR involved the work of ASAR. The organization has been active in the region for some time and demonstrates a considerable capacity to do the work well. It is a valuable component in the system. The inspections of the efforts expended by ASAR with farmers showed them to have high acceptance and respect by the farmers. Although they work under many constraints, they are accomplishing their assigned tasks.

ASAR has 30 professionals and lower level technicians working in the Aiquile area; they also do some work in Mizque Province. That number is adequate for the present level of activities and since only a few additions will be made in the future, the number is likely to remain adequate for the tasks. Vehicles for mobilization, however, are a major problem; only 4 have been received. The technicians work in teams so at least 10 vehicles, including some pickup trucks, are required.

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d. Radio La Esperanza

The cost of the involvement of this non government organization is very low. Its administration provides much of what is needed for its part of the effort, especially personnel and the radio (and later the television) stations. Its project function is to give agricultural information programs within its schedule; make announcements of meetings and work schedules so the community members are alerted; and to help with the training of farmers and their families, and especially in the training of the forestry promoters.

The Radio La Esperanza communicators were observed in action at a workshop for the forestry promoters. They spoke fluent Quechua, used terms easily understood by the participants when Spanish was required, and generally demonstrated a great deal of ability in carrying out these efforts. They were cited in the field by many farmers as important to them in the communication process.

The project should consider some assistance to the staff in their efforts to gear up for television reporting on project activities and for showing farm demonstrations. The staff is progressing but since their contributions to the overall effort is large, the station merits short term assistance.

4. Irrigation Activities in the Project

In late 1989, PDAR opened irrigation engineering offices in Mizque and Aiquile. Their assigned tasks were to work with the communities to design, execute, and teach the maintenance of mini and small water projects. The communities decide which type of system they desire (drinking water, irrigation, or a combination), contribute their labor to the execution of these projects, and maintain them after completion. Sixteen small systems have been completed in Mizque Province and 25 in Campero. About a dozen are in some stage of design or construction in each province. Hundreds of applications have been filed by communities to achieve systems for their people.

a. The Completed Systems

Whether for drinking or irrigation water, the systems take advantage of existing sources of water. A wide variety of construction types have been utilized depending upon the amount of water available, the location of the source, the terrain, and the system that would be most advantageous. An examination of a large number of the sites and systems shows excellent workmanship; no severe problems have developed with them. Minor difficulties such as cracks in cement, silting, and variation in flow have been resolved - many of them by the communities themselves without recurring to the engineers.

The most frequent type of construction is to build a collection structure and provide access limits to animals and soil from erosion. Obtaining water from a creek or river follows; these systems are more complex in construction but in most cases supply much more water for home and farm use. When sources were judged to be inadequate during the dry season, catchment basins have been constructed to allow for storage for later use. In all cases, the water has been channeled to the user area, generally through concrete canals, sometimes clay lined canals, and in a few cases via pipes.

The quality of the drinking and irrigation water appears very satisfactory. The water source was tested, pronounced safe, and safeguards erected to assure continuation of suitable quality. During 1990-1991, the supply of water has been sufficient to its design. Drought years will no doubt bring some lessening of the flow but it is still expected to be adequate.

The irrigation systems are too new to allow calculation of exact production benefits to the farmers. However, the fields of corn, barley, onions, and tomatoes show excellent growth. The first corn plantings have multiple, large ears. When these are compared to the non irrigated plantings, the contrast is remarkable. Estimates are that the yields will probably be five times that of the dryland fields. Barley yields will somewhat less spectacular but are definitely higher. The vegetable crops could not have been grown without the irrigation. The ASAR technicians have worked well with the farmers, helping them prepare the soil, put in the irrigation channels, plant properly, and cultivate well. The systems are producing solid benefits for the property owners.

Water is extremely limited in most of the Campero Province and consequently their systems are mostly small, irrigating from 3 to 20 H. Some medium sized systems installed where sufficient water exists, water up to 110 hectares. Mizque Province and a small portion of Campero have vastly greater water supplies; their systems are larger, irrigate more hectares, and will benefit the farmers commensurately. These systems cost more to construct but their consequent benefits are also much greater.

The social benefits of those systems that supply drinking and laundry water are equally salutary. The rural families benefit substantially. Health improvement is occurring and is attested to by the families. The reduction of the hours of daily drudgery in carrying water from faraway sources or carrying the clothes to be laundered to a sufficient supply of water have not only liberated the women from these tasks but has allowed them to expend more of their time with the children and in carrying for crops and animals. While these benefits may not be easily quantifiable in economic terms, their contributions to social well being are obvious.

It is important when viewing these water systems to comprehend the huge contributions of the community members to their construction. PDAR provides only the engineering and surveying staff, masons and plumbers when not available in the community. The community participants provide all of the manual labor. The men, women, and children of the community have expended from 2,000 to 7,000 person days in the construction. And all of this has taken place is just over a year.

Those contributions in and of themselves are a mark of the success of the engineering staffs in organizing the participant communities, helping them determine the rotation of labor, and furnished the encouragement necessary for such a giant undertaking. They have also taught the members how to take care of the systems and the communities are doing so. Each user group assesses a small charge (usually one boliviano - US 0.29 - per month to purchase any needed materials for repairs that cannot be done solely via labor. All maintenance and repair labor is parceled out equally to the user families. The maintenance of the systems, in a very high proportion of the cases, will be well done and involve no recurrent costs to the project.

Perhaps even more important is the feeling of ownership of the systems that these community participation has created. No one talked about a "PDAR" or "USAID" system although they expressed great gratitude to both institutions. They talked about "our" water system. Some results were seen of that pride of ownership. A small crack had developed in one small water channel; the community purchased cement, brought sand from a river, and repaired the crack.

In a water diversion system, high water in the river had carried a large amount of silt into the diversion canal. They farmers simply gathered together, shoveled it all out, and then carried the productive silt to their fields. No one had to tell them what to do nor when to do it. In one community, only 12 of the 20 families had contributed to the construction of the system. After seeing it in operation, some of the non participants asked to use water. The user group calculated the approximate cost in labor and materials, and assessed the new members accordingly. The users are owners and they new exactly what to do in this case; they took care of it. All of these indications provide evidence of proper care and operation of these valuable water supplies.

An unexpected result has occurred from these constructions. Community members that worked closely with the mason and plumber have learned a great deal about the trades. They are able to do most of the work now themselves. These new skills in the communities add to the income of those members when they work in nearby communities. Those skills will also be valuable in effecting any repairs or additions to the system.

b. Recommendations for the Future of Water Supplies

The over riding recommendation for this subproject is that it continue throughout the life of the new project. There is still a great deal to be accomplished, as evidenced from the vast number of pending applications. The family and economic benefits are so outstanding that nothing should hinder the work being done. Not all the families in the two provinces will benefit equally, of course. Those receiving drinking and irrigation water obtain far more than those in which insufficient water or land will not allow system installation.

The engineering staffs in both areas are not only competent in their fields but understand how to work with the communities to obtain the best for the future from the relatively small resources being invested. The addition of two additional technicians and sufficient transportation for the staff and materials should be added. With a small additional investment, even more systems will be put in place and the provinces will benefit far more than such small monetary investments suggest.

Two areas in the High Valleys need further development of the irrigation water supplies if they are found to be feasible. One of these is a substantial portion of the area around the town of Mizque where insufficient water arrives. Improvement of the sources and the feeder canals should be done as soon as possible. Since there is a great deal of water in the area, it appears practical to undertake a project to supplement the supplies.

The second area is that running roughly from Arani to Cochabamba; the structures for canal supply of water are not providing sufficient for the irrigation needs. The San Benito Experiment Station and some groups of farmers are drilling wells for supplemental water. A study of the possibilities of increasing the canal supplies must be undertaken and the improvements made as soon as possible.

Finally, it must be borne in mind that the installation of any water system, especially when that commodity is scarce, protection of the sources must be installed and/or maintained. Many of the sources of supply are fragile, little vegetation is protecting them. Substantial efforts must be expended in reducing the number of domestic animals utilizing the watershed. Reforestation must be done as quickly as possible. Without these efforts, the water in many of the systems is endangered and will become more so in the future. A strengthened soil conservation and reforestation program must be assured. Should some of these communities lose their water supplies, irreparable damage will be done after their expectations have been realized.

(c) A Pilot Project in Terrace Rehabilitation

The severe limitation of available land in the Aiquile and part of the Mizque areas has few solutions. The small irrigation projects make more intensive use of the land that can be watered. Only one other avenue remains open, the rehabilitation of the pre-colonial terraces, evident in many places in Campero and a few in Mizque. The soil has eroded over them, leaving only a taller band of vegetation at the border formed by the rock wall that supported the terrace. A cursory examination of a few of them showed that the basic structure is mostly intact. The rehabilitation work will entail removing the erosion over flow, restore some of the contour lines, and reestablish sufficient vegetation to begin to strengthen the soil nutrients.

The analysis suggests that this is one way in which more land can be added to some communities. A pilot project is recommended that, using community labor and under the direction of the PDAR water engineering units in the two sites, would rehabilitate two small sites in each area. In each, one that can be readily supplied water and one that would entail dryland farming, will be chosen and the work accomplished. The sites must be fenced since they lie in communal grazing lands. IBTA Maira and ASAR will work with the farmers to restore the land to tillage conditions and instruct the farmers on the care of the crops, irrigation, and terraces.

As the terraces begin to produce crops, an assessment of their profitability and/or contributions to consumption will be done. In about 1995, if the pilots are successful, PDAR should undertake other rehabilitation works requested by the communities.

5. Sustainability of the Project Effects after 1999

One of the concerns for the future is that time beyond the new project; what organization will be present with enough training and experience to continue the work with the rural families. PDAR at this time is organized to perform tasks for the USAID/Bolivia projects. ASAR will probably continue although on a much more limited scale after the new project ends. Attention must be paid to this implication. The most obvious solution would be to turn over the research and propagation to

IBTA. That entity, however, has only a limited presence in the High Valleys, mostly that of fruit production. Therefore, the government and the project should consider this as a potential general provider of research and extension in the future, expanding its work to include the consumption and local market crops and to livestock.

The most obvious move would be to make Maira a full station, give it the personnel and mobilization to carry out the work in conjunction with ASAR, allowing it to expend efforts into the crop and livestock implementation now done by PDAR. Arrangements with ASAR to continue to carry out its portions of the work could no doubt be made. The construction of the small water projects should remain with PDAR.

This arrangement also makes it possible for PDAR to conduct work in preparation for and the beginnings of activities in new geographic and subject areas that are assigned to it. The experience gained in one makes it possible for PDAR staff to progress more rapidly in the new tasks.

Similar arrangements should be made with IBTA San Benito, expending its role to include consumption and local market crops and livestock. The station already works in many of these enterprises; funding to permit expansion and greater concentration in this part of the High Valleys can pay large dividends.

6. Summary Statement on Agricultural Technology Soundness

It is important, first, to state that overall, the research, extension, and propagation of plants and animals is unusually well done throughout the project area. The experiment stations, research trials on farms, nurseries operated by the cooperating institutions and by private farmers are well cared for, properly designed, and producing the desired results. Mistakes have been made and in a few cases, problems have arisen. These difficulties represent a tiny majority of the work being conducted.

The technicians and extensionists of IBTA Chapare, National IBTA in the High Valleys, PDAR field people and ASAR in that same area, are well trained, dedicated, and hard working under very difficult situations. No organization conducting field work has enough staff, vehicles, and other inputs. The areas they serve are huge, complex for agriculture and livestock, and need many kinds of social and technical infrastructure. Despite these circumstances, a great deal has been accomplished in a short time. The farmers know the field personnel, respect them, and are convinced that the advice being given is worthwhile.

