Working Paper No. 45

RURAL DEVELOPMENT AND CROP SUBSTITUTION IN BOLIVIA: USAID AND THE CHAPARE REGIONAL DEVELOPMENT PROJECT

by

Roger N. Rasnake
Michael Painter

October 1989

This paper is published by the Institute for Development Anthropology and reports on work supported by Human Settlement and Natural Resources Systems Analysis (SARSA) Cooperative Agreement No. DAN 1135-A-00-4068-00, at Clark University and the Institute for Development Anthropology, funded by the U.S. Agency for International Development, Bureau for Science and Technology, Office of Rural and Institutional Development, Division of Rural and Regional Development. The views and interpretations in this publication are those of the authors and should not be attributed to the Agency for International Development or to any individual acting on its behalf.

TABLE OF CONTENTS

LIST OF TABLES

ACRONYMS

AHV	Associated High Valleys
BAB	Banco Agrícola de Bolivia/Bolivian Agricultural Bank
CEDEAGRO	Centro de Desarrollo Agropecuario/Agricultural Development Center
CERES	Centro de Estudios de la Realidad Económica y Social/Center for Studies of the Economic and Social Reality
CIDRE	Centro de Investigación y Desarrollo Regional/Center of Research and Regional Development
COB	Central Obrera Boliviana/Bolivian Workers' Central
CORDECH	Corporación de Desarrollo de Chuquisaca/Chuquisaca Development Corporation
CRDP	Chapare Regional Development Project
CSUTCB	Confederación Sindical Unica de Trabajadores Campesinos de Bolivia/The Sole Sindical Confederation of Peasant Workers of Bolivia
CUMAT	Capacidad de Uso Mayor de la Tierra
DEA	United States Drug Enforcement Administration
DESFIL	Development Strategies for Fragile Lands Project
DIRECO	Dirección de Reconversión Agrícola/Directorate of Agricultural Reconversion
FENACRE	Federación Nacional de Crédito/National Credit Federation
FSTMB	Federación Sindical de Trabajadores Mineros de Bolivia/Sindical Federation of Mine Workers of Bolivia

IBTA	Instituto Boliviano de Tecnología Agropecuaria
INC	Instituto Nacional de Colonización/National Colonization Institute
MACA	Ministerio de Asuntos Campesinos y Agricultura/Ministry of Peasant Affairs and Agriculture
MNR	Movimiento Nacionalista Revolucionario/Nationalist Revolutionary Movement
NGO	Non-governmental Organization
OAS	Organization of American States
PADC	Program for Alternative Development of Cochabamba
PIDYS	Plan Integral de Desarrollo y Sustitución de Cultivos/Integrated Development and Crop Substitution Plan
PROCIPLA	Programa de Control Integrado de Plagas/Integrated Pest Control Program
PRODES	Proyecto de Desarrollo y Sustitución/Development and Substitution Project
SARSA	Cooperative Agreement on Settlement and Resource Systems Analysis
SDBT	Secretariat for the Development of the Bolivian Tropics
SDTB	Secretaría del Desarrollo del Trópico Boliviano
SUBDESAL	Subsecretaría de Desarrollo Alternativo y Sustitución de Cultivos de Coca/Subsecretariat for Alternative Development and Coca Substitution
UDP	Unidad Democrática y Popular/Democratic and Popular Unity
UMOPAR	Unidad Motorizada de Patrulla Rural/Motorized Rural Patrol Unit
USAID	United States Agency for International Development

1. BACKGROUND TO CHAPARE DEVELOPMENT EFFORTS[1]

Since the 1960s, Bolivian government authorities and international development agency officials viewed the development of Cochabamba department's Chapare region as a highly desirable objective. Opening the area to development would provide relatively nearby land where smallholders from Bolivia's highland and intermontane valley regions who were finding it increasingly difficult to support themselves through agriculture could resettle. In addition, roads constructed through the Chapare as part of this development effort would link the highlands and valleys with the commercial agricultural enterprises and smallholder settlement areas of Santa Cruz department. This linkage would, in turn, promote economic growth and economic and political integration of all three regions.

