

PN-ABP-346
1001 82859

COCA MARKETING
MONITORING AND CONTROL
IN BOLIVIA

A Report Prepared for

OFFICE OF INTERNATIONAL NARCOTICS MATTERS

U.S. DEPARTMENT OF STATE

by

Multinational Agribusiness Systems Incorporated

Washington, D.C.

August 17, 1979

MASI Project 1068

Contract # AID/afr-C-1149, W.O.43



Multinational Agribusiness Systems Incorporated

1015 Eighteenth Street NW, Washington, DC 20036 • (202)872-8782

August 17, 1979

Office of International
Narcotics Matters
Department of State
Washington, D.C.

Attention: Mr. Howard Groom

SUBJECT: Submission of the report - Coca Marketing,
Monitoring and Control in Bolivia.
IQC AID/afr-C-1149, Work Order 43

Dear Mr. Groom:

As required in the Work Order identified above, we are pleased to submit two copies of the subject report. Additional copies are being sent to the Contracting Officer and the Project Manager.

Very truly yours,

Carl J. Metzger
President

CJM:aid

TABLE OF CONTENTS

	<u>Page No.</u>
EXECUTIVE SUMMARY	S-1
I. INTRODUCTION	I-1
II. BACKGROUND FOR THE STUDY	II-1
A. U.S. Coca/Cocaine Policy in Bolivia	II-1
B. GOB Policy Commitment, Instrumentalities and Implementation	II-11
III. THE COCA SECTOR	III-1
A. Coca Production	III-1
B. Coca Marketing	III-16
C. Coca Consumption	III-51
IV. ALTERNATIVE MECHANISMS FOR CONTROL	IV-1
A. Existing Free Market System	IV-1
B. The <u>Estanco</u>	IV-4
C. Recommendations for an Alternative Coca Marketing, Monitoring and Control System	IV-17
V. CONCLUSIONS AND RECOMMENDATIONS	V-1
A. Conclusions	V-1
B. Recommendations	V-10
ANNEX A. Complementary Instrumentalities	A-1

LIST OF TABLES

<u>No.</u>	<u>T I T L E</u>	<u>Page</u>
III-1	Coca Production Estimates	III-12
III-2	Yungas and Chapare - Illustrative Coca Production Estimates, 1979 and 1980	III-14
III-3	Illustrative Coca Prices and Transport Costs	III-47
III-4	Socio-Cultural/Geographic Characteristics of Sample Population of Peasant Workers	III-57
III-5	Average Coca Consumption per Household	III-60
III-6	Capital Cities - Estimated Annual Consumption	III-64
III-7	Lowland Departments - Estimated Annual Consumption	III-65
III-8	Bolivia - Estimated Annual Consumption for Traditional Use	III-66
III-9	Peasants/Workers - Chewers, Number of Acullis per day, by Sex	III-69
IV-1	Full-fledged Estanco: Projection of Coca Purchase and Sales Operations	IV-11
IV-2	Specific Assumptions for illustrative Projections	IV-22
IV-3	Illustrative Projections of Estanco Operations - Highly Effective Enforcement	IV-23

LIST OF TABLES (Continued)

<u>No.</u>	<u>T I T L E</u>	<u>Page</u>
IV-4	Illustrative Projections of Estanco Operations - Moderately Effective Enforcement	IV-24
IV-5	Illustrative Projections of Estanco Operations - Low Level of Enforcement	IV-25
IV-6	Illustrative Projections of Estanco Operations - Highly Effective Enforcement, Obligatory Producer Deliveries at Fixed Prices	IV-26

LIST OF FIGURES

<u>No.</u>	<u>T I T L E</u>	<u>Page</u>
II-1	U.S. Mission Coca/Cocaine Policy	II-7
III-1	Actual and Potential Production Zones - Bolivia	III-2
III-2	Actual and Potential Production Zones - La Paz	III-3
III-3	Actual and Potential Production Zones - Cochabamba	III-7
III-4	Main Flows of Coca to Market	III-30
III-5	Bolivia: Coca Trade Flows in 1978	III-31
III-6	Potosi: Coca Trade Flows in 1977	III-32
III-7	Tarija: Coca Trade Flows in 1977	III-34
IV-1	Checkpoints for the Control of Coca in Bolivia	IV-32
A-1	La Paz and Cochabamba: Agricultural Customs Checkpoints	A-5

CHAPTER I.

INTRODUCTION

EXECUTIVE SUMMARY

A. Background

Through PAT 2071-910073-(33), the Office of International Narcotics Matters (OINM) of the U.S. Department of State contracted with Multinational Agribusiness Systems Incorporated (MASI) to provide a feasibility study of the proposed establishment of a Government of Bolivia (GOB) Coca Supply and Marketing Board. The purpose of the Board, or Estanco, would be to purchase and market or control the purchasing and marketing of all Bolivian coca. MASI was also to make recommendations for the establishment of such a marketing board if the study concluded it was likely to be feasible and if requested to do so by the U.S. Government after review of the feasibility study.

B. U.S. Coca/Cocaine Policy in Bolivia

Bolivia is of major importance to the U.S. narcotics control efforts. It is estimated by DEA that between 14,000 and 72,000 kilos of 90 percent pure Bolivian cocaine are destined to the U.S. each year.

The goal of U.S. coca/cocaine policy in Bolivia is to reduce illegal exports of cocaine and reduce the production of coca leaf to the level required for legal domestic consumption and export.

The measures by which the U.S. Mission hopes these goals will be achieved within a three to five year period include:

1. Cocaine Interdiction through Enforcement

Here the objective is to develop the capability within the Bolivian Direccion Nacional de Control de Sustancias Peligrosas (DNCSP) "to restrict trafficking in illegal cocaine in order to reduce the supply reaching the U.S "

2. Coca Reduction through Production Control

The objective of this component of U.S. Mission policy is to improve the GOB's ability to limit the cultivation of coca leaf to the level required for licit domestic use and legal export in order to reduce the supply of coca leaf available for processing into cocaine and for illegal export.

3. Coca Reduction through Crop Diversification and Area Development

This measure seeks to reduce coca production and cultivated area through an overall program of rural development, with emphasis on crop diversification. This would ameliorate unemployment and income displacement caused by crop reduction and therefore make control measures less objectionable to

present consumers.

4. The Proposed Estanco -- Government Marketing Monopoly

Recently, it has been proposed that another element of the U.S. coca/cocaine policy in Bolivia be added to make production control more acceptable, i.e., the establishment of an "estanco" or marketing board. The objectives of such an estanco would be (a) to assure that traditional users (chewers) of leaf and the legal export market continue to be supplied at reasonable prices, and (b) to inhibit diversion of coca to the cocaine traffic as crop substitution efforts reduce total production and as the "black market" price offered by cocaine traffickers rises sharply.

C. GOB Commitment to Support Coca and Cocaine Control Measures

The political commitment of the GOB to support the four Coca/Cocaine measures suggested by the U.S. Mission is a crucial factor. Analysis and projections relating to the proposed coca marketing control and monitoring system are based on the assumption that adequate GOB support will be forthcoming. Without reasonable certainty that forthright action be taken by the GOB on coca/cocaine policy directives and on implementation through its designated instrumentalities, coca/cocaine program planning could prove to be a futile exercise.

The Government of Bolivia's attitude toward the coca/cocaine problem can be summarized as follows:

1. Reduction of area planted to coca can be achieved only through prior provision of proven substitute crops which yield revenues at least equal to income from coca, and for which markets are assured.
2. Traditional coca chewers must be assured of adequate and regular supplies of coca at reasonable prices.
3. The cocaine problem is considered to be a problem external to Bolivia -- principally a U.S. problem. Except for Santa Cruz, cocaine use in Bolivia is not widespread. Cocaine is recognized to be an important source of foreign exchange. Press articles cited foreign exchange earnings from cocaine exports on the order of U.S. \$300 million per year, superseding tin exports, historically the leading export commodity.

The first clear manifestations of GOB policy commitment to cocaine control was enactment of a 1973 Law Decree for Control of Dangerous Substances, modified in 1976 by Law Decree No. 14203. The mandate of Law Decree No. 14203 quite explicitly encompasses the three measures suggested by the U.S. Mission in its Policy Statement, namely cocaine interdiction, coca production control and coca crop substitution.

A new revision in 1979, Law Decree No. 16562, omits the GOB's

conceptual framework for Coca Crop Substitution through Area Development. This revision confirms Bolivia's adherence to the 1961 U.N. Single Convention of Narcotics, whereby both Peru and Bolivia agree to "eradicate coca chewing" over a period of 20 years. In contrast, Supreme Decree 14518 of April 1977 which provides for the creation of PRODES calls for a "step by step reduction of coca cultivation to the level required for legal demand for this product".

D. GOB Instrumentalities and Implementation

1. DNCSP's Department of Narcotics and Dangerous Substances
(DNCSP Operations)

This is the principal arm of DNCSP, with the mandate to enforce the law against cocaine processing and traffic. As the GOB instrumentality supporting U.S. policy on Cocaine Interdiction through Enforcement, DNCSP Operations has been the main beneficiary of U.S. financial and technical support over the last three years (some US \$5.3 million).

With an estimated 70 tons of cocaine being exported from Bolivia annually, results of DNCSP Operations are disappointing -- much less than the enhanced capability the U.S. investments should have been able to achieve. The reasons for this poor performance are not solely a result of the disparity of forces between DNCSP and the cocaine traffickers in Bolivia; they also reflect a lack of support at the policy level.

The manufacture of coca derivatives, such as paste and HCL, in or near coca producing areas results in a much less bulky, higher value product. The manufacture of cocaine in the same areas may begin in the near future. This reduction in volume greatly facilitates smuggling and other illicit operations, and makes the interdiction task of DNCSP even more difficult.

2. Proyecto de Desarrollo "Chapare-Yungas" (PRODES)

This decentralized entity under the direction of the Ministries of Interior and Agriculture was created in April, 1977, as one of the conditions precedent to disbursement of U.S. funds under Project Agreement 70046 for area development programs.

This entity's small staff of technical personnel (with a ratio of 1:1.6 of technical to supporting staff) is complying with most of its scheduled activities of coordination and implementation of various research studies contemplated for the pilot program stage -- notwithstanding lags in arrival of equipment and technical assistance for area development.

3. DNCSP Department for the Registration and Control over Production and Marketing of Coca (R&C Department)

The R&C Department now functions without its agricultural development component (PRODES). However its organizational

structure is woefully inadequate. Of a 1978 payroll of 363 employees for the DNCSP as a whole, the R&C Department has only 17 persons.

As its name indicates, the Department of Registration and Control of Production and Marketing of Coca has a broad mandate under the GOB's policy framework. It is presently the GOB instrumentality for coca production and marketing control, regulation and monitoring, and clearly the principal instrumentality on which the success of the U.S. coca production and marketing control policy hinges.

Since 1977, the R&C Department has carried out the census or Registration of Coca Producers, the Registration of Coca Merchants and, at present, it is implementing a network of 25 checkpoints for control and monitoring of the coca flow throughout the country.

E. The Coca Sector

1. Coca Production

Attention has been focused mainly on the Yungas and Chapare, but there are a number of other areas where coca plantings have existed for many years. However, new areas are coming to light in the Santa Cruz area, Beni and Pando. Other areas will probably be discovered in the near future. The

ecologically favorable zones for coca far exceed the two areas on which attention has been focused in the past.

Mainly due to rapid expansion in the Chapare, output is estimated for the Yungas-Chapare regions at 22,000 tons for the current year and 30,000 tons for 1980. Recorded movement out of the Chapare is 25% above the volume of one year before.

2. Coca Marketing

Coca is frequently bartered, or paid in lieu of wages, and transported or traded in small quantities.

Intermediaries play an important role in assembling and transporting coca to market. They are also suppliers of staples to campesinos and perform credit functions as well.

It is estimated that about 15,000 persons are employed directly in coca marketing and about 50,000 people in coca production. Peripheral activities may provide steady or intermittent work for about 76,000 persons. Direct and indirect employment, therefore, may total as much as 141,000 persons.

Coca trade follows mainly geographical lines. Yungas coca goes to La Paz and then south to the Altiplano, the mining districts and border regions. Chapare coca goes to Santa Cruz in large volume. Other routes take Chapare coca to Sucre,

Potosi, Oruro and south to the border regions. Santa Cruz, which has a relatively small coca chewing population, receives an estimated 26% of total domestic coca shipments. This implies that a significant amount of coca from Santa Cruz enters illicit trade channels.

3. Coca Prices

At the consumer level, non-economic factors (socio-cultural and dietary) play an important role in the demand for coca. That accounts for the fact that demand for coca is apparently inelastic over a wide range. Evidence of sustained purchases in localities where prices range up to \$b 88-110 per kg, as compared with \$b 44 in Cochabamba and \$b 44-52 in La Paz, tend to support the notion of inelasticity. Demand for coca from cocaine traffickers is inelastic over a very wide price range because of the extremely large spread between the cost of coca and the street price for cocaine in the U.S.

Information on farm-gate prices is difficult to obtain. The closest approximations to producer prices readily available are market prices in villages where the primary intermediary may sell to another intermediary. Wholesale prices are easier to obtain because of the active trading markets in Cochabamba and La Paz. Retail prices, as cited above, are well-defined in major urban markets, e.g., Cochabamba and La Paz. (See Table I)

4. Marketing Costs and Margins

Transport costs are the major expense in marketing coca. There is strong competition among intermediaries in the licit trade in most parts of Bolivia and, as a result, margins are narrow. Typically, gross margins of intermediaries bringing coca to the Cochabamba market are on the order of \$b.3.50-5.30 per kilogram.

Chapare coca costs about \$b.32.00 or U.S. \$1.58 per kg. About 166 kg of coca are needed to make one kg of cocaine. The cost of the coca required to produce a kilo of cocaine is about U.S. \$264. Other inputs and processing costs raise the total cost of cocaine to about U.S. \$410 per kg. That cost compares with an export value of U.S. \$5,000-8,000 and U.S. street prices of fifty times the export levels.

5. Coca Consumption

A USAID-sponsored study of coca consumption, the Multi-disciplinary Study of the Traditional Use of Coca in Bolivia (MDS) 1/ found that aggregate coca consumption in Bolivia was approximately 12,000 metric tons per year. The MDS contained many findings on non-economic aspects of coca consumption which support the notion that demand for coca among chewers is inelastic over a considerable price range.

1/ See Chapter III for a discussion of this study.

The reactions of Bolivian coca consumers to the possibility of coca disappearing or becoming scarce are likely to be politically and culturally quite serious.

F. The Estanco

The primary objective of the proposed estanco or coca marketing board would be to stabilize prices by regularizing supplies of commodities to markets, absorbing excess supplies during seasonal harvests and releasing stocks in periods of tighter supplies.

In the Bolivian context, an estanco established to deal in a sensitive commodity such as coca would experience serious political drawbacks. It would have high visibility and be a focal point for dissatisfaction and disaffection from both the producer and consumer sectors. In the absence of effective control of movement there would be a significant amount of leakage to the illicit market. Consequently, the estanco might not be able to acquire sufficient supplies or to direct supplies to legal markets.

Organization and managerial problems are likely to be major constraints to efficient operation. At the executive level, political interference in the personnel selection process can be expected. With lower level staff, the civil service mentality will be a serious constraint to efficient performance. Prior experience with commodity boards in Bolivia and in other LDCs has shown that certain undesirable marketing practices can be expected: (a) quality of

product will deteriorate, (b) extraneous material will be mixed with deliveries, (c) short weighting will occur, (d) estanco inventories will deteriorate from spoilage, (e) corruption and graft will severely limit internal control measures.

The GOB is likely to find it politically infeasible to apply sanctions against producers or intermediaries.

This study has analyzed two variants of the Estanco concept: a full-fledged entity which would purchase all of the coca crop and a limited estanco which would buy only supplies required for distribution to the legal market.

1. The classical estanco concept is that of a monopoly marketing board which stands ready to accept all offers with no effort to control production. It attempts to regulate the entire crop movement. In the case of the coca marketing board, the surplus coca that the board acquired would be destroyed in order to prevent its falling into the hands of cocaine traffickers. Only that portion of production needed to satisfy demand in the legal consumer market would be released or re-sold to coca merchants.

Recent expansion in coca plantings has substantially changed the supply outlook for coca and the prospective capital requirements for an estanco. After only three years of operation, an estanco would be confronted with a coca crop of

34,000 tons from the Yungas and Chapare regions alone. Purchase cost of this amount would be about U.S. \$60 million per year. Sales revenues would be about U.S. \$18 million per year. This assumes that the sales price would be lower than purchase price by about U.S. \$275 per ton. The annual deficit would be about U.S. \$42 million, to which operational costs of the estanco would have to be added. Coca supply can be expected to continue expanding over the medium term as producers strive to supply a guaranteed market (legal or illegal). The surplus supply situation confronting the estanco would be expected to intensify, thereby increasing the deficit from market operations in future years.

This study concludes that a full-fledged estanco in the present context of Bolivia is not feasible from the standpoint of excessive costs alone.

2. The U.S. Mission has defined a limited estanco concept which would be restricted to purchase and distribution of sufficient coca to supply the legal market -- about 12,000 tons. The remainder of the national coca crop would be within the purview of the enforcement agencies (about 10,000 tons in 1979 and 18,000 tons in 1980). As in the case of the full-fledged estanco or monopoly board, feasibility would depend on the enforcement environment. Efficient enforcement and monitoring would cause a two-tier market to develop as traffickers bid prices higher to capture supplies. Leakages would occur along

distribution channels. The magnitude of leakage would depend on internal control within the estanco. In the absence of effective enforcement, substantial diversion of coca to illicit markets would occur. As a result, traffickers would not be stimulated to bid up prices as high.

Under the very optimistic assumption of a highly effective enforcement system which could compel some producers to deliver coca to the board at artificially low prices, cumulative operating losses for the estanco are estimated at U.S. \$34 million in the first five years, and U.S. \$90 million in the first ten years of operations. Less favorable assumptions (e.g., a less effective enforcement environment in which the estanco would have to pay higher prices) would result in larger deficits.

It is important to reiterate that non-economic factors (institutional, organizational, political and managerial) are major constraints to be encountered by any type of estanco operation.

G. Recommendation for an Alternate Coca Production and Marketing Monitoring and Control System

The team believes that an estanco alone is inadequate to control prices and supplies. It is possible that the desired objectives can be obtained at considerably less cost and without the organization of a new bureaucracy.

The following strategy is suggested for providing an adequate supply of coca to legitimate consumers at a reasonable price.

The main instrumentality for the coca marketing control and monitoring system is the DNCSP Registration and Control Department (R&C). R&C has the legal mandate to monitor and control the flow of coca to legal markets. Increasing the efficiency of this instrumentality is a pre-condition for an effective coca marketing monitoring and control system. R&C has the advantage of already having a legal, operational and institutional status. Moreover, R&C would not have the political drawbacks of an entity established especially to buy and sell coca. R&C as an established control agency would not be as much a target for dissatisfaction and dissent of both the producer and consumer sectors as would an entity especially created to deal in coca. An estanco may play a complementary role in the future, once the coca monitoring and control system is in place and functioning effectively.

The major components of the proposed alternate course are:

1. Production Monitoring and Control

Initial efforts to implement production monitoring and control systems have been made. However, refinement of methodology and techniques is required, and an ongoing licensing system (under which producers would annually declare their output) needs to

be developed in order to maintain current information on production trends.

2. Monitoring of Marketing Distribution Channels

The basic elements of the market monitoring system are currently being put into place. However, this aspect of control also needs refinement. Ongoing licensing of coca merchants will better enable the R&C monitoring forces to identify and track suspected diversions from legal channels. Only the number of producers and merchants required to supply the legal market will be licensed. Proof of extenuating circumstances should be required for licensing after an initial registration campaign. Limiting legal production to designated regions and traffic to specified routes would facilitate monitoring and control. Eventually a nationwide system of strategic checkpoints should be in place, supported by surveillance and patrols, communications and other infrastructure. A data processing system from which registrant information can be retrieved promptly is also needed. Eventual tracking of coca movement from producer to legal markets with minimal leakage is the goal of the DNCSP - R&C coca control and monitoring system. As control of movement tightens, it is expected that processing will move closer to the producer level to reduce volume and make covert movement easier. Control beginning at the producer level will become increasingly important.

The scope of operations of the R&C Department consists of: a) registration of producers and merchants; b) verification procedures to be conducted by an inspection force, e.g. measurement of land planted to coca; c) monitoring of merchant activity as it passes checkpoints; d) development of a data bank containing information on all registrants that can be promptly retrieved; e) surveillance and patrol activities, aided by radio communications, to detect illegal movement around checkpoints.

Complementary instrumentalities of the R&C Department could be the agricultural customs entities. Standardized reporting forms could facilitate data entry from different sources into the DNCSP data bank.

Supplementary entities could be DNCSP-Operations and National Customs. PRODES could play a supplementary role in support of R&C monitoring activities especially at the producer and intermediary levels in the areas of its jurisdiction. Intra- and inter-institutional coordination is an important requisite for effective operation of the system. In fact, as cocaine processing moves to the producing areas, cooperation of these agencies will become more important.

One of the major constraints to efficient operations is lack of managerial capability. As much political leverage as possible by the U.S. Mission is needed to assure adequate performance.

12

Adequate equipment is a vital necessity for an essentially mobile force. Intensive long-term training is essential to achieve permanent upgrading of personnel. A substantial force of specialized advisors with various specialized skills will be needed to achieve impact in the upgrading effort.

3. Price Stabilization Mechanism

An official coca price stabilization mechanism would reinforce the monitoring and control system by placing statutory limits on consumer coca prices. It would provide a guideline for coca traders and intermediaries along the distribution pipelines to the legal market. A GOB decree setting consumer price ceilings would be a clear statement acknowledging the validity and legality of coca consumption, and of the determination of GOB to protect the consumer sector. Positive action by GOB relating to consumer prices would allay apprehension among campesinos generated by public statements referring to eradication of coca. Coca price stabilization could be administered by the Ministry of Industry and Commerce which presently is charged with fixing prices for several consumer staples. Compliance would be verified by local and administrative police who already have regulatory and enforcement powers relating to supervision of markets.

4. The Coca Marketing Board -- Estanco

The estanco, although quite expensive in terms of money and talent, may be required at a later stage, to strengthen the price stabilization mechanism.

Establishment of an estanco will likely require 2 years, and the organization will not be fully effective for at least two years after it is established. Therefore, plans for the establishment of an estanco should be drawn up immediately. The decision to implement or not to implement these plans should be made as soon as possible after the control and monitoring system is in place and functioning at an acceptable level of efficiency.

EXECUTIVE SUMMARY

I. INTRODUCTION

This study is conducted in furtherance of the overall narcotics policy of the U.S. Mission in La Paz, the principal objective of which is to reduce the amount of cocaine entering the United States. The measures considered most important in accomplishing these objectives are (1) control of production through a system of registration and enforcement, (2) interdiction of illegal coca and cocaine both within Bolivia and between Bolivia and the U.S., and (3) a program of rural development and crop substitution in growing areas which would make control of production less objectionable. Success of all three of these elements depends on the willingness of the Government of Bolivia (GOB) to take overt action.

An important aspect of the coca problem in Bolivia is that coca consumption in leaf form is licit and there are presently about one million users who consume a total of about 12,000 metric tons of coca leaf per year. If some degree of success is achieved in production control while the strong demand for coca in the illegal market continues, it is likely that the quantity of coca available to domestic consumers will be reduced and/or prices will increase. Interdiction of the illegal trade may mitigate this supply and price response, but is unlikely to be sufficient to maintain supply and price in the licit market within what are considered politically acceptable limits.

To resolve this problem the U.S. mission suggested establishment of a marketing board which would regulate price and quantity of coca to legitimate consumers. Through PAT 2071-910073-(33), the Office of International Narcotics Matters (OINM) of the U.S. Department of State contracted with Multinational Agribusiness Systems Incorporated (MASI) to evaluate the feasibility of establishing a Government of Bolivia (GOB) Coca Supply and Marketing Board. The purpose of the board, or estanco, would be to purchase and market, or control the purchasing and marketing of all Bolivian coca to ensure an adequate supply for the domestic users. MASI was also to provide recommendations for the establishment of such a marketing board if it was indicated by the feasibility study and if requested to do so by the U.S. government after review of the feasibility study.

The Statement of Work for Phase I of the study is as follows:

1. Contractor will perform a feasibility study of the potential for success of the proposed Board through analysis of the following broad functional areas:
 - a. A detailed analysis of the present marketing system, legal and para-legal, for coca in Bolivia, including identification of firms and influences involved in all sub-sectors.

- b. Present marketing margins, prices at all levels, actual marketing costs and returns.
 - c. Quantities of production by regions, seasons, movements, storage, and domestic disappearance as well as legal and paralegal exports.
2. Following the analysis of the present coca marketing system, the Contractor will determine if a Government Supply and Marketing Board could provide an adequate and stable supply of coca leaf at reasonable prices to the traditional market by:
 - a. Purchasing and marketing or destroying the remainder of the coca leaf production at a financially feasible cost in the (1) Yungas region, (2) the Chapare region, and (3) both regions; or
 - b. An alternate course which would control market supply without purchase of leaf and would preclude narcotics traffickers capturing the coca supply destined for the traditional market.
3. The Contractor will provide a determination of the relative feasibility of either course outlined in 2a. or b. with supporting rationale.

In the course of this study, the MASI team had extensive discussions with the principal GOB agencies concerned with coca production, distribution and regulation. Other information sources were interviewed to obtain additional pertinent information not readily available through official channels. These included interviews with campesino leaders, campesino producers, intermediaries, coca traders, local customs officials, ex-enforcement officials, and others.

Within the limited time frame which precluded observation of several important production zones and potential production zones, the MASI Team sought to conduct a comprehensive analysis taking into account the dynamic nature and geographical extent of the coca sector which is far broader than previous more superficial analyses have suggested. In carrying out these data collection and analytical tasks the MASI team concentrated on three zones --the Yungas of La Paz, the Chapare, and the Northern Santa Cruz Area.

A reconnaissance flight was made over a wide area of the Chapare and the northern part of Santa Cruz to view the existing and potential production zones. Farm laborers were observed and interviewed during coca harvesting activities, and often while they were chewing coca. Coca markets were visited in La Paz, Cochabamba and Northern Santa Cruz.

The MASI Team received excellent cooperation and logistical assistance from the U.S. Embassy Staff. Cooperation of GOB

agencies concerned with the coca sector was excellent. In this connection, special mention should be made of PRODES, DNCSP, National Customs, the Aduana Agropecuaria of La Paz, the PRODES officials in Cochabamba and Chulumani, and especially Licenciado Clovis Villegas of the La Paz PRODES office.

The MASI Team was composed of the following persons:

1. Mr. George Kawata, Team Leader, an agricultural economist with experience related to government commodities supply and marketing.
2. Mr. Raul Vera Tudela, a Peruvian agronomist with broad experience in the handling, storage, transportation, distribution and financing of agricultural commodities.
3. Mr. Roderick E. Burchard, a cultural anthropologist with experience in Andean cultures, especially coca-related Aymara and Quechua cultures.
4. Mr. Stewart Adams, a former drug enforcement expert with experience in controlled purchasing of agricultural substances and the legal and police functions in support of such a program.

The U.S. Mission in Bolivia contracted Mr. Winston Estremadoiro as Resident Research Coordinator for the study. Prior to the arrival

of the MASI team to Bolivia, Mr. Estremadoiro collected bibliographic and documentary materials of interest to the study and met with GOB officials to make preparations for the Team's later activities. During the Team's stay in Bolivia, Mr. Estremadoiro coordinated the research and field activities, and participated in the writing of the first draft of the Report. This revised version of the Report has been written by the Team Leader and the Resident Research Coordinator, with assistance from the MASI Project Director in the home office.

The possible courses of action relating to coca production and distribution control and to interdiction of cocaine are predicated on appropriate full support by the GOB of the agencies concerned with these activities. Without a clear demonstration by the GOB of its determination to pursue the objectives of coca/cocaine policy as stated herein, investment and related efforts to implement these policies may be largely futile, or, at best, are likely to meet with very limited success.