The small water projects (drinking water, irrigation, and combinations) in the Mizque and Campero Provinces are conducted extraordinarily well. The designs are excellent and yet simple. The communities that have benefitted from them have invested enormous person days in their construction, without pay. They feel an ownership of these projects that augers well for their maintenance. The hectares already under irrigation are producing incomes and helping slow the migration of labor to other areas. There are some finite limits, because of amount of land and water, but the activity should continue as an invaluable asset to the development of the affected areas. There are some severe scarcities of irrigation water in the strip from Arani to Quillocollo strip. Consideration should be given to resolving these problems for this highly productive agricultural area.

There are some problematic areas in which the services are not at the level or quality needed for this project. Cost of production and profitability of the enterprises data collections have just begun and by no means in the quantity required. The post harvest activities are at best incipient. Efforts in marketing are diffuse, and need continuity. Work with families has only just begun. There is a reluctance, or fear of contradiction, in properly assessing a few crops and making the necessary judgments about reorganizing the research or to drop them as very doubtful enterprises. However, these weaknesses, for the most part, can be understood in light of the few personnel in the field, and the insufficiency of inputs and support out of the central offices.

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B. Natural Resources Management

a. Hathershed Management in the High Valleys

1. Overview

In the High Valleys, the natural resources management component relies in part on continuing technical practices that have already been successfully introduced into the project area. New techniques recommended under the project have been chosen on the basis of social and environmental suitability as well as technical adequacy. The component, therefore, appears technically feasible.

2. Water Production and Conservation

The project proposes to continue constructing and operating micro works in water capture, water storage, and water distribution. The infrastructure is relatively simple and relies in part on local materials and local labor that are readily available. The project can readily continue to supply machinery and supplies not available from local farmers. Farm families value the water supplied under the project and participate willingly in maintaining the structures and protecting catchment sources with fencing and plantings. It is technically feasible for the project to continue constructing micro works wherever adequate water supplies exist.

As the project undertakes more complicated and larger scale works, it will do so on the basis of adequate engineering studies. Such works - infiltration galleries and small dams, for example - will use well established technology, currently available in Bolivia.

3. Soil Productivity and Soil Conservation

Stream bank erosion control and gully control under the project will continue current practices that involve simple technology and voluntary collaboration of farmers. These practices will not present any technical difficulties.

4. Agroforestry

The agroforestry activities which the project will undertake require operating a series of small scale nurseries to produce trees and perennial plants. Nurseries of the size and level of technology required are common in Bolivia and do not present any technical difficulties. To some degree, the project will develop practices with certain species - seed storage practices or planting techniques could be examples - that represent innovations. Such innovation will not strain the technical capacity of the nurseries or the technicians who work in them. Agroforestry also entails planting trees and caring for them after they are planted. Again, the technology is simple and, even when innovative, well within the capacity of local farmers, especially if assisted by project technicians.

5. Range Management

Range management under the project consists of shifting from the current system of uncontrolled grazing to a system of controlled grazing. Fences, made from live plants, from cut brush and wood, or from stones, will form the technical basis for controlling grazing by providing areas from which animals can be excluded, thereby allowing vegetation to recuperate and become available for future grazing. Rotating livestock from one exclosure to another keeps the whole range productive.

Several other practices complement rotational grazing to round out the techniques applied to attain range management. These include elimination of burning from the rangelands, protection of sensitive areas like water intakes and canyons by permanent exclusion of livestock from these areas, and reforestation of some sensitive areas.

Simply from the point of view of technological capacity to build fences, range management presents no problems. Fencing materials are readily available at little or no cost and labor is also available. Fencing will probably progress well in the most intensively grazed areas close to settlements. Likewise, tree planting and controlling burning should progress well in these areas. But the High Valleys contains large expanses of steep lands at great distances from the settlements. These lands, which have very low productive capacity, are currently grazed communally. Whereas it is technically feasible to fence these lands and plant trees on them, it is also costly, especially in labor. Moreover, fencing and tree planting on these lands provide relatively lower benefits in increased forage as contrasted to the benefit from more productive lands closer to settlements. Therefore, the project may encounter difficulties in attaining range management on the most difficult lands, not so much because of technical problems as because local farmers will not be persuaded that the benefits of range management merit the effort to accomplish it.

6. Forestry

Forest management in the High Valleys will entail operating nurseries at a somewhat larger scale than those for agroforestry, and forestry will also use some different species of trees. In general, however, the technology for forestry is similar to that for agroforestry so that forestry should be equally feasible from a purely technical point of view.

In practice, forestry will present difficulties similar to those for range management. People will probably be willing to commit effort to tree planting near their homes where the benefits of the plantations will be clear and direct and the labor investment relatively low. Planting trees in remote areas, however, will have less obvious and less direct benefits, as well as require more labor. Therefore, it may be more difficult to attain under the project.

b. Environment Monitoring/Conservation of Cultural Sites

The component on environmental management will operate by way of analytical techniques already well known in Bolivia and elsewhere. Proposed activities consist of studies and efforts to increase public awareness of environmental. Eventually, though separately from the project, these initial efforts should lead to concrete protection measures at specific sites.

The High Valleys has long been recognized for its cultural resources. These resources are being destroyed by infrastructure work like road construction and irrigation systems, and looters. Their conservation would not only protect Bolivian resources but could also provide the potential for increasing family income in this rural area through tourism. The new road to Mizque and Aiquile is an important step in this future development of the sites and is not ruining any of them.

The project would work with this and other institutions to perform a series of studies to determine how to protect adequately these pre-colonial and colonial resources and how to promote them for tourism. Consideration should be given to the conservation of selected sites.

c. Technical Soundness Statement: Natural Resources

The details of the soundness of the natural resources component are listed in Annex F.6. In reiteration, the analyses lead to a very positive statement - the proposed activities in these fields will materially aid in the conservation and management of the natural resources within the Cochabamba Regional Development Project area.

d. Critical Studies

1. Watersheds and Environment

i. High Valleys

Within the High Valleys subcomponent the project will undertake the following studies:

(1) Land use capability studies for new areas of project focus similar to those already performed by CUMAT for areas in which the Associated High Valleys Component currently operates.

(2) Water resources studies of both actual and prospective water sources and actual and projected water demand for the areas of Aiquile, Mixque, and the area from Tarata to Arani. One of these studies will be a prefeasibility study of the San Pedro damsite near Aiquile for multi-purpose water development.

(3) Wood energy analysis of supply and demand for fuelwood for the areas of Aiquile, Mixque, and the area from Tarata to Arani.

(4) Studies to determine environmentally stable carrying capacities for livestock in each of the principal watersheds in which the project operates.

(5) Study of potential for industrial wood plantations in selected places within the project area at elevations of 3,000 masl or more.

b. Tropical Lowlands

The project will undertake the following studies in the tropical lowlands:

(1) Studies of potential non-timber products from secondary forest.

(2) Continuing research on native species, nursery practices, planting practices, post-planting silvicultural techniques, growth rates, markets, and environmental effects of second growth forests.

(3) Baseline studies of geology, flora, fauna, and ecology within Isiboro-Secure National Park.

2. Conservation of Natural Resources

(1) Annual reports on environmental conditions in the project area and environmental impacts of project activities.

C. Marketing and Agroindustry Analysis

The Cochabamba Regional Development Project, as did its predecessor, will strive to achieve the improvement of rural family incomes through an integrated approach involving agricultural production, processing, and marketing. To enhance the success of these major components, other complementing projects will facilitate the movement of goods and services through improved infrastructure (principally roads and rural electrification).

Considerable strides have been made in all of these objectives but a great deal remains to be done. New and improved crop and livestock enterprises were introduced. The farmers demonstrated an interest in them and the demand for plant materials and animals has been evidenced. Beginnings were made during the first project on determining the economic feasibility of these enterprises as components in raising family incomes but more is required before some of them can be recommended wholeheartedly to private farmers. Similarly, the early efforts in marketing showed promise for the future but, again, these activities must be organized and then operated at a much faster rate. Products that cannot be sold are a liability to the farmer and to the project.

1. Marketing and Agroindustrial Background

The GOB has established policies to strengthen the private sector and has focused on agriculture for economic growth. The nation is recovering from the inflationary crisis of the early 1980s (due to policies introduced in 1985 and 1989). Many of the unfavorable policies have been removed, including trade restrictions, unrealistic tariffs, controls on prices, interest limits, and foreign currency transactions. Furthermore, in 1990, the Bolivian congress approved an investment code which provides for equal treatment to domestic and foreign investors, eliminates profit repatriation restrictions, and simplifies registration procedures for foreign firms.

It would be a fallacy to believe that these policy changes alone are sufficient to correct the marketing deficiencies in the project area. The private sector performance has been weak, in part because investors are not sure that these policies will last. Too, the present infrastructure and technology in the country are not conducing to further investment in some types of enterprises.

Chapare and the High Valleys agricultural potential is partially a case in point. Although there is the promise of worthwhile investments in processing and marketing, few businesses have expressed an interest. Except for a few small and medium sized operations, the primary private sector entities actively working in the area transporters and intermediaries, and some bilateral and international development programs.

2. Marketing in the Project Area

The most common marketing mechanism in the entire project area is that of farm gate sales to truckers or intermediaries. While the studies show that the prices are reasonable, the profit that must be realized by these entrepreneurs stays with them, rather than increasing the rural family incomes. The second most frequent marketing method is taking the products to a sales area and either selling them there to a wholesaler or peddling them to the attending shoppers. The general opinion is that the latter brings the highest returns.

a. Marketing in the High Valleys

The traditional crops in the High Valleys are potatoes, corn, wheat, tomatoes, and peanuts. The non traditional crops include peaches, grapes, chirimoya, and avocado in some sections. Both the traditional and the newer crops are marketed alike, mostly utilizing intermediaries. The distances from Mizque, Campero, and Carrasco Provinces are long and there is some damage to perishables. This factor causes somewhat lower price at the farm gate but individual transportation to other markets suffers the same conditions. At the completion of the USAID financed road from Mizque to Arani, the travel time and the damage will be reduced.

Livestock in the High Valleys are also mostly sold to intermediaries because of the immediate cash payment and the distances are too great for most farmers to walk their animals to a sale area. The intermediaries buy some at the farm and some at the local Mizque and Aiquile markets. In general, the studies of these sales have shown results similar to those for crops - the intermediary increase is reasonable in consideration of the costs of transportation and investment.

The High Valleys market fairs are relatively competitive with many buyers. However, producers, transporters, and intermediaries realize low profits. In addition to the previously discussed problems, other factors are involved: high per unit costs of production, low quality products, low post harvest technology, inability of consumers, and deficient information on current supply and demand. Additionally, the low volume of produce raises the costs of transportation and sales.

b. Chapare Marketing

The Chapare traditional crops are corn, peanuts, citrus, bananas, plantains, and some other tropical fruit. The newer crops, which had just begun to reach the market during the last years of the first project, vary widely but their volume is small. Many farmers sold their produce through intermediaries but some asked for assistance from the project. With the low amount of these products, both methods were said to achieve a reasonable price but it is expected that the marketing arrangement under this project will raise the income to the grower.

Chapare livestock are marketed in three ways: small numbers are often sold to local establishments that butcher them and sell the meat. Larger numbers and those the local market will not absorb are primarily sold to intermediaries but some growers pay for the animals to be trucked to Santa Cruz. Farmers feel that the latter yields higher returns.

Truckers and intermediaries report that the major problem with Chapare farm produce is that it is not sorted by size and approximate grade. Further, some produce is at the proper stage while other portions are too mature or too green. Since the intermediaries cannot sell the mixed produce at a price that will cover transportation and sales efforts, they must hire persons to do the sorting and grading. Some NGOs have worked with grower groups to remedy the mixed produce offerings and they and the farmers report higher acceptance of the product and a better price. Unfortunately, the NGOs have worked with relatively few growers, thus the mixed offerings are still common.

Corn price margins for example, including transport and risks from the farm gate, are around 10% if sold in the local markets, 50 to 60% if sold at more distant fairs, and around 150% if sold in the La Cancha market of Cochabamba (George Gray Molina, 1990). The price margin from the farm gate to the local markets is lower because short distance transportation cost is higher. Rural families usually do not want to take the risk and higher transport cost to sell in distant markets because they do not know the buyers and often do not have the cash to pay the transporter at the time of pick up. A doctoral dissertation indicates that some families have tried to sell in extra regional markets but realized disappointing markups (Maria Laura Lagos, 1988).

c. Participants in Marketing

Truckers bring products for sale in the High Valleys and sell them rapidly to retailers in the local fairs. Generally, the marketing system in the High Valleys consists mostly of a husband and wife partnership that handles transport, wholesale, and retail activities. Over two- thirds of the producer-merchants interviewed sold their own agricultural products as well as those of their neighbors and friends.

Minor vendors are generally small truck owners living in the rural areas, who gather farm gate products and sell them. Major vendors are larger truck owners, usually with several trucks and drivers. They may live in the areas from where they buy products or from the sales points. They handle the bulk of regional goods, playing an important role in the integration of the high in much of the project area.

Cattle marketing is mainly handled by Santa Cruz, Cliza, and Punata truck owners. Vendors of all business sizes buy grains, peanuts, onions, tomatoes, and fruit. They coordinate their weekly sale schedules according to the extra regional and departmental market calendars.

3. Agroindustrial Activities

Existing agroindustrial uses for High Valleys products are minimal. Limited processing of some fruit and spices does occur, usually with procurement of raw materials at the processing plant. The agroindustrial sector in Bolivia is a minor player in the economy. Most of the processing enterprises in the High Valleys are operating at near artisan level, using rudimentary technologies. The few larger processing companies appear to lack confidence in the domestic supply of raw materials, and due to low import costs, they often rely almost exclusively upon foreign materials. A number of key technologies and processing systems are nearly non existent: individual quick frozen, aseptic bulk packing, controlled temperature commercial storage space, and cold storage space.

a. Marketing and Agroindustry in the Chapare

Marketing prospects for Chapare products are good if production and its costs are under the selling price. Pineapples, bananas, passion fruit, black pepper, and some other crops appear to offer good possibilities.

In a few cases, cooperatives have undertaken produce grading; the members feel the prices they receive are better. A few also contract the transportation of the produce to a larger market. The members note that this has given mixed results but mostly positive on profit after the costs have been deducted.

High production and marketing costs and a disarticulated system that fails to transmit clear signals about quantities, quality, and prices to producers, intermediaries, and processors limit success. This situation distorts price formation and creates uncertainties leading producers, intermediaries, and processors to sub-optimal behaviors, further distorting the market.

Chapare rural families, transporters, intermediaries, and those from other areas who export products often lack knowledge of export prices, post harvest technology, and market principles. This causes all these sectors to exploit their resources inefficiently, foregoing investments that could yield profits. Likewise, traders lack knowledge as to the quantity and quality of produce in the Chapare which causes them to make short run decisions which reduces risks but create high operating costs. Some of these costs include expenses to control the market and reduce competition. Others result from operating at low levels of capitalization, and offering limited selection of qualities and quantities to the markets.

Production and marketing activities in the Chapare exhibit weak vertical coordination. In general, each marketing stage lacks information, technology, and efficiency. As a result, per unit costs are high at all levels and income is lower.

b. <u>High Valleys Processing</u>

A few producer families do some grading and sorting of products but this is a minor factor in family incomes in the area as a whole. Mizque, Carrasco, and Campero growers find little incentive to do value added activities although the complaints of the buyers suggest that the gains might be substantial.

Considerable improvement can be effected with peaches; the pruning is insufficient to allow entry of sunlight and thinning should be done to increase size. Presently, the trees are stripped of all fruit rather than choosing for maturity. These improvements, plus attractive packing, would greatly enhance the salability of the fruit.

Sorting, grading, and packaging are at a much higher level in the potato regions of the High Valleys. An examination of the offerings in the Arani potato market, for example, revealed none that was of mixed size, variety, or quality. Fruit grown in Arce, Arani, and Punata, too, is mostly graded although little packing is done. The classes by the San Benito Experiment Station have made an impact on these farmers.

The more advanced processing, however, is done by a few companies in Cochabamba and several in La Paz and Santa Cruz. Their receipts of produce are much higher than in the main project area and thus they have a relative competitive edge. Canning and juice making depend upon low price raw materials; the large supplies allow for the selection of these grades; they, of course, pay lower prices for most of the produce they buy.

4. Efforts under the First Project

To make up for the deficit, the PDAR Marketing Unit assists producers in the Chapare and the Southern Zone to do some grading and packaging and in the location of markets. This unit is composed of a PDAR officer and a contracted advisor. This marketing unit made some headway despite its limited staff. It has sold some products at request of rural families, offered seminars on post harvest and marketing technologies, and helped some of the Chapare farmer associations and cooperatives learn the basic strategies. For example, the Marketing Unit has assisted the Maripoza farmers to sell pineapple through a Santa Cruz exporter. Other help has been given on bananas, passion fruit, palm hearts, and pejivalles.

5. Potential Agribusiness Opportunities

At the present time, the quantity of produce from the Chapare is small but that will increase as more farmers grow the crops. There may be openings for small processing plants in the future. The most likely are community or area market centers with grading and packing services, cool rooms (when electricity reaches Chapare), and the processing of passion fruit for juice or concentrate to be shipped to cities where it can be converted into consumer products.

The High Valleys offers more possibilities, especially in the fruit producing areas. A small manufacturer of ladders, pruning equipment, and packages and boxes could be profitable. A supplier of small motor driven walking cultivation equipment, if instructions were given on their use and economy, might flourish. Cool rooms for holding fruit before shipment to distant cities would increase the quality of the product but USAID purchased several some years ago.

For many farmers in the High Valleys, animal traction is the most common plowing and cultivation mode. Some progress in the utility and efficiency of the equipment has been achieved by the use of the Swiss Technical Mission plows. However, smaller instruments need to be introduced; the combined plow-cultivator would increase effectiveness on small areas. Improved yokes would enable greater efficiency.

Simple drying racks for grains would be helpful all over the zone. Hillside storage for onions and potatoes would enhance the the ability of the products to withstand the rugged transport and would allow farmers to hold the products until better prices can be obtained. Similarly, simple drying racks for black pepper and the other spices would reduce the losses in the Chapare due to moisture and would make the product of higher quality, and thus worth more, in the market.

An important agribusiness potential is that of the development of the dolomite deposits in the Chapare for use as an agricultural additive. Most of the Chapare soils are very acidic, pH 3.5 and 4, requiring the addition of calcium carbonate. The dolomite deposit would require relatively small investment and, if the legal impediment can be removed, would allow for an inexpensive soil additive.

6. General Perspectives on Marketing

The search for products with export potential continues and there are opportunities for many products in neighboring countries. Markets in the US and Europe will be limited to light weight, high value products because of the expensive transportation.

As a generality, grading would enhance the sale prices of products throughout the project area. Producer groups or communities should develop low cost centers where the process could be conducted. These centers would also accumulate more product and make it easier for truckers to acquire a complete load with less back road travel, which could also increase price to the rural families.

There are also some serious health hazards in most of the livestock sales areas, especially Punata and Aiquile. The sites are broken and muddy, allowing for the accumulation of manure. Since few animals have been tested for brucellosis and tuberculosis, both of which can be transmitted to humans, the conditions are dangerous. Grading and putting in a stone surface that will allow for complete cleaning can greatly reduce the risk. Appropriate drainage from the area should be included. Ramps for loading and unloading animals from trucks, with some simple chutes and holding pens, would enable better control.

7. Statement of Technical Soundness

The marketing strategy for the Cochabamba Regional Development Project, described in detail in the implementation section, contain the following essential ingredients:

The creation of a special Marketing Unit to specifically address the market needs of the products of the project area.

The inclusion of price information, marketing opportunities, and connections with markets will greatly enhance production targets and sales.

The incorporation of private investors in the process will stimulate interest in marketing and processing and furnish greater possibilities for sustained actions in the Chapare and Southern Zone.

Vital to the success of these efforts is the coordination between those stimulating production and those fomenting processing and marketing. First, the prices offered to the growers must be such that they provide a profit, that is, they contribute to increased rural family incomes. This entails, then, the provision of sufficient quality and quantity of produce that the marketing costs are low enough to pay utilitarian prices to the rural families while leaving enough margin so that the costs of processing, transportation, and marketing can be met plus a reasonable profit for those enterprises.

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The organization in the implementation plan will provide the technical assistance, training, and guidance that will permit the development of a marketing system. Further, the provision of credit through the marketing and agroindustry fund described in the credit plan, will enable investors to start up operations and progress to satisfactory partnership in the Cochabamba Regional Development Project.

The findings from the analyses of the marketing and agroindustry conditions in the project area demonstrate the urgent need to enhance, and in most cases reform, these agriculture related enterprises. There are opportunities but it will take concerted effort to realize them.

The project Marketing Unit, together with credit for those activities, will make a sound contribution to the development of the Cochabamba and adjacent areas. The net result will be to increase rural family incomes.

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D. Small Farmer Production and Agroindustrial Credit

The Cochabamba Regional Development Project, to begin in 1992, is a follow on to the Chapare Alternative Development Project that began in 1984. Start up time was, of course, slow because of the need to satisfy the conditionalities and to get the technical assistance and other mechanisms in place. The credit program began in late 1989 with two implementation agencies as participants: PL 480 and Banco Agricola.

1. Background of Agricultural Credit

The first project recognized the need for small farmer production credit because of the relatively high inputs to the new crop and livestock enterprises being strengthened and/or introduced. In addition, USAID/Bolivia also deposited money in commercial banks via "opportunity windows," to allow for the development of agroindustries and other investments that would forward the goals of the project.

a. Small Farmer Production Credit History

During the colonization and settlement periods in the Chapare, land preparation and production was funded through special monies allocated to the government Agricultural Bank; those funds were expended, replenished at several points, and have since ceased to be available. Although no concrete figures could be obtained, it appears that repayments were slow and sporadic but most farmers have managed to repay their loans.

Informal credit has been the main source of loans, almost all for production costs, since about 1975. These are obtained from relatives, intermediaries for payment at harvest, and a few suppliers of agricultural inputs. A few loans were obtained from the Agricultural Bank or other loan institutions. The interest rates are very high on all but the latter, often amounting to 5% or more per month. Coca buyers gave advances to most growers, all to be paid in coca leaves at harvest. Almost none of the sources was willing to grant credit for the new crops and animal enterprises in this project.

Banco Agricola had operated in the High Valleys but the fund available for that program had been decapitalized; the credit program no longer operated. A private bank, Banco Mercantil operates a branch office in Punata but few loans were made to small farmers. All other credit was from the informal loan sector; little is known about the amounts or the terms of these loans.