CHAPTER II

BACKGROUND FOR THE STUDY

II. BACKGROUND FOR THE STUDY

A. U.S. Coca/Cocaine Policy in Bolivia

Bolivia is of major importance to the U.S. "narcotics control"^{1/} efforts. As a producer of coca, it is estimated by DEA that from 14,000 to 72,000 kilos of 90 percent pure Bolivian cocaine is smuggled into the U.S. each year.^{2/} Moreover, it has been stated that "due to recent plantings and possible new plantings in the future, production of coca will increase significantly over the next few years unless steps are taken to prevent such production from occurring beyond the level required for legal domestic use and export."

The goal of the U.S. coca/cocaine policy in Bolivia, therefore, is to "reduce illegal export of cocaine" and "reduce the production of coca leaf to the level required for legal domestic consumption and export."^{3/} The means by which the U.S. hopes to meet these goals within a three to five year period presently include three components: (1) cocaine interaction through enforcement, (2) coca reduction through crop diversification and area development, and (3) coca reduction through production control. An additional component, a coca marketing board, has been proposed.

^{1/} This is placed in quotations because neither coca nor cocaine are narcotics.

^{2/} Am. Embassy "Narcotics Strategy Paper for Bolivia," La Paz, September, 1978.

^{3/} Ibid.

1. Cocaine Interdiction through Enforcement

The objective of this component is to develop the capability within the Bolivian DNCSP "to restrict trafficking in illicit cocaine in order to reduce the supply reaching the U.S." To meet this goal, DEA hopes to assist the DNCSP, over the next five years, in the improvement of its antitraffic capability to the point that there will be a 50% increase in seizures of cocaine per year. Even if these goals are met (which would mean the seizure of a total of some 1,603.1 kilos of cocaine in 1983 -- vs. 211.6 kilos seized in the baseline year of 1977), it would be only between 2% and 9% of the current cocaine traffic, which is estimated to be between 14,000 and 72,000 kg. per year. Assuming severe penalties for smugglers, interdiction would increase the risk of smuggling and help maintain high margins between Bolivia and the U.S. High prices tend to hold cocaine consumption down in the U.S. but also provide incentive to illegal narcotics dealers in the U.S. and abroad.

The basic assumptions of the U.S. Mission regarding the Cocaine Interdiction through Enforcement policy are:

- The U.S. Government continues to consider Bolivia a major source country for cocaine and places a high priority on the Narcotics Control program. There exists a full U.S. commitment to assist the GOB in reaching the goals outlined above.

35

- Future U.S. financial inputs will be commensurate with DNCSP's continued personnel expansion and improved capability.
- The GOB, in turn, gives a high priority to creating and constantly improving an effective narcotics enforcement program.
- The GOB considers drug abuse and the control of narcotics traffic as its own, as well as a worldwide, problem.

2. Coca Reduction through Crop Diversification and Area Development

The "overall program for diversification of agricultural production in major coca-producing areas complements the objective of reducing the production of coca leaf destined for illicit markets."^{1/} This component is seen as having two parts: a) alternative agricultural production should be made more attractive to campesinos currently producing coca, and, b) the agricultural diversification effort should ameliorate some of the employment and income displacement effects which presumably will occur as crop control efforts become increasingly effective.^{2/}

^{1/} Ibid.

^{2/} Ibid.

Meeting the goal of the crop diversification component of the program is, like the other two major components, seen as a phased effort over the next few years. Thus, it is stated:

"Based on an upper limit of approximately 5,000 MT of coca leaf being used for illegal purposes, it appears that a realistic goal should be set at 2,500 MT, i.e., a reduction of 50%. By the end of five years this amount would be further reduced to 400 MT, i.e., a reduction over the five year period of 80%.1/"

It is astutely stated, however, that:

"To project a reduction of more than this amount as a result of crop diversification is unrealistic, since the existence of microclimates will always make some areas considerably more profitable for coca production than other areas.2/"

It is notable that recent estimates place the amount of coca being used for illegal puposes up to 12,000 metric tons, and there are indications that coca production is expanding.

The basic assumptions of the U.S. Mission's Coca Reduction through Crop Diversification and Area Development policy are that:

- The GOB is fully committed to and capable of undertaking a program to reduce coca production to legal consumption levels.

1/ Ibid.

2/ Ibid.

- GOB enforcement and control of the level of coca production and the diversion of coca to illegal uses is developed and implemented vigorously.
- Climate conditions favorable to alternative crops persist during the life of the project.
- The GOB provide adequate compensation to the personnel trained for the new research and extension services in the Yungas and Chapare.
- The indigenous populations cooperate, and that cross-language experience can be assimilated by the U.S. and local technicians preparing the studies.
- Timely arrival of technicians to work with GOB personnel to perform the needed studies.
- Farmers are willing to cooperate with test programs.
- Laboratory, farm machinery and other necessary equipment and inputs arrive as scheduled.

3. Coca Reduction through Production Control

The objective is "to improve the GOB's capability to limit the cultivation of coca leaf -- to the level required for legal domestic use and export -- in order to reduce the supply of coca leaf available for processing into cocaine."^{1/} Meeting this goal, like that of increased seizures, is seen as being achieved through the improvement of the "GOB's coca crop control capability so that there will be a phased annual reduction in that

^{1/} Ibid.

portion of the crop beyond the estimated requirement for legal domestic use and export."^{1/}

If the Crop Substitution and Area Development component provides the "carrot" for the U.S. Mission's coca policy, the production control component is the "stick". The latter component is the least developed in its conceptual framework and inputs for implementation. The U.S. Mission conceives the policy solely for production control, while the GOB instrumentality, the DNCSP, understands its mandate as encompassing production, distribution and marketing of coca. (See Figure II-1)

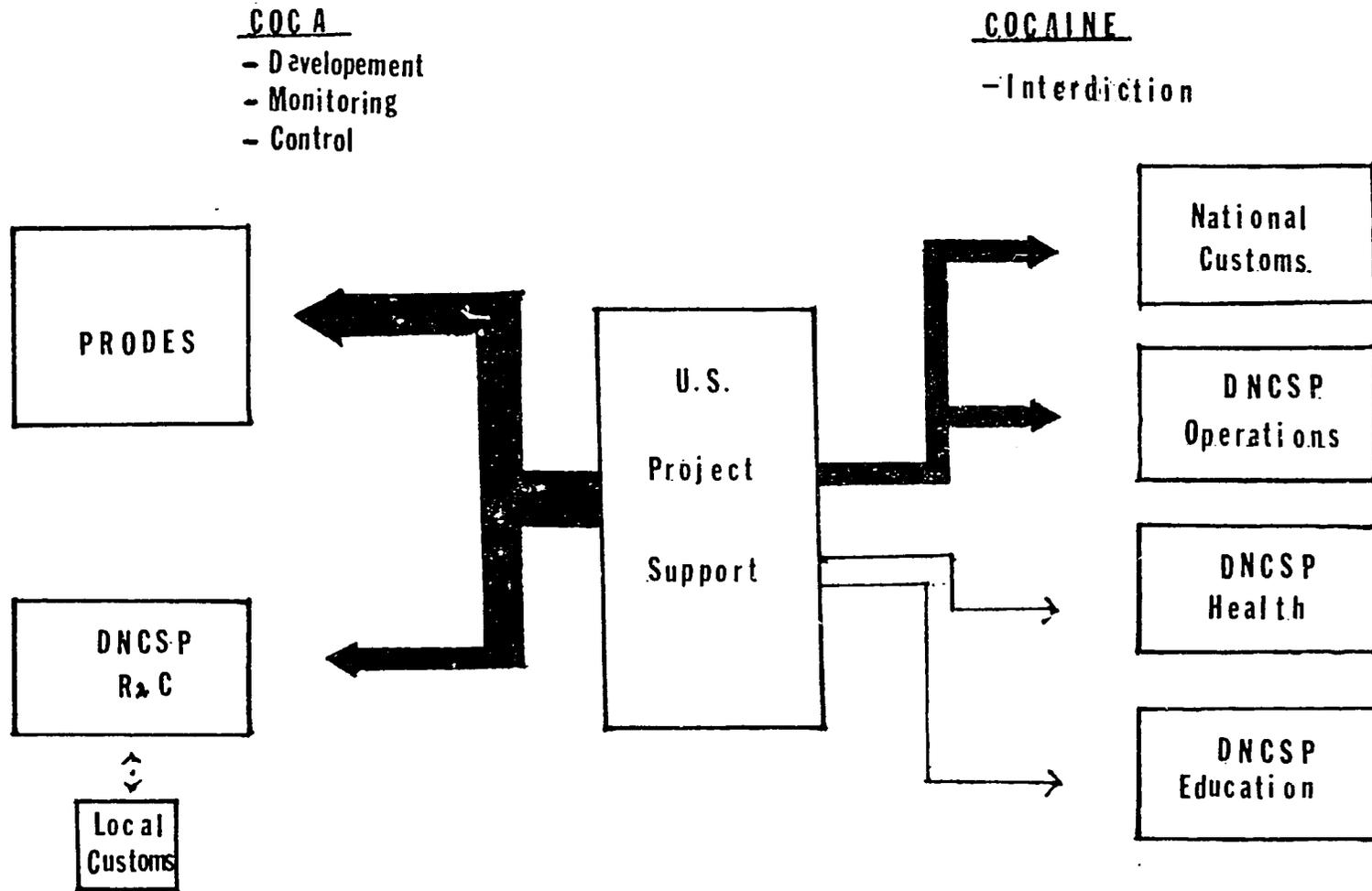
The basic assumptions for this U.S. Mission policy component are:

- That the GOB is prepared to enforce regulations inhibiting increased land use for coca cultivation.
- That DNCSP has the personnel and logistical capability to monitor and control plots in the producing regions.
- That the Crop Substitution and Area Development component will be implemented in coordination with the application of production controls.

^{1/} Ibid.

FIGURE II-1

U.S. MISSION COCA/COCAINE POLICY



4. The Proposed Estanco -- Government Coca Marketing Monopoly

Recently, it has been proposed that another "prong" of the U.S. coca/cocaine policy in Bolivia be added, ie. the establishment and initial funding of an "estanco." The stated objective of such an estanco in the context of the overall narcotics strategy in Bolivia is said to be:

"to assure that traditional users (chewers) of coca leaf and the legal export market continue to be supplied at a reasonable price as ... crop substitution efforts reduce total production and therefore the 'black market' price to cocaine traffickers rises sharply."

It is also stated that:

"Unless this objective is met, the crop substitution effort will be undermined because: 1) up to 12,000 tons of coca leaf now consumed in Bolivia by traditional users will be bid away into the cocaine trade; 2) several hundred thousand chewers, unable to secure leaf at a reasonable price, will agitate to increase production and politically destroy the program".^{1/}

On the basis of these statements it is obvious that the establishment of the Estanco is considered important to U.S. coca/cocaine policy in Bolivia.

^{1/} Proposal for an ESTANCO, U.S. Embassy, La Paz, date unknown.

The assumptions by which it is proposed that these goals be met are briefly summarized below:^{1/}

- The U.S. would provide initial funding of US\$ 7.0 million in the first two years for start-up costs and for working capital.
- GOB would seek credits for subsequent working capital requirements (sources unspecified).
- GOB would fund the cost of staffing.
- GOB would fund a small-farmer credit program.

The establishment of the Estanco is not a new idea in Bolivia. On the contrary, it has long been argued, mainly by those individuals in favor of increased control over the production, distribution, and consumption of coca leaf, that, prior to the arrival of Europeans to the Andes in the sixteenth century, coca leaf production, distribution, and consumption were monopolies of the Inca State and its social, political, and religious elite. Also, following a series of Indian rebellions in the colonial period, it was proposed in 1792 that the Spanish Government form an Estanco in order to finance the presence of a larger standing army to protect the vested interests of the large coca-producing haciendas in the Yungas and in other areas such as the provinces of Arcaja and Mapiri. One of the objectives was, in addition to protecting their coca haciendas, to

^{1/} Ibid.

47

control the price of coca leaf and assure its continued supply to users in the mining industry. Furthermore, in 1830, the Society of Yungas Landowners formed the Board of Yungas Landowners which in a sense could also be considered a government coca leaf marketing monopoly, or estanco, since its members played key political and economic roles in Bolivia for the 100 years following its formation.

In 1949, the Coca Monopoly Board (ENACO) was formed in Peru with the objectives of controlling the planting, cultivation, distribution, consumption, and export of coca leaf. The control of prices to the hundreds of thousands of coca consumers in Peru was, of course, also one of the objectives of ENACO. In fact, in a personal interview with its director in 1970, one of the Team members was told that this was a major weapon in the Peruvian coca eradication program, the objective being to make the price of coca so high that campesino and miner users could no longer afford to buy it. The United Nations-sponsored Commission of Enquiry on the Coca Leaf was so impressed with the idea that the Peruvian estanco would be a major arm in coca leaf control and eventual eradication, that in 1950 it proposed the establishment of the same in Bolivia. In fact, the Commission of Enquiry recommended the "establishment in Peru and Bolivia of a parallel policy for the limitation of the production and consumption of coca leaf, together with an appropriate system of control." And, in addition to the Estanco, this policy included

-42

"crop substitution" and enforcement.^{1/} It is also clearly stated in Article 23 of the 1961 Single Convention on Narcotic Drugs that, because it would not be possible to control the amount of coca and other drug crops that entered into "controlled trade" if such production and distribution were left in the hands of private individuals, a "government monopoly of the wholesale and international trade in the agricultural product in question had to be established in the country which authorizes its production."

B. GOB Policy Commitment, Instrumentalities and Implementation

1. Bolivia's Attitude Toward the Coca/Cocaine Problem and its Implications

Bolivia's attitude toward coca can be summarized as follows: With respect to coca production, reduction of area planted to coca can be attempted only after substitute crops have been provided which would yield assured income for the campesinos. Traditional coca consumers must be protected; they must be assured of an adequate and regular supply of coca, and retail prices must be sustained at reasonable levels.

The prevailing sentiment in Bolivia is that cocaine use is an external problem. Only in Santa Cruz where cocaine is sold openly in the streets and consumption has become widespread,

^{1/} Commission of Enquiry on the Coca Leaf. United Nations, ECOSOC, New York, 1950.

44-

particularly among the youth, have manifestations of public concern and protest surfaced. In other cities and areas of the country, cocaine consumption has not reached magnitudes that have attracted public attention. Therefore, it is not regarded as a domestic problem by the majority of Bolivians.

Public statements, particularly in the press, allude to the economic benefits of the cocaine trade. For example, a recent press article cited foreign exchange revenues gained through exports of cocaine as being on the order of US\$ 300 million per year, exceeding foreign exchange receipts from tin, traditionally the principal source of foreign exchange earnings for Bolivia.^{1/}

Study findings regarding prevailing attitudes in Bolivia suggest that the U.S. Mission should reassess some of its key assumptions regarding coca/cocaine policy, particularly the following:

- The GOB gives a high priority to creating and constantly improving an effective narcotics enforcement program.
- The GOB considers drug abuse and the control of narcotics traffic as its own, as well as a worldwide, problem.
- The GOB is prepared to enforce regulations inhibiting increased land use for coca cultivation.

^{1/} Presencia, July 7, 1979, p.3.

HS

2. GOB Policy Commitment

The GOB's policy commitment began with the enactment of Law Decree No. 11245, labelled National Law for Control of Dangerous Substances, in December, 1973. Subsequently, a Study Commission was formed in February of 1976, through Supreme Decree No. 13359, in order to make the law compatible with international agreements and revise it in the light of two years of experience. The Study Commission presented its recommendations after more than six months delay, giving rise to the modified Law Decree No. 14203 of December 17, 1976.

The mandate of Law Decree No. 14203 on dangerous substances is quite clear and encompasses the three GOB instrumentalities for U.S. Mission Policy -- cocaine interdiction, coca production and control, and coca crop substitution:

"establishes the forms of control, administration and regulation over the planting, cultivation, harvest, collection, marketing, distribution, expenditure, use, possession, delivery and possession of plants or its parts containing raw materials for the production and fabrication of drugs and controlled substances..." (Title I, Article 1)

Clearly the U.S. instrumentality on cocaine policy is most completely covered in Law Decree No. 14203. However, the law establishes in its Title IV, a "special" regulatory framework regarding coca (regimen de fiscalizacion especial) based on the following criteria:

- a. Coca is a native plant deeply rooted in the tradition of important sectors of the country.
- b. Coca is a production activity which is a significant source of income for certain farm sectors.

GOB policy through the "special" regulatory framework for coca conforms with the "coca crop substitution" and "coca production control" components of U.S. Mission policy. Regarding the former, Article 46 states:

"It is determined that coca be reduced in a planned, systematic, step-by-step manner throughout the country, substituting the crop with the production of other crops of similar or greater profitability. Coca crop rationalization will be implemented through the application of an Integrated Development Plan in the current production regions."

Regarding coca production control, Articles 49 and 50 stipulate:

"The planting, cultivation, harvest, gathering and exploitation, as well as the marketing (emphasis ours) of plants of the genus "erythroxilon" (coca), and its parts, will be object of control and regulation by the Dirección Nacional de Control de Sustancias Peligrosas."

"All coca producers are obligated to register and record their plots with the DNCSP, under the terms and conditions established by this organism, under penalty of sanctions set forth for these cases."

Law Decree 14203 delineated the GOB instrumentalities for coca/cocaine policy implementation. In the case of cocaine, it is the DNCSP Department of Narcotics and Dangerous Substances, otherwise known as the "Operations" Department.

In the case of coca, the picture is somewhat more complicated. Coca reduction through crop substitution was under the purview of the DNCSP Department of Rationalization of the Coca Crop. However, the special framework that established the substitution-through-development approach provided for formation of a "Technical Commission" to formulate the project entity in charge of implementing and administering the Integrated Development Plan.

Before the conclusions of the "Technical Commission" were known, the Department of Rationalization of Coca was organized in two divisions -- one in charge of Registration and Control of production and marketing of coca, and a Division of Coordination of Projects in the coca-producing zones.

The Technical Commission's work, with the approval of the Ministries of Interior and of Agriculture and the support of the U.S. Mission, resulted in Supreme Decree No. 14158 of April 1977, whereby PRODES^{1/} was created as the implementation unit for the Crop Substitution and Area Development program. That agency is still engaged in pilot project studies.

The Supreme Decree No. 14158 for the creation of PRODES was a major shift in the provisions of Law Decree No. 14203. The agricultural development division of DNCSP was separated from

1/ Proyecto de Desarrollo

both DNCSP and the Ministry of Agriculture, and became an autonomous entity, PRODES. The DNCSP Department of Rationalization of Coca was established with the Division of Registration and Control over Production and Marketing of Coca being upgraded to the level of a Department.

Aside from the Treaty on the Execution of Penal Sentences, which bears little interest for this study, the revised Law Decree on Control of Dangerous Substances, enacted in June of 1979, is the most important policy commitment on the part of the GOB.

While the principal concern of the revision was some characteristics of drug offenses and penalties, it is relevant to point out incongruities in the new Law Decree No. 16562, and the policy legislation of the GOB which have been discussed above.

- Law Decree No. 16562 omits provision for the instrumentality for Coca Crop Substitution and Area Development, leaving only a general statement (Title IV, Articles 40 and 41) on reduction of the coca crop through substitution and on state control and regulation (fiscalización) of the coca crop. Since Law Decree No. 14203 was annulled in its entirety by the new law, there are now no adequate GOB legal policy commitments for the Crop Substitution and Area Development component of U.S. Mission coca policy.

- A legislative inconsistency relates to Bolivia's adherence to the 1961 U.N. Single Convention on Narcotics, whereby both Peru and Bolivia agree to "eradicate coca chewing" over a period of 20 years. Both the Law Decree No. 14203 as well as the revised Law Decree No. 16562 reiterate Bolivia's ratification of the 1961 U.N. Single Convention. In contrast, the Supreme Decree 14518 creating PRODES calls for a "step by step reduction of coca cultivation to levels required for legal demand of this product," namely, coca chewing. In 1978, on the occasion of a U.S. Mission-sponsored visit to Bolivia by the Peruvian executives of ENACO and Narcotics Control, the executives of DNCSP and PRODES and their Peruvian counterparts signed a joint declaration asking their respective governments to rescind their adherence to the U.N. Single Convention's covenants on the eradication of coca chewing.

3. GOB Instrumentalities and Implementation

- a. DNCSP's Department of Narcotics and Dangerous Substances (DNCSP Operations)

This is the principal arm of DNCSP, with the mandate to enforce the law against cocaine processing and traffic. As the GOB instrumentality which would support the U.S.

Mission policy on Cocaine Interdiction Through Enforcement, DNCSP Operations has been the main beneficiary of U.S. financial and technical support over the last three years (approximately \$5.3 million).

Its 125 professional and technical staff comprise 34% of DNCSP personnel, but this figure rises to more than 50% when supporting staff are considered. About one third of its personnel is stationed in the districts of La Paz, Oruro, Cochabamba and Santa Cruz. Most of DNCSP's fleet of 42 vehicles are radio-equipped. A limited U.S.-financed communications system is also functioning. It is clear that DNCSP Operations has improved its logistical and technical capability to interdict drug traffic in Bolivia. This is, to a large extent, a function of U.S. efforts in the last three years. However, its record leaves much to be desired. In 1978, 614 traffickers were arrested, 87 cocaine factories were discovered and 236 kilograms of cocaine sulphate and chlorhydrate were seized. By March 1979, seizures showed an upward trend, with some 164 kilograms of cocaine paste and HCL seized. Compared with estimates of up to 70 tons of cocaine being exported from Bolivia, and given the enhanced capability that U.S. investments should have made possible, the results of DNCSP's Operations are disappointing. The reasons for this poor

performance lie beyond a simple disparity of forces between DNCSP and the cocaine traffickers in Bolivia. A major factor contributing to poor enforcement performance is lack of political support by the GOB, viz., to discourage political interference with DNCSP in the discharge of its functions.

b. Proyecto de Desarrollo "Chapare - Yungas" (PRODES)

PRODES, created in April, 1977, is being separated from DNCSP and placed under the direction of the Ministries of Interior and Agriculture. Its creation met the need for an agency for implementation of Coca Reduction Through Crop Substitution and Area Development, which the U.S. desired to support.

PRODES has experienced difficulties because of lack of political support and clout which should have been built into its formulation. Resentment on the part of the DNCSP, who saw the creation of PRODES as a dismemberment of part of their organization, and jealousy of the entities in the Ministry of Agriculture of PRODES' relative initial wealth of resources, have impaired the fulfillment of this entity's potential.

Conceived initially to coordinate research activities in a "pilot project" framework, the very nature of the PRODES

structure gave rise to expectations of commanding immense resources for the development of the Chapare and Yungas. The fiction of its "wealth" and the relative absence of political leverage within the GOB attracted political and institutional interference.

The small staff of technical personnel at PRODES is complying with most of its scheduled activities of coordinating and implementing various research studies in the pilot program -- notwithstanding lags in receipt of equipment and technical assistance.

The need to revamp PRODES as an independent regional authority with overall presence and pre-eminence in the Chapare region is apparent. The PRODES staff of 44 distributed in La Paz, Cochabamba, the Chapare and Yungas are unprepared to manage a multimillion dollar operational program. Reorganization should be undertaken with support from GOB at the highest levels. This form of institutional arrangement was contemplated in the original conception of PRODES. Indeed, the present PRODES organization was designed to implement a pilot program for an initial period of two to four years. In the light of experience, it is clear that PRODES should be insulated from political or other negative interferences, and command sufficient institutional weight to implement directly and/or sub-contract

components of their programs to other entities according to regulations established by project requirements and conditions. Since PRODES will be concentrating its efforts in the Chapare, a modification of its structure along the lines of regional development authorities such as, for example, TVA in the U.S., or the Regional Development authority or the Guayana in Venezuela, is clearly in order.

c. DNCSP Department for the Registration and Control over Production and Marketing of Coca (R&C Department)

As stated in the section on GOB Policy Commitment, the R&C Department remains after separation of the agricultural development component from DNCSP. Its organizational structure is inadequate. At the departmental level is the Department of Registration and Control over Production and Marketing of Coca; at the division level, there is the Division of Registration and Control over Production and Marketing of Coca -- an organizational redundancy. Of the 1978 payroll of 363 employees for the DNCSP as a whole, the R&C Department comprised 17 persons -- less than 5% of total personnel.

As its name indicates, the Department of Registration and Control of Production and Marketing of Coca (R&C) has a

broad mandate according to the GOB policy framework. It is presently the GOB instrumentality for coca production and marketing control, regulation and monitoring, which conforms with U.S. Mission policy on coca production and control.

Since 1977, the R&C Department has carried out the census or Registration of Coca Producers and the Registration of Coca Merchants. At present, they are implementing a network of 25 checkpoints for control and monitoring of coca flow through the country.

The 1977 Census registered 13,300 coca producers and purported to yield baseline data on coca production. The census also provided a registry of coca producers in order to facilitate enforcement of regulations inhibiting the spread of coca cultivation areas. The first objective was not adequately accomplished because, as DNCSP recognizes, perhaps as many as 30% of the producers were not registered. Furthermore, relatively high yield data declared by campesinos were used to calculate production estimates. Not all traditional coca-producing areas were included in the census -- the Yungas of Cochabamba being one such exclusion. The second objective falls short due to reasons already noted, and also because of the absence of good data input, retrieval capability, and subsequent monitoring of land use.



The Registration of Coca Producers is a case in point of a good idea gone astray because of conceptual and logistical problems. The census was undertaken somewhat as a one-shot operation without appropriate concepts of census methodology.

An initial "baseline" census must be undertaken based on rigorous methodology and field work. The Producer's Registry should be designed to operate in a flexible framework, much as other regulations regarding licensing of "controlled" products, or obtaining license plates for motor vehicles. The initial objective of registration must be monitoring and control rather than attrition of the coca crop, because attrition is an enforcement function rather than a function of a development authority such as PRODES. Moreover, if policy formulation is lacking for a "legal" coca crop zoning strategy, it is politically counter-productive to attempt enforcement of a "no more coca plots" policy indiscriminately throughout all of the coca producing areas.

The 1978-1979 Registration of Coca Merchants has been completed. These results are being processed. The number of coca merchants registered is 3,810 located in seven departments of Bolivia. The merchants were issued free licenses, valid for two years. R&C executives contemplate

charging a fee for subsequent revalidations, which could render further registration unpopular.

The Registration of coca merchants provides the basis for monitoring and control of coca flow throughout Bolivian territory. Registry files are maintained in DNCSP Operations, the DNCSP R&C central office, and in the districts where the merchants' licenses were issued. The R&C kardex files are to be organized by Departments, Provinces, and County districts, where the network of checkpoints for on-the-spot control and monitoring is to be organized.

Presently, DNCSP R&C is establishing a provincial network of 25 checkpoints, with a total of 51 to be put in place in the near future.^{1/} These checkpoints are to be manned experimentally with high ranking officers of the National Police who are on the pre-retirement list.

The phasing of the DNCSP R&C plan appears excellent. First, registration and licensing of merchants; second, establishment of an elementary data retrieval and monitoring system; third, establishment of a network of checkpoints with intra-network communications. Such checkpoints, coupled with coca marketing forms and other forms of registry, would insure that transported coca leaf reaches its legal destination. For example, 100 tambores of coca purchased

^{1/} See map -- Chapter IV.

51

in Cochabamba by Juan Mamani, with destination Monteagudo, would clear the Epizana checkpoint without diversion to Santa Cruz, arrive in Sucre and clear the checkpoint there, and finally arrive in Monteagudo. The purported objective of the DNCSP R&C is to complement the monitoring system with on-the-spot periodic checking of the legal demand. For example, some hacendados traditionally furnish coca leaf to laborers as part of their wages. Spot checks would establish whether the coca destined for this hacienda was actually chewed by Bolivian workers or diverted for eventual snorting by some gringo.

The DNCSP R&C has undertaken the ambitious task of monitoring the flow of coca over the extensive regions of legal consumer demand, albeit with the woefully inadequate organizational and logistical capability which their meager share of DNCSP resources presently gives them.