Since there was nearly no immediately available institution to provide credit for farmers when the Chapare project began, two interim arrangements were made:

(1) Three branches of Banco PL 480 were begun in Chapare with a management unit in Cochabamba.

From the opening of the PL 480 banks in 1988 through December 1990, 1,010 farmers borrowed $5,218,275 to finance a wide variety of projects, most of them related to plantings of new, medium and long term crops, livestock, and construction of the necessary structures for these.

The credit in the Chapare was available only to farmers who had eradicated the required proportion of their coca plantations. They were required to have the DIRECO certificate of eradication, legal title to the land, and a document certifying that there were no other liens on the property. A farm plan, elaborated by the farmer in conjunction with an IBTA Chapare technician and/or extensionist was required. Only 43 formal applications were rejected; the previously discussed documents were not in order, the farmer had never planted coca, the land was situated in the reserve area, or other impediments were discovered.

(2) Arrangements, with funding from PL 480, were made with Banco Agricola, a government bank, to provide small farmer production in Mizque and Campero Provinces.

Banco Agricola operated two part time loan agencies in the High Valleys, one in Mizque and one in Aiquile. This program began late and by the end of 1990, had made 62 loans, estimated to total $92,000. The borrowers invested the money in planting tree crops, structures for vineyards, and acquisition of some equipment.

b. Agroindustrial and Related Loan Background

Much of the agroindustry, marketing, and related infrastructure and organization has typically been funded privately in Bolivia. These larger investments were primarily begun by entrepreneurs that already had established their credit worthiness and they were able to borrow from private banks. Over the last 25 years, various national, bilateral, and international programs have also furnished funds for these investments. Their success rates have varied a great deal, a checkered history. When the Chapare Alternative Development Project began, private sources for loans had become severely limited and few other types of investment credit were available for beginning operations and for new businesses entering the field.

c. The Rationale for the First Small Farmer Credit

The credit provisions were separate for the Chapare and the Associated High Valleys. The driving force in the Chapare was the incentive for farmers to eradicate coca; that in the Associated High Valleys was to improve the rural family incomes sufficiently so they would not have to migrate to the Chapare to work in the coca operations.

(1) The Chapare

Two separate circumstances affected small farmer production credit in the Chapare region:

i. Incentives to eradicate coca included eligibility for credit;

ii.) Rural families that had not grown coca or did not eradicate the required proportion, were ineligible for the project credit.

Further, the cooperatives and other associations existing in the Chapare included some members who had no access to credit and that hindered the development of those institutions. There is ample evidence for this problem in the discussions by association officers and members. The effect was particularly damaging when the group wanted to develop a joint enterprise. There was frequently insufficient capital among the credit eligible members to secure loans from the project system.

Despite these difficulties, credit did have some salutary effects on small farmer production in the Chapare. More than a thousand loans were made. Most of the loans were to finance enterprises that have medium and longer term start up costs: tree and vine crops. Preparation of land, installation of structures such as fences, supports for vines, and expensive inputs such as fertilizers and agro chemicals - must usually be financed with credit.

Payments on these loans are not characterized by high percentages of delinquencies. Many farmers have used funds other than from the financed enterprise to make their payments because the crop was not yet in production. They have also obtained loans from relatives and friends to defray the interim interest and maintenance of value expenses. Some were unable to use either of these mechanisms and they have become delinquent on their loans.

(2) The Associated High Valleys

Credit examinations for these valleys show two quite separate conditions:

i. In general, in Mizque Province, fair soils and sufficient water for irrigation was available.

ii. The severest limitations to agricultural development in Campero Province are both arable land and water for irrigation.

These disparate conditions brought about large differentials in the number of applications for credit and the loans granted; Mizque accounted for almost all of them.

The project irrigation projects were designed and built in both provinces but there was a great deal of difference between the two sets. Campero has little arable land and scarce water. thus the systems installed in Campero water an average of only 18 H. of land for the entire community that installed them. The average in Mizque Province, on the other hand, irrigate about 44 H. This factor alone accounts for much of the imbalance in loans between the two provinces.

Finally, the economic status of the Mizque and Campero populations are, as a generality, very different. Many farmers in Mizque already had irrigation; this, of course, allowed them to invest in more lucrative crops. The vast majority of farmers in Campero are in abject poverty. Their capacity to invest in perennial and otherwise more expensive crop enterprises is thus severely limited or non existent.

(3) Requirements for Loan Eligibility

In the Chapare region, the documents that had to be presented included:

i. Official title to the land

ii. Certificate of no mortgage indebtedness on the land

iii. Certificate from DIRECO that coca had been eradicated.

iv. Official personal identification card

Most of the farmers in the Chapare were agrarian reform colonists or settlers. The process to receive title to the land is long and costly. Many have all their documents completed and submitted to the Government of Bolivia authorities but have not yet received their titles.

The requirements for the High Valleys were the same as for Chapare but no DIRECO certificate was required. The proportion of farmers holding official land titles is much lower in these valleys. Land is passed from one generation to the next with little or no formality. Those who had purchased land often had only the bill of sale; the title change had not been recorded in most cases of inheritance or purchase.

(4) Terms

An important factor in the decision to borrow or not is the cost of the credit. The loans were extended under the following terms:

i. 13% annual interest

ii. Annual payments of a sum designed to keep the principal on a par with the US dollar - maintenance of value.

iii. Interest and maintenance of value payments were due the first year even though in many cases the payment on the principal was given a grace period.

In 1990, the combination of (i) and (ii) summed to about 24%. For crops such as macadamia nuts, for example, the farmer would pay some 96% of the value of the principal before any production was realized. Since the stage at which macadamia trees reach their full potential in the Chapare is still unknown, borrowing risks appear unusually high.

Some crops give a brighter perspective. Black pepper plants have already given some reasonable early yields and the price on the domestic market has been good. These farmers have a much more favorable perspective than others. Early yields of passion fruit have also been purchased; while the future for large harvests of this fruit is clouded by lack of processing arrangements, it is anticipated that these will be attained. The picture for tumeric and ginger is less clear.

2. Credit Provisions in the Present Project

After a thorough review of the credit extended during the Chapare Regional Development Project, and with the change in basic focus of the Cochabamba Regional Development Project - that of development that will raise rural family incomes - the new credit program will operate very differently. Too, the credit for marketing and agroindustry will also be reformed to give greater assurance of loan repayment.

a. Small Farmer Production Credit

The PL 480 program does not want to continue its direct participation as a banker. Banco Agricola has operated on much the same principles and with PL 480 money. Both will be phased out in the early years of the Cochabamba Regional Development Project although they will have to continue - or alternatives will have to be provided until the new arrangements are set up.

The loan eligibility criteria for small farmer production credit are the following:

Possession of a farm plan, made by trained credit agents, that takes the entire farm into account. The calculation of probable enterprise, and overall farm, capacity to pay for the loan plus a sufficient amount to allow the family to live, will be an integral part of that plan.

Loan applicants with debts pending through Banco PL 480 and that program through Banco Agr cola are not eligible for a loan except:

To pay off the previous loan;

To pay off that loan and receive additional credit if the farm plan determines that the investment will allow payment on both and sufficient for family living during the loan period.

To accomplish loans that have a reasonable chance of paying for the loan and yielding a profit, the following mechanism will be established. A group of qualified paraprofessionals will be recruited and trained to make the plan and credit assessment. In addition, they will have the advice, and assistance when necessary, of IBTA technicians and extension agents. The combination is required to avoid over burdening the already burdened IBTA personnel.

ANNEX F 5

ENVIRONMENTAL ASSESSMENT

ENVIRONMENTAL ASSESSMENT

I. SUMMARY

A. Major Conclusions

The proposed Cochabamba Regional Development Project conforms to USAID environmental regulations. The proposed project is superior, from an environmental point of view, to other development alternatives for the the project area, especially the alternative of no action. The project includes direct actions in conservation of tropical forests and biodiversity, thereby complying with the 1986 amendments to the Foreign Assistance Act which mandate attention to such conservation.

The proposed project, under its sustainable small farm production component, includes several activities which are designed to reduce adverse environmental impacts and maintain or enhance environmental quality. Watershed management, agroforestry and forest management, and soil and water conservation measures constitute the most important of these activities. In order to avoid environmental problems, the project will fully implement these measures. To ensure complete environmental implementation, the project contains a subcomponent for continuous environmental monitoring. This subcomponent will employ full time staff responsible for ensuring that all project activities are implemented in an environmentally sound manner.

B. Areas of Controversy and Issues to Be Resolved

1. Land Use

The proposed project proceeeds from a strategy of appropriate land use: agriculture on the best lands, with permanent crops on poorer soils and in adverse climates; pasture and grazing on slopes, with controls to maintain pasture and range quality; agroforestry and forest management to provide economic benefits coupled with site protection; and protection on critical sites for soil and water conservation and to conserve biodiversity. Unquestionably, the strategy promotes environmentally sound development. But issues arise in putting the strategy into operation.

Although all the land uses promoted under the project currently exist in the project area, they do so in conflictive fashion. Actual land use practices frequently result in environmental deterioration through overuse of the land. The project, then, in order to attain its land use and environmental goals, must provide appropriate technology and it must also motivate changes in behavior in the rural people who live in the project area.

An area of particular concern as regards land use is Isiboro- Secure National Park. The park houses an exceptional array of habitats and species of plants and animals. It is also home to several groups of indigenous peoples and to settlers who have entered the park and remain there illegally. Securing the park for conservation will entail delicate interactions with the settlers to modify their activities in the park so that they are more compatible with the rights of the indigenous peoples and with the conservation objectives of the park.

2. Livestock

Livestock abound in the High Valleys where they provide the majority of cash income to most rural families. Existing livestock practices in the High Valleys encourage overgrazing of rangelands which leads to site deterioration with attendant erosion and other environmental problems. The project proposes to introduce range management and watershed management practices into the High Valleys. But the effectiveness of these new practices relies on understanding and participation by farm families and communities.

Livestock, notably cattle, also pose a problem in the tropical lowlands. There, current livestock populations are fairly low and most cattle are kept in fenced pastures. The excessively wet climate of the area and its poor, acid soils, are not conducive to cattle raising. The animals themselves suffer, and the environment suffers even more as grazing by the animals compacts soil and weed invasion reduces pasture quality. Over time, many sites that have been pastured lose most of their fertility and potential for other productive uses whether agriculture or forestry.

3. Roads

Roads constitute the most significant type of infrastructure in all parts of the project area because they are so important for transport and communications. Engineering studies that take environmental factors like drainage into account can avoid direct environmental damage from the roads themselves. But such studies do not explore the broader environmental impacts of improved infrastructure. It is important to perform studies in the project area to determine the relationship between roads and broad positive and negative impacts on the environment like migration, deforestation, hunting, etc.

4. Pesticides

Pesticide use varies widely over the project area but, in general, it is relatively low. Pesticide use practices are environmentally damaging, however, and also hazardous to human health. The proposed project will not promote much additional use of pesticides. However, at any point in project implementation when it becomes apparent that the project will need to introduce pesticides, the project must perform an environmental analysis of the proposed pesticide use before proceeding.

II. DETAILED ASSESSMENT

A. Background

This environmental assessment describes the environmental impacts of the proposed Cochabamba Regional Development Project. It also relates proposed project activities to the 1986 amendments of the Foreign Assistance Act which direct USAID to intervene actively in the conservation of tropical forests and in biodiversity conservation. The assessment proposes mitigation measures for adverse environmental impacts of the project and also proposes procedures for continuous monitoring of the project environment. The proposed project contains a natural resources component that expressly aims at conserving natural resources and the environment in the project area. The assessment explores two alternatives to the proposed project: the alternative of no action; and

the alternative of concentrating project activities exclusively on agricultural production without specific attention to environment or to natural resources beyond those immediately employed in agriculture.

The proposed Cochabamba Regional Development Project has two geographic focal points: the Chapare region and adjacent tropical lowlands in the northern part of the Department of Cochabamba; and the High Valleys of the Department, consisting of a chain of valleys to the south and east of the city of Cochabamba. Because the environments of these two areas are completely different from each other, they are treated separately in this assessment. Both these regions are included in the currently operating USAID Chapare Regional Development Project. That project, which was approved in 1983, began field operations in the Chapare in 1985 and in what were referred to as the Associated High Valleys but are referred to herein as the High Valleys, in 1988. Environmental Assessments were prepared for the initial project and for the expansion of the project into the high valleys. In 1989, USAID Bolivia considered a proposed amendment to the Chapare project which would have expanded the project to include more natural resource conservation activities in the Chapare. Although the amendment was never implemented, a detailed environmental assessment was prepared for it.

The three environmental assessments which precede this one are:

1983: Environmental Analysis for Chapare Integrated Regional Development Project, by Dennis McCaffrey;

1988: Environmental Assessment: The Valles Altos Project in Bolivia, by Marko Ehrlich, Howard Clark, and Joshua Dickinson; and

1990: Environmental Assessment of the Chapare Regional Development Project, Bolivia, by James Tolisano, Richard Bossi, Ray Henkel, Alberto Rivera, Chris Seubert, David Smith, John Sutton, and Jack Swagerty.

This environmental assesment takes into account the existence of the three preceding assessments and avoids duplicating detailed information they contain or repeating discussions not directly related to the new proposed project. The most recent of the three earlier assessments is particularly detailed and contains an excellent description of the Chapare environment. Readers of this assessment are referred to the earlier ones, especially the most recent one, for additional information and discussion.

B. Description of the Project Environment

1. The Southern Zone

A series of high ridges of the eastern Andean cordillera reaching altitudes of 3500 to 4000 masl with intervening valleys at altitudes of 2000 t0 2800 masl comprise the High Valleys. The ridges and valleys are higher in the west and lower in the east. Drainage of the area is southward and eastward into the Rio Grande, a tributary of the Amazon. Rainfall approximates 500 mm annually and available moisture decreases with decreasing altitude. Climate is temperate with higher temperatures and greater rainfall during the period October to April and lower temperatures and rainfall between April and October.

Land forms are very complex with deep, twisted valleys and long, steep slopes. Most land surfaces exhibit slopes far too steep to

cultivate except in the narrow valley bottoms and, in some instances, near the rounded tops of high ridges. Soils vary in depth, composition, and fertility. The soils tend to be fairly erodible and, on most slopes, have suffered moderate to severe erosion. Stream channels also exhibit high levels of erosion.

The little flat land available is cultivated, as is sloping land both on lower slopes above the valleys and on upper slopes below the ridge tops. Middle elevations on long slopes are usually so steep that farmers do not attempt cultivation. Cultivation of slopes provokes moderate to severe erosion. Grazing occurs throughout the region, even in the steepest terrain. Livestock are mainly goats, sheep and cattle at lower elevations and sheep and cattle at higher elevations. In many places, people burn rangelands periodically to induce growth of wild forage. Grazing and burning provoke moderate to severe erosion. Wood cutting has occurred over the whole region. The combination of wood cutting, burning, and grazing has reduced native forests to tiny remnants of what they once were and has reduced and degraded all types of native vegetation. Some reforestation has occurred, mostly at higher elevations, but the area reforested is minuscule in comparison to the area deforested.

Low rainfall combined with land use practices that reduce natural water storage capacity make water a scarce resource throughout the High Valleys. In the dry season there is insufficient water to meet needs for domestic use, livestock, and irrigation. In contrast, in the rainy season, heavy rains often result in flash floods and gully erosion. Water quality tends to be poor throughout the region as a result of contamination from human and livestock waste. In the few larger valleys that have enough arable land to support extensive agriculture, water contamination from pesticides has become a problem. Improper pesticide use also poses a direct threat to the health of farmers in the areas of more intensive agriculture.

Although there are no formally declared protected areas anywhere in the High Valleys, the area contains significant biological and cultural resources that will become lost if not protected. The biological resources in need of protection include the last few specimens in Bolivia of Puya raimundi, a unique, high altitude bromeliad, and relict forests of Podocarpus and Polylepis. Prehispanic ruins occur throughout the zone with concentrations of particular interest near Mizque and near Omereque. Several of the oldest colonial towns in the area, like Arani, contain Spanish churches and other buildings from the 16th and 17th centuries. None of these cultural resources receive any protection and all of them suffer from deterioration and, in some cases, from depradation by artefact hunters.

2. <u>The Tropical Lowlands</u>

A few kilometers northeast of Cochabamba, the easternmost ridge of the Andes drops sharply into the Amazonian plain across a horizontal distance of only 40 km and across a vertical distance of nearly 4,000m. At the bottom of the slope lies the region known as the Chapare. The Chapare extends eastward from the base of the mountains to the Rio Ichilo and northward to a point where the terrain becomes so swampy as to severely limit human habitation. Along the southern and western edges of the Chapare human habitation extends into the foothills of the Andes but not up the main slopes as they are too steep and wet and subject to landslides. On the northwestern edge of the Chapare, the Isiboro River forms the boundary with Isiboro-Secure National Park.

The Chapare is a region of extremely high rainfall and generally high temperatures. Average annual rainfall ranges from about 2500mm at Puerto Villaroel on the Ichilo River to 7,000mm at Chipiriri which is a little north of Villa Tunari, the oldest and most important town in the region. Temperatures average about 24 degrees C over the year. Noticeable cool spells can occur in the moths of May through September which is also the season of the year when rainfall decreases somewhat. Under the Holdridge system of Life Zone ecology, the region is classified mostly as tropical wet forest and subtropical rain forest.

High rainfall gives rise to large amounts of surface water. Streams and rivers flow out of mountain canyons carrying high levels of energy and high sediment loads. Upon reaching the plain, they form wide braided channels into which they drop stones, gravel and sand. These channels are unstable and can shift overnight across lateral distances of up to several hundred meters. Futher out on the plain, the rivers lose some of their energy and their channels become deep and meandering. These meandering channels are also unstable and continually shift as the rivers cut new courses leaving oxbow lakes in their former channels.

Originally, the Chapare region was completely covered with tall, dense forest that exhibited high diversity of species and high density of biomass. This forest provided habitat to a highly diverse population of animals. Essentially all of the Chapare has now been settled which has led to clearing of the original forest and replacing it with a mosaic of cultivaed lands and second growth forest. The second growth forest is less diverse than the original forest but still contains a large variety of trees.

Soils in the Chapare tend to be acid and infertile. Poor soil quality combined with high precipitation limit the agricultural capacity of the region. Quite a bit of agricultural experimentation has occurred in the region over the last two decades. This experimentation has generally indicated that tree crops and other perennial crops perform better in the Chapare than do grains or other annual crops. Coca is one crop that does perform well in the Chapare. It has been the mainstay of agriculture in the region for many years. The high rainfall and poor soils also limit livestock potential in the Chapare, especially for cattle. Forest management appears to present a sustainable land use in the Chapare but, thus far, it has not been studied.

The Chapare has been completely subjected to human exploitation with no attempt at any sort of conservation. Forests have been completely removed even along the edges of watercourses. Wildlife and fish populations have been depleted except for those animals like agouti that thrive in cultivated landscapes. Soils have been depleted and are restored through rotation with second growth forest fallow and, more recently, by planting cover crops that maintain organic matter and nutrients. The coca processing industry uses chemicals like sulfuric acid and kerosene, the residues of which get dumped into streams. Agricultural chemicals, likewise, though not used in large amounts in the region, cause some problems by choice of harmful chemicals and improper application and disposal.

The one place that has been set aside for protection and to serve as a reservoir of the biological resources that once covered the entire Chapare, is Isiboro-Secure National Park. The park was established in 1965. It covers an area of 110,000 km square, the second largest protected area in Bolivia. Isiboro-Secure National Park extends

from the crest of the Andes well out into the Amazonian plain. It is the only park in Bolivia to contain a complete range of altitudinal zones. The park includes extensive lowlands that provide habitat for rare crocodilians and other aquatic animals. Overall, the park contains a very large number of species of plants and animals, many of which may be endemic. Probably, the park is a "pleistocene refugium", that is, a place that remained moist during the ice ages when the earth's climate became much drier and Amazonian forests were reduced to savannahs and steppe. This enhances the range of its biodiversity and its value as a protected area.

Isiboro-Secure is a park in name only; it has never really been protected. Since its establishment, hunters, fishermen, and loggers have been entering the park, mostly by way of the rivers in the eastern part of te park, to extract its rarest and most valuable resources: mahogany logs, caiman skins, turtle eggs, cats, monkeys, macaws. More recently, and especially in relation to cultivation and processing of coca, the park has been invaded by settlers. Most of the settlers have penetrated the park from the Chapare, entering along the trail that forms an extension of the road beyond Isinuta and across the Isiboro River. Inside the park the settlers clear land, cultivate coca and other crops, cut timber, hunt, and fish. These activities all conflict with the conservation objectives of the park. Presence of settlers also clashes with indigenous peoples who inhabit the park - Yuracares, Mojenios, and other groups - whose traditional hunting and gathering way of life requires that the park's wild resources remain intact.

Despite some despoliation of the park, it still remains a viable conservation area. Its large size and the absence, so far, of a road bisecting it, have allowed most of its resources to survive in acceptable condition.

C. Environmental Alternatives

1. The Alternatives in the High Valleys

Under the alternative of no action, the existing Associated High Valleys component of the Chapare Regional Development Project disappears and USAID does not undertake any other development activities there. It is unlikely that any other international development assistance organization, or the Bolivian government, would institute a development effort in the area to fulfill the functions vacated upon cessation of the AID project. The High Valleys would be left to its own resources with regard to its continuing development. Because the USAID project has been operating in the zone for only a short time, it is unlikely that local farmers or communities would be able to continue many of the incipient activities started by the project without continued project assistance. Thus the High Valleys would regress toward its condition prior to the project.

Return to pre-project conditions in the High Valleys would have serious, negative environmental implications. Land use practices that degrade the environment would continue and become more damaging. These would include: continuing overgrazing; increased tree cutting; continuing burning of rangelands; continuing cultivation of steep slopes; and continuing contamination of water supplies. Over time, erosion would increase; streamflows would decrease; water availability would decrease; available arable land would decrease; and natural vegetation would become more degraded.

The alternative of no action in the High Valleys is the least desirable alternative from an environmental point of view.

Conceivably, USAID could approve and implement a project in the High Valleys which would concentrate on agricultural development, yet have no environmental component. Such a project could seek to increase agricultural productivity and farm incomes through such measures as: increasing availability of irrigation water; introducing improved varieties of crops and livestock; introducing improved agronomic practices for planting, cultivating, harvesting, etc.; providing improved transport and marketing infrastructure; and supporting small-scale agroindustries. This hypothetical project would not include components to reduce erosion, control overgrazing, protect watercourses, or protect native forests and vegetation.