A major drawback of the R&C plan seems to be the utilization of policemen on the brink of retirement to man the first 25 checkpoints -- at an average salary of US\$300 a month. This is an interesting way to maximize meager GOB payroll allocations but may prove counterproductive. The question arises whether these high ranking policemen, stationed in pairs, will be able to cope with a complex

task to be carried out 24 hours a day in localities where working and living conditions are primitive. Some of the checkpoints appear to be misplaced, missing major cross-roads or localities where coordination with other existing checkpoints -- for instance, of Agricultural Customs entities -- would make monitoring easier. This is the case at Paracti, the principal checkpoint of the Agricultural Customs of Cochabamba on the road to the Chapare coca-producing area. These instances may be corrected in time. There may be other conceptual implementation flaws, but the important point is that R&C has already taken specific steps in the right direction. The major obstacles to efficient operation are the absence of technical and financial resources.

CHAPTER III

THE COCA SECTOR

III. THE COCA SECTOR

A. Coca Production

Any discussion on coca production regions must take into account the crop's adaptability over large segments of Bolivia. Fourteen varieties of the coca plant have been identified in the various regions. Because of the dynamic situation in the coca sector, differentiation between "traditional" and "non-traditional" areas will facilitate analysis (See Figure III-1).

The U.S. Mission's coca policy papers are based primarily on Chapare and Yungas of La Paz:

1. Traditional Coca Producing Regions

- a. The Chapare is a vast alluvial plain north of the foothills of Cochabamba, between the Isiboro and Ichilo rivers. It encompasses some 7.0 million hectares, with some 1.2 million hectares under settlement. The region covers the tropical parts of the provinces of Chapare (with its capital town in Sacaba), Arani and Carrasco^{1/}. Its road network comprises the Alliance for Progress-financed paved road from Cochabamba to Villa Tunari and Chimore (185 km), from which a good gravel road goes to Puerto Villarroel (56 km). Additional gravel road links are Villa Tunari with

^{1/} See Figure III-2

FIGURE III-1

Actual and Potential Coca Production Zones

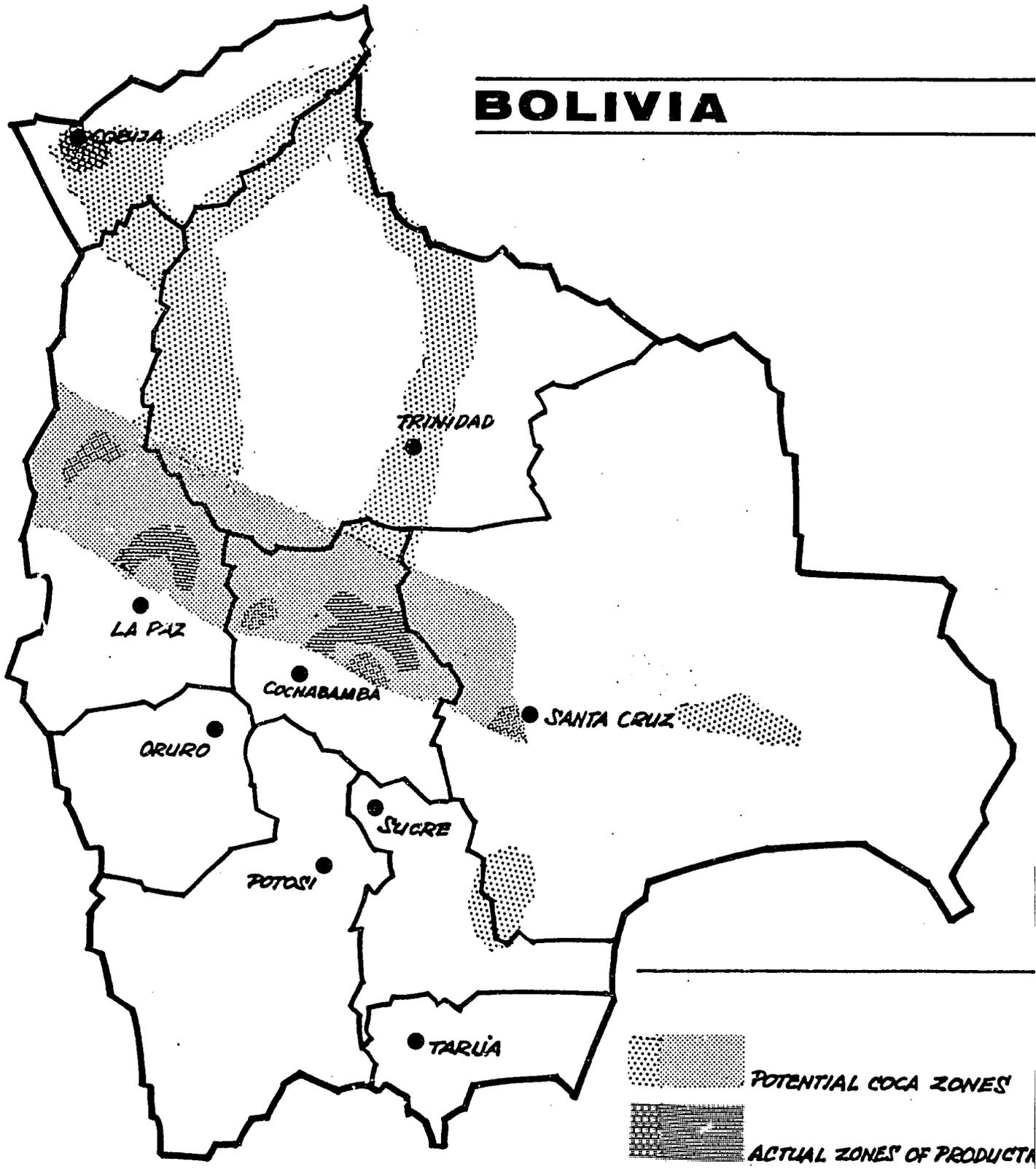
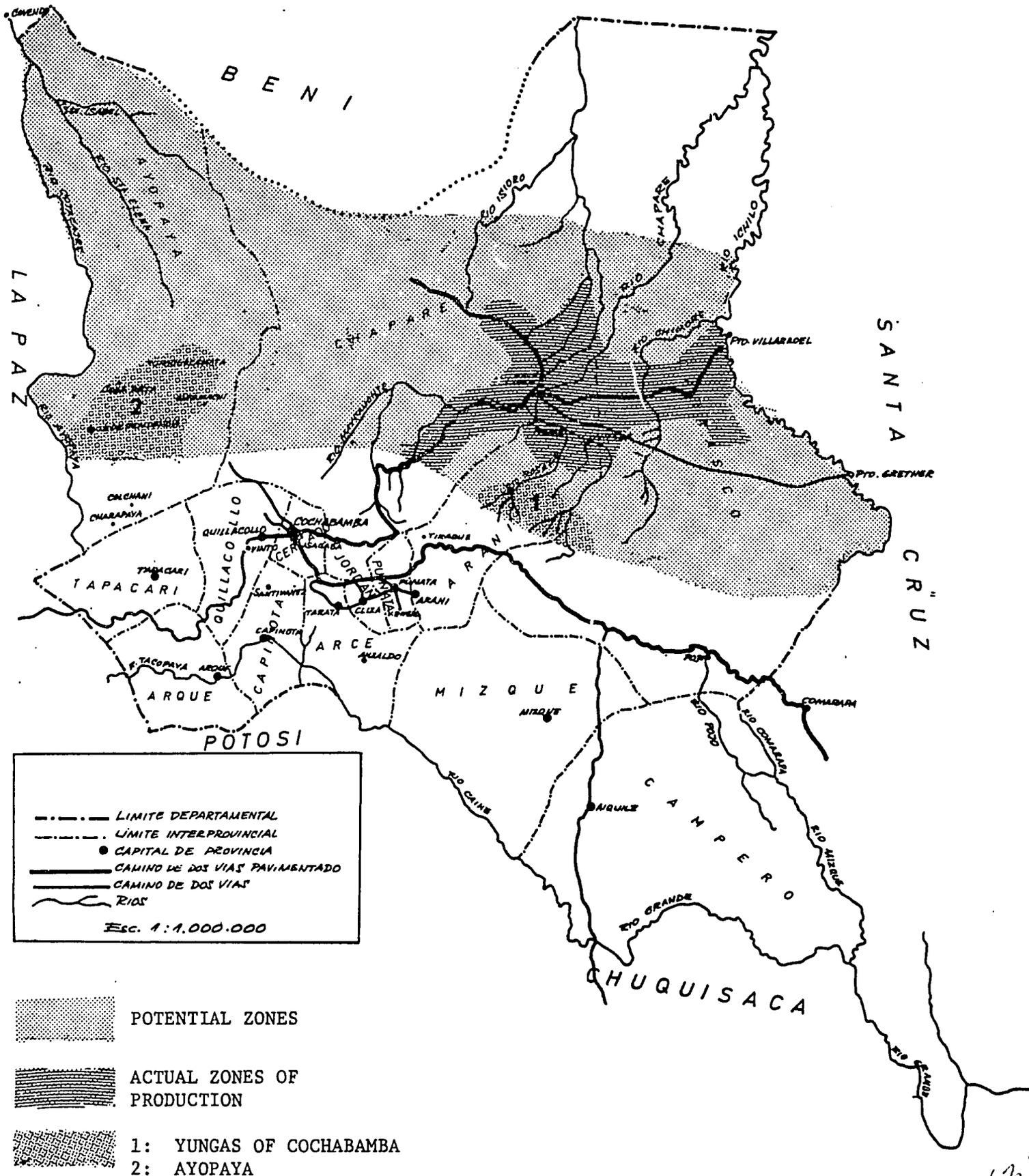


FIGURE III-2

Actual and Potential Coca Production Zones

DEPTO. DE COCHABAMBA



(3)

Samusabeti, Villa Tunari - Puerto San Francisco, Chimore - Puerto Alegre, and Ivirgarzama - Valle Ivirza. From these main roads runs a network of brechas or rudimentary access roads linking the colonist's homesteads.

Spontaneous colonization has occurred dating back 40 years, and some 15 years ago directed colonization was sponsored by the GOB.

It is often argued that the construction of the paved road from Cochabamba to the Chapare opened the way to coca cultivation. However, the history of settlement of the region and the spread of coca cultivation is far more complex. A large number of the original settlers in the Todos Santos area, some 40 years ago, came from the Yungas of Cochabamba, where coca cultivation was traditional for many decades. They planted coca in their new holdings. The coca crop in the region has dramatically increased since the new road was completed in 1974, partly due to the absence of planned agricultural development to accompany increased colonization of the region resulting from the completion of the road.

Until the late 1960's, the concentration of coca production was in the area of spontaneous settlement due to the GOB's prohibition on the planting of coca in the directed colonization areas which opened after 1962. The recent withdrawal

64

of the National Institute of Colonization from the Chapare resulted in the opening of the area west of the Ene River to coca cultivation. This area at present has one of the greatest rates of coca expansion in the region as a whole.

Rice, manioc and maize are the principal annual crops, which account for roughly 8% of land use. Bananas and plantains, citrus fruits, papaya, avocados and cacao are the main perennials, which comprise about 17% of total land under cultivation. About 35% of the cultivated land is planted to coca throughout the Yungas. Coca cultivation accounts for 58% of gross earnings of the Chapare farmer.^{1/}

Population in the Chapare is relatively sparse, with approximately 11,000 families, or about 50,000 people. The increase in population is related to the opening of new areas of colonization as the road network is enlarged. Present zones of pioneer settlements are located along the proposed Villa Tunari - Samusabeti - Puerto Isiboro routes.

^{1/} PRODES, Factores Sociales y Económicos del Cultivo de la Coca en una Micro-Región del Chapare, La Paz, 1978, p. 14.

65

Along the new proposed Cochabamba - Santa Cruz road to be financed by IDB, colonists are anticipating construction by settling rapidly in the Valle Ivirza area.

- b. The "Yungas of La Paz" is a region which encompasses areas of the provinces of Nor Yungas, Sud Yungas and Inquisivi. The landscape consists of steep intermountain valleys, where altitude determines subtropical and tropical micro-regions suitable for a variety of crops. In the coca producing zone^{1/}, four broad areas can be distinguished in terms of cropping patterns. In the area of Coroico, coffee is the predominant crop, followed by coca and citrus fruits. The area of Coripata contains the greatest concentration of coca. In fact, the ravine-like valley where Coripata, Arapata, Cruz Loma and other such villages are located is serviced by the "coca" road. In the areas of Chulumani, Irupana and Ocobaya, citrus is foremost, followed by coca and coffee.

Although the Inquisivi region is located in a different province, it markets most of its products (including coca) through Southern Yungas due to the better road conditions and easier accessibility to La Paz by the main road out of the region.

^{1/} See Figure III-3

A traditional coca producing region since colonial times, the Yungas of La Paz is known for its production of "sweet tasting coca", preferred for chewing purposes.

Older settlement in the Yungas region is the main factor in the greater population density than in the Chapare. Some 40,000 families (200,000 - 250,000 people) are occupied in agricultural labor. Settlement is more stable than in the Chapare, although the meager livelihood which the farmer obtains in the Yungas is the push factor in migration to La Paz and to new colonization areas such as those in Caranavi and Alto Beni.

Land tenure, after the Agrarian Reform of 1953 which abolished the hacienda system, is comprised of family farms averaging 3-7 hectares, but the holdings are non-contiguous and located in a hopscotch pattern over the mountainous landscape. This accounts for a variegated cropping pattern on the family farms: a sayaña or field high on a mountain slope planted with coca, another one kilometer below planted with citrus and coffee, and further down by the river another field with bananas and mangoes.

The coca production system in the Yungas is quite different from in the Chapare. A greater initial investment is required by soil management techniques which utilize steep

68

hillsides for coca terraces. The coca leaf commands a better price although yields are less than in the Chapare.

If more than ten years of continued production is used as the criterion to define traditional regions of coca production, the following areas would also qualify:

- c. The Yungas of Cochabamba comprises the inter-mountain valleys in the Carrasco province of Cochabamba, south of the piedmont area where the Chapare region begins. The Yungas de Tiraque, as the region is called, was a coca producing area long before the new road to the Chapare opened that region for coca cultivation. This area was not covered by the DNCSP R&C producer registration.
- d. The area of Ayopaya, presently the province of Independencia in Cochabamba, has a tradition of coca production which dates back to pre-Hispanic times. A field reconnaissance would probably confirm the existence of coca fields whose output is presently marketed through the Inquivisi area of the Yungas of La Paz. Producers were not registered in this area.
- e. The Apolo area of Northern La Paz Department is recognized as a coca production region, and was included in the DNCSP R&C producer registration, although the extent of coverage

is not clear. It encompasses a broad territory covering both inter-mountain valleys (Yungas) and piedmont areas of the provinces of Bautista Saavedra, Franz Tamayo, Munecas and Larecaja. Much of the coca production of this region supplies legal demand in the northern region of Lake Titicaca on both the Bolivian and Peruvian sides. Part is smuggled into Peru, where it is counted as part of that country's coca production.

2. Non-Traditional Coca Producing Regions

Non-traditional coca production has recently been reported in Northern Santa Cruz, with some industrial size plantations (more than 20 hectares). The team had the opportunity to visit small coca plots in the colonization area west of Yacapani. These were relatively new plantings (1-3 years), in small plots ranging from one tenth to half a hectare (plots up to two hectares exist in that area).

There are reports of coca plantings along the course of the Beni river, and in the area around Cobija. Traditional garden size plantings are known to be cultivated by rubber tappers of the Northern Beni and Pando Departments. In that region, wild coca grows along numerous tributaries of the Amazon River.

3. Production Estimates

There are wide gaps in quantitative information on coca production. Moreover, there is pronounced divergence among production estimates made by various agencies. The range of difference is such that there is urgent need for a comprehensive and sound national survey of the producing regions to establish acceptable benchmark data for planning purposes. Once benchmarks are set, procedures can be developed whereby a recognized agency can periodically survey output trends in the different regions so as to maintain accurate data on current coca availabilities.

Because of the lack of comprehensive data from any one reliable source, estimates must of necessity be based on selective information. Presently, production information is largely restricted to the Yungas and Chapare regions. In the accompanying Table III-1 estimates made by the Ministry of Agriculture (MACA), DNCSP and PRODES are shown. The methodologies of the three agencies vary.

- MACA estimates for national coca output are based on data obtained in an earlier national agricultural census and projected on the basis of selected trends.
- DNCSP estimates are based on their 1977 producer registration campaign in which planted area and output were declared by campesinos as they registered.

TABLE III-1

COCA PRODUCTION ESTIMATES; BY SOURCE OF ESTIMATE

I N S T I T U T I O N	AREA (Ha.)	METRIC TONS
Statistics Division, MACA 1977 <u>1/</u>	12,000	15,250
Direccion Nal. de Control de Sustancias Peligrosas 1978 (DNCSP) <u>2/</u>	9,119	25,250
PRODES "Chapare-Yungas" 1978		
Yungas	4,406	3,130
Chapare	4,713	12,280
TOTAL	9,119	15,410

Source: Compiled by Lic. C. Villegas

1/ Bulletin No. 2, Statistics Division, MACA, September 13, 1977 (Estimate is for national production).

2/ Report on Coca Registration Campaign, 1977, Direccion Nacional de Control de Sustancias Peligrosas (DNCSP) For Yungas and Chapare Only.

13

PRODES has conducted micro-analyses of yields in the Yungas and Chapare, but aggregate planted area and output data have not been compiled.

In Table III-1, the MACA estimates appear to be conservative, as compared with the most widely accepted legal consumption estimate of 12,000 tons. These output estimates would leave a margin of only 3,250 tons for diversion to the cocaine traffic. The DEA estimates up to 72 tons of cocaine are exported per year. That would require 8,300 to 12,000 tons of coca, based conservatively on cocaine sulfate equivalent. The PRODES estimates also permit only a small margin for diversion to the cocaine traffic. However, PRODES data are only for the Chapare-Yungas regions, and would be considerably higher if other regions, traditional and newer, were to be included.

Because of time constraints this study is limited to estimates of coca production in the Chapare-Yungas areas. After consideration of available information, including estimates of illegal exports, a total 1979 production of about 22,000 metric tons is estimated. This total is considerably higher than previous estimates, and should be more accurate due to the availability of more current information.

In Table III-2, estimates have been calculated by the following methods. An upward adjustment in the area data has been made (30% for Yungas and an estimate made by PRODES for Chapare). Similarly, 1980 area estimates have been made by PRODES with yields being held constant. Without an in-depth analysis of planting rates over time, an

TABLE III-2

YUNGAS AND CHAPARE: ILLUSTRATIVE COCA PRODUCTION ESTIMATES, 1979 and 1980

Y E A R		AREA (Ha.)	YIELD ^{2/} PER HA. (m.t.)	TOTAL OUTPUT (m.t.)
1979	(Yungas)	5,730 <u>1/</u>	0.71	4,100
	(Chapare)	7,000 <u>3/</u>	2.61	18,300
	TOTAL	12,730		22,400
1980	(Yungas)	6,000 <u>4/</u>	0.71	4,300
	(Chapare)	10,000 <u>3/</u>	2.61	26,100
	TOTAL	16,000	-	30,400

Source: Basic Data from Table A.

1/ Based on 30% upward adjustment in area planted as shown in Table A.

2/ Based on field studies conducted by PRODES technicians.

3/ Based on estimate of C. Hoffmann, PRODES, Villa Tunari.

4/ Based on estimate of C. Villegas.

NY

attempt at additional accuracy would be illusory. Therefore, these calculations are shown as illustrative orders of magnitude. The estimate for 1979 of 22,300 tons for Yungas and Chapare is in the range of "acceptable" estimates mentioned in U.S. Mission papers, whereas the 1980 estimate of 30,400 tons is high in relation to the aforementioned range. Coca matures quickly in sub-tropical climate, the first picking being from year-old plants. No lag factor has been introduced in the calculations because of the fact that information on the rate of planting of new acreage is fragmentary. In any event, the time lag for oncoming crops is not likely to be long and may be compensated by margins of error in the estimates.

B. Coca Marketing

1. Aspects of Marketing in Bolivia

a. Contraband and barter

The consumer sector of the Bolivian economy is based in large measure on contraband trade. A recent study^{1/} on agricultural marketing estimated that 50% of processed foods sold in the markets were contraband imports. Some temperate zone fresh fruits such as apples and pears also are imported in contraband trade.

In La Paz, some 20% of the 150 blocks of market space are devoted to contraband merchandise. It is called the "Mercado Negro". In Cochabamba and Santa Cruz, there are established markets and dealers in contraband autos. The city of Montero, the "Cocaine Capital", is situated 50 kilometers from Santa Cruz. It is said that the economy of Santa Cruz is based on oil, cocaine and contraband. With the contraction in petroleum activity due to technical factors, cocaine is said to be superseding oil as the leading product of the region.

Contraband exports are shipped from Santa Cruz and the Beni by air, boat, rail and truck. High-value exports are exotic

1/ AID Study, 1978

hides and cocaine. On return trips, contraband imports are hauled back. Aside from this contraband traffic, under-invoicing of exports and imports is rampant, allowed by corrupt customs officials. Tax evasion and under-reporting of trade is therefore widespread.

There is a law that specifies a reward of 50% of the eventual sale value of confiscated goods. However, there is very little reporting of contraband exports or imports. Corruption is so deeply rooted that it is the norm, making it more difficult to face up to the responsibility of reporting illegal traffic.

Contrabando de Hormigas is a term applied to the thousands of traders,^{1/} largely women, who carry small parcels of consumer goods across frontiers, evading customs and local tax authorities, or bribing the personnel at customs posts. Often their profit on the merchandise that they carry in bundles or on their backs is mainly lost to the customs agents in the form of bribes. It is difficult to estimate the extent of their role in the coca/cocaine trade across the borders with Argentina, Chile, Peru, and on certain key internal trade routes where such traders would likely be a factor.

^{1/} National Customs estimates 50,000 families are engaged in this trade. Article in Presencia, July 11, 1979.

Thousands of campesino workers who migrate from the highlands to the valleys and lowlands often take coca as part of their pay and return to their villages in the highlands to sell the small amounts of a tambor^{1/} or less. Most of this traffic is hidden under baggage, to avoid paying local taxes. The volume of this traffic is considered to be substantial. The proportion of this coca traffic going to cocaine is difficult to determine. However, there is cocaine activity in the highlands where small lots of half a kilo or so at a time reportedly are produced.

In the Yungas, the potential volume that could be carried by campesinos and hundreds of weekend travelers on trucks, in baggage, and private autos is indeed large. This traffic to La Paz is heavy and surveillance is difficult, since all traffic goes through a bottleneck at Unduavi.

Although tax collections at Unduavi on coffee, coca, and other goods are relatively large, inspection is conducted in a perfunctory manner. It is reported that there is fierce competition for assignment to the customs post at Unduavi, even though it is an isolated and unpleasant job, because of the lucrative pay-offs from the truckers who must pass through the only road out of the Yungas to La Paz. Of course, to attempt to inspect the baggage of thousands of campesinos riding atop truck cargoes

^{1/} Standard coca package of 45 pounds in the Yungas and 62.5 pounds in the Chapare.

daily would present a logistics problem and cause a monumental traffic jam at the already congested checkpoint.

Trade and barter, i.e., transactions in kind, occur not only between intermediaries and coca producers, but also between campesinos, particularly during harvests when mutual aid in picking coca is frequent. Migrant farm labor is often paid in coca which the workers take back to their native villages to sell or trade. In the highland consumption regions, trade or barter with coca is a common practice.

b. Role of Intermediaries

As in most underdeveloped regions of the world, intermediaries in the coca producing zones perform an important role in marketing the product. They penetrate areas of difficult accessibility to collect coca from farmers. They provide the means of transport or assemble quantities of coca and arrange economical transportation to market centers. The intermediary often performs a credit function, providing crop financing to poor farmers. The intermediary also is frequently a supplier (on credit) of staple food items and of basic household goods which are paid for in coca when it is harvested.

In the Yungas 85% and in Chapare 92% of the campesinos sell their coca to an intermediary (rescatador).^{1/}

^{1/} Source: Multidisciplinary Study on Traditional Use of Coca, (MDS), October 1978

In areas where campesino holdings are isolated and far from roads, such as in the Chapare, the primary intermediary may be an enterprising campesino who collects coca from his neighbors and negotiates with a second intermediary (rescatador) who has a truck for pickup at a given point to take to a village or Cochabamba. The enterprising campesino may intermittently supply the neighbors with staple items and take coca in trade. Thus coca may pass through the hands of two intermediaries before reaching a large market such as Cochabamba. At any point in the channels of trade an intermediary may be an agent for a cocaine trafficker, in which case the coca would be promptly diverted, avoiding the necessity for packaging in tambores and paying taxes at checkpoints or in the markets.

In La Paz, dealers act as intermediaries for large wholesalers in the Altiplano and mining districts, assembling small offerings and preparing bulk shipments.

c. Commodity Boards and Attempts to Eliminate Intermediaries

The Case of Rice:

The Empresa Nacional de Arroz (ENA) is an outgrowth of earlier public rice marketing bodies^{1/} and has been in existence since 1971. It originally functioned as a monopoly buyer of rice to assure sufficient supplies to the domestic market and is the

^{1/} Comité Nacional de Comercialización del Arroz (CONCA), 1960-1964, and Comité Nacional del Arroz (CONAR), 1964-1970.

designated sole exporter of rice. One of its aims is to promote rice production in new areas such as the Chapare and Santa Cruz. However, ENA has not been able to develop and distribute improved seed nor otherwise increase yields. Storage facilities were improperly designed or built and as a result, heavy inventory losses were incurred. ENA has not been able to install sufficient rice milling capacity. ENA reportedly had a cumulative deficit of U.S. \$20 million in its first seven years of operation. Two years ago, the decision was made to buy only export grade rice, thus depriving campesinos of a guaranteed market and compelling them to resort to traditional intermediary channels. That decision in part was prompted by heavy losses experienced due to off-grade rice delivered by campesinos, mixed with extraneous materials and high moisture content which accelerated spoilage. A mobile laboratory which tested rice before delivery to ENA was ineffective, because ENA personnel reportedly were corrupt. Partially due to a short crop in 1978, and due to the foregoing buying decision, there is a persistent supply deficit. Meanwhile the free market price has gone up to \$b. 5.00 per pound as compared with the official consumer price of \$b. 4.00 per pound. Bolivian opinion is that a coca marketing body would experience a much greater loss rate because coca is much more susceptible to spoilage than rice.

The Case of Coffee

In 1956, the Banco Agrícola began a coffee purchase program. Campesinos were obligated to deliver coffee to the Banco Agrícola facility and were guaranteed a minimum price. Campesinos delivered coffee with extraneous material mixed in the sacks. Coffee was improperly dried, or water was added to increase its weight. Corrupt personnel accepted delivery without inspection. Lax supervision permitted stacking the moist coffee with dried coffee, thus contaminating large inventories which had to be dumped. Losses of U.S. \$1.0 million annually reportedly were experienced for several years, whereupon the program was abandoned. Subsequently, other public sector coffee agencies were created.^{1/}

COBOLCA (Comité Boliviano del Cafe) has as its primary function the administration of a consumer price ceiling and a quota for delivery of coffee to the retail trade by the coffee industry. Because the quota delivery price and the retail price are set unrealistically low, the lowest-grade coffee is delivered to roasters. Roasters re-sell part of the quota delivered to them and add various materials to the low-grade coffee to make up the weight. This adulterated product^{2/} is sold at the official consumer price. Setting price ceilings for coca may cause

1/ Instituto Boliviano de Cafe (INVOLCA), 1965-71, and Comité Boliviano del Cafe (COBOLCA) 1971-present.

2/ Laboratory tests have graded coffee samples from roasters as unfit for human consumption.

traders to similarly downgrade their deliveries unless strong enforcement is exercised. Bolivian sources point out the necessity for preventing such product deterioration because coca is a vital staple and campesinos may react violently to product manipulation.

The Case of Tomatoes

The Asociación de Productores de Tomates de San Isidro (Comarapa, Santa Cruz) in 1969-70 was able to negotiate directly with an importer in Buenos Aires to supply about ten truckloads of tomatoes weekly to that city. This deal was assisted by MACA which provided an expert adviser for training in production, selection, and packaging for export. Convoys were sent to Buenos Aires where the tomatoes were well received. Subsequently, the campesinos began to fill boxes with small off-grade tomatoes on the bottom covered by top quality tomatoes, and the importer refused further shipments. Bolivian sources state that a public coca marketing agency would continually be faced with similar problems, because of its political inability to apply sanctions against producers.

The Case of Wool

The Comité Boliviano de Fomento Lanero (COMBOFLA) was formed in 1962. Its aim was to become the monopoly buyer of wool and

82

alpaca-llama hair, and to provide technical assistance in improving product quality. The COMBOFLA purchase price was set too low relative to the going price across the border in Peru, so that a large quantity of alpaca-llama products were sold to contraband traffic in Peru, depriving COMBOFLA of sufficient volume to break even on its operations. The likelihood of erasing its perennial deficit was small due to quality problems of campesino deliveries. In the case of COMBOFLA operations, extraneous materials mixed with deliveries to add weight, lack of responsible pre-grading by campesinos, and lax inspection by personnel caused continual operating losses until its demise in 1977. The failure to improve delivery performance over an extended number of years holds important implications for a public coca marketing body, which, according to Bolivian sources, would face identical problems.

The Case of Tropical Fruits

Comité Nacional de Comercialización de Frutas (CONCOFRUT) was organized in 1967 as a public sector entity to promote exports of fruit from the Yungas. During its seven year-existence, C. Hoffman (now with PRODES) was sent to Florida for an extended period of training in and experience with citrus marketing. When he returned to Bolivia, another manager had been employed who lacked experience in fruit marketing, so that the valuable training and time were lost to CONCOFRUT. CONCOFRUT collapsed

when a Chilean importer reportedly absconded with payments due CONCOFRUT for Bolivian exports. Similar management decisions are likely to be a serious constraint for a public coca marketing body.

2. Legal and Para-Legal Firms in the Demand Sector

a. Legal firms

At the primary distribution level in the Yungas and Chapare, the majority of intermediaries, large and small, purchase coca for their own account from producers or producer-intermediaries at village weekend markets or at collection points. Practically all the coca is transported directly to the coca markets in Cochabamba or La Paz for immediate sale.

The Cochabamba market is active on Saturdays and Mondays. Coca is transacted by itinerant buyers and sellers at the street-side location, and the coca is immediately hauled away by buyers to distant destinations. The La Paz market is characterized by a more permanent environment, and is active seven days a week. Dealers or agents occupy storefronts in the coffee-coca section of the market. Intermediaries transact their coca with one or several dealers or agents. Agents accumulate large consignments for buyer-clients for consuming regions for immediate shipment,

while dealers conduct resales during the week. Dealers also may act as agents for the coca tea bag manufacturer and for coca export firms.

Direct buyers are COMIBOL, which carries coca in its commissary to supply miners, private mining companies, and large cotton and sugar planters who provide daily rations of coca as part of farm wage.

b. Para-legal firms

This is a gray area that is not amenable to definition or measurement. At any point, in distribution channels, an intermediary or dealer may divert all or part of a coca shipment to the cocaine traffic. Buyers in the Cochabamba market may be acting for cocaine traffickers. Clearly a large proportion of the coca transported to Santa Cruz by intermediaries is not for legal consumption.

Bolivia does not have a tradition of local cocaine consumption outside of criminal and prison circles. However, a new phenomenon has appeared in the Santa Cruz area. The active cocaine traffic has developed a local marketing device in the form of "pitillos", cigarettes laced with cocaine. These cigarettes reportedly are sold openly in certain streets for

\$b. 400 per pack of 20. Youths are the major market, and estimates of the proportion of youths in Santa Cruz using this form of narcotic are quite high. The packs are bought by groups of several persons so that the individual outlay is modest. Public concern reportedly is mounting in Santa Cruz, but counter-measures are difficult to initiate because of the political leverage of the entrenched interests in that city. Thus far the cocaine problem seems to be confined mainly to Santa Cruz. This traffic has not been given public notice in other cities. There are instances of cocaine usage in the prisons, where it and other drugs reportedly can be obtained by prisoners through the criminal grapevine.

There is no evidence that in the highlands those who make small lots of cocaine use any of it. They apparently make cocaine only for sale.

3. Patterns of Coca Marketing

a. Direct and derived employment

The DNCSP registration of merchants thus far has reached a total of 3,810 traders of all categories, with substantial areas of the country yet to be covered. There are numerous cases where several members of one family have registered (men, women and older children). Generally, it can be assumed that one or at

most two members of a family have registered, so that enumeration of other family members who help would probably double the number of directly employed persons, (or about 7,600 traders.) That total probably should be doubled to account for under-registration and areas of the country not yet covered, for a total of about 15,200. Itinerant employment in trucking, stevedoring, storage, food service in markets, maintenance, etc., should be in a ratio of 5:1, so that derived and indirect employment should total about 75,000 persons.

The DNCSP list of merchant registrants is shown below. It is interesting to note that the proportions generally follow the volume of coca trade flows, with the possible exception of Santa Cruz which has few merchants in relation to the estimated quantity of coca going to that area.

<u>Department</u>	<u>No. of Coca Merchants</u>	<u>%</u>	
La Paz	1,618	42.5	
Oruro	464	12.2	(61.1%)
Cochabamba	709	18.6	
Santa Cruz	237	6.2	
Potosi	360	9.4	
Sucre	312	8.2	
Tarija	110	2.9	
TOTAL	3,810	100.0%	

b. Coca trade flows and prices

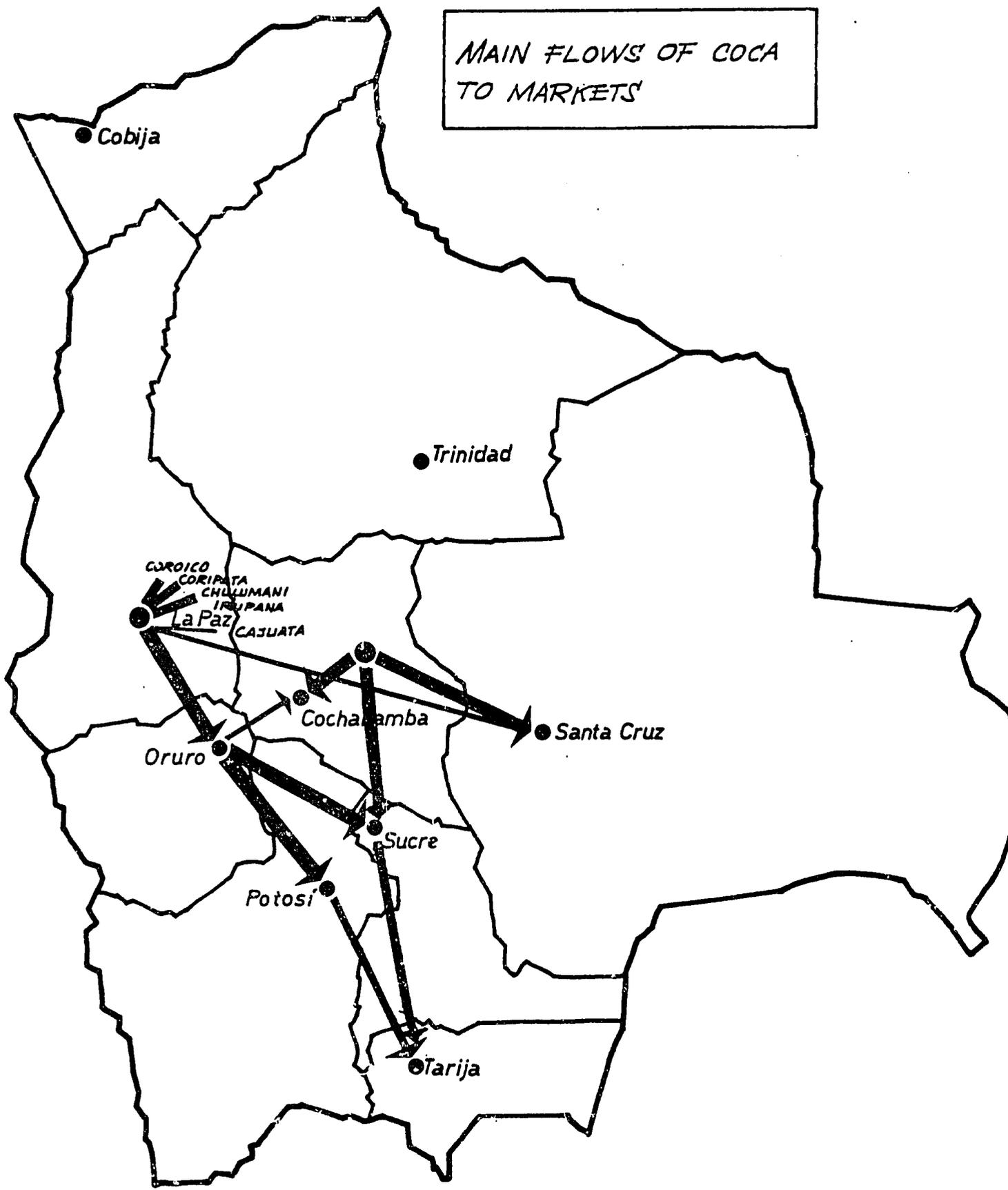
Coca trade flows follow mainly geographic lines.^{1/} Yungas coca goes to La Paz over the one main road out of the area that leads to La Paz. From La Paz, coca is transported to the main high-land markets. Because it is a preferred coca, small volumes go to the Cochabamba and Santa Cruz markets and to other southern cities. Chapare coca goes from Cochabamba to Santa Cruz, the South and to Sucre, Oruro and Potosi; a small volume also goes to La Paz. Despite the fact that Santa Cruz is not a major traditional coca consumption area, it receives 26% of all recorded shipments^{2/} exceeding Potosi, a heavily populated traditional coca market. In the latter department, about one fifth of coca supplies are estimated to be taken to Argentina by clandestine trade.^{3/}

In Santa Cruz, the coca arrives mainly from the Chapare. In 1978, 400 tons were recorded as having been dispatched from Cochabamba to Santa Cruz. DNCSP officials state that in May, 1979, arrivals totalled 5,000 tambores, equivalent to 1,700 tons annually, still a relatively small volume in relation to production of an estimated 16,000 tons in the Chapare, for which Santa Cruz is reportedly by far the most important market. One

1/ See Chart, Figure III-4, "MAIN FLOWS OF COCA TO MARKETS".
2/ See Chart, Figure III-5. "COCA TRADE FLOWS IN 1978"
3/ See Chart, Figure III-6. "COCA TRADE FLOWS IN 1977"

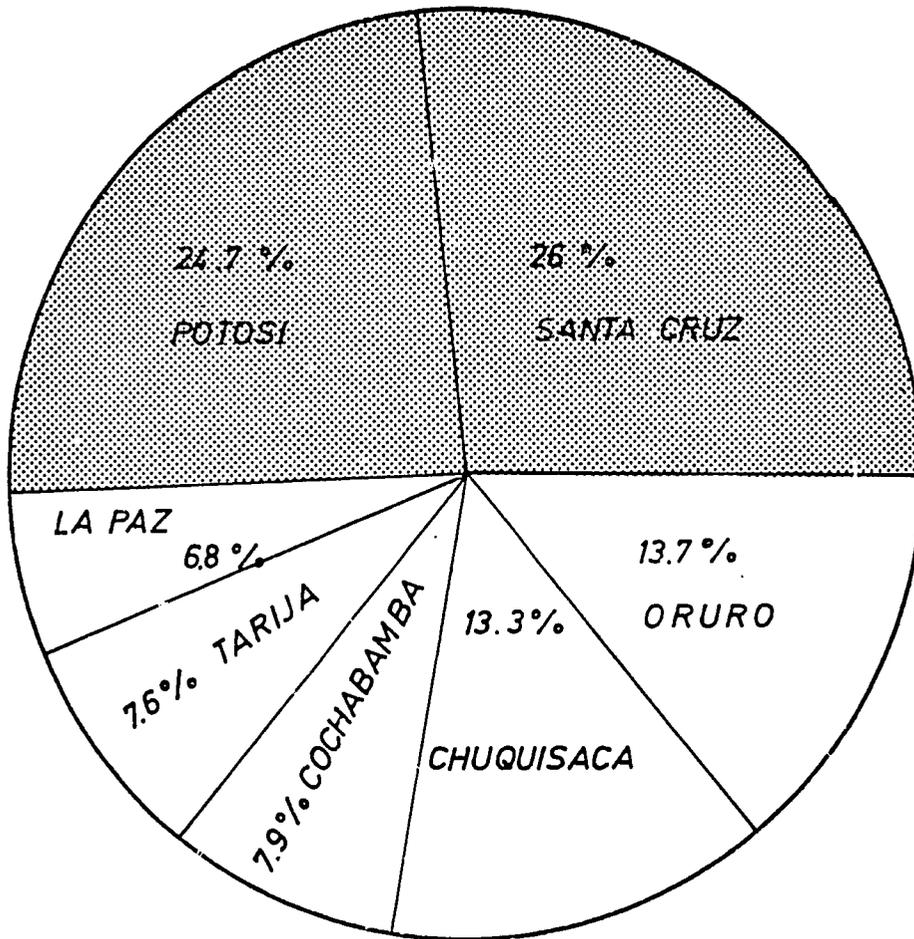
89'

FIGURE III-4



90-

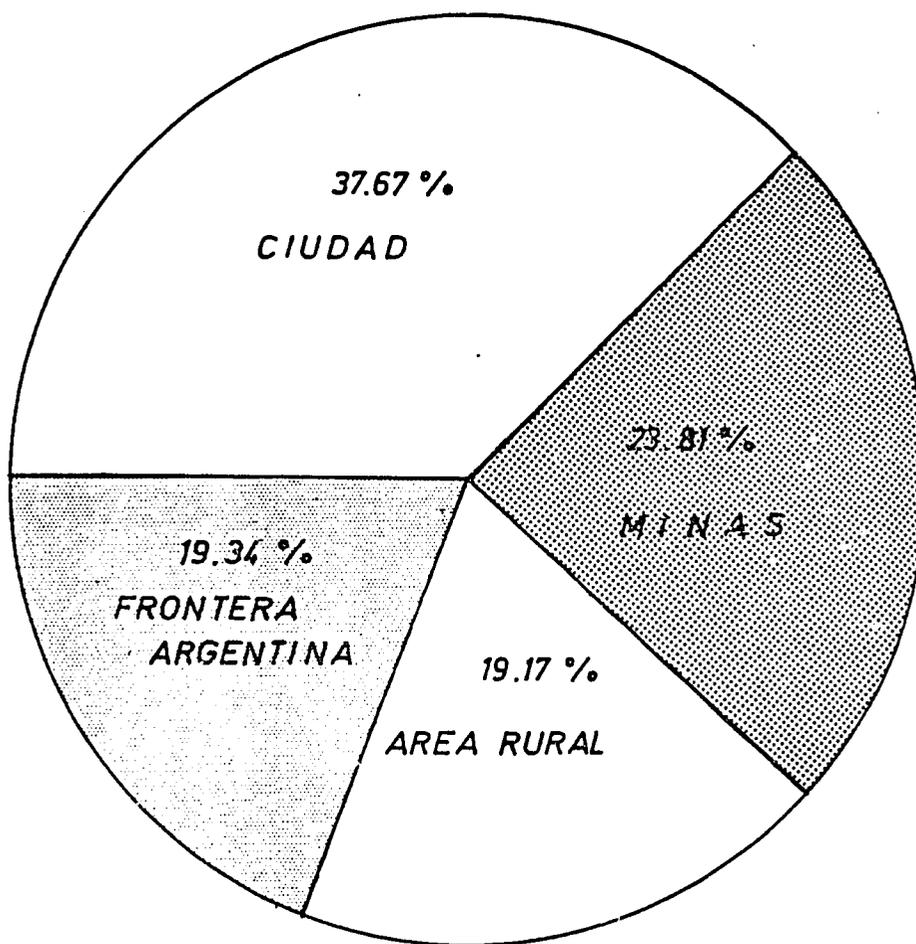
FIGURE III-5
BOLIVIA : Coca Trade Flows in 1978



Source: DINCSP.

FIGURE III-6

POIOSI: Coca Trade Flows in 1977



Source: D.N.C.S.P.

implication is that volume going by diversionary routes to Santa Cruz is substantial, and must be destined for the cocaine traffic because the 5,000 tambores recorded by the local customs already exceeds apparent consumption requirements. About half the legal coca is sold in the Warnes, Portachuelo, and Mineros area of Santa Cruz. About a third is sold in the city itself, and the rest in the distant rural areas of the Department.

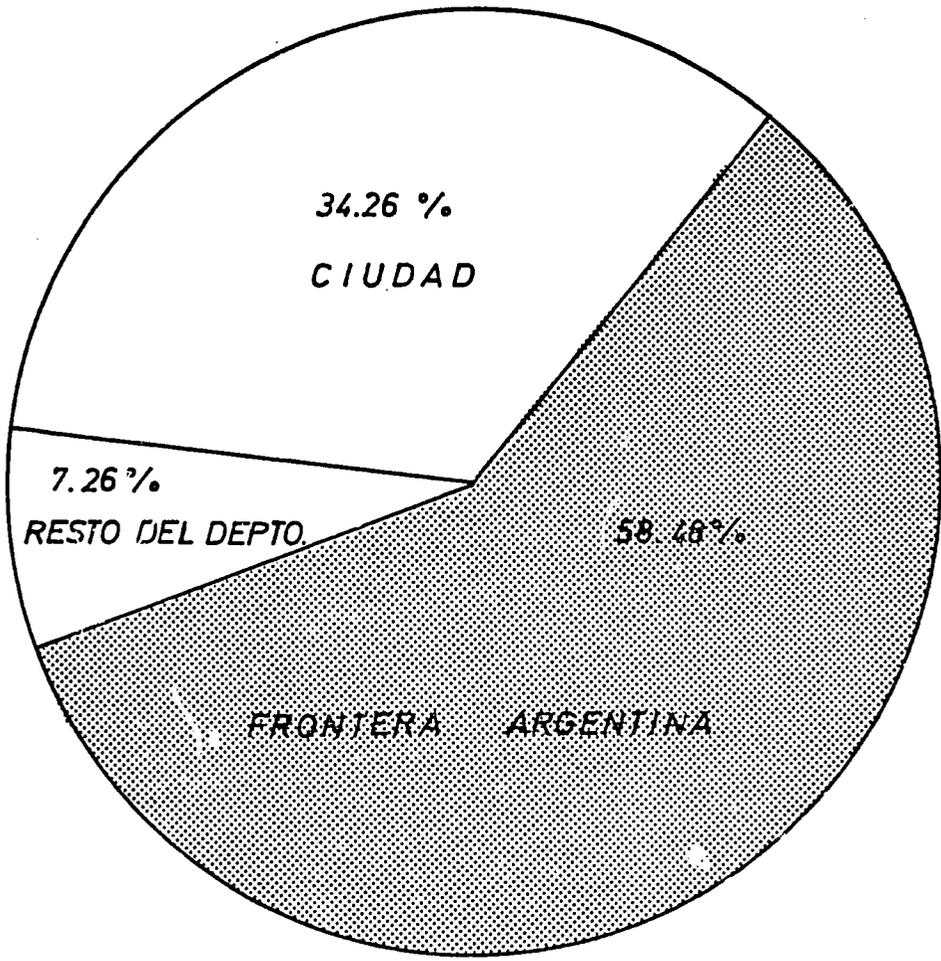
The campesinos of Tarija are not noted for their coca chewing habit. About 50% of the coca going to Tarija department is received in the border towns of Yacuiba and Bermejo and reportedly is shunted across the border clandestinely.^{1/} Another one-third of the coca business is done in the city of Tarija, and about 25% of that quantity is said to be shipped to Argentina, where imports are prohibited.

In La Paz there are about 40 coffee-coca merchants clustered in a small area along three blocks along the streets Juan de la Barra and Sebastian Seguro. This specialized sector is located at one end of the Mercado Rodriguez where mostly agricultural products are traded. Along the main street, Max Paredes, many vendors sell coca retail along with other items. The coca dealers or agents rent storefronts on the street, in contrast to fruit and vegetable dealers who rent space in the tambor in the interiors and courtyards of the buildings. Outside those stores, vendors sell coca at retail.

1/ See Chart, Figure III-7. "TARIJA-COCA TRADE FLOWS IN 1977"

FIGURE III-7

TARIJA: Coca Trade Flows in 1977



Source: DNCSP

All the coca merchants handle coffee as well. In fact, they deal only in these two commodities. Rarely do they have other products on the premises. Volumes are small, average store inventory ranging from 10 to 20 sacks of coffee or 10 to 20 tambores of coca. Many dealers act as buying agents for coffee exporters and for large coca intermediaries from Oruro, Potosi, etc. These dealers do not engage very actively in wholesale business, and are very reticent about their dealings. The trading goes on seven days a week.

Practically all the dealers and the retail vendors on the sidewalks as well have Yungas coca. Only one dealer had Chapare coca. A large dealer specializing in Chapare coca was closed. He reportedly services the cocaine traffickers (the latter, of course, could be the numerous carriers of coca in the Altiplano who make cocaine in small lots of half a kilo at a time). One dealer had coca from Vandiola, and one dealer had some "hoja negra" (improperly dried coca).

The tambor from the Yungas was quoted as being from 44 to 48 pounds (average should be about 45 pounds). A small tambor (cesto) weighed 30 pounds. Many tambores had an outer wrapping of jute, making a durable and attractive package. This packaging is obviously essential to protect the product, as most of the trucks arriving in the market were unloading coca from the bottom of the load. Mostly citrus and miscellaneous fruits covered the tambores. The top layer of the cargo was, of course, people.

95

The consumer market in the La Paz area is based mainly on Yungas coca, its higher price reflecting consumer preference. Coca from other origins arrives largely in transit trade to the Altiplano and the mining districts. Direct buyers are reportedly the main market for Chapare coca, as they distribute the cheaper coca in daily rations.

In Cochabamba the coca market is concentrated on one side of one block slightly removed from the main municipal produce market. It is mainly a wholesale market operating on Fridays and Mondays. Intermediaries (rescatadores) and truckers usually go to the Chapare on Thursday and Sunday to do their buying. Trading in the Cochabamba market is brisk and most coca is sold by mid-day. In Cochabamba the tambor is larger - 62.5 pounds - and the trading unit is the carga (two tambores, or 125 pounds). Sales are made off the truck or from stacks of tambores along the sidewalk. Trucks unloaded and loaded again in the course of the morning as transactions were made. About 1,750 tambores (50 tons) were traded on one Monday in May. Traders estimate that an average of 100 tons per week are traded, with some seasonal variations, indicating an annual trading total about half the production. Vendors buy tambores and sell at retail in the same market alongside the wholesalers.

Several thousand persons pass through the block-long market. At one extreme of the trading activity are small buyers, campesino laborers buying one tambor at a time, while several large buyers negotiate for large quantities. The differences in trading activity in the concentrated area are indeed striking.

In Montero, a city 50 km north of Santa Cruz, 42 vendors have stalls in the local market and were actively selling coca. DNCSP has licensed 100 coca merchants in this city who can sell in the local market. Sales were active with a large number of people buying on the market day attended.

Antofagasta, a small village, was visited because of its interest as a Northern Santa Cruz colonization center consisting of families from traditional coca consuming regions in the Altiplano, Sucre, Potosi and the mining districts. Six vendors with one or two tambores of coca were located in small stores on the plaza of this colonization center. Several vendors stated that they sold one tambor per week, and sometimes a tambor in 3-4 days when coca was scarce.

c. Coca packaging

The packaging of Chapare coca in the tambor is one of the best examples of commodity packaging designed in a developing country.

It features the use of an abundant local natural resource - banana tree bark - which is very sturdy while allowing for aeration of the coca, and is absorbent but sufficiently water resistant. The tambor is a standard shape and size in each region which is universally accepted in coca markets. The shape lends itself to handling and storage. The package is tough and stands abuses. Price quotations are based on the tambor, or carga (two tambores). In the Yungas, the tambor is often wrapped in jute sacking material (imported from India). This packaging is indeed durable. Coca destined for quick sale in La Paz may be sent in large plastic bags for the short trip from the Yungas.

Although coca packaging is excellent, there is need for encouraging development of packaging for other commodities grown in the coca production zones. In contrast to coca, fruit, potatoes, and other products are transported in loose bulk, thus incurring large losses due to handling and damage en route. Spoilage also occurs due to lack of protection. Coca is usually at the bottom of the load, but is well-protected by its packaging.

The transport of other commodities in bulk facilitates evasion of taxes and controls on coca, because it is relatively easy to conceal a number of tambores of coca underneath a cargo of bulk commodities. It is asserted that, for this purpose, indiscriminate transport and handling of other commodities is encouraged.

d. Coca prices

(1) Price elasticity of demand

The Legal Market

Recent research on coca consumption reviewed in Section IV, 3, has shown that demand for coca is in large part conditioned by socio-cultural, nutritional and biomedical factors. These factors have a strong influence on coca consumption, accounting in part for the fact that demand for coca apparently is inelastic over a wide range. Evidence suggests that, from a base of \$b. 20-25 per pound, demand for coca is inelastic over a range of at least 200% to 300%. Apparently campesinos are willing to sacrifice food items in order to have their daily ration of coca. Coca is often lent by friends or relatives, so one can have his daily ration.

In the Santa Cruz area, retail activity of coca vendors apparently continues unabated at prevailing prices of \$b. 40 per pound for Chapare and other cocas, and \$b. 50 per pound for Yungas coca. Those prices compare with \$b. 20 per pound in the Cochabamba market, and an average of \$b. 25 per pound in the La Paz market. These observations from casual interviews must of course be supported at the first opportunity by research and accurate measurement of volume-price relationships.

Consumer preference is also a factor in the coca market. Yungas coca always is at the upper end of the price range, whereas coca from the Chapare or from a lesser region usually sells at varying discounts. Local opinion attributes those preferences partly to an income effect, buyers of Yungas coca frequently being regarded as campesinos with better than average incomes. Whether income elasticity of demand for coca can be defined would be an interesting subject for research, and so also would other non-economic factors leading to this market segmentation. If in fact there is a strong income effect, rising incomes among traditional coca chewers could be reflected in increased demand for coca or for upgraded tastes. On the other hand, higher incomes would enable campesinos to augment their protein intake, possibly diminishing their need for coca. Physiological or metabolic measurement would be required to establish whether a different protein balance in the diet, particularly at higher altitudes, would change nutritional requirements and affect the demand for coca. Non-monetary factors may prove to be more important influences in demand for coca at different income levels.

The Illicit Market

Demand for coca from cocaine traffic clearly is elastic over a wide range. Demand from the illegal sector in fact has been

expanding as coca prices have remained firm or risen, reflecting similar conditions in the U.S. market for cocaine. This is particularly notable in the Chapare. Presently, there are no indications as to the level of absorptive capacity of the drug market in terms of volume, nor of the price level at which the market would react to further price increases. It is considered likely that a decrease in the street price would widen tremendously the scope of the market for cocaine, with no incidence on local market prices. It is of interest to note that in the present circumstances coca in illicit use has a value of approximately \$b. 600 - 1,000 per kilo, 30 to 50 times prevailing prices in the legal market in Bolivia based on estimated export prices of cocaine. Illustrative calculations of the value of coca when converted to coca are shown below. It should be emphasized that these are conservative calculations, based on the Bolivian price rather than the U.S. import price which may be ten times higher. Margins of profit shown here are narrower than they might be.

(2) Farm-Gate (Producer) Prices

Because of the difficulty of access to campesino holdings in many areas and the important role of the intermediary, the so-called producer price is not a farm-gate price, but a primary village trading price. Even at that level, quotations may vary according to the informant. Crop quality is of course an important consideration.

101

Although coca is not a perishable commodity, the producer is under a certain degree of pressure because in the Yungas the leaf begins to deteriorate two weeks after being sun-dried. Coca has to be brought to La Paz where natural dehydration helps to preserve the leaf for long periods. In the Chapare, the leaf has to be shipped out of the humid climate within a week.

The producer price is regarded as a barometer of cocaine activity. When the intermediary offering price is firm, it is assumed that cocaine traffickers are in the market. When there is no immediate demand from cocaine traffickers, intermediaries show little interest in buying and seek concessions from campesinos or campesino intermediaries.