An agricultural development project for the High Valleys that did not include a strong environmental component would be unsataisfactory from a development point of view as well as from an environmental point of view. Sustainable agricultural production in the High Valleys requires protecting and enhancing soil and water resources that have already suffered significant deterioration. The only way to prevent further loss of natural resource productivity is to introduce conservation practices as soon as possible over as wide an area as possible. The goal of increased agricultural production and increased farm incomes in the High Valleys probably cannot be attained, and certainly cannot be sustained, without natural resources conservation.

The proposed project recognizes the essential role that natural resource conservation must play in agricultural development and increased rural incomes in the High Valleys. It will continue and expand conservation practices which have begun under the Associated High Valleys component of the Chapare Regional Development Project. These practices will provide direct and indirect environmental benefits.

The proposed project component in water production and conservation will protect water intakes and increase water production capacity. The soil productivity and soil conservation component will control erosion on slopes, in gullies, and along streambanks. The agroforestry component will propagate native plants and will reduce pressure to cut wild vegetation. The livestock and range management component will decrease overgrazing, reduce erosion, and restore native vegetation on rangelands. The forest management component will protect remnant forests and decrease pressure to cut wild vegetation. Among them, all the components, if they work effectively, will gradually restore native vegetation, augment wood and forage sources, reduce soil erosion, and increase water availability and quality. These environmental improvements will also result in increased habitat for wildlife and assurance of maintaining biodiversity.

2. Environmental Alternatives for the Tropical Lowlands

The alternative of no action in the tropical lowlands would eliminate the current USAID Chapare Regional Development Project from the area upon reaching its termination date. Development efforts of other organizations - the United Nations, Scandinavian governments, the Canadian government - would probably continue. The efforts of other development agencies in the area have mixed impacts on the environment. These other development efforts, as currently performed, do not address the two most important environmental issues in the region: controlling deforestation and managing natural forests; and protecting and managing Isiboro- Secure National Park.

Under the no action scenario, farmers in the Chapare would continue existing agricultural practices without benefit of improvements realized through the current USAID project. In the absence of improved crop varieties and better agronomic practices provided under the project, farmers would obtain lower yields and lower incomes from their labor. This would probably lead to expanding areas under cultivation and reducing the length of fallow periods. These effects, in turn, would lead to reduction of soil fertility and further impoverishment of second growth forests. In other words, trends in the Chapare, in the absence of the project, would tend toward gradual, but serious, long-term environmental degradation of the area.

Likewise, under the no action alternative, no action would be taken to protect or manage Isiboro-Secure National Park. Settlers would continue to invade the park and logging, hunting, fishing, and land clearing would continue. Over time, these activities would seriously compromise the conservation function of the park. This could lead to loss of rare and endangered species in the park and, possibly, to their extinction in Bolivia.

From an environmental standpoint, the alternative of no action is the least desirable development alternative for the tropical lowlands.

The alternative of agricultural development without environmental protection would introduce improved crops and agronomic practices into the Chapare. This would probably lead to beneficial environmental effects in the form of improved soil conditions and better soil conservation.

On the other hand, efforts at livestock improvement under such a project could well lead to adverse environmental impacts unless accompanied by express environmental protection measures. The hot, wet climate and acid soils of the Chapare are not conducive to raising livestock, especially cattle on unimproved pastures. Pasturing cattle in the Chapare compacts soil, leaving it less usable for agriculture or forestry, and also provokes leaching of soil nutrients. Weeds quickly invade and overrun pastures in the area resulting in relapse to second growth forest, but forest of very poor quality. To some extent, the problems of pasturage can be alleviated by planting legumes and grasses to enrich the pastures and by practicing pasture rotation with fencing. Across a range of pasture practices by farmers in the project area, from well managed to poorly managed, the net effect on the environment would almost certainly be detrimental.

Agricultural development without environmental protection in the tropical lowlands would fail to deal with the urgent need to protect and manage Isiboro-Secure National Park or with the need to protect and manage tropical forests. Given that a substantial amount of coca is grown and processed in the park, a project that did not include a significant focus on the park would not fully deal with the coca issue either.

The 1986 amendments to the Foreign Assistance Act mandate attention by USAID to protecting tropical forests and biodiversity. Amended Section 118 of the FAA states, in part:

In providing assistance to developing countries, the President shall do the following:

(1) Place a high priority on conservation and sustainable management of tropical forests.

A proposed FY 92 Natural Resources Management (NRM) project deals fully with the environmental situation in the tropical lowlands and hence meets the conservation requirements of the Foreign Assistance Act.

This proposed project rather than the CORDEP would introduce forest management practices into second growth forests in the Chapare. This would enhance both their economic value and their conservation value, leading to expansion and consolidation of forest relative to other, non- forest land uses. More important from the point of view of conservation, the proposed FY 92 NRM project would protect and manage Isiboro-Secure National Park. The park constitutes a particularly important reservoir of biodiversity in Bolivia and it suffers from imminent threat to its ecological integrity. The project component to protect and manage the park will counter the tendencies that are damaging the park.

D. Environmental Impacts and Mitigation Measures

1. High Valleys

The proposed Cochabamba Regional Development Project incorporates into the design of the component for the High Valleys a series of measures that should reduce adverse environmental impacts and actually produce beneficial change in the environment. The central project theme is to enhance agricultural production and increase rural incomes on a sustainable basis, consistent with natural resource capacity.

As proposed, the project will produce few unavoidable adverse impacts on the environment and these will be minor. These impacts include the infrastructure works which the project will undertake: micro irrigation works; ponds; improved, short- distance access roads to isolated communities. In all instances, these infrastructure works are small scale and laid out to make minimal impact on the terrain they traverse and occupy.

The proposed project conscientiously seeks to promote short-term uses of natural resources which will bolster long-term productivity. Thus the project promotes soil conservation, measures to increase volume and availability of water, recuperation of rangelands, and similar activities, all aimed at increasing productivity in the short-term but always with an eye to sustaining productivity in the long-term.

Natural resources in the High Valleys tend to be fully committed, and even over-committed, already. There is no new land to bring into production; no readily available source of additional water. The project does not rely, therefore, on committing natural resources not yet committed. Rather the project introduces new technologies which will increase productivity of currently committed resources. For the most part these technologies are not sophisticated. They consist of practices like live fencing, protection of water intakes, controlling streambank erosion with relatively simple and inexpensive structures. Many of these

technologies entail conservation - they increase productivity by using resources more wisely. The technologies are within the means of local farmers to grasp and operate once in place. The project needs to provide financial and technical resources at startup that local communities do not have. But once the technologies are up and running the communities and individual farmers should be able to sustain them.

a. Pesticides

The proposed project will not introduce pesticides into the project area, at least not during its early phases. Some farmers in the project area do use pesticides in their current practices, however. Especially in the area between Tarata and Arani, where the project may develop activities a few years into the future, pesticides are a problem, both with regard to health of pesticide users and as pollutants in water and soil.

As the project progresses, it may begin to use pesticides, especially in connection with fruit culture. If the project introduces pesticides, it will choose only from among those approved by the USDA. Studies to determine least harmful applications will precede introduction and, upon introduction, farmers will receive instruction in safe and environmentally acceptable application procedures.

b. Livestock

Existing livestock practices in the High Valleys are a cause of serious environmental problems. These include degradation of native vegetation, reduction of vegetative cover on slopes, soil erosion on slopes, aggravation of irregularities in streamflows, increased sediment loads in streams, and aggravation of streambank erosion.

The project will introduce livestock and range management practices that have the express goal of reducing environmental damage from livestock. These will include fencing, stabling, and rotational grazing.

c. Energy

Fuelwood constitutes the principal source of energy in the High Valleys for household use and for small industries. It is anticipated that electricity will reach most households in the area within the next few years and bottled gas is generally available now. Fuelwood will continue as an important energy source, however, even though other sources of energy are available. Under current practices in the High Valleys, fuelwood collection removes and reduces native woody vegetation, thereby negatively affecting the environment.

The project will address the fuelwood problem through its components in agroforestry and forestry. Within a few years after project start-up, the number of trees in fencerows and woodlots should increase dramatically. These trees will provide fuelwood on a sustained basis as wood can be harvested by pruning their branches without destroying the trees, a practice somewhat in use in the High Valleys already.

Transport in the area is very inefficient and consumes excessive fuel for a variety of reasons, one of which is the awful condition of the roads. Several major highways in the area have been improved under the Associated High Valleys Component of the current USAID

project and a number of rustic feeder roads have also been built. The net effect of these roads on energy consumption in transport is almost certainly positive. Future road improvement will extend this beneficial effect.

d. Roads

Notwithstanding their positive effect on energy use in transport, roads can have detrimental environmental impacts. These arise in direct relation to the method of their location and construction. Excessive gradients, inadequate drainage, and improperly sized culverts and bridges can all produce adverse environmental impacts, typically in the form of erosion and stream sedimentation. Although environmental impact studies were made for the roads constructed under the USAID project, they appear not to have been fully effective as some environmenral damage has resulted from road construction. This damage consists mostly of gully erosion associated with culverts on the improved road betwen Rodeo and Mizque.

e. Historic and Cultural Resources

The central activities of the project - increasing agricultural production, providing improved marketing services, etc. - probably have no effect on historic and cultural resources in the High Valleys. Natural resources management activities under the project, if they succeed in reducing degradation of vegetation and soil, may have a slight positive effect on small ruins that could be damaged by erosion. The most significant effect of the project on historic and cultural resources is the positive effect provided under the subcomponent to protect cultural resources. Effective implementation of this subcomponent should identify the most important historic and cultural resources, evaluate their condition, and designate them for formal recognition and protection.

f. Urban Quality of Life

In general, the proposed project will effect the quality of urban life indirectly, but positively. The main thrust of the project is to increase rural incomes. This increase should redound in greater circulation of money in urban areas, most of which depend on the prosperity of surrounding agricultural areas for their own prosperity and growth. The High Valleys includes a handful of small urban centers surrounded by expanses of rural lands. In addition to indirect benefits resulting from increased rural incomes, these small urban centers will benefit from infrastructure, notably road improvements and electricity, provided under the project or ancillary to it.

2. Tropical Lowlands

In the tropical lowlands, the Cochabamba Regional Development Project focuses on increasing rural incomes by improving farm practices, introducing second growth forest management onto local farms, and protecting and managing Isiboro-Secure National Park. The combination of these activities should have a beneficial effect on environment, overall, in the region. On individual farms, concentration on long-cycle crops, especially tree crops, and on forest management should result in improved soil and water conservation. Across the area, an increase in forest and long- cycle crops should help maintain biodiversity, increase habitat for wildlife, and reduce streambank

erosion. Livestock activities will require special attention, as discussed in more detail below, to ensure they do not result in adverse environmental impacts.

The whole thrust of the project, from the point of view of land use and commitment of natural resources, is toward increasing long-term productivity by promoting sustainable short-term uses. In particular, the continuing shift away from annual crops and toward perennial crops aims toward the objective of increasing long-term productivity.