In the Chapare, the highway from Cochabamba has improved transport to the region to the extent that removal of coca to market has become a direct process. Intermediaries at the producer or village level are numerous. Most are small traders, handling about 20 tambores at a time. There is sharp competition among them because of their number. Complex personal relationships characterize intermediary trading, as is the case with all community activities. Some intermediaries work for others, who may be relatives or friends. Small intermediaries may work for large intermediaries. The bigger intermediaries may set the tone of the market, though they may not dictate prices.

Coca prices may vary \$b. 200 - 300 per carga (125 lbs.) between localities. Quotations tend to be higher in the more accessible areas. Generally, the spread between the higher price levels in the villages and in the Cochabamba market is a range of \$b. 200 - 300 per carga. This narrow margin seemingly permits limited profit prospects, especially for the small intermediary. After paying the tax of \$b. 80 per carga and transport costs, fluctuations in the market could cause the intermediary to incur a loss, a situation which does occur at times. This situation leads to a widespread opinion that many of the larger intermediaries serve the cocaine traffickers, a more profitable market. Smaller intermediaries may profit from two-way trading, i.e., the sale or barter of household supplies and staples for coca, earning a margin of 30% or more on the merchandise. The maximum margin permitted by law on retail sales of household goods is 30%. However, that ceiling is not always respected in practice.

In early May, in the Cochabamba market, the intermediaries were selling at \$b. 1,600-1,800 per carga in the course of the morning. Daily fluctuations range to \$b. 300 or more. Speculators buy and sell during the market trying to capitalize on short fluctuations. Intermediaries assertedly bought coca in Chapare at \$b. 1,400-1,500 per carga so that their after-tax margin was narrow and could be wiped out if they could not sell near the top of the day's market. Those rescatadores probably

- 103 -

bought from local intermediaries who assembled coca for sale at village markets on Friday and Sunday. Of course, an intermediary who trades 20 cargas (40 tambores) and who clears \$b. 100 per carga gains an excellent income by local standards, so that the financial incentive to trade in coca is very strong.

Seasonal Variations

During the rainy season -- November to March -- coca yields are heaviest. The relative abundance of supply depresses the market, and prices in past seasons have reacted as much as 50%. Weather and road conditions cause sharp week to week price movements, but there is usually noticeable downward pressure on the market during rainy months.

In the Chapare, it is notable that the cocaine traffickers apparently offer a small premium for coca. In the Cochabamba area, prices fluctuated between \$b. 1600 and \$b. 1800 per carga (at the wholesale level) during May. In Puerto Villarroel, \$b. 2000 was being offered at one point. Of course, various factors besides cocaine trafficker demand could account for part of that differential, such as temporary weather or harvest conditions.

There is nominal police presence at the port of Villarroel, but bribery is commonplace. There is no special surveillance in

this locality. Coca can be brought in and loaded on riverboats without paying the tax of \$b. 80 per tambor on coca taken out by road to Cochabamba past the local customs checkpoint at Paracti. Many riverboats are known to be mobile cocaine labs.

(3) Wholesale and retail prices

Dealer quotations vary according to the informant. An intermediary selling coca in La Paz, for example, will quote the price he receives, which may be more accurately described as a "jobber" price. The dealer's resale price in the La Paz or Cochabamba coca markets would be considered a wholesale price. These quotations were obtained in the course of a few interviews and are only illustrative, as not all information is based on generalized quotations.

Retail prices are lowest in Cochabamba, based on Chapare coca. The prevailing level is \$b. 20 per pound. Vendors agree on this price; no variation is evident through the market area.

In the La Paz market dealers uniformly quoted available lots of coca at \$b. 1,200 per tambor. This could have been attributable to demand from the cocaine traffic. However, retail prices vary considerably. Yungas coca is most expensive. Coca from minor regions (Vandiola, etc.) is lower-priced.

Apolo coca reportedly is of superior quality, but quotations are not always available. Coripata (Yungas) coca is highest at \$b. 26-28 per pound. Other Yungas at \$b. 24-25 are on a par with lesser origins. One vendor sold Chapare coca at \$b. 18 while another sold Vandiola coca at that price; off-grade coca at \$b. 18 or less was probably destined for the cocaine traffic where leaf quality and taste are not important.

In the Santa Cruz area prices are highest, reflecting the intermediaries' strong position in an area where there is strong demand from the cocaine traffic. Yungas coca at \$b. 50 per pound is most expensive; Chapare and other origins range from \$b. 35-40. This price situation may change as more local coca becomes available with substantially larger harvests. Cocaine traffic demand will be the most important price determinant. Campesinos indicate that the high prices definitely are an incentive to plant coca, in the first instance for family consumption and eventually for sale in the local markets. Coca appears to be the most profitable crop in the area.

(4) Marketing costs and margins

In the accompanying Table III-3, quotations from various sources are shown which are illustrative of prices, costs and incentive margins. Actual costs and margins would vary with the scale of business. Transport is an important cost. For an intermediary

TABLE III-3

ILLUSTRATIVE COCA PRICES AND TRANSPORT COSTS
Bolivian Pesos per Kilogram

<u>AREA AND MARKET</u>	<u>PRODUCER (FARM-GATE PRICE)</u>	<u>TRANSPORT COST</u>	<u>INTERMEDIARY PRICE</u>	<u>WHOLESALE PRICE</u>	<u>RETAIL PRICE</u>
Yungas					
La Paz	6.67- 8.89	.22	16.67	26.67	52.80-55.00
Coripata	13.33-15.56	.22	17.78	-	57.20-61.60
Chapare					
Cochabamba	5.60- 6.40	.22	10.40-12.00	12.80-18.00	44.00
Puerto Villarroel	5.60- 6.40	.11	10.40-12.00	16.00	-
Santa Cruz					
Montero (Yungas)	-	-	-	-	11.00
Antofagasta (Chapare)	-	-	-	-	77.00-88.00

107

who owns his truck, transport charges are an opportunity cost. With a high-value product such as coca, transport and other incidental costs are minor items. Taxes are by far the most important factor affecting margins as they cannot be passed on in the market. PRODES Cochabamba is conducting a series of market studies in various coca consuming centers which should broaden the limited information available on this product. Retail prices cited in the description of the various markets are summarized in Table III-3.

(5) Ratios of coca costs to cocaine sale price

Given a production range of 20,000-30,000 tons and assuming legal consumption requirements of 12,000 tons, coca availabilities for the illicit traffic would be of the order of 8,000-18,000 tons per year. That range is equivalent to about 48 to 108 tons of cocaine. DEA estimates of the amount of cocaine shipped out of Bolivia range upwards to 72 tons.

The cost of coca leaf to make one kilo of cocaine can be analyzed as follows:

Wholesale (Cochabamba) leaf	
125 lbs. at \$b 1800	= \$b 14.4 per lb.
	= \$b 31.75 per kg.

166 kgs. required to make
 1 kg. cocaine x \$b 31.75 = \$b 5270
 = U.S. \$264

Price of Cocaine paste
 (sulfate) = U.S. \$2500-3000 per kg.

Price of Cocaine HCL
 = U.S. \$5000-8000 per kg.

The value of cocaine paste (sulfate) in Bolivia is about 9 to 11 times the cost of coca required to produce it. Cocaine HCL ranges from 19 to 30 times the value of coca required for manufacture.

Coca is the major input and cost factor in the manufacture of cocaine paste and HCL. Labor and chemicals would be the other major cost items. A typical cocaine processor would use 20 men for four days at \$b. 100 per day (several times the going daily wage), for a total of \$b. 8000 (U.S. \$400), to make 20-30 kilos of cocaine. Costs of chemicals might equal labor outlays. Other costs, such as kerosene and heavy plastic sheets used to produce paste, are minimal. For an operator making 20 kilos of cocaine HCL, unit costs per kilo may be as follows:

Coca	U.S.\$ 264
Labor	20
Chemicals	20
Kerosene	1
Plastic Sheet	5
Building rent, truck, etc.	<u>100</u>
Total cost per kilo	U.S.\$ 410

Total value of 20 kilos of cocaine HCL	U.S.\$ 100,000-160,000
Total cost of 20 kilos of cocaine HCL	U.S. \$8,200
Net profit	U.S.\$ 91,800-151,800
Net profit per kilo	U.S.\$ 4,590 - 7,590

That profit would require about one week of intensive effort from the purchase of about three tons of coca leaf in the market to the packaging of the final product.

The aggregate value of the cocaine trade in Bolivia would range from:

Basis: Cocaine paste (sulphate)	U.S. \$2500/kg. x 48-100 tons
	= U.S.\$120-270 million
	U.S. \$3000/kg. x 48-100 tons
	= U.S.\$144-324 million
Basis: Cocaine HCL ^{1/}	U.S. \$5000/kg x 48-100 tons
	= U.S.\$240-540 million
	U.S. \$8000/kg x 48-100 tons
	= U.S.\$384-864 million

The basic wholesale value of coca in illicit trade is on the order of U.S.\$12.63 to 28.42 million. Therefore, the value added for cocaine paste amounts to 9.5 to 11.4 times the original value. In the case of cocaine HCL the value added is greater, 19 to 30 times the base value.

1/ There is a small loss in refining from cocaine paste to HCL which is not taken into consideration in these calculations.

C. Coca Consumption

1. Background of recent research

Coca leaf has been produced and consumed in various forms in the Andes for at least 5,000 years, and probably longer. Today there are several million individuals, mostly of native background and principally in Peru and Bolivia who consume coca leaf, either in the form of a masticatory or in tea (mate de coca). Both forms of coca use are considered by its users to have significant medical value. Coca leaf is also used in various other forms by Andean peoples, especially as a ritual object and an important medium of exchange.

Although much has been written about coca leaf over the past four and a half centuries since the arrival of the first Europeans, it is only very recently that any serious research has been undertaken in an effort to delineate (1) the patterns and levels of coca leaf consumption among Andean peoples; (2) the significance of these patterns and levels of consumption for its millions of traditional users; and (3) the consequences of the long-standing efforts to bring about an end to its use.

Without question, one of the most important of these research efforts in Bolivia is the USAID-sponsored Multidisciplinary

Study (MDS), "Traditional Use of Coca Leaf in Bolivia" (1978).¹ This study, carried out under the direction of William Carter and Mauricio Mamani (both anthropologists) in conjunction with the Museo Nacional de Ethnografia y Folklore (La Paz), is the first large-scale and comprehensive study of coca leaf that directs itself to all of the points noted above.

The major objectives of the MDS were: (1) "to investigate the present structure of the marketing, distribution, and legal use of coca leaf," and (2) "to identify some of the economic and social factors that should be considered if the Bolivian government should desire a decrease in coca production to a level sufficient to cover only legal use."^{2/} In pursuing these objectives the MDS team aimed its research at the study of the legal marketing system of coca leaf and at the patterns and levels of legal coca consumption.

Because the current marketing system (both legal and illegal) of coca leaf in Bolivia and its illegal consumption for the manufacturing and use of cocaine are discussed earlier in this chapter, this section deals only with aspects of legal coca consumption. Moreover, while it is acknowledged that coca consumption has a long historical past in Bolivia and elsewhere in the Andes, our remarks are limited to the contemporary context, and depend heavily on the data generated by

1/ Contract USAID/Bolivia AID-511-121T
2/ MDS (1978:i)

the MDS, supplemented by observations of our own team members.

The copious data generated by the MDS is based on research conducted in the six "highland" departments of Bolivia (La Paz, Oruro, Potosi, Cochabamba, Chuquisaca and Tarija). The study also covered all the major ecological zones in these six departments (altiplano, valleys and tropics).

A total of 100 of the 955 cantons in these six departments were randomly selected for study. Within each of the 100 cantons, a sample of 5% of all the households, using the latest Bolivian "pre-census" data (1976), was randomly selected. In all, a total of 2,989 households were surveyed (2,717 "peasants/workers" and 277 miners households). The authors of the MDS state: "Those consumers surveyed constitute a random sample of 65% of the Bolivian population, and represent the nucleus of traditional coca users."^{1/}

Several extensive questionnaires in Aymara, Quechua, and Spanish for each of the respective sample groups (peasants/workers and miners) were designed and pre-tested on individuals who were not part of the final sample. The questionnaires were administered to the members of the sample population by a team of Bolivian Quechua-Spanish and Aymara-Spanish speaking field assistants, all with experience in survey research.

^{1/} MDS (1978:iii)

113

In addition to the use of the questionnaires, the research plan of the MDS included the collection of "qualitative data by means of open-ended interviews and participant observation."

Despite the fact that the methodology of the MDS represents a giant step beyond all previous research on coca use in the Andes, there are several limitations that require comment.

First, as its authors themselves pointed out, "Due to lack of time and resources, neither departmental capitals nor the three lowland departments (Santa Cruz, Pando and Beni) could be surveyed." And they state: "We consider this to be the basic flaw in the study that should be corrected at some time in the future."^{1/}

Secondly, the MDS employed a number of elaborate methods to see that all questions had been answered and that the respondent was appropriate for the sample design, to detect possible errors, such as lack of information, contradictions, ambiguity, altered question format, etc., and to make corrections" immediately in consultation with the appropriate

^{1/} MDS (1978:iv)

interviewers."^{1/} We believe, however, that while such methods clearly minimize errors and maximize the credibility of the data gathered, a randomly selected and statistically significant number of the initially selected households should have served as subjects for the re-administration of the questionnaire by a different field worker in order to check the consistency of responses between the two questionnaires.

We realize, of course, that such a research strategy is limited by both time and resources available. It would, however, have served to enhance the reliability of the data collected, especially regarding the levels of coca consumption for the population studied. Other limitations in the MDS will be noted later.

2. Patterns and levels of coca consumption

The population surveyed by the MDS represents a cross-section of basic socio-cultural and geographical variables for Bolivia, at least for the six highland departments covered by the study. The characteristics of the 2,712 peasants/workers surveyed, for example, are illustrated in the table that follows. (Table III-4).

^{1/} MDS (1978:xi)

115

TABLE III-4

SOCIO-CULTURAL/GEOGRAPHICAL CHARACTERISTICS
OF SAMPLE POPULATION OF "PEASANT-WORKERS"

Sex		
Male	2,180	
Female	532	
TOTAL	<u> </u>	2,712
Religion		
Catholic	2,482	
Evangelical	230	
TOTAL	<u> </u>	2,712
Ecological Region		
Altiplano	1,367	
Valley	798	
Tropics	547	
TOTAL	<u> </u>	2,712
Age Group		
15-24	304	
25-34	609	
35-44	650	
45-54	556	
55-64	311	
65-74	189	
75 and above	93	
TOTAL	<u> </u>	2,712
Level of Education		
0	1,056	
1-5	1,328	
6-8	258	
9-12	60	
Normal School	8	
University	2	
TOTAL	<u> </u>	2,712

MDS (1978:160)

The following discussion summarizes some of the most important findings and conclusions of the MDS regarding the patterns and levels of coca consumption among the 2,712 "peasant/workers" and 277 miners who constitute the traditional coca-using segments of the Bolivian population.

a. Incidence of coca use

The MDS team found that the percentages of the sampled population who regularly consume coca leaf, either in the form of the "aculli" ("chewing") or in numerous other forms (see below), are quite high. Among the peasant/ workers surveyed, only 11 percent of the women (60/532) and 8 percent of the men (171/2,180) "did not use coca in any shape or form". Moreover, 68 percent of women and 82 percent of men among peasant workers were acullicadores.

Out of the total of 2,712 peasant/workers surveyed, 2,151 (79%) were acullicadores, 330 users who did not practice the aculli, and only 231 individuals (19%) were total non-users.^{1/}

Among the population of miners surveyed, the incidence of non-use was much lower. Out of a total of 277 miners representing 10 cantons, "only 10 (4%) did not use coca." Moreover, 22 (8%) said they did not practice the aculli, but did use the leaf in other forms, and 245/277 (88%) were acullicadores.^{2/}

^{1/} MDS (1978:52)

^{2/} MDS (1978:53)

- 117 -

In addition to correlation by sex and form of coca consumption, the sample population was also grouped according to ecological zones, age group, and level of education. For example, the smallest percentage of coca consumers, and especially acullicadores, was found in the tropics (80%), the largest percentage in the valleys (93%), and 92 percent in the Altiplano. A high incidence of coca consumption (86%) was found among the 304 individuals falling into the youngest age group (15-24). The percentage gradually increased to 97% for the 93 individuals falling into the oldest age group (75 years or more). Finally, it was found that "use of coca diminishes with increase in level of education. The largest percentage of acullicadores (88%) is illiterate, followed by those who have not gone beyond the elementary level."^{1/}

b. Socialization to coca use

Initiation to coca use was found to be the result of numerous life processes such as orphanage, marriage, military service, work on haciendas, work in the mines, becoming a community political official, etc. According to the MDS team, "the crucial age" for socialization into coca consumption "would appear to be between 15 and 24, when the majority of individuals are assuming the responsibilities of the adult world."

^{1/} MDS (1978:53-54)

Moreover, they state that the high percentage of coca users (86%) in this age group cannot be accepted as evidence that incidence of coca use is diminishing, but does suggest that socialization into its use is strong.^{1/}

The answers given by members of the sample population in response to the question, "For what do you use coca?", are multiple. Thus, the authors of the MDS write:

"...coca is an inseparable part of life itself. It is used for protection against the elements, for diagnosing illness, as a remedy, for predicting the future, for keeping in tune with the supernatural, for both individual and communal activities, for rites of passage such as births, weddings, and deaths, for happiness, for sorrow, for laughing, for crying. Such a diversity of uses and cultural inter-penetration has no parallel in the Western world. To compare coca use with the use of tobacco, coffee, tea, or alcohol in Europe or the United States is to fail to realize the manner in which coca is, and has been, a symbol of cultural identification, of proper conduct, and of human life itself. Among Andean peoples, one is born, is married, weathers the storms of life, and dies with coca. And the tradition persists, despite all the campaigns that have accosted it.^{2/}"

c. Levels of coca consumption

Given the multiple uses of coca and its significance to Andean life and culture, it is not surprising that the amount of coca leaf consumed by the peasant/worker and miner populations of the six departments surveyed by the MDS team would be substantial.

^{1/} MDS (1978:56)
^{2/} MDS (1978:115)

In order to arrive at their consumption figures, the MDS team first attempted to determine the amount of coca each household unit brought in per week. They write:

"We found that each of the 2,989 individuals surveyed could quite precisely estimate the frequency with which they bought coca as well as amounts purchased. Most made their purchases on a weekly basis - those who lived in relatively isolated areas tended to buy once or twice a month and some, under special circumstances, bought coca only once or twice a year. Seventy-five percent of the surveyed users bought coca on a weekly basis, 21% on a monthly basis, and only 4% on an annual basis. Provinces where purchases were made much less often were precisely those most isolated."^{1/}

Second, they calculated "the average weekly consumption of coca per household unit for all households surveyed, be they consumers or not." Thirdly, they used ounces as their major unit of consumption measurement per week per household unit. Table III-5 summarizes the conclusions of the MDS regarding the average weekly/yearly consumption of coca per household for their global sample.

TABLE III-5

AVERAGE WEEKLY/YEARLY COCA CONSUMPTION PER HOUSEHOLD UNIT
(in ounces per wk/lbs per yr.)

<u>Peasants/Workers</u> <u>n = 2,712</u>	<u>Miners</u> <u>n=277</u>	<u>Total Sample</u> <u>n = 2,989</u>
9.41/30.58	17.16/55.77	10.13/32.92

Source: MDS

^{1/} MDS

120

It becomes obvious from the above figures that miners consume significantly more coca per household unit than the peasant/worker households, an observation that agrees with all that is known of coca use in the mines.

Like the incidence of use among their sample population, the MDS team also found variation in the levels of coca consumption according to ecological zones, age, sex, level of education, religion, degrees of isolation from major urban centers, roadways, etc. For our purpose, however, the foregoing figures on the weekly/yearly coca consumption levels for the entire sample will be sufficient.

d. Requirements for Traditional and Legal Use

The authors of the MDS feel quite confident that their survey data on consumption levels per household unit in the six highland departments of Bolivia "provide us with a solid base upon which to calculate the amount of coca consumed by the total population of said departments, excluding capital cities." Thus, using as a minimal number the total of 690,762 household units which the 1976 Bolivia precensus indicates exist in the six departments, they write:

"Average consumption per household unit has been calculated at 10.13 ounces per week, or 32.92 pounds per year. Using a conversion factor of 2.2046 pounds per

kilogram, this would mean that each unit would consume, on the average, 14.93 kilograms per year. Multiplying this figure by the 690,762 family units mentioned above, we find that global consumption in these six departments, excluding the capital cities would be 10,313,076.66 kilograms per year."1/

While we believe that these consumption figures do approach reality, as noted earlier, we would have liked to have seen their reliability enhanced by means of the administration of a second questionnaire to a statistically significant number of sample households in order to check the correlation between consumption figures per household unit on the first and second questionnaires.

The major limitation of the data on levels of coca consumption, however, is related to the fact that, due to lack of time and funds, the MDS team was unable to make the same type of survey in the departmental capitals and the three lowland departments that it did in the six highland departments.

This is indeed unfortunate, since not only does the MDS note that coca leaf is consumed in these areas, but even in our limited time in Bolivia the members of our study team have observed considerable coca consumption in the capital cities we have visited, either in the form of the aculli or

1/ MDS (1978:121)

especially its consumption as mate de coca in hotels, restaurants, and even the U.S. Embassy. Moreover, our observations on coca leaf consumption in the lowland department of Santa Cruz indicate that there may be a much higher level of legal consumption by traditional users than the low levels estimated by such GOB entities as the DNCSP. For example, a total of 42 coca vendors were observed doing a very brisk business in the Sunday market in Montero which is visited by thousands of people.

Nethertheless, the MDS team did attempt to estimate the level of coca consumption for the capital cities and lowland departments. They write:

"Under the circumstances, the best we can do is to estimate hypothetical needs of these two markets on the basis of alternative levels of consumption per household unit. Our first estimate is that levels of household consumption in the capital cities range between one half pound and three pounds per year--very little when compared to levels already demonstrated for people living outside these cities. Although, for lack of an adequate survey, we cannot say for sure, we believe, based on personal experience, that the average would be at least one pound per year."^{1/}

Their estimated levels of coca consumption in the nine departmental capital cities, therefore, are presented in Table III-6.

^{1/} MDS (1978:122)

But what about all the smaller cities and towns that do not reach the level of capital cities? And what about all the thousands of hotels and restaurants that serve their customers mate de coca in these capital cities and other towns?

TABLE III-6
CAPITAL CITIES
ESTIMATED ANNUAL CONSUMPTION

City	No. of household units	A Half pound per household unit	B One pound per household unit	C Two pounds per household unit	D Three pounds per household unit
La Paz	115,174	26,121 Kg	52,243 Kg	104,486 Kg	156,729 Kg
Oruro	25,304	5,739 Kg	11,478 Kg	22,956 Kg	34,434 Kg
Cochabamba	38,017	8,622 Kg	17,245 Kg	34,489 Kg	51,734 Kg
Sucre	12,186	2,764 Kg	5,528 Kg	11,055 Kg	16,583 Kg
Tarija	7,785	1,766 Kg	3,531 Kg	7,063 Kg	10,504 Kg
Potosi	16,407	3,721 Kg	7,442 Kg	14,884 Kg	22,327 Kg
Santa Cruz	37,106	8,416 Kg	16,831 Kg	33,663 Kg	50,494 Kg
Trinidad	5,387	1,222 Kg	2,444 Kg	4,887 Kg	7,331 Kg
Cobija	818	186 Kg	371 Kg	742 Kg	1,113 Kg
Totals	258,184	58,557 Kg	117,113 Kg	234,225 Kg	351,339 Kg

Source: MDS

Turning to the three lowland departments, the MDS team writes that here, "we have even less to guide us." And they state:

"Arbitrarily we have estimated requirements based on consumption levels that oscillate between one half and ten pounds per household per year. We purposely chose these higher values because of the relatively heavy levels of consumption we found in the areas we actually surveyed. Yet we would not be fair if we did not share our belief that the tropical areas surveyed were somewhat exceptional. They were either coca producing areas, such as the Yungas, or Chaco areas, bordering on Paraguay and

Argentina, through which a good deal of coca flows... In the end we may discover that mean coca consumption per household is greater than ten pounds throughout the lowlands. But we would prefer to underestimate than to overestimate."^{1/}

Their estimated figures of coca consumption in the three lowland departments are presented in Table III-7.

TABLE III-7

LOWLAND DEPARTMENTS EXCLUDING CAPITAL CITIES
ESTIMATED ANNUAL CONSUMPTION

Department	No. of household units	Half a pound per household unit	One pound per household unit	Five pounds per household unit	Ten pounds per household unit
Santa Cruz	79,194	17,961	35,922	179,612	359,224
Beni	26,805	6,079	12,159	60,794	121,587
Pando	4,245	963	1,926	9,628	19,255
Total	110,244	25,003	50,007	250,034	500,066

Source: MDS

Combining the foregoing discussion, Table III-8 presents the estimates of the MDS team of the annual consumption of coca for traditional uses for the global Bolivian population.

^{1/} MDS (1978:122)

TABLE III-8

BOLIVIA - GLOBAL POPULATION
ESTIMATED ANNUAL CONSUMPTION FOR TRADITIONAL USE

A.	Six highland departments excluding capital cities	10,313,077 Kg
	Capital cities, based on 1/2 pound per household unit per year	58,557 Kg
	Eastern areas, excluding capital cities, based on 1/2 pound per household unit per year	<u>25,003 Kg</u>
	Total	10,396,637 Kg
B.	Six highland departments, excluding capital cities	10,313,077 Kg
	Capital cities, based on 1 pound per household unit per year	117,113 Kg
	Eastern areas, excluding capital cities, based on 1 pound per household unit per year	<u>50,007 Kg</u>
	Total	10,480,197 Kg
C.	Six highland departments, excluding capital cities	10,313,077 Kg
	Capital cities, based on 2 pounds per household unit per year	234,225 Kg
	Eastern areas, excluding capital cities, based on 5 pounds per household unit per year	<u>250,034 Kg</u>
	Total	10,797,336 Kg
D.	Six highland departments, excluding capital cities	10,313,077 Kg
	Capital cities, based on 3 pounds per household unit per year	351,339 Kg
	Eastern areas, excluding capital cities, based on 10 pounds per household unit per year	<u>500,066 Kg</u>
	Total	11,164,482 Kg

Source: MDS (1978:124)

It becomes obvious from the foregoing discussion that, in addition to adequate studies on coca production, there is an urgent need for a comprehensive study of coca consumption in the capital cities and lowland departments of Bolivia. Otherwise, there will be little more than estimates of consumption levels that may not approach reality. The policy implications of such a situation should be obvious, particularly in regard to the stated objective of trying to rationalize levels of production to meet the requirements of traditional coca consumption for the Bolivian population, and to prevent the escape of coca into the illegal cocaine market.

e. Qualities and Preferences Regarding Coca Leaf

One of the most important observations of the MDS team is their conclusion that "When considering the relationship between consumption and marketable supply, it is important to know any preferences which consumers might have." And they write:

"A number of studies have indicated that Chapare coca is richer in cocaine than is Yungas coca. If the presence of this alkaloid were the principal determinant as to popularity among traditional consumers, then Chapare coca would be preferred by all. The truth, however, would appear to be the opposite. Because it is considered sweeter and softer, Yungas coca is much preferred. The bitter taste characteristic of high cocaine content does not encourage the purchase of Chapare coca."^{1/}

^{1/} MDS (1978:126)

On the contrary, the MDS team argues that the reasons that any preference for Chapare coca is shown by the members of their sample surveyed, is that "it is cheap and available, and not that it is superior. If Paceaña (Yungas) coca were available at a competitive price in any market, undoubtedly there would be little demand for that from the Chapare."^{1/}

f. Frequency of Daily Coca Use

Another important finding of the MDS deals with the frequency of daily coca use among the members of their sample population. This aspect of the patterns and levels of coca consumption, of course, is determined by multiple factors, some of which have already been discussed. Thus, the members of the MDS team write:

"Among the 2,151 peasant/worker acullicadores we interviewed, we found a minimum of one aculli per day and a maximum of nine. A large majority of both men and women appear to use from two to four acullis per day."^{2/}

Also, they note that this number does not tend to vary greatly with age or level of education.