Within the settled area of the Chapare, virtually all land is owned in individual parcels and committed to a mix of farm uses that include annual crops, perennial crops, pasture, in some cases, and second growth forest and forest fallow. Under the project, this commitment of land and soil resources will continue, with the gradual shift toward more perennial crops and toward better managed forest as noted in the previous paragraph. The resources in Isiboro-Secure National Park have officially been committed to conservation. In practice, however, conservation inside the park is not effective and wild resources suffer from depradation. Park management under the project will reinvigorate the commitment of park resources to conservation.

a. Direct and Indirect Effects of the Proposed Project

Coca cultivation occurs throughout the Chapare and also inside Isiboro-Secure National Park although eradication efforts have reduced its prevalence in some areas. The cultivation of coca can cause soil depletion and erosion when the crop is grown on sloping land, without shade or ground cover, and in the absence of rotation with other crops. Thus coca cultivation has caused some environmental deterioration in the Chapare which has been aggravated by heavy use of herbicides to control weeds. More serious adverse environmental effects of coca are associated with the use and disposal of chemicals, like kerosene and sulfuric acid, to convert coca leaves into interim substances in the chain that leads to cocaine. These chemicals are not stored or used safely and are disposed of directly in streams where they kill fish and make the water unsafe for human use.

In 1994, all cultivation of coca in the Chapare will become illegal and the elimination of coca will change farmers' way of life. Some of the changes which could result from the elimination of coca will have favorable impacts on the environment while others could have negative impacts. Some farmers might choose to migrate out of the Chapare which would probably result in abandonment of some less productive land and its reversion to forest. Other farmers might expand acreage under cultivation. This would have no adverse environmental impact on better soils so long as appropriate crops were chosen but could have negative impact on poorer soils if farmers choose demanding crops or shorten fallows too much. Some farmers might turn to raising cattle which would have negative environmental impact unless done on improved pasture, under rotation or with stabled livestock. The situation bears watching and, as coca cultivation declines, the project needs to be aware of possible negative environmental repercussions and stand ready with less damaging alternatives.

Currently, pesticides are little used in the Chapare except for herbicides to control weeds in coca. The large amounts of fallow on most farms, the high presence of coca, a plant that is impervious to pests, and low densities of other crops keep insect and

other pest damage low. With the advent of larger amounts of alternative crops, pest outbreaks could occur, however, which would require chemical control. Should the project become involved in such pest control it should use only USDA approved pesticides in strict conformance with recommended dosages and complemented by safety instruction to farmers and applicators. Specific studies of environmental impacts should precede any pesticide usage under the project.

The Chapare has limited capacity for livestock raising, especially cattle raising on unimproved pasture. The hot, wet climate is not propitious for the animals or for pasture. Most soils in the region quickly deteriorate from compaction and nutrient leaching when subjected to grazing. Notwithstanding this limited capacity, many farmers keep a few cattle and some practice cattle raising, usually on poor pasture, as a principal land use. Over the years, there have been many proposals to increase cattle raising in the region. On the other hand, the 1986 USAID evaluation of the Chapare project recommended discontinuance of all project activities dealing with livestock.

The most recent cattle effort in the Chapare is currently underway through the "Milka" project, a project operating under Scandinavian government and UN funding at Ivirgarzama at the eastern end of the Chapare. This project would produce milk at a modern, fully mechanized plant, from its own herd and supplemented by numerous small herds owned by nearby farmers. The project purportedly proposes to raise its cows in stables and feed them cut forage and other feed. If the project proceeds as stated, it does not pose a threat of environmental damage. But if cattle feeding shifts to pasture, even improved pasture, the project could provoke substantial deterioration of soils and vegetation.

Fuelwood is the principal source of household energy in the Chapare. The region has a virtually unlimited capacity to produce fuelwood, however, so that reliance on it for energy does not constitute any sort of environmental problem.

The existing USAID Chapare Regional Development Project has improved a number of roads in the Chapare and an active program of road improvement will continue over the next year or two. From the point of view of energy consumption, these road improvements have a positive impact because they greatly increase transport efficiency.

Road improvements in the Chapare proceed on the basis of engineering studies that include environmental impact analysis for drainage, bridges, etc. These studies probably suffice from an engineering standpoint and the road improvements probably have minimal direct impact on the environment. In some instances the road improvements may actually have locally positive effects, for example by improving drainage. The road studies do not look at environment from a more comprehensive perspective, however. They take no note of the effects road improvements will have on increasing population densities, providing access to more distant lands for settlement, commerce in logs, wild animals, etc., whether legal or illegal, or promoting further incursion into Isiboro-Secure National Park. These more farreaching studies are urgently needed to determine the environmental impacts of infrastructural improvements, especially roads, in the Chapare.

The indigenous peoples which occupied the Chapare until a few decades ago have either migrated to more remote places or been absorbed into the local population. Several groups, among them the Mojenio and Yuracare, continue to inhabit Isiboro-Secure National Park. Inside the park these peoples continue their traditional ways of life, more or less in harmony with the park. Incursion into the park by settlers, hunters, and others creates conflicts with the indigenous peoples. Implementation, under the aegis of the proposed project, of a management plan for the whole park should enable the indigenous inhabitants of the park to continue their traditional ways of life harmoniously with other park residents and other park objectives.

3. Means to Mitigate Adverse Environmental Impacts

The foregoing discussion proposes specific mitigation measures the project will undertake in response to specific environmental situations it will encounter. At a more general level, it is important for the project to monitor the impacts it has on the environment and to modify project activities if it becomes apparent that they have adverse environmental impacts. Toward this end, the project includes a component denominated the "Continuous Environmental Monitoring." This component will employ a full time staff who will have responsibility for both continuous monitoring and the conduct of periodic studies to determine project environmental impacts and propose mitigation measures as needed.

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ANNEX F 4

INSTITUTIONAL ANALYSIS

INSTITUTIONAL ANALYSIS

This analysis considers agencies and organizations in terms of their mandates and functions both within the present project (ending in 1991) and of those proposed for the new CORDEP. A great deal has been learned during the present project about how the participating organizations function. Moreover changing circumstances such as the dramatic downward spiral in the price of coca leaf, even if it proves to be somewhat cyclical, have opened new territory and have greatly increased the opportunities for achieving more immediate major impacts in the next, phase. Markets for competitive fresh and processed alternative agricultural products at good prices do exist and the target small farm population is able to produce them; the concomitant potential for small and medium scale support and processing enterprises associated with marketable crops can increase farm income and create jobs in the project area. To accomplish this however the participating institutions and organizations will have to make certain key changes which will be vital to the "Market driven" approach and accelerated momentum which this project will require to capitalize on the opportunities. Additionally certain essential project operational units will need to be created for this same purpose.

The overriding priority for each participating institution and for the project interinstitutional relationships will be the rapid development of the "functional agility" required to take the soonest possible advantage of the market opportunities presented, and to overcome any obstacles which stand in the way of bringing quality product to sale. Project success hinges an the willingness and flexibility of all the key institutions and organizations to make the adjustments necessary to get the job done.

SUBDESAL

SUBDESAL's stated functions are:

* Overall responsibility for planning and implementing the National Alternative to Coca Crop Substitution program.

* Responsibility for insuring that a voluntary coca cultivation reduction program is implemented.

* Responsibility for the regulatory functions pursuant to Law No.1008. " Development of Alternatives and Coca Substitution" and insuring regulatory compatibility with other related Supreme Decrees (22373 and 22270).

* Organization and convening of the National Commission on Alternative Development (CONADAL) and its corresponding regional (COREDAL) and local (COLODAL) committees.

* Oversight and evaluation Responsibilities for the alternative programs and projects included in the National Strategy for Alternative Development (PIDYS).

* Responsibility for establishing the institutional framework though which terms and conditions for the voluntary coca reduction and substitution programs as well as fair compensation are carried out.

In the past year SUBDESAL seems to have fulfilled its juridical and regulatory responsibilities as planned and has been an active participant in the development of the National Strategy for alternative Development.

SUBDESAL has also been very active in seeking to expand the resource base for implementing the National Strategy on Alternative Development by developing mini-proposals for the European Economic Community for specific Projects. Several of these are destined for departments outside the area covered by the USAID funded project.

In addition SUBDESAL participated in several International Illegal Substance Control Meetings.

As the new CORDEP begins, SUBDESAL will be encouraged to establish a simple mechanism for obtaining regular information from the implementing field level agencies specifically about anticipated or actual problem or coordinating actions needed which could not be handled at the local interagency level and which would need SUBDESAL's supportive action.

SUBDESAL's increasing focus on information systems and information sharing will be a valuable tool in project oversight and for Project support.

Finally, while we recommended that SUBDESAL refrain from field level activities in the are of subproject design, once subprojects are designed which require additional resources, not available under contenplated project financing, the secretariat will be encouraged to play an active role in contacting and making presentations to new potential financial resources.

To summarize: plan approval, project oversight, progress monitoring, high level interagency support and problem solving as well as information sharing and advocacy for resources are key functions through which SUBDESAL can make a significant contribution to the success of the new CORDEP.

PROGRAMA DE DESARROLLO ALTERNATIVO REGIONAL

The Programa de Desarrollo Alternativo (PDAR) is the principal agency charged with the responsibility of defining and coordinating the alternative CRDP development program in the Chapare and Southern Zone area of the Department of Cochabamba. PDAR is responsible to the Subsecretary of Alternative Development (SUBDESAL) in the Ministry of Rural affairs and Agriculture (MACA) which is charged with responsibility for insuring the implemention of a comprehensive Plan for Crop Development and Substitution (PIDYS) which, in turn, is an integral Part of the National Strategy to combat the illegal narcotics traffic promulgated by the National Council Against Illegal Narcotic Traffic and Drug Abuse (CONALID).

PDAR's 49 person staff is comprised of 6 senior Administrative staff, 23 administrative support staff and 20 field technicians, 2 of whom double as area coordinators.

PDAR had a very shakey beginning which culminated in the wholesale firing of the Director and most of the technical staff in December 1988. PDAR spent most of 1989 hiring staff and reorganizing and only began program implementation in the last months of 1989. Thus 1990 was its first full year of program implementation in the field. PDAR has concentrated most of its program in the High Valleys but recently has been charged with coordinating and monitoring of the alternative crop program in the Chapare which is so ably being carried out by a quasi autonomous agency-IBTA/Chapare of the Bolivian Technological Institute (IBTA).

Two prior Institutional analyses have been conducted concerning PDAR. The first, completed in April of 1990 shortly after PDAR had began program implementation covered all the institutions related to the CRDP. The section about PDAR was complementary about the immediate impact projects being carried out in the High Valleys. The comments on PDAR management were neutral with specific suggestions about the need for PDAR to develop an explicit development strategy for the High Valleys as well as an effective system of resource allocation. As of the date of this analysis (March 1990) PDAR has developed a broad, general strategy of enhancing the incomes of the High Valleys population by providing infrastructure and agricultural technical assistance so that High Valleys farm families in this zone can make a living on their crops without have to migrate to work in the coca fields. However no specific criteria have been developed and no effective planning process detailing how this will be done has not yet been put in place. Therefore effective resource allocation also remains a problem.

The second institutional analysis, completed February 1991, focused exclusively on PDAR. This analysis was critical of PDAR on two accounts. The first dealt with the issue that partisan politics were interfering with PDAR technical decisions. The second dealt with management practices which contribute to less than effective program implementation.

The usual 5 or 10% line item transfer authority has not been granted by PDAR for NGO's implementing subprojects. Any request for changes entails reams of and paperwork and two months time before an answer is received from PDAR. Especially difficult for some cash poor NGO's, are delays in approval of and financial reimbursement for subprojects.

PDAR's strength seems to lie in implementation infrastructure activities in the field in the High Valleys. PDAR has been effective in coordinating the support of other GOB agencies in feeder road and water catchment construction. PDAR's field technical teams have completed 41 small water catchment/water distribution systems, 34 of which are for irrigation and 7 for human comsuption.