^{1/} MDS (1978:126)

^{I/} MDS (1978:127)

TABLE III-9

PEASANTS/WORKERS-CHEWERS
NUMBER OF ACULLIS PER DAY, BY SEX

$$x^2 = 39.52 \quad x^2.005 (9) = 23.589 \quad \text{Significant}$$

No. of Acullis per day	Female n=361	Male n=1790	X n=2151
1	9%	6%	6%
2	17%	14%	15%
3	21%	18%	19%
4	20%	30%	28%
5	4%	6%	6%
6	5%	3%	3%
7	-	-	-
8	-	1%	1%
9	1%	-	-
No response	23%	22%	22%
Totals	100%	100%	100%

Source: MDS (1978:127)

It seems curious to us why this same type of data was not provided for the 277 miners in the sampled population, or why frequency of use was not correlated with other variables such as ecological zones, etc. Such data is important because, if the frequency and amount of coca per aculli is known, it is useful in determining overall levels of coca consumption per individual per week, etc.

g. Economic Costs of Traditional Coca Use

According to the MDS team, "In order to maintain his habit, the acullicator must spend a substantial amount of money, at

129

least in terms of his limited income." They also note that age has little influence on costs incurred, and "The young spend as much or more for the purchase of coca as do their elders." They conclude that "average annual expenditures reach some 600 Bolivian Pesos," which at current exchange rates would be US\$ 30.00.^{1/}

It needs to be emphasized, however, that the determination of the economic costs of traditional coca use needs to be placed in the context of the multiple social and health-related benefits that are derived from access to an adequate supply of coca leaf. It is probable that such benefits far outweigh the economic costs.

The members of the MDS team note that "a very common impression, upon which a number of contemporary political measures are being based, is that the use of coca for traditional purposes has diminished considerably in the last few years."^{2/} They continue:

"It is our opinion that the people best equipped to judge the validity of this statement are those who live in areas of traditional consumption, peasants/workers, miners, consumers and non-consumers. One of the key questions in our survey instrument, therefore, was how each respondent perceived changes in coca use by himself and his neighbors over the previous five years. We selected the five-year period for which memory would still be fresh, but that would also be sufficiently long to indicate the impact and direction of even gradual change."^{3/}

^{1/} MDS (1978:127)
^{2/} MDS (1978:128)
^{3/} MDS (1978:128)

Summarizing the results of this aspect of their research, they state:

"Only a minority surveyed believed that the use of coca is decreasing. Forty-eight per cent said that, within their own communities, the same amount of coca or even more is used now than was used five years ago. The 37 per cent who believe that less is used attributed this decrease principally to the spreading of Evangelical sects and to the fact that the young are abandoning the custom. Only 3 per cent attributed the decrease to the influence of formal education. Merely being young does little to inhibit coca use. Those young people who have little or no education (less than six years) appear to be following the established patterns; they use coca with the same dedication as did their own progenitors. Where changes do occur is within the small minority which has more than six years of education. There is a strong relationship between level of education and level of coca consumption."1/

While this research strategy certainly offers one means for attempting to determine if change has taken place in the patterns and levels of traditional coca use, it may not, however, be totally adequate. As much social science research has shown, change in cultural patterns can occur beyond the consciousness of those it affects.

h. Substitutes for Coca Consumption

While a great deal of attention is being placed on the problem of trying to find alternative crops to substitute for coca in the production zones, less attention is being paid to the problem of consumers, although one of the longest standing

1/ MDS (1978:161)

positions is that food is the key to the "coca problem." The most influential group to make such an argument in the past several decades has been the United Nations sponsored Commission of Enquiry on the Coca Leaf (1950). Not only did the commission conclude that the "coca problem" is mainly a "problem of hunger," but it is stated that in order to bring about a "solution":

"The primary need is to improve the nutritional status of that part of the population which is affected by the chewing of coca leaf. One of the basic observations of this Commission was that where food is good and sufficient, chewing stops. This observation is in agreement with many medical and military opinions in these countries (Peru and Bolivia). Of all factors concerned, better nutrition abolishes most quickly the habit of chewing."1/

While it would certainly be a major contribution to the overall well-being of the Bolivia population if nutritional status were greatly enhanced, there is a growing body of research that suggests that the relationship between coca and nutrition, and subsequently human health, is far more complex than previously thought. And while this is clearly not the place to offer a detailed academic argument on this complex problem we believe that some observations are in order. First, the results of the MDS itself show that coca leaf serves as a substitute for food. To some, this implies that food should serve

1/ United Nations Commission of Enquiry on the Coca Leaf.

as a substitute for coca. The general thrust of the above position is misleading. Thus, the MDS team writes:

"According to the 70 per cent of our surveyed population coca has no substitute. Only 11 per cent said that it could be replaced with food, and another 11 per cent that it could be replaced with candy. This suggests that people do not resort to coca because they lack food; if so, an increase in food supply would probably not affect coca consumption. The belief that coca can be replaced by candy might be related to coca's function in raising blood glucose levels. The fact that the majority of people sharing this belief live on the Altiplano, where the problem of hypoglycemia is common, adds plausibility to this hypothesis. Most of our surveyed population insisted that coca has no substitute, and that, if there were no coca, consequences would be serious for both consumers and for Bolivian society as a whole."^{1/}

Secondly, not only has research shown that the long-standing position that the chewing of coca leaf results in loss of appetite and reduced food intake is without basis in fact,^{2/} but also that coca leaf from the Chapare region in Bolivia is of exceptional nutritional value. Thus, compared to an average of 50 other Latin American vegetable products commonly incorporated into the diet, coca leaves were found to be higher in calories, protein, carbohydrate, fiber, ash, calcium, phosphorus, iron, vitamin A and riboflavin. Coca was lower on the average for the 50 plant foods only in oil content, moisture, niacin, and ascorbic acid.^{3/} That coca probably makes a

^{1/} MDS (1978:161)

^{2/} Burchard, R.E. Coca y Trueque de Alimentos. In G. Altermi and E. Mayer, Reciprocidad e Intercambio en los Andes Peruanos. Lima, Instituto de Estudios Peruanos.

^{3/} Duke, James A., David Aulik and Timothy Plowman. "Nutritional Value of Coca." Harvard University, Botanical Museum Leaflets 24(6):113-119.

133-

a significant contribution to the nutritional status of Andean coca users is further supported by recent unpublished research from Bolivia that shows that in comparison to 15 non-users, a closely matched sample of 15 coca users have higher serum protein, vitamin A, vitamin C, and carotene levels, as well as higher urine vitamin B complex levels.^{1/}

Thirdly, the remarks of the MDS team regarding the possibility that "the belief that coca can be replaced by candy might be related to coca's function in raising blood glucose levels" in a population "where the problem of hypoglycemia is common," are of special interest. One of our own team members (R.E. Burchard) has been actively engaged in research on the relationship between coca use and carbohydrate metabolism in the Andes, as well as the above cited unpublished research on nutritional status. This research is briefly referred to in the MDS where it is stated that "according to the hypothesis being explored by Burchard and colleagues at the University of Manitoba," not only is it possible that ecgonine may be more important to the explanation of coca chewing than its cocaine content, but ecgonine has an effect very similar to atropine. In other words, it rapidly converts carbohydrates to blood sugar. This could explain why so many Bolivian workers say that it is irreplaceable -- even by food."^{2/}

^{1/} R.E. Burchard - Unpublished research data, Bolivia 1978.
^{2/} MDS (1978:140)

While it is gratifying that other researchers are aware of this research, the above is something of a misstatement of Burchard's position. Burchard argues as follows: (1) coca and foods, and especially high carbohydrate foods, are usually ingested in combination with one another, (2) ecgonine has atropine-like qualities, (3) there appears to be a high incidence of carbohydrate metabolism problems in the Andean population (including both reactive hypoglycemia and malabsorption), (4) atropine is recommended for the medical management of these problems. Conclusion: chewing of coca leaf may well be important in the management of these carbohydrate management problems. Since this position was first suggested in 1975^{1/}, subsequent laboratory research at the University of Manitoba Department of Pharmacy, as well as field research in Bolivia, add strong support to this position. Unfortunately, this research has not yet been published.

While the foregoing discussion is clearly not exhaustive, nevertheless it is sufficient to underline our total agreement with the recommendations of the MDS that:

- (1) Serious and well-funded studies should be launched on the relationship between traditional coca use and nutrition.

^{1/} Burchard, R.E. "Coca Chewing: a New Perspective." In Cannabis Culture V, Rubin ed., The Hague, Mouton Press.

175

- (2) Studies should be carried out on the long-range effects on the aculli. Basic socio-cultural variables, such as sex, age, religion, level of education, type of work, diet, altitude, and consumption of alcohol and tobacco should be carefully controlled. Only after such studies have been completed will we be able to know the true effect of this habit on the health of its adherents.
- (3) The distinction between coca leaf and cocaine should be continually emphasized. More research should be carried out on the other 13 alkaloids of coca and their influence on the traditional users. The pharmacokinetics of the aculli should be studied in order to establish, once and for all, how this form of absorbing alkaloids differs from others.^{1/}

That such research is clearly related to U.S. and Bolivian Coca Policy aims should be obvious. If coca does play a positive role in the nutrition and health of Andean peoples, misguided attempts to force the use of a substitute for coca could cause deleterious effects on consumers and Bolivian society as a whole.

i. Reactions to Possible Disappearance of Coca

Finally, another of the major contributions of the MDS is that it clearly shows that any attempt to bring about an end of coca consumption in Bolivia will meet with a great deal of resistance. They write:

"The surveyed population reacted quite negatively to a possible disappearance of coca. Among peasants/workers, 40 per cent were of the opinion that this situation would

^{1/} MDS

lead to a general rebellion, 16 per cent that the people would become ill, and 13 per cent that agricultural production would seriously decrease. In the case of miners, 50 per cent believe that there would be a rebellion, 18 per cent that the people would fall ill, and another 18 per cent that productivity would be seriously impaired. These attitudes demonstrate the great importance given by peasants/workers and miners to coca as a source of energy."1/

Our brief experience in Bolivia this summer demonstrates to us that such statements as the above go beyond mere rhetoric. U.S. as well as GOB Coca Policy cannot afford to overlook such research conclusions.

1/ MDS

CHAPTER IV

ALTERNATIVE MECHANISMS FOR CONTROL

IV. ALTERNATIVE MECHANISMS FOR CONTROL

A. Existing Free Market System

1. Coca Prices in a Free Market

In the Bolivian free market for coca, the major year-to-year fluctuations have been ascribed to variations on growing conditions, droughts or extremely heavy rains, which have caused poor yields. Harvest prospects have been a factor in the market, that is, in certain years of poor harvests, coca prices have been known to strengthen substantially. Over the shorter term, climatic conditions have also influenced coca prices to a pronounced degree. Those fluctuations affect producer prices and their effects can be traced through the distribution network to the final consumer. The seasonal factor has been mainly a depressant on the coca market, particularly during the rainy season from November to March, when yields are highest and coca supplies are most abundant.

In the coca markets, particularly the market in Cochabamba, fluctuations of a secondary nature are evident. These fluctuations reflect trader-demand and there is a certain speculative element. Prices fluctuate during the day as traders attempt to assess the course of the market.

2. Coca Price Determinants and Influence of the Cocaine Trade on Prices

Aside from the seasonal factor or availability of supplies, quality of coca is the most important factor bearing on traders' negotiations and the actual sale price. The price quoted in the market, generally speaking, is for an average or standard quality. Traders negotiate, on that basis, premiums or discounts for particular lots of coca depending on the quality as they sample it.

Demand in the traditional market has been relatively stable in recent years, so that the main variable in the market has been on the supply side. Variation in the quantity of coca diverted to illicit channels is apparently the major reason for variations in market supply. One of the most important factors bearing on the daily fluctuations in the coca market is traders' assessment of the presence or buying interest of cocaine traffickers or their agents. If a consensus develops among traders that large cocaine traffickers are bidding in the market, they will tend to hold their offers in the hope that during the course of the day's trading, available supply will diminish as a result of the traffickers' purchases and traders subsequently will be able to raise their offering prices. Conversely, if there is little manifestation of such heavy buying interest early in the trading day, traders are likely to unload their

coca and thus depress the market. In any event, it can be seen that cocaine trafficker buying intentions at the producer level and at the coca market level are indeed a strong influence on market conditions. As cocaine processing moves to the producing areas, direct purchasing from producers will become more important and the role of markets in price formation may change.

3. Price Implications in a Situation of Diminished Supply Relative to Demand

As described above, coca prices fluctuate freely in the free market. In recent periods, seasonal fluctuations have had a pronounced effect on coca prices and so have short-term climatic conditions which have either inhibited harvesting operations or have affected the drying process which requires a certain period of direct sunlight. It has also been seen that the entrance of cocaine traffickers into the market, either at the producer level through intermediaries, or at the main coca market through their buying agents, has a distinct influence on coca prices. The result may be daily fluctuations based either on the influence of cocaine trafficker buying operations on supply or on the traders' expectations regarding cocaine traffickers' buying intentions.

Restriction of coca supplies through a control system would have an effect similar to the entry of cocaine traffickers into the

market. As the free supply diminishes, due to a successful coca control program, cocaine traffickers can be expected to bid up prices in order to divert coca to illegal uses.

Because the price of coca leaf for cocaine traffic can go as high as 30 times the price in the legitimate coca market, the margin for the traffickers in bidding up their offering prices is far wider than in the case of any other commodity. It can therefore be hypothesized that coca prices over the coming years in the free market could be bid up double, triple, or even 5 to 10 times the prevailing level in the current market. The price differential in such a two-tier market would then be of such proportions that only a very efficient control and enforcement system could prevent diversion of supplies to the cocaine traffic to the extent that supplies to the legal consumption market would be assured.

B. The Estanco

1. General Purpose and Function

The normal function of an estanco, or marketing board, is to control the flow of products from the producer to markets in order to achieve a given purpose. The most common objective of marketing boards is to stabilize prices by regulating the volume moving through channels of distribution. A concomitant

-142-

objective may be to reduce the margins of intermediaries, either by regulation or through the boards' own intervention in crop collection and delivery operations. The usual method of providing desired stability is for the marketing board to absorb seasonal supply peaks and release stocks when output slackens. This has the effect of stabilizing prices for both producers and consumers.

The method of operation for a marketing board depends on its objectives. If its objective is to protect producers from undue price declines, the board must be prepared to buy all or most of the stocks at a support or floor price. It may have to make large purchases and dispose of excess supplies at a heavy loss. Producer price support programs are usually carried out along with production controls in order to keep costs of the program within reasonable limits.

If the marketing board's objective is to moderate prices to consumers, it must be prepared to release a sufficient volume in time of short supply to keep prices down through the interaction of supply and demand in the market system. In order to achieve that purpose, the marketing board must obtain and store sufficient supplies to meet shortages and price surges due to seasonal and yearly fluctuations. A consumer-oriented price and supply stabilization program does not normally require production controls, but might benefit from a moderate level of price support to producers.

2. The Estanco in the Bolivian Context

The coca estanco visualized for Bolivia, although clearly of the consumer-oriented type, does not fit neatly into either of the above conceptualizations. The complicating factor is the illegal market which bids for coca supplies and is potentially so competitive that the estanco cannot hope to perform its functions within reasonable cost guidelines. The coca estanco in Bolivia will be faced with the unusual situation of excess supply (from the standpoint of legal requirements) and high prices.

a. Expanded Concept

It becomes necessary to expand the concept and functions of an estanco to enable it to obtain stocks at prices below what the illegal bidders are willing to pay. Some possibilities in this regard are as follows:

- The estanco might license coca producers in selected areas (such as Yungas and Chapare) and prohibit them from selling on the illegal market. This would require a legal basis and concentrated enforcement efforts.
- The estanco might produce coca on state-owned farms for sale to legitimate consumers.
- The estanco might cut its losses by reselling coca seized from illegal traffickers. A vigorous enforcement effort

such as is visualized in U.S. Mission narcotics policy should produce substantial quantities of contraband coca.^{1/}

- The estanco might operate within an enforcement environment so efficient that it would destroy the effective illegal demand for coca, and traffickers would be forced out of business or to move to other countries. This is considered unlikely in Bolivia where enforcement will probably merely drive up prices offered to producers. However, such efficient enforcement should be a policy objective for the more distant future.

b. Constraints

In the present Bolivian context, there are certain constraints to the establishment and implementation of an estanco. Some of the problems to be faced by an estanco in Bolivia are as follows:

- An estanco, as an institution specifically constituted to buy and sell a politically sensitive commodity such as coca, would have high visibility and be a focal point for disaffection and dissent from both the producer and consumer sectors. It could become a political liability as

^{1/} Normal procedure is to destroy illegal narcotics seized in raids. The Bolivian situation is somewhat different, however, because of the large legal market. There is a precedent for transferring seizures to legal channels. Some governments have sold seized opium to legitimate international drug firms.

145

traffickers make difficulties. The existing monitoring and enforcement instrumentality, DNCSP, would not be subject to the same degree of pressure in the performance of its regulatory functions and would avoid political involvement in the inevitable pricing controversies between producer and consumer interests.

- In the present Bolivian context, wherein commodity agencies or commodity marketing board-type operations have been noted for their inefficiency, nepotism, graft and corruption, a coca marketing control system without strong enforcement support cannot be expected to function efficiently and to achieve its aims.
- The major organizational problem to be encountered in installing a public sector agency in Bolivia is the human factor. At the executive and upper echelon staff levels, political interference may obstruct the selection process. Middle and lower level personnel, if not drawn from the civil service, will be employed on the same basis as other public sector employees with no special incentive for performance. Operations will be hampered by the civil service environment. In many LDC's this has been a major constraint experienced by public agencies charged with marketing functions.
- Quality of deliveries will deteriorate in the absence of the self-regulating feature of a free market.

- Corruption at lower levels will permit acceptance of off-grade product in the board's warehouses, especially at interior locations.
- Short-weighting will become common. Periodic inventories will reveal substantial shortages of stocks.
- Extraneous material mixed in with the product will become a serious problem.
- Deliveries to the board will continue to rise while supplies to the illegal market also expand unless production control is highly effective.
- Disappearance of stocks in warehouses will be attributed to "spoilage", damage due to insects, rodents, humidity, etc. Such stocks may be written off and "dumped" at an accomplice facility.
- Where surplus stocks are to be disposed of or destroyed, experience has shown that abuses will be more flagrant.
- The board will usually find it politically untenable to apply sanctions against producers or intermediaries and it will become a perennial deficit operation.

3. The Full-fledged Estanco in Bolivia: A Model

Recent expansion in the production sector changes substantially the prospective coca supply outlook, and therefore the implications for purchase operations of a marketing body. Working capital requirements and prospective operating deficits would

assume formidable proportions in three years time when coca purchases would reach 34,400 tons. Cost of that coca would total US\$60.2 million, compared with sales revenues of US\$18.3 million, the resulting annual deficit being of the order of US\$41.9 million. See Table IV-1.

An important consideration affecting the potential deficit would be that an estanco probably would have to operate on a narrow margin in order to maintain good political relations with producers and consumers and to discourage leakage from the system.

Coca supply can be expected to expand over the medium term. Even in the event that planted area could be stabilized within five years, as the monitoring and enforcement system improves its efficiency and scope, producers will attempt to improve yields to supply a guaranteed market (legal or illegal). New technology made available through the agricultural development program will be applied to coca as well as to other crops, thus increasing coca yields and revenues. The primary problem in the coca sector over the first five years will be a heavy oversupply relative to legal demand.

In the illustrative calculations shown in the accompanying Table IV-1, a conservative progression of purchasing activity is shown, mainly in connection with purchases in the Chapare. A

FULL-FLEDGED ESTANCO: PROJECTION OF COCA PURCHASE AND SALES OPERATIONS

	Year of Program				
	<u>1st.</u>	<u>2nd.</u>	<u>3rd.</u>	<u>4th.</u>	<u>5th.</u>
<u>COCA PURCHASES</u> (m.t.)					
Yungas	4000	4200	4400	4700	5000
Chapare ^{1/}	10000 ^{2/}	20000	30000	30000	30000
TOTAL PURCHASES	14000	24200	34400	34700	35000
TOTAL DELIVERIES ^{3/}	11200	19360	27520	27760	28000
Cost per m.t. (US\$) ^{4/}					
Yungas	1348	1483 ^{5/}	1780 ^{6/}	2136 ^{6/}	2563 ^{6/}
Chapare	1323	1455 ^{5/}	1746 ^{6/}	2095 ^{6/}	2514 ^{6/}
COST (US\$000)					
Yungas	5392	6229	7832	10039	12815
Chapare	13230	29100	52380	62850	75420
TOTAL COST	18622	35329	60212	72889	88235
<u>COCA SALES</u> (m.t.)					
Yungas	3200	3360	3520	3760	4000
Chapare	8000	8640	8480	8240	8000
TOTAL	11200	12000	12000	12000	12000
Excess (deliveries over sales)	-	7360	15520	15760	16000
Sales Price per m.t. (US\$)					
Yungas	1593	1593	1593	1593	1593
Chapare	1499	1499	1499	1499	1499
RETURNS (US\$000)					
Yungas	5098	5352	5607	5990	6372
Chapare	11992	12951	12712	12352	11992
TOTAL RETURNS	17090	18304	18319	18341	18364
LOSS ON SALES	1532	17025	41893	54548	69871

^{1/} -----
^{1/} Could include some other regions.

^{2/} Considered unrealistically low for current production.

^{3/} Allowance of 20% for off-grade deliveries, extraneous material, spoilage, theft, disappearance.

^{4/} Includes taxes and transport costs.

^{5/} Price increase of 10% due to anticipated pressure on demand from cocaine traffickers.

^{6/} Price increase of 20% due to anticipated pressure on demand from cocaine traffickers.

conservative loss factor of 20% (the difference between purchases and deliveries) takes into account off-grade deliveries, extraneous materials mixed with the coca, administrative inefficiencies, theft, spoilage, etc. Costs and margins vary between the Yungas and Chapare because of different trading practices, and the fact that the Chapare is a larger volume source.

Assumptions regarding price increases brought about by traffickers' reactions to a tightening supply situation are considered conservative. Demand for coca leaf from traffickers is inelastic over a wide range, the limits of which are not known. The U.S. street price of cocaine is reportedly 100 times the estimated export price in Bolivia. The value of the coca content is only a fraction of the latter price. In this case, sales prices of coca to legitimate consumers are assumed to be constant in accordance with stated GOB policy.

Projections in Table IV-1 indicate a deficit from market operations of about US\$185 million over a five year period. This total does not include operating costs and overhead. These projections are considered more realistic than previous projections because they take into account the most recent supply-demand outlook for coca. Moreover, previous projections did not account for an increase in the price of coca which the Estanco would have to pay.

4. The Limited Estanco Concept: A Model

The U.S. Mission has defined a limited concept of an Estanco which would restrict its role to purchase and distribution of 12,000 tons of coca, the quantity considered necessary to supply legal demand and stabilize consumer prices. The Estanco would not concern itself with the remainder of the crop (about 3,000 tons from the Yungas and Chapare alone) in its early years of full operation.^{1/} Those quantities would be within the purview of the monitoring and enforcement agencies.

Legal consumption of coca is assumed to be stable at about 12,000 tons because:

- Price to consumers will remain relatively stable.
- Population increases, which could be reflected in increased consumption are counterbalanced by rural-urban migration (per capita consumption of coca among urban dwellers is less than among the rural population).

It is proposed that legal production would be defined as limited largely to Chapare and Yungas, and purchases by the Estanco would be limited to these areas, with minor quantities from

^{1/} Based on estimated purchase requirements of 17,000 tons for the Estanco to have 12,000 tons of saleable grade coca during one year of operation, and forecast production of 30,000 tons in 1980. Output in later years probably will be higher, resulting in higher residual supply figures.

other traditional producing zones. Production is, however, rapidly moving to other more isolated areas where control and enforcement are more difficult. This trend can be expected to accelerate in the next several years. The rate of expansion will depend on the effectiveness of enforcement. In any event, serious problems can be foreseen because elimination of established coca plantings may cause political repercussions.

The operating budget for the Estanco will depend primarily on the effectiveness of monitoring and enforcement. The market price of coca leaf will increase in proportion to the success of enforcement, at least up to the point where enforcement begins to erode effective demand (at the point where traffickers decide to move out of Bolivia or to new production regions because of tighter enforcement). Price assumptions regarding cocaine traffickers' reactions to an improving enforcement environment are necessarily conservative because of the tremendous scope for bidding up coca prices that would be permitted by the margins between the low coca costs in Bolivia and the street price for cocaine in the U.S.

In the projection of the Estanco operations shown in Tables IV-2, IV-3, IV-4, IV-5 and IV-6 retail prices and Estanco resale prices are assumed to increase 10% per year due to inflationary factors.^{1/}

1/ pp. IV-22 through 26.

These illustrative analyses are based on several basic assumptions regarding the enforcement environment in which a limited estanco would operate. In this connection, it is important to bear in mind the lead time required for development of the coca monitoring and control system, and complementary enforcement agencies which are necessary pre-conditions for an Estanco operation. This is particularly true for cases under assumptions of moderate to high enforcement capability.

These analyses illustrate the quantitative aspects of an estanco operation. It must be reiterated here that the major constraints to an estanco operation are in other areas, institutional and political problems, administrative inefficiencies, organization and managerial problems, and corruption.

The four scenarios shown in Tables IV-3 through IV-6 assume different levels of enforcement and cover years 1 through 10 and year 15 of Estanco life.

Losses due to marketing operations of the four scenarios can be summarized as follows:

Scenario Number*	Effectiveness of Enforcement	Marketing Losses (US\$000)		
		After Five Years	After Ten Years	After Fifteen Years
I	High	136,900	2,262,100	8,497,800
II	Moderate	97,600	934,300	2,698,900
III	Low	57,400	415,000	1,132,400
IV	High (Regulated Price)	49,700	135,300	238,300
IVa**		34,200	90,300	150,700

The marketing losses for Scenarios I, II, and III are very high. Operating expenses (salaries, rental of offices and warehouses, transportation, supplies, etc.) have not been considered as these remain to be determined by Phase II of the study. Such operating expenses would probably be from 20 to 40 percent of sales.

Scenario IV assumes highly effective enforcement, as in Scenario I, but with purchase prices from registered or contracted producers) unaffected by illicit demand. This latter assumption seems somewhat unrealistic considering the length to which illicit buyers are willing to go to obtain raw material for cocaine and their wide margin of bidding capability.

* Scenarios I through IV correspond to Tables IV-3 through IV-6.
 ** As in IV, but assuming only 10 percent difference between quantities of purchases and deliveries, which is considered unrealistically low in the present Bolivian context.

Highly effective enforcement implies a tightening of supplies that could be shunted off to the cocaine traffic and consequent bidding up of prices in the illegal market, thus widening the gap between traffickers' bids and the price being paid by the Estanco. This situation will influence campesinos' notions of a "fair" price for their coca. The Estanco will be compelled to revise their purchase price upward to retain its political viability, as traffickers and other vested interests attempt to exploit the situation to undermine the Estanco.

Campesinos' notions of a "fair" price would be influenced mainly by:

- The higher prices many registered campesino producers would get from the traffickers for portions of their crops reported as lost due to insect damage, unfavorable weather low yields (a bad year), etc.;
- Higher prices received for coca from clandestine plots sold to traffickers.

Scenario IV seems to be the only acceptable case if it is determined that an Estanco is required to support a fixed producer price mechanism. Even this approach will cost about US\$135 million, excluding operating expenses, in the first ten years of operation.

If a further assumption were made that there was only a ten percent difference between purchases and deliveries (a very unrealistic assumption) the Estanco marketing loss would be over US\$90 million in the first ten years. Even if the assumption is made that there will be only a 20% (vs. 30%) leakage in distribution channels the Estanco will still be a very expensive operation, with a marketing loss of about US\$20 million in the first five years and about US\$60 million in the first ten years. It is imperative to bear in mind that the cumulative operating deficits will increase year by year.

It should be noted that an Estanco would not be in a position to bid directly against traffickers for coca supplies, as enforcement efforts succeeded in reducing coca output, because traffickers with their stronger financial resources would always outbid the Estanco. Nonetheless, under assumed conditions of effective enforcement which would imply that the excess coca production over wide areas of the country would be substantially eliminated, an Estanco would need to "follow the market" upward to some degree in its purchasing operations in order to maintain its political viability, and to counter the efforts of the traffickers and vested interests to undermine the Estanco by fomenting discontent among the campesinos. The extent to which the Estanco would need to accede to campesino notions of a "fair" price for their coca and raise its purchase price would depend on the effectiveness of the registration and monitoring

system and the degree of success of the crop substitution program which would be a pre-condition for enforcement of measures to reduce coca plantings. In the Scenario I (Table IV-3), an effective enforcement environment is presupposed. Leakages in channels of distribution are assumed to decline from 30% to 20% in the tenth year as enforcement improves. Tightening enforcement would prompt cocaine traffickers to bid up prices -- by as much as 70% in the seventh and eight years. Price increases would be smaller thereafter as strong enforcement caused cocaine traffickers to move to neighboring countries or new coca producing regions in Bolivia. By the tenth year, Chapare coca would cost US\$45,000 per ton, compared to US\$1,323 in the first year of estanco operation. That would indicate coca costs of US\$45 per kilo or US\$7,470 to make one kilo of cocaine, still a reasonable cost level, as compared with estimated U.S. street prices of US\$250,000 or more. Since the estanco re-sale, or consumer, price would only rise by 10% per year to reflect the inflation factor, loss on operations would rise from US\$21.9 million in the first fully operational year (year 3), to US\$804.3 million in the tenth year.

Scenario II (Table IV-4) assumes a moderately effective enforcement environment. Leakages from distribution channels to the cocaine traffic are assumed to be less as less effective enforcement enables traffickers to tap more coca supplies from the producing areas so that less pressure to divert coca from legal channels of trade exists. Leakage is assumed to decline

from 25% to 20% in the tenth year. The latter level is considered to be an irreducible volume of leakage. Purchase prices would rise less, reflecting lighter bidding pressure from cocaine traffickers. Chapare coca would cost US\$16.60 per kilo or US\$2,756 to make a kilo of cocaine. The annual deficit of the estanco would be US\$17.8 million in the first fully operational year (year 3) and US\$270.4 million in the tenth year.

Scenario III (Table IV-5) assumes a low level of enforcement. Leakages from legal marketing channels would be 20% as cocaine traffickers would have ready access to coca in the producing areas. Purchase prices would rise more moderately. Chapare coca would go from US\$1,323 per ton in the first year to US\$8,100 per ton in the tenth year. Maximum increases would be 30% in the seventh and eighth years, after which the upward trend would level off. At US\$8.10 per kilo in the tenth year, the cost of coca to make a kilo of cocaine would be US\$1,345.

Scenario IV (Table IV-6) assumes a high level of enforcement, which would encourage leakage in marketing channels of 30%, declining to 20% in the tenth year as enforcement is improved. In this case it is presupposed that monitoring and control of producers is efficient enough to enable the Estanco to buy its maximum supply requirements of 21,500 tons in the third to seventh years at the prevailing price (adjusted for 10% annual inflation). This assumption is rather tenuous for a partial

crop purchase operation. Political problems may arise due to campesino discontent and pressure to raise the purchase price, as mentioned earlier. Under these assumptions, Chapare coca would only rise to US\$3,120 per ton in the tenth year, reflecting only the inflation factor. Cost of coca for one kilo of cocaine would be US\$518 -- an increase of only 25% or so from currently estimated coca cost. The indicated annual deficit for an Estanco would be relatively modest, US\$12.4 million in the first full year of operations (year 3) and US\$18.2 million in the seventh year, declining to US\$15.8 million in the tenth year as better enforcement causes leakage to diminish.

TABLE IV-2 SPECIFIC ASSUMPTIONS FOR ILLUSTRATIVE PROJECTIONS OF ESTANCO OPERATIONS

	Scenario I	Scenario II	Scenario III	Scenario IV
	Highly Effective Enforcement	Moderately Effective Enforcement	Low level of Enforcement	Highly Effective Enforcement Obligatory Producer Deliveries at Fixed Prices
1. Percent Loss in sales volume due to leakages in distribution channels *				
Year	2-7			
	8			
	9			
	10			
	15			
	30	25	20	30
	27	23	20	27
	24	20	20	24
	20	20	20	20
	20	20	20	20
2. Purchase price increase** (Percent per year)				
Year	2			
	3			
	4			
	5			
	6			
	7			
	8			
	9			
	10			
	15			
	20	20	15	10***
	30	25	17	10
	40	30	20	10
	50	35	23	10
	60	40	27	10
	70	45	30	10
	70	45	30	10
	60	35	25	10
	40	20	15	10
	10	10	10	10

* Minimum leakage conservatively estimated at 20% (even at normal market price).

** Includes basic price increase of 10% per year due to inflation factor.

*** Assumes that the Estanco will be able to purchase coca supply from registered producers at prices unaffected by illicit demand. Changes in prices are due to inflation only (10% per year).

160

TABLE IV-3 ILLUSTRATIVE PROJECTIONS OF ESTANCO OPERATIONS

Highly Effective Enforcement

FY	(1983)										
	I	II	III	IV	V	VI	VII	VIII	IX	X	XV
Coca Purchases m.t.											
Yungas	4000	4200	4400	4400	4000	4000	4000	4000	4000	4000	4000
Chapare	1000	7800	16600	17100	17500	17500	17500	16700	15800	14800	14800
Total Purchases	5000	12000	21000	21500	21500	21500	21500	20700	19800	18800	18800
Total Deliveries m.t.	4000	9600	16800	17200	17200	17200	17200	16560	15840	15040	15040
Cost Price (US\$ m.t.)											
Yungas	1348	1618	2103	2944	4416	7066	12012	20420	32672	45740	94972
Chapare	1323	1588	2064	2889	4334	6935	11789	20041	32066	44892	93212
Cost of Purchases (US\$000)											
Yungas	5392	6796	9253	12954	17664	28264	48048	81680	130688	182960	379888
Chapare	1323	12386	34262	49402	75845	121363	206308	334685	506643	664402	1379538
Total Cost	6715	19182	43515	62356	93509	149627	254356	416365	637331	847362	1759426
Coca Sales m.t.											
Yungas	2240	2352	2464	2464	2240	2240	2240	2336	2432	2560	2560
Chapare	560	4368	9296	9576	9800	9800	9800	9753	9606	9472	9472
Total Sales	2800	6720	11760	12040	12040	12040	12040	12089	12038	12032	12032
Sales Price (US\$ m.t.)											
Yungas	1593	1752	1928	2120	2332	2566	2822	3104	3415	3756	6049
Chapare	1499	1649	1814	1995	2195	2414	2656	2921	3213	3535	5693
Revenues (US\$000)											
Yungas	3568	4121	4751	5224	5224	5748	6321	7251	8305	9615	15485
Chapare	839	7203	16863	19104	21511	23657	26029	28489	30864	33484	53924
Total Revenues	4407	11324	21614	24328	26735	29405	32350	35740	39169	43099	69409
Loss on Sales (US\$000)	2308	7858	21901	38028	66774	120222	222006	380625	598162	804263	1690017

1/6

TABLE IV-4 ILLUSTRATIVE PROJECTIONS OF ESTANCO OPERATIONS

Moderately Effective Enforcement

FY	(1983)										
	I	II	III	IV	V	VI	VII	VIII	IX	X	XV
Coca Purchases m.t.											
Yungas	4000	4200	4400	4400	4000	4000	4000	4000	4000	4000	4000
Chapare	1000	7800	15600	15600	16000	16000	16000	15600	14800	14800	14800
Total Purchases	5000	12000	20000	20000	20000	20000	20000	19600	18800	18800	18800
Total Deliveries m.t.	4000	9600	16000	16000	16000	16000	16000	15680	15040	15040	15040
Cost Price (US\$ m.t.)											
Yungas	1348	1618	2022	2629	3549	4968	7204	10445	14101	16921	27252
Chapare	1323	1588	1984	2580	3483	4876	7070	10252	13840	16608	26747
Cost of Purchases (US\$000)											
Yungas	5392	6796	8897	11568	14196	19872	28816	41780	56404	67684	109008
Chapare	1323	12386	30950	40248	55728	78016	113120	159931	204832	245798	395856
Total Cost	6715	19182	39847	51816	69924	97888	141936	201711	261236	313482	504864
Coca Sales m.t.											
Yungas	2400	2520	2640	2640	2400	2400	2400	2464	2560	2560	2560
Chapare	600	4680	9360	9360	9600	9600	9600	9610	9472	9472	9472
Total Sales	3000	7200	12000	12000	12000	12000	12000	12074	12032	12032	12032
Sales Price (US\$ m.t.)											
Yungas	1593	1752	1928	2120	2332	2566	2822	3104	3415	3756	6049
Chapare	1499	1649	1814	1995	2195	2414	2656	2921	3213	3535	5693
Revenues (US\$000)											
Yungas	3823	4415	5090	5597	5597	6158	6773	7648	8742	9615	15485
Chapare	899	7717	16979	18673	21072	23174	25498	28071	30434	33484	53924
Total Revenues	4722	12132	22069	24270	26669	29332	32271	35719	39176	43099	69409
Loss on Sales (US\$000)	1993	7050	17778	27546	43255	68556	109665	165992	222060	270383	435455

162

TABLE IV-5 ILLUSTRATIVE PROJECTIONS OF ESTANCO OPERATIONS

Low Level of Enforcement

FY	(1983)										
	I	II	III	IV	V	VI	VII	VIII	IX	X	XV
Coca Purchases m.t.											
Yungas	4000	4200	4400	4400	4000	4000	4000	4000	4000	4000	4000
Chapare	1000	7800	14400	14400	14800	14800	14800	14800	14800	14800	14800
Total Purchases	5000	12000	18800	18800	18800	18800	18800	18800	18800	18800	18800
Total Deliveries m.t.	4000	9600	15040	15040	15040	15040	15040	15040	15040	15040	15040
Cost Price (US\$ m.t.)											
Yungas	1348	1550	1814	2176	2677	3400	4420	5746	7182	8260	13302
Chapare	1323	1521	1780	2136	2627	3337	4338	5639	7049	8106	13055
Cost of Purchases (US\$000)											
Yungas	5392	6510	7982	9574	10708	13600	17680	22984	28728	33040	53208
Chapare	1323	11864	25632	30758	38880	49388	64202	83457	104325	119969	193214
Total Cost	6715	18374	33614	40332	49588	62988	81882	106441	133053	153009	246422
Coca Sales m.t.											
Yungas	2560	2688	2816	2816	2560	2560	2560	2560	2560	2560	2560
Chapare	640	4992	9216	9216	9472	9472	9472	9472	9472	9472	9472
Total Sales	3200	7680	12032	12032	12032	12032	12032	12032	12032	12032	12032
Sales Price (US\$ m.t.)											
Yungas	1593	1752	1928	2120	2332	2566	2822	3104	3415	3756	6049
Chapare	1499	1649	1814	1995	2195	2414	2656	2921	3213	3535	5693
Revenues (US\$000)											
Yungas	4078	4709	5429	5970	5970	6569	7224	7946	8742	9615	15485
Chapare	959	8232	16718	18386	20791	22865	25158	27668	30434	33484	53924
Total Revenues	5037	12941	22147	24356	26761	29434	32382	35614	39176	43099	69409
Loss on Sales (US\$000)	1678	5433	11467	15976	22827	33554	49500	70827	93877	109910	177013

1973

TABLE IV-6 ILLUSTRATIVE PROJECTIONS OF ESTANCO OPERATIONS

Highly Effective Enforcement - Obligatory Producer Deliveries at Fixed Prices

FY	(1983)											
	I	II	III	IV	V	VI	VII	VIII	IX	X	XV	
Coca Purchases m.t.												
Yungas	4000	4200	4400	4400	4000	4000	4000	4000	4000	4000	4000	4000
Chapare	1000	7800	17100	17100	17500	17500	17500	16600	15800	14800	14800	14800
Total Purchases	5000	12000	21500	21500	21500	21500	21500	20600	19800	18800	18800	18800
Total Deliveries m.t.												
4000	9600	17200	17200	17200	17200	17200	17200	16480	15840	15040	15040	15040
Cost Price (US\$ m.t.)												
Yungas	1348	1483	1631	1794	1974	2171	2388	2627	2890	3179	5119	
Chapare	1323	1455	1601	1761	1937	2131	2344	2578	2836	3120	5024	
Cost of Purchases (US\$000)												
Yungas	5392	6229	7176	7894	7896	8684	9552	10508	11560	12716	20476	
Chapare	1323	11349	27377	30113	33898	37253	41020	42795	44809	46176	74355	
Total Cost	6715	17578	34553	38007	41794	45977	50572	53303	56369	58892	94831	
Coca Sales m.t.												
Yungas	2240	2352	2464	2464	2240	2240	2240	2336	2432	2560	2560	
Chapare	560	4368	9576	9576	9800	9800	9800	9694	9606	9472	9472	
Total Sales	2800	6720	12040	12040	12040	12040	12040	12030	12038	12032	12032	
Sales Price (US\$ m.t.)												
Yungas	1593	1752	1928	2120	2332	2566	2822	3104	3415	3756	6049	
Chapare	1499	1649	1814	1995	2195	2414	2656	2921	3213	3535	5693	
Revenues (US\$000)												
Yungas	3568	4121	4751	5224	5224	5748	6321	7251	8305	9615	15485	
Chapare	839	7203	17371	19104	21511	23657	26029	28316	30864	33484	53924	
Total Revenues	4407	11324	22122	24328	26735	29405	32350	35567	39169	43099	69409	
Loss on Sales (US\$000)												
2308	6254	12431	13679	15059	16572	18222	17736	17200	15793	25422		

16ix

C. Alternate Coca Marketing Control and Monitoring System

1. The Concept: Development of Production Control and Market Monitoring Capability

As the Sections on GOB Policy Commitment and Instrumentalities show, DNCSP R&C has the legal mandate to control and monitor both coca production and marketing. Within this framework, it is the position of this study that, through the R&C Department, an effective instrumentality for coca marketing control and monitoring can be developed. A coca marketing control and monitoring mechanism could be instrumental in controlling coca flows so as to inhibit or limit diversion to illicit use. This approach would utilize the existing market to balance supply and legal demand.

A Estanco may be required in the future to strengthen the system of control and monitoring. The need for and feasibility of an Estanco should be considered in light of experiences in implementing the control, monitoring and enforcement systems.

A crucial factor in the success of a coca marketing control and monitoring system is the commitment the U.S. Mission can muster and whether the GOB can be expected to support such a program.

In the following paragraphs the major features of the coca marketing control and monitoring system are outlined.

a. Production Control and Monitoring

Production control is one of the main components of U.S. Mission coca policy. The basic mechanism for achieving the goal of limiting coca production to the level required for legitimate consumption and legal exports (with a tolerable level of leakage from the system) is a system of registration eventually encompassing all legal coca producing areas. DNCSP R&C has the legal mandate to implement and execute this function. Producer registration was first implemented in 1977, when campesinos in the Yungas and Chapare were required by R&C to appear at designated locations to declare their planted areas and output of coca. Thus far, 13,300 producers have been registered. Eventual refinement of the system and census and licensing producers on a periodic basis should enable R&C to cover all the important production zones, to develop verification procedures, and thus be in position to maintain current information on coca output. R&C will then have the capability to provide GOB with current coca data for decision-making on coca containment policy and, eventually, on coca reduction policy. DNCSP recognizes its technical shortcoming and the need for technical assistance to R&C in census and registration techniques and methodology and also in data processing technology.

There is a recognized need for a sound baseline survey of coca production which could serve as a point of departure for R&C. Its importance for U.S. coca policy cannot be over-emphasized. A combination of non-obstrusive methods -- such as satellite/aerial photography and scanner-computer techniques -- with properly planned and directed census field work and ground truthing procedures could provide a base upon which a comprehensive production monitoring and control system could be implemented. Once overall national benchmark data for the coca production sector are available, R&C, with proper technical assistance, should be able to monitor the coca production areas. This can involve continuing use of non-obstrusive techniques such as those suggested above, as well as the system of on-going registration of producers.

The techniques of registration of producers, planted areas and estimated output would be extended to all legal production areas. The registration may be renewable annually, at which time producers would be able to declare changes in their holdings and production. This on-going procedure would be refined over time so as to provide up-to-date information on production volume and trends, trends in plantings, abandonments, and incidental information on coca producers' cultivation activities. On these bases, eventual enforcement of coca planting regulations can be implemented in order to serve

cocaine interdiction, containment and reduction objectives as well as controlling the amount of coca available to the legitimate market.

b. Registration and Licensing

A system involving the registration and licensing of coca intermediaries, dealers, agents, vendors and transporters, and a network of well-placed checkpoints along the principal routes of coca flows would accomplish the objectives of monitoring and control. The marketing activities in terms of volume of coca handled would be evaluated on a continuing basis, providing marketing data which would be utilized in verifying flows to legitimate markets. These data would be refined over time, so as to serve as bases for identifying clandestine movements of coca for interdiction purposes.

The DNCSP R&C Department has partially completed the registration and licensing of coca merchants. In the future, this procedure should be routine, and include all the occupational groups involved directly or indirectly with coca marketing and distribution. Annual registration and licensing would enhance the attractiveness or convenience of complying with the regulations regarding coca marketing. Punitive connotations should be removed from the procedure. Thus, most or all

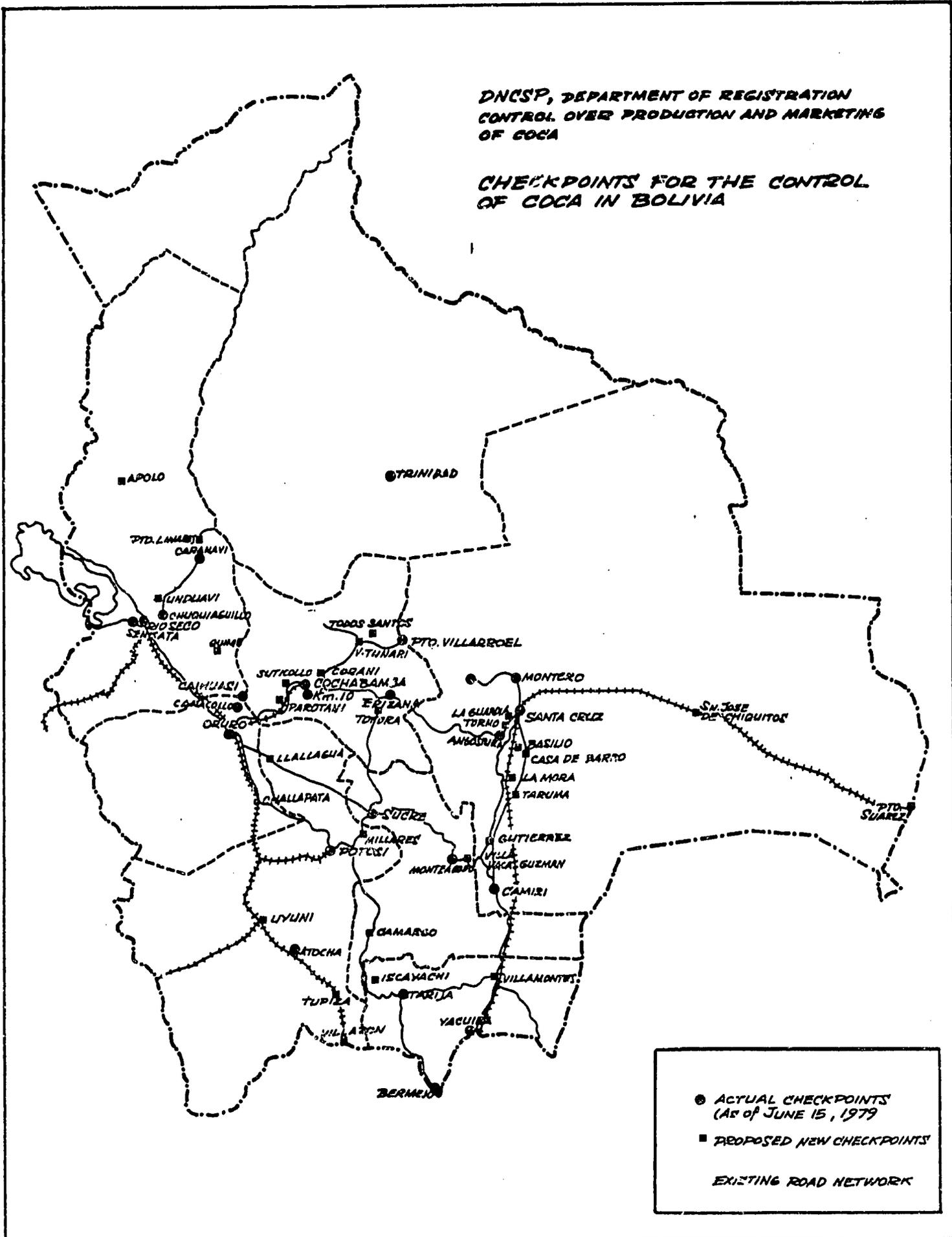
legitimate intermediaries should eventually be drawn within the regulatory system of R&C.

High-ranking R&C officials characterize as "experimental" the first unsophisticated attempts to establish a network of 25 checkpoints to monitor and control the flow of coca. Twenty-six additional checkpoints are planned and the number may exceed 51 in the future.^{1/} The idea is sound, but the means and techniques available at present make implementation an unprofessional operation. Some checkpoints are poorly located; infrastructure and equipment are lacking; personnel selection (high-ranking police officers on the pre-retirement list) has been made on the basis of GOB budget constraints. Pay scales are very low. The implementation flaws of this important component of the coca marketing control and monitoring system could be resolved or minimized through the U.S. Mission's financial, training, equipment and technical assistance inputs.

The checkpoint system strategically located along coca trade routes, managed around the clock by a full complement of trained, properly equipped inspection personnel, could effectively monitor legal coca flows. A radio communications network is already planned and will connect all checkpoints with a data processing center, so that information can be transmitted or retrieved for on-the-spot checking of coca

^{1/} See Figure IV-1

FIGURE IV-1



transporters or dealers. A system of waybills, "guias de transito," would accompany each transport vehicle from origin to the final consignee. Surveillance for traffickers avoiding the checkpoints would be carried on by a mobile radio-equipped force.

The accumulation of data entries, file cards, and copies of documents by R&C is already assuming formidable proportions. A data processing center must be installed before the volume of data becomes unmanageable. The number of registrations and descriptive data will become voluminous as the registration system is extended to vendors at the retail level.

c. Price Stabilization Mechanism

In the present free coca market, there is evidence that demand from the illicit trade is already exerting upward pressure on coca prices. An external influence with a dampening effect on coca prices would be beneficial to the consumer sector. Official price stabilization would be a corollary action in support of coca policy, encouraging development of the coca monitoring and enforcement system.

A decree establishing government policy with respect to consumer coca prices would in effect be a clear statement of the position of the government vis-a-vis the coca consumption sector, whereby the government would acknowledge the validity

and legality of coca consumption and the determination of the government to protect legitimate consumers. A clear statement of the position of the government to protect and defend the coca consumption sector would serve to allay fears among the campesinos, generated by public statements and discussions referring to eradication of coca. Discussion of the coca eradication issue in the press and elsewhere has been misconstrued or misunderstood, generating apprehension among campesinos. This action on the part of government would, at the same time, aid in advancing the efforts of the DNCSP R&C in expanding and improving its registration and monitoring system, particularly with respect to coca intermediaries and merchants.

The coca price stabilization mechanism should be within the purview of the Ministry of Industry and Commerce, which is charged with stabilization of the market for staple commodities, such as potatoes, coffee, etc. The decree establishing the coca price stabilization policy could be formulated with the cooperation of institutions that are concerned with the coca sector, mainly the Ministry of Agriculture (MACA), DNCSP and PRODES.

The coca price stabilization mechanism should be flexible to reflect inflationary impact on production costs and unusual crop conditions that may affect harvests. It could be

patterned after the Coffee Stabilization Policy which sets a ceiling on retail prices and also specifies an amount to be set aside by the coffee industry (exporters and dealers) for the domestic market. In the case of coca, there would be no quantitative conditions since the registration system would provide guidelines as to the volume of coca that should be moving through distribution channels to legal markets. In the event that the volume flowing to legal markets did not measure up to consumer demand, supply would be regularized through the DNCSP R&C monitoring and control system at the producer and at distribution levels. Municipal police would survey and supervise retail marketing along with other price-regulated staples.

Executing coca price stabilization policy with a light hand is important when considered from the standpoint of producer prices. There is high risk and inherent political liability involved in a price stabilization policy that involves both consumer and producer prices. This hinges on producers' notions of a "fair" price which may not be consistent with a tolerable range of consumer prices. If this proves to be the case in Bolivia, a limited Estanco operating at a loss, may be necessary to equilibrate prices.

In the present Bolivian context, there are compelling reasons for allowing producer prices to remain unfettered in a free

market. Producer price supports would be inconsistent with a policy directed toward discouragement of coca plantings. Coca is a relatively lucrative crop and campesinos have been faring reasonably well in their dealings with intermediaries, even though the latter, as a class, have been benefiting from wide trading margins. So long as a surplus and expanding coca supply situation prevails, producer prices would be reasonable. However, in an improving enforcement environment pressure will mount for fixing of producer prices incompatible with consumer price policy.

2. Institutional Framework

a. DNCSP R&C Department

The principal instrumentality for the coca marketing control and monitoring system is the DNCSP R&C Department. Its scope of operations, for which some activities are already in progress, is as follows:

- Registration Procedures. Producers and coca merchants will be required to register at designated localities, where they will declare pertinent information on their activities. An identification document will be issued which will contain data to accompany all future reports relating to their coca activities.

- Verification Procedures. Producer information will be verified by an inspection force which will be trained for this purpose. Acreages and yields will be subject to examination. The activity of merchants will be checked as they pass from one checkpoint to another. The radio communication system and the data processing system will enable R&C personnel to promptly verify the status of the merchant or intermediary so as to effectively monitor trade flows.

- Information Systems. These will be based on a relatively simple business computer and data storage system programmed for accumulation of information collected through registration and reporting procedures. Retrieval systems tied to the communication system will enable outposted personnel to obtain prompt information on suspect cases for monitoring, surveillance or interdiction purposes.

- The Checkpoint System. Each checkpoint will be manned by an adequate team on a 24-hour basis. Each post will be equipped with proper infrastructure for inspection of cargoes, quarters for personnel, radio equipped vehicles and communications to the headquarters and data processing center.

Manpower Requirements. Support and maintenance personnel such as mechanics and communications specialists will be employed as needed. Data processing technicians and clerical personnel will also be required.

Additional investigative personnel will be required by DNCSP Operations. Additional officers will require additional support personnel. Interdiction needs in the future will determine the pace of expansion for DNCSP Operations.

Logistical support. Infrastructure requirements, particularly for the checkpoints, need detailed study. Vehicle requirements for a mobile operation will be formidable. Maintenance shops are essential for upkeep and economical operation of equipment.

b. Complementary Instrumentalities

The agricultural customs tax-collecting entities could be coordinated with the control and monitoring system as complementary instrumentalities. The legal framework of the Narcotics Law in Bolivia gives DNCSP R&C the mandate to command coordinated institutional support activities on the part of these complementary entities. Moreover, improved monitoring of coca flows on the part of these entities would

increase the tax revenues derived from coca, which already are the principal source of their revenues. Willingness has been stated on the part of the agricultural customs agencies to cooperate with DNCSP R&C efforts. This willingness to cooperate could be formalized through inter-institutional agreements of an operational nature, once a system of marketing control and monitoring is fully implemented and operational.

The principal complementary instrumentalities are the Agricultural Customs of La Paz, the Agricultural Customs of the Tropics of Cochabamba, and the Office of Coca Revenues of the Prefectura (state government) in Cochabamba. These entities control coca flow for tax-collecting purposes in the areas of Yungas of La Paz and the Chapare. A summary of their legal framework and purpose, their modus operandi, structure and potential as complementary instrumentalities of coca control and monitoring is given in Annex A.