PDAR agricultural field staff have implemented a forage research program and have started 2 plant reproduction centers for plant distribution to small farms.

IBTA/CHAPARE

IBTA/Chapare is a wholly USAID funded agricultural research and extension unit which until recently operated as the quasi independent alternative crop development agency for the Chapare region. Amendment 7 of the existing CRDP tied IBTA/Chapare more closely to PDAR within the project context.

The details of IBTA/Chapare structure, operations, accomplishments and recomendations are discussed at length in the technical analysis of the small farmer production program.

Suffice to say that IBTA/Chapare is an extremely vital component of the new CORDEP and that it will be essential that strong participation in the overall CORDEP planning and linkages with other operational units in implementation process by IBTA/Chapare needs to be insured. IBTA/Chapare's participation will be incorporated in the framework of the new CORDEP's planning and budgeting process.

N G O ' s

CHAPARE

Prior to 1990, NGO's within or serving development needs in the Chapare were not notable and the politically oriented Sindicatos were the only viable organizations. The Sindicatos, once powerful because of their active stance in promoting the interests of the Coca producers, have declined somewhat in influence as the price of coca fell below production costs. At the same time IBTA/Chapare technicians and their 87 promoters were able to convince several Sindicato leaders of the benefits of turning to alternative crops. In other areas farmers influenced by the IBTA/Chapare program took it upon themselves to enroll in the coca reduction/alternative crop program whether or not Sindicato leaders approved, thus weakening the Sindicatos influence. The trend is likely to continue if the price of coca stays relatively low and the markets for alternative crops materialize.

NGO's/Cooperatives

To date two fairly large cooperatives and one NGO have been formed in the Chapare:

COOPERATIVA MULTIACTIVA ETERAZAMA

The multipurpose Eterazama cooperative was formed in June 1990 and is comprised of 900 members. It originated after 12 sindicatos met and made a decision to redirect their efforts to the production of alternative crops and to community improvements through a larger single organization. After weighing the various options the organization might take, the groups voted to form a multipurpose cooperative. The cooperative is well organized and has the four standard cooperative committees (Administration, Education, Program and Fiscal oversight) which are very active. With the help of IBTA/Chapare the cooperative has established a 15,000 plant nursery, the majority of which is quality macadamia root stock imported from Costa Rica, with small amounts of Passion Fruit, Pineapple, Mandarin orange and ginger- all of which are sold to members. Members rotate working in the nursery on a volunteer basis to keep costs down. The cooperative has also built a school for 189 students and are is the process of developing its own demonstration farm where members can learn new agricultural technologies, assisted by IBTA. That the cooperatives influence is increasing in the area was evidenced by the fact that they have been approached by other Sindicatos in the area who wish to join (one of which claims to have already eradicated 80% of its coca).

The Cooperative is less than one year old and has no experience in managing credit to its members. Given a strong education and credit management training program however, one could anticipate that this cooperatives could develop into a 1st tier lender to its members. At minimum it could exercise group guarantee and oversight responsibilities vis a vis loans to its members.

COOPERATIVA DE AHORRO Y CREDITO DEL TROPICO COCHABAMBINO (TROPICOOP)

TROPICOOP has just been organized in March 1991 and follows the standard savings and loan cooperative model. Approximately 200 members have joined to date (with on initial deposit of US$50.- each). Tropicoop projects a membership growth from 1000 members by the end of 1991 to 7000 by 1995 which would be 28% of the families in the Chapare. Tropicoop plans to build a headquarters building in Ivirgarzama on land donated by the municipality.

It is too early to tell how successful this cooperative will be in attracting members, and substantial training in savings and loan cooperatives management will be needed. If all goes well this cooperative will be in a position to be considered as a first tier credit provider for project activities. Since savings and loan cooperatives traditionally lend to their members for a wide range of purposes, any line of credit to Tropicoop for alternative crop production, processing or marketing would have to be preceded by an agreement with the cooperatives for a separate account and record keeping system and for confining loans to CORDEP project purposes.

The National Federation of Savings and Loan Cooperatives (FENACRE)

FENACRE has recently become active in the Chapare, ofering training courses in savings and loan cooperative organization. FENACRE's continued involvement in the Chapare will be very helful.

The Swedish Pentacostal Church

The Swedish Pentacostal Church in Ivirgarzama, which operates at least nominally as an NGO, has launched an ambitious, UNFDAC sponsored Dairy Project, heavily subsized through UNFDAC and directly with Swedish volunteers and by the Pentacostal Churches in Finland and Sweden. Medium sized very modern ALFA/LAVAL milk processing and cheese making equipment has been installed.

Since no marketing assessment, nor the 1000 milk supplying cows have yet materialized, it is too early to tell how the project will do. The very charismatic swedish leader of this project has certainly been able to marshall substantial resources to date and has raised expectations in the Ivirgarzama area. This project is discussed in the project technical analysis.

OTHER NGO SERVICES TO THE CHAPARE

As of this writing inquiries have not uncovered any specific local NGO's outside of the Chapare with an interest in working in the Chapare. If NGO services are needed to supplement IBTA/Chapare and other Project implementation unit activities, they will probably have to be delivered by international PVO's. Such services may include credit or cooperative management training, small and medium scale agribusiness enterprise development, vocational training, technology transfer, conservation, and other community development local infrastructure needs. Most recently in February 1991 CARE submitted a proposal to USAID/Bolivia for an OPG part of which would be implemented in the Chapare covering community development in potable water and latriness, child survival, health, vegetable gardens and animal husbandry. The proposal is under active consideration.

HIGH VALLEYS

There is a wide variety of NGO's serving the High Valleys many of whose activities have substantially antedated initiation of the present project. Most NGO field staff have worked in close coordination with PDAR field technical staff as well as DAI's technical advisors. An extensive institutional analysis was completed in April 1990 which includes a section on the NGO's working in the Present CORDEP. This present analysis, done a year later summarizes key facts and provides some update information concerning the NGO's, which because of their continuing demonstrations of capability, are most likely to be involved in this CORDEP.

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ASOCIACION DE SERVICIOS ARTESANALES RURALES (ASAR)

ASAR became a legally established NGO in 1966. ASAR is part of a network of institutions afiliated with the Centro para el Desarrollo Social y Econ mico (DESEC) which, while originally given "impetus by the Catholic Church's Social concerns in the early 1960's, has since clearly established itself as non denominational and an apolitical organization. ASAR's link with DESEC is coordinative and ASAR operates with complete legal and programmatic independence. ASAR has specialized in Agricultural technical Support, and in providing assistance in mobilizing savings and managing credit programs. ASAR has a long track record of attracting and successfully managing grant and loan funds from international agencies.

ASAR has 24 professionals, 10 technicians and 10 administrative support staff. All but nine administrative support staff work in the High Valleys. In 1990 ASAR implemented 4 subprojects of the CRDP, serving 4,000 farm families in 86 small communities in the High Valleys. In 1991 ASAR will implement 6 subprojects in Farming systems, livestock management, forage development, soil improvement, and community participation. To accomplish this ASAR expects to add 23 additional staff. ASAR's excellent organizational management and administrative practices have by now provided ample reason to believe that the institution can handle that type of expansion.

ASAR with its long history and track record of community confidence and accomplishments is very important to the success of the High Valleys component of the CORDEP.

CENTRO DE DESARROLLO AGROPECUARIO (CEDEAGRO)

CEDEAGRO has a nine year history of work with the peasant communities in the Mizque area. It has developed programs in agricultural and livestock technical assistance, rural small irrigation and potable water systems and school construction.

CEDEAGRO is implementing only one CRDP component in soil conservation. It also works with IBTA on fruit tree extension. CEDEAGRO has encountered some problems with PDAR partly due to political differences with PDAR's executive director. Because of CEDEAGRO's ability to attract donor funds from European and Canadian sources, it is considering severing it's connection with the CRDP. USAID will encourage CEDEAGRO to participate in the new CORDEP project and believes that the project's decentralized focus and participatory planning process will provide sufficient inducement for CEDEAGRO's participation.

PROCIPLA

PROCIPLA began 1985 as a program of integrated pest management (IPM) funded by USAID through PROCIPLA's parent organization Acci n Rural Agr cola de Desarrollo (ARADO). PROCIPLA presently has an extensive IPM sub-project with CRDP in the Aiquile and Mizque areas using the ARADO mechanism.

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PROCIPLA is considering the possibility of acquiring independent legal status. Whatever they decide this capable organization is of great value to the High Valleys and will be included in the new CORDEP.

RADIO ESPERANZA

Radio Esperanza is a Catholic Church sponsered network reaching approximately 70% of the population of the High Valleys. Radio Esperanza has cooperated with CRDP under a small sub-project to provide radio programs an agricultural extension topics and to provide announcements of training courses offered by other sub-projects in the area.

Radio Esperanza is beginning to offer local farm commodity price information but is hampered by the lack of local reporters.

This group also works closely with CORDECO in training local forestry promoters.

Radio Esperanza has gradually increased it's cooperation with the present CRDP and will be a valuable asset to the new project.

COCHABAMBA REGIONAL DEVELOPMENT CORPORATION (CORDECO)

CORDECO's Regional development portfolio is extensive, involving several large construction and other large development projects.

CORDECO, with the initial assistance of the Swiss Development Corporation conducts a departmental reforestation campaign. A special CORDECO reforestation unit works with CRDP to establish community nurseries in the Aiquile and Mizque area.

CORDECO will be a valuable asset in both the Chapare and High Valleys in the forestry and conservation area.

University Affiliated Institutions

PDAR has collaborated with the Universidad Mayor de San Simon (UMSS), through four of its integrated institutions.

The Escuela Técnica Superior de Agricultura (ETSA) and the Centro de Formaci n Intergral were subcontracted for Rural Research work in the project areas. The problems associated with the research, including data collection and methodolgy as well as faculty analysis have negated the usefulness of the research. Part of the reason for the problems were related to University internal politics and related personnel changes.

The Facultad de Ciencias Agr colas y Pecuarias (FACP) was contracted to conduct research on small scale Tilapia production in the Chapare which was quite successful.

The Facultad de Ciencias Técnicas has recently begun conducting tests on Solar equipment which seems to be proceeding according to Plan.

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Presidencia de la República
MINISTERIO DE PLANEAMIENTO
Y COORDINACION
BOLIVIA

La Paz, 27 ... 1991
DIFAID/724.01 19.12

Señor
Carl H. Leonard
DIRECTOR
USAID/Bolivia
Presente

Ref.: Solicitud de Donación
"Desarrollo Regional de Cochabamba"

Señor Director:

En relación al Proyecto de Desarrollo Regional de [illegible], ratifico a usted nuestro acuerdo, en principio, con este Proye[illegible] y, por la presente, solicitamos una donación de $us. 50 millones. El Gobierno de Bolivia estará dispuesto a contribuir con el equivalente en Bolivianos de la suma de $us. 40 millones.

La implementación del proyecto será normada por el Ministerio de Asuntos Campesinos y Agropecuarios (MACA), a través de la Subsecretaría de Desarrollo Alternativo y Sustitución de Cultivos de Coca (SUBDESAL).

Aprovecho la oportunidad para agradecer por su intermedio al Gobierno y pueblo de los Estados Unidos de Norteamérica, por el eficiente apoyo que su misión está prestando al país.

Con este motivo, reitero a usted, las seguridades de mi consideración más distinguida.

ENRIQUE GARCIA RODRIGUEZ
MINISTRO DE PLANEAMIENTO Y COORDINACION

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