Other complementary instrumentalities of the coca marketing control and monitoring system would be those departmental and municipal entities which at present collect taxes for coca marketed within their jurisdictions. Among these is the Municipality of Santa Cruz, which has a checkpoint in La Guardia, some 22 km outside the city on the road to Cochabamba. Similar situations exist in Sucre and Potosi.

The DNCSP Operations Department and National Customs should supplement DNCSP R&C system of control and monitoring of coca flows. There presently exists an inter-institutional arrangement between DNCSP and National Customs which could be broadened to cover specific operational procedures regarding monitoring and control of coca flows throughout Bolivia. The role of these entities will become increasingly important in the control and monitoring system as cocaine processing moves to the producing areas.

PRODES could also play a supplementary role in support of the R&C coca marketing control and monitoring system. Exchange of information regarding producer and intermediary marketing activity in the Chapare and Yungas is one such possibility, but PRODES should not jeopardize their credibility as a development agency.

3. Requisites for Effective Operation

a. Intra and Inter-Institutional Coordination

The two main departments of DNCSP -- Operations and R&C -- should coordinate closely. Close communication between the two departments is essential to efficient functioning of both arms of DNCSP as they implement different but related components of coca/cocaine policies.

At the producer level, close coordination with PRODES is necessary in monitoring producer and intermediary activities, as their personnel are in daily contact with campesinos. An improved reciprocal understanding of DNCSP and PRODES institutional activities and goals must be achieved.

National Customs, in the course of their expanding interdiction activity, can aid DNCSP Operations in investigating coca diversion. This is an especially important cooperative effort. In fact, there is an agreement between the two entities to exchange information and cooperate in interdiction. It is important to bring National Customs up to the same level of proficiency as DNCSP in the future in order to facilitate coordination.

Tax collection agencies, the agricultural customs and the provincial customs agencies that levy taxes on coca can be integrated into the DNCSP monitoring system as complementary control agencies. The information they collect in connection with their tax functions can be utilized if common reporting forms and procedures are developed.

Intra- and inter-institutional coordination of the various complementary, supplementary and direct implementation GOB instrumentalities could be enhanced by a supra-institutional mechanism at the highest level of decision-making in the GOB.

Such supra-institutional coordination could encompass the U.S. Mission and other international bodies concerned with the coca/cocaine problem in Bolivia. Directorship could be comprised of one or two representatives from the GOB, their counterparts at the highest level of the U.S. Mission in Bolivia, and a U.N. representative. These commission members would be assisted by heads of the various agencies concerned with enforcement, rural development, price control and other elements of the narcotics program.

b. Personnel Selection and Incentives

One of the major factors in administrative inefficiency which characterizes public entities in LDCs is the lack of managerial capability. This situation arises partly from political interference in executive selection and partly from lack of training and experience. Competent management is a critical factor in assuring the success of any project. This explains the emphasis on the discreet use of leverage by the U.S. Mission in executive selection. Not only is the initial selection of top echelon staff important, but, in the Bolivian context, it also is essential to assure continuity at the executive level. A positive role for the U.S. Mission in selection of project directors and the guaranteed continuity

of executive staff should be pre-conditions for U.S. funding. Recent examples of the successful application of this strategy are the Ulla Ulla and Ingavi projects.

An adequate personnel compensation system is a basic requirement in a sensitive area such as monitoring of coca movement. Better remuneration is the first line of defense against graft and corruption, although it is only a partial solution to the problem. Colonels and other high police officials are being paid US\$300 a month to man the DNCSP checkpoints, many of them in small or isolated interior communities without modern facilities. Other personnel are paid correspondingly low salaries.

Incentive systems are an important element where performance is essential. In fact, in an organization such as DNCSP, where alertness is a prime requisite, performance may well depend on the incentives offered. DNCSP Operations in particular should have a strong incentive program.

c. Logistical and Qualitative Improvements

Adequate equipment must be provided for an essentially mobile force. Both DNCSP R&C and Operations could be hindered by lack of communications equipment at interior points; or by lack of

capability to process information filed on thousands of cards; or by lack of infrastructure to perform necessary functions. Heavy investment will be required to bring the monitoring and enforcement system to operational efficiency over all the coca routes in the country.

Intensive long-term training and indoctrination programs are vital to achieve permanent upgrading of personnel and improvement in the operational environment. DNCSP R&C personnel require indoctrination in unobtrusive monitoring techniques, census-taking and data processing. DNCSP Operations personnel require training in the entire array of enforcement techniques and skills. Cooperating monitoring and enforcement agencies should be given the benefit of training concurrently with DNCSP to bring them to equivalent levels of efficiency. Disparate levels of skill and efficiency among complementary agencies would only frustrate coordination efforts and inhibit monitoring and enforcement. Requests already have been made to the U.S. Mission for several advisors. A substantial force of advisors with various specialized skills will be needed to make an impact on the coca situation.

CHAPTER V.

CONCLUSIONS AND RECOMMENDATIONS

objectives of U.S. Mission coca/cocaine policy with regard to stabilizing prices to legitimate coca consumers. See Chapter IV. Once this coca monitoring and control system is in place and functioning effectively, the need for and feasibility of an estanco-type coca marketing body can be evaluated.

It is recommended that a Coca Production and Marketing Monitoring and Control system be implemented promptly on a scale commensurate with the scope of the problem that is being confronted. The principal instrumentality of the system proposed is the DNCSP R&C, with other coca and cocaine related entities as complementary instrumentalities. The major features of the system proposed are Production Control and Monitoring, Monitoring of Marketing Distribution channels, and a Price Stabilization Mechanism.

Actual control of production should be accomplished through a system of public education and persuasion which is backed by GOB commitment to eliminate illegal plantations and punish offenders. Registration of producers is also an important element in controlling production.

Market monitoring should consist of checkpoints, patrols and other surveillance to determine the routes used for transporting coca. Monitoring should be coordinated with DNCSP Operations, the instrumentality for interdiction of illegal coca, coca derivatives and cocaine. In addition, constant monitoring of prices, quantity and quality in the traditional legal market must be maintained. This effort should

be carried out in close cooperation with market control activities such as registration of sellers, carriers and intermediaries.

Phase II Study to Formulate a Nationwide Coca Data Base

Phase II of this study should be carried out as soon as possible. There is urgent need for a reliable comprehensive data base (on the coca sector, which could be useful for logical, realistic decision-making regarding coca/cocaine policy.

Traditional coca producing regions not accounted for in U.S. Mission papers and the corresponding GOB instrumentalities should be surveyed and included in the producer registration and other policy implementation procedures of the DNCSP R&C coca production and marketing control and monitoring system. Application of regulations to prevent these traditional coca producing regions from becoming major new areas of coca expansion thereby would be facilitated. The newly detected coca plantings in Northern Santa Cruz and along the Beni river should be surveyed.

The Phase II survey should be adequately funded, staffed and designed, so that its findings would have authoritative status and universal credibility. A sound data base is a critical factor in the proposed system, because monitoring of production cannot be done accurately without a base from which to analyze change. During the Phase II survey, groundwork should be laid for a continuing system of up-

195

dating and maintaining current information on coca production trends. A practical, unobtrusive means of data gathering, production monitoring, localization and quantification would be through the use of aerial photography computer scanner techniques. These methods, coupled with ground truthing and field surveys, should be implemented as part of the Phase II project as an integral, on-going activity of the monitoring system.

Other major objectives of the study should be as follows:

- a. To determine the requirements of the Alternate Production and Marketing Monitoring and Control system for 1) the legal framework, 2) organizational structures, 3) functional activities, 4) logistical support, 5) budget, 6) personnel policies, 7) compensation scales, 8) training and 9) technical assistance.
- b. To specify the inputs required from GOB in order to give the system a reasonable chance for success.
- c. To specify the inputs required from the U.S. Mission, United Nations and other external sources.

The Phase II study team should be composed of an economist, experts and specialists in various aspects of enforcement, a data collection specialist and specialists in data processing and analysis, information systems, communications, equipment maintenance and government organization.

U.S. Mission Coca/Cocaine Policy

The U.S. Mission's three-pronged approach to the coca/cocaine problem in Bolivia should be stated in terms of a longer lead time. A 15- to 20-year lead time is more adequate and realistic. Objectives within that time frame could be measured in terms of specific indicators. Those indicators should be defined in terms of stages in development of monitoring and control capabilities of DNCSP R&C and the complementary enforcement agencies.

Coca Reduction through Production Control should be clarified in concept. First of all, the U.S. Mission and the GOB instrumentality should make their policy coverage and breadth compatible. Secondly, attrition of land under coca cultivation as an objective for this component of U.S. Mission policy must be viewed in the light of needed time for prior implementation of the Coca Crop Substitution and Area Development component.

The U.S. Mission must be assured of a strong stand on coca/cocaine policy by the GOB, which would allow for destruction of new coca plantings, and would prevent proliferation of coca production to other areas in Bolivia where it is not presently grown. In fact, there is little chance of controlling narcotics production in Bolivia unless both production control and interdiction efforts are extended to the entire country. Otherwise, production, processing and smuggling will simply move to uncontrolled areas with little or no decrease in volume of operations.

Of the approximately seven million hectares in the Chapare region, some 1.2 million are presently under settlement. Colonization of a spontaneous nature is rapidly spreading, mostly along planned road construction routes to Beni and Santa Cruz. Spontaneous settlements are difficult to supervise, given the weak GOB presence along the expanding frontier of colonization. The Instituto Nacional de Colonización and Reforma Agraria should be directed to apply the law prohibiting coca cultivation to new homestead grants under penalty of having title withheld. In the Chapare region, this would at least inhibit a further spread of coca cultivation along major new roads under construction.

The U.S. Mission must work with the newly elected government in 1980 or 1981, to insure that inadequacies concerning policy instrumentalities of the GOB dealing with the coca/cocaine problem are properly spelled out by Bolivian law. An amended version of Law Decree No. 16562 should be drafted and approved by the Bolivian Congress. This new legal commitment of the GOB should encompass all coca/cocaine instrumentalities.

In light of new developments in research on physiological, nutritional and cultural aspects of coca chewing, it is recommended that the U.S. Mission encourage Bolivia to renounce the coca chewing eradication covenant of the U.N. Single Convention on Narcotics. Such action would minimize potential political liabilities for the overall coca/cocaine policy arising from public opinion concerned

with the legal use of coca for mastication purposes and the effect of coca policies on Andean populations in Bolivia and Peru.

It is recommended that the U.S. Mission take steps to raise the level of performance of the GOB instrumentality of cocaine interdiction through enforcement on three different levels. One, a major commitment is necessary at the highest level of the GOB to support interdiction of cocaine traffic, whomever it implicates and whatever measures are required to achieve greater effectiveness. Two, a greater degree of effort must be shown by DNCSP Operations, both in terms of improved territorial coverage, and in increased interdiction rates involving the "big fish" of cocaine traffic in Bolivia. Third, concomitant with the foregoing, a qualitative and quantitative enhancement of U.S. counterpart inputs must be undertaken both in terms of personnel -- such as DEA agents -- as well as physical inputs.

Given that PRODES is at a juncture, going from a pilot program phase to implementation of rural development programs, it is recommended that the U.S. Mission assess the institutional and structural modifications required in order for PRODES to be able to operate effectively. The main focus of coca policy is on the Chapare region. A semi-autonomous regional development authority there should have an overall mandate to implement the crop substitution and area development plans which are suggested for the achievement of policy goals.

Coordination and integration of efforts of the three-pronged program approach to the coca/cocaine problem is imperative. A supra-national

and institutional mechanism, composed of the highest level of the GOB, U.S. Mission representatives and perhaps United Nations participation could be one way to resolve institutional conflicts and uncoordinated efforts, as well as provide an instrument to gauge the degree of GOB political will regarding effective action on the coca/cocaine problems.

Expanded research on coca consumption in Bolivia would be valuable to the general body of medical, social and behavioral science. An expanded MDS-type survey addressing the areas of coverage and patterns of consumption not encompassed in previous research should be helpful in shaping coca policy in Bolivia. Further investigation is needed to gauge changing patterns, both spatial and demographic, of coca consumption in Bolivia.

An important recommendation is that the U.S. Mission promote and encourage scientific research on the physiological and nutritional aspects of coca use. Certainly, the implications are far-reaching not only for Bolivian consumers who risk bio-ecological disaster should misguided attempts at coca use eradication be implemented, but also for other similar populations that subsist on high carbohydrate staples.

In Bolivia there is considerable misguided or misinformed public opinion on U.S. Mission coca policies. It is recommended that a public relations and information effort be initiated to prevent

further damage to policy implementation. Specifically, "eradication of coca production and chewing" should be carefully avoided in the terminology. The U.S. Mission's goals to reduce production to the level required for legal demand so as to secure stable and reasonably-priced coca supplies to local consumers should be stressed. A well-designed information program explaining U.S. Mission coca/cocaine policies may indeed muster greater public support in Bolivia, and would defuse potentially dangerous political criticism.

ANNEX A

COMPLEMENTARY INSTRUMENTALITIES

CUSTOMS AND REVENUE AGENCIES

ANNEX AA. AGRICULTURAL CUSTOMS OF LA PAZ1. Background and Purpose of the Entity

Originally, this entity was created by Supreme Decree of December 12, 1941, as the Aduana de la Coca de La Paz. Originally, it was composed of representatives of the Committee for Construction of the La Paz-Beni Road, the Dean of the University of La Paz, the society of Land-owners (hacendados) of Yungas, and a representative from the Ministry of Finance.

In 1973, by Supreme Decree No. 11090, the entity became the Aduana Agropecuaria de La Paz. Twenty-three agricultural products were declared tax-free, but duties were maintained on coca, tobacco, coffee, quinine, tropical fruits, lumber, charcoal, cacao, copal, incense, flowers, and cereals for manufacture of alcoholic beverages. The tax on coca leaves was set at 25.1% ad-valorem.

The revenues were allocated to the entities below, shown with their percentages.

a. <u>Prefectura</u> of La Paz	36.00%
--------------------------------	--------

193

b.	<u>Prefectura</u> of La Paz, for the construction of the road Apolo-Ixiamas-Puerto Heath	21.20%
c.	<u>Servicio Nacional de Caminos</u> , for road construction in La Paz	15.00%
d.	Public works in Yungas provincial capitals (Coroico, Coripata, Chulumani and Irupana)	2.80%
e.	Administrative costs of the <u>Aduana Agropecuaria</u> of La Paz	25.00%

In 1977, some modifications were made by Supreme Decree No. 14574. The ad-valorem tax rate for coca was raised from 21.20% to 50%, and taxes were lowered for other products. The Prefectura of La Paz was given a broader (and more nebulous) mandate regarding the use of the tax revenues, and the town of Inquisivi was made eligible for public works derived from the revenues. By a Resolution of the Prefect of La Paz and the Director of the Aduana Agropecuaria, on July 26, 1977, the tax on coca was raised to 62 pesos ad-valorem per tambor of 50 pounds (1.24 pesos per pound).

2. Modus Operandi

The modus operandi of the Aduana Agropecuaria at its principal checkpoint (Unduavi, where more than 80% of the revenues are

collected) is as follows: A truck stops at the checkpoint. A revisor climbs upon it, and obtains the declaration of the coca merchant. The revisor inspects the cargo of coca. Then the revisor and the coca merchant enter the Aduana office and the declaration of the product subject to tax is made. A guia or receipt is issued. Then the truck continues to Chuquiaguillo (in the outskirts of La Paz) and the coca merchant receives another receipt (called the Tornaguia) which confirms the former appraisal and payment of taxes. Then the coca is free to enter La Paz.

The other checkpoints are only minor outposts for tax-collection, and thus the operation is simpler. The tax is paid on whatever load is being transported and the receipt (or guia) is issued to the coca merchant authorizing continuation to La Paz.

A major flaw in the system results from the issuance of two different tax receipts -- the Guia and the Tornaguia for the traffic out of the Yungas. Cases have been detected where, in complicity with the revisors and administrators of Unduavi, the coca or coffee merchants obtain a guia for 150 cestos 1/ of coca, duly stamped on the original but without marked copies. Then the coca merchant proceeds to Chuquiaguillo where his cargo is inspected and a tornaguia is issued for 150 cestos of

1/ Container of 30 pounds.

coca. On the return trip to Yungas, after disposing of the coca in La Paz, he stops again in Unduavi, and pays taxes for a load of 50 cestos, since alteration of a decimal point changes the amount of coca for which he is obligated to pay taxes.

3. Location of Checkpoints and Personnel Structure

The Aduana Agropecuaria has a central office in La Paz, a Sub-Administration in Unduavi, and nine retenes or checkpoints (see map).^{1/} A total of 72 employees are distributed in the network. The average salary is \$b.3,289 (US\$161.40) per month. The Executive Director earns \$b.13,000 (US\$637.80) a month, and a revisor approximately \$b.2,427/month (US\$119).

There are obvious flaws in the location of checkpoints. For example, four checkpoints controlling the road out of the region of Inquisivi are unnecessary. It is quite apparent that the institution suffers from featherbedding . . . inefficient personnel distribution. The Sub-Administration of Unduavi, for example, has a complement of 25 (15 of them "guardas-revisores"), while the "Resguardo" (checkpoint) in Quime has one person.

4. Institutional Problems and Potential

The Aduana Agropecuaria of La Paz is in serious financial difficulty. According to a document prepared by the Aduana, the accumulated deficit for 1977 was \$b.173,435.62; in 1978, it

^{1/} Figure A-1

196

FIGURE A-1

LA PAZ and COCHABAMBA : Agricultural Customs Check Points



grew to \$b.3,455,403.17 as the result of their purchasing an overpriced and rather inadequate office building (for US\$120,000). At present, this institution owes \$b.5,073,559.73 (US\$248,948) to the Prefectura and the Servicio Nacional de Caminos for their share of revenues. The poor financial situation will be compounded due to the need to invest US\$100,000 for a new Sub-Administration quarters on the new road to the Beni, which will bypass Unduavi. As this new checkpoint will be the source of over 80% of their revenues, this investment cannot be foregone.

The crux of the Aduana Agropecuaria de La Paz is its dependency on the Prefectura, which is a political division of the Ministry of Interior. The Aduana is used both as a source of funds for "public relations" investments by the governments in power and as a financial till to underwrite the Prefectura's operating costs, which include salaries of government officials interested in getting rich quick (indeed, the Aduana de la Coca (in Unduavi) has been a traditional post to which governments have appointed deserving loyalists to pay political debts). Graft and corruption are an important factor in diminishing tax revenues.

Under-invoicing most likely occurs with large coca shipments as the result of collusion between the coca merchant and truckers dealing with Aduana Administrators and inspectors. With small scale coca loads brought to market by peasant producer-merchants, petty graft results in lesser amounts of

coca being declared. In addition to these factors, inadequate compensation and working facilities, and inefficient methods of detection and counting of cargoes, contribute to the poor performance of the institution, both as a revenue-collection accruing agency and as an indirect source for control and monitoring of the coca flow from the Yungas.

The Aduana Agropecuaria of La Paz -- together with the Aduana of Cochabamba and other tax-collection entities -- could play an important complementary role in monitoring the flow of coca as the first line of control, for the production area of Yungas. This complementary potential hinges upon close coordination with the DNCSP Registration and Control Department. Indeed, just as DNCSP R&C must improve dramatically its operating capability and efficiency, so the Aduana Agropecuaria of La Paz has a big task ahead to fulfill its potential role.

B. ADUANA AGROPECUARIA DEL TROPICO DE COCHABAMBA

1. Background and Purpose

Under the terms of Supreme Decree No. 07413 enacted on December 3, 1965, the Servicio Nacional de Caminos (National Road Service) collected the 10% tax ad-valorem on agricultural products from the tropical region of Cochabamba Department. In July, 1975, Supreme Decree No. 12702 transferred the Agricultural Customs of the Tropics of Cochabamba (Aduana Agropecuaria) del Tropicico de Cochabamba - AATC) to the Ministry of

Agriculture and Rural Affairs (MACA). It also established an new schedule of allocation of revenues to the various entities.

At the present time, tropical products are taxed at the following rates:

<u>Product</u>	<u>Unit</u>	<u>Tax</u>
Coca	Carga (5 arrobas) <u>1/</u>	\$b. 80.00
Banana, Papayas, and Citrus fruits	Quintal <u>2/</u>	1.00
Coffee	Quintal	21.00
Timber	Cubic inches	1.00
Cereals (rice, maize)	Quintal	1.00
Tubers (potatoes, yucca, sweet potatoes)	Quintal	2.00
Tomatoes	Box	2.00
Chili peppers	Quintal	10.00
Achiote (<u>Bixa Orellana</u>)	Quintal	10.00
Palm hearts	By the unit	1.00
Pineapple, watermelon	Quintal	2.00
Flowers	Bundle	5.00
Peanuts	Quintal	5.00

The distribution of revenues among entities is:

a. Servicio Nacional de Caminos (National Road Service)	51.59%
b. Operating costs of the AATC	17.34%
c. Committee for Social Works of the Peasant Federation in the Chapare	10.00%

1/ One arroba = 25 lbs.

2/ A quintal (qq) = 46 kilograms (101 lbs).

d.	National Customs Police	2.57%
e.	University of Cochabamba	9.00%
f.	<u>Prefectura</u> of Cochabamba	9.50%

In 1978, AATC collected a total of \$b.5,730,570.30 (US\$281,186). The tax on coca is the major source of this revenue. The tax on coca in Cochabamba of \$b.0.64 pesos per pound is much lower than that of the Aduana Agropecuaria of La Paz, \$b.1.24 per pound.

2. Modus Operandi

The AATC works through one checkpoint, located in Paracti, some 80 km. on the road from Cochabamba to Villa Tunari, Chapare. As the trucks come to Paracti, the customs guard, an aide, and one representative of the Federation de Campesinos inspect the cargo and determine the taxes to be levied. Generally, for fruit and small loads of coca (up to 15 or 20 arrobas -- 375 to 500 lbs) duties are paid in Paracti. For larger amounts of coca, the merchants obtain a Guia de Transito (in transit invoice), which must be presented to the Oficina de Resello of the AATC, located near the coca market in Cochabamba. Once the in transit invoice is presented, the taxes are collected, the coca bales are stamped with a seal, and then are ready to be sold. This procedure usually occurs in the coca market.

3. Checkpoints and Personnel Structure

The AATC has a simple structure: a Central Office in Cochabamba, an Oficina de Resello (stamp seal office) is located near the coca market in the city, and the Aduanilla or checkpoint is located in Paracti (See Map No. _____).

The Central Office has a staff of six. The Administrative Manager earns \$b.8,114/month --US\$398/month, the porter \$b.3,159/month -- US\$155/month. Two clerks in the stamp seal office have an average salary of US\$202/month. In the checkpoint at Paracti there are two revisores (customs guards), two aides, and two representatives of the Peasant's Federation on the payroll, with an average salary of US\$191/month. On the average, AATC pays US\$213 per month to its employees, a sum slightly higher than the US\$161/month the Aduana Agropecuaria de La Paz pays its employees.

An interesting aspect of the AATC is the peasants' participation in its operations. This participation arises out of Supreme Resolution No. 174805, dated November 15, 1974, whereby a Committee of Social Works was organized to supervise the utilization of 10% of the revenues in public works, school construction, potable water systems and other infrastructure investments of direct benefit to the Chapare farmers. Peasant participation in the operations of the AATC is assured through the presence of two peasant representatives at all times in the checkpoint of Paracti. These representatives are on the

202

AATC regular payroll. They are routinely changed every 3 months by the Peasant Federation. The purpose is to diminish graft and corruption.

The Committee of Social Works is composed of the District Chief of the National Road Service as its President, and as vocales or members, two representatives from the FEAT (The Peasant Federation), and a representative from the National Comptrollers' Office who audits and controls the funds. The Committee's investments are implemented by the Federacion Especial Agraria del Tropico of Cochabamba -- FEAT -- (Special Agrarian Federation of Cochabamba's Tropical Areas). The FEAT implementation arm of the Committee purchases necessary construction materials, transports them to the sites throughout the Chapare in a used dump-truck purchased several years ago with coca-tax revenues, and supplements the investments through community labor and money contributions. The peasants in the Chapare are hopeful that the work of the Committee of Social Works of the FEAT will be made more effective through the provision of two new dump-trucks through the Felt Needs Survey-derived community projects to be financed by PRODES with U.S. funds. This contribution probably will achieve the most impact among the PRODES Felt Needs' Study and Community Projects.

4. Problems and Potential

In the opinion of the Administrator of the AATC, the system works well and there is no large-scale evasion. However, he

mentioned an increase in coca hidden in banana stalks and other means due to recent increases in taxes on coca. Contraband coca from the Chapare, however, is being diverted after passing through the checkpoint in Paracti. Instead of taking coca to Cochabamba, merchants divert it through The Aguirre-Tiraque cut-off and take it directly into Santa Cruz or the Punata-Arani area (a well-known cocaine-processing locality).

The AATC system does not have checkpoints monitor the coca shipped from the Yungas area of sub-tropical Cochabamba. The coca producing areas of Yungas de Tiraque, Vandiola and El Palmar, located north of the Cochabamba-Santa Cruz road, do not have checkpoints of the AATC or DNCSP. Moreover, AATC does not control the coca being shipped north to the Beni directly from the Chapare, through the ports on rivers which flow into the Mamore-Madera river network.

The AATC system has two notable features. There is no feather-bedding; in addition, peasant representation is a major innovation which enhances effectiveness of AATC in tax collection and control of the flow of coca out of the Chapare. The result is a higher level of performance in terms of taxes collected per man. The inclusion of peasant representatives in the AATC has generated perception of their vested interest in community projects. At an interview the Executive Secretary of the FEAT insisted that proper control of coca movement is possible through direct monitoring in the coca producing areas.

The FEAT would be willing to support the monitoring system as soon as the development component in the coca-producing areas moves forward. Peasant support would be conditioned on maintenance of "fair" coca prices to the producer. Increased revenues for the Committee of Social Works from coca tax receipts also would be an important factor in generating present support for the monitoring system.

C. OFICINA DE RECAUDACIONES DE LA COCA, PREFECTURA DE COCHABAMBA

1. Background and Purpose

The Prefectura of Cochabamba receives 9.50% of the revenues collected through the Aduana Agropecuaria del Tropico. Through the Office of Revenues of the Prefectura, coca, chicha (maize beer), limestone and plaster are taxed.

Coca is taxed for export from Cochabamba at a rate of \$b.20 per tambor of 62.5 lbs. This works out to \$b.0.32 per pound. The \$b.0.64 per pound AATC tax the \$b.0.32 per pound tax of the Office of Revenues of the Prefectura of Cochabamba, total \$b.0.96/pound tax on coca. That total still falls short of the \$b.1.24 per pound levied by the La Paz Agricultural Customs entity. The Office of Revenues of the Prefectura of Cochabamba collected some \$b.3,058,520 on 152,926 tambores of coca in 1978 (about 4,404,550 kilograms of coca leaves). The 1978 revenues represented an 8.03% increase over 1977 figures.

105

2. Modus Operandi

When the coca arrives in the market, any merchant who wants to ship it out of the city of Cochabamba must obtain the Invoice of Exportation of Coca (Guia de Exportacion de la Coca), paying the rate mentioned above. Once the Guia is obtained, the coca merchant must deposit \$b.5 per tambor to the DNCSP account in the Banco Central. With the Guia and the DNCSP deposit receipt, the coca merchant goes to the DNCSP office in Cochabamba to obtain a Hoja de Transito (In-Transit Form), for which DNCSP charges an additional 2 pesos. At this point, the coca is ready to leave the city of Cochabamba.

3. Checkpoints and Personnel

The Office of Revenue of the Prefectura is located in a one-room office near the coca market in Cochabamba. Its personnel number three collectors and a supervisor, paid a monthly salary averaging only \$b.2,600 a month (about US\$127). Although the pay is low, even by Bolivian standards, the office handles a substantial amount of cash. On Mondays, for example, up to \$b.100,000 (about US\$ 5,000) is collected. For this reason the Supervisor is bonded.

4. Problems and Potential

Although this entity is rather small, it would be an important complement to the control and monitoring system for coca. Its

personnel expressed concern about lacking the means for improved revenue collection. Specifically, they mentioned the need for a collection point in a strategic location to control the flow of coca from The Aguirre-Tiraque-Punata cut-offs.