The development of the Chapare and other tropical lowland areas has long been viewed as central to successful economic expansion in the high valleys of Cochabamba and neighboring departments. As part of Bourbon efforts to revitalize the colonial state in the final decades of the eighteenth century, Intendant Viedma sought to reverse the economic decline of Cochabamba through colonizing the Chapare with settlers from the Andean valley areas and establishing commercial coca leaf production. Anticipating modern development strategies by two hundred years, Viedma sought investment in the construction of a road to link the area with Cochabamba and open it to settlement and commerce. His plan was blocked by Chuquisaca-based regional elites, who feared that the proposed road would break the monopoly they enjoyed over trade with the lowlands by virtue of the existing road linking Sucre and Santa Cruz (Larson 1988a:253-258).

Modern interest in the Chapare began to rise in the mid-twentieth century, as Bolivia's domestic production was increasingly reorganized around the provision of tin to the international market, engendering social and economic change that led to the 1952 revolution. Attention turned to the Chapare as it became apparent that the land redistribution effected under the 1953 agrarian reform law would not solve the social and economic problems confronting the rural poor of Bolivia's highland and valley regions. It was clear that the new state order was threatened by the political mobilization of these populations (on which the success of the revolution had depended) combined with the fact that the new government's programs had failed even to begin to meet the expectations that such mobilization had created.

Rather than attempting to modify the organization of agricultural production in order to improve the productivity of labor, the state sought to promote lowland settlement by poor rural families from the highland and Andean valley regions of the country (Fifer 1982; Flores and Blanes 1984; Gill 1987; Painter et al. 1984b). This effort began in 1953 with the unsuccessful United Nations-sponsored Cotoca project in Santa Cruz department.

---

[1] The authors thank Eduardo Bedoya and Carlos Perez for reading and commenting on a draft of this paper. However, responsibility for errors of fact or interpretation is solely that of the authors.

Throughout the rest of the 1950s a number of settlement projects were established in Santa Cruz, most of them under military direction (Wiggins 1976). Settlement of the Chapare began in earnest in the 1960s, with the elaboration of the Plan Nacional de Desarrollo for 1962-1971, and the Plan Nacional de Colonización, which appeared in 1963 and designated the Chapare as a priority settlement area. In 1965, the Instituto Nacional de Colonización (INC) was established to administer settlement activities, including the designation of areas within the colonization zones for spontaneous and planned settlement; the demarcation of individual holdings and the formalization of land titles; and the coordination of the international donors, state agencies, and nongovernmental agencies (NGOs) involved in providing settlers with infrastructure and social services.

Construction of the highway linking Cochabamba and Villa Tunari was also begun in 1965. With its completion in 1972 families from the Andean valleys and highlands of Cochabamba and neighboring departments could establish plots in the tropical valley without giving up landholdings in their home communities, because the road made it practical to move back and forth between the two areas with some regularity.[2] Following this main artery and spreading out on the web of secondary roads and trails being constructed, the population of the Chapare began to grow rapidly, reaching 24,381 people distributed among 54 hamlets by 1967 (Flores and Blanes 1984:82).

Between 1978 and 1980, the Department of Regional Development of the Organization of American States (OAS) worked with the Bolivian Government to formulate an ambitious development strategy for the Chapare that included identifying investment opportunities for immediate implementation. Among the goals of the strategy was to provide a framework for coordinating the activities of some 54 international, national, regional, and private institutions that were promoting development efforts in the Chapare at the time (OAS 1984:182). Subsequent development plans for the Chapare have been numerous and have varied in emphasis but have not departed from the major elements of the OAS plan, which provided five main guidelines for the development of the region:

1) integrate the area more fully into the national economic and political context;

2) promote more equitable income distribution;

---

[2] In fact, a road was constructed from Cochabamba to El Palmar in 1937. This reached Villa Tunari in 1940, and was extended to Todos Santos in 1942. The Chapare River changed course in 1946, however, cutting the road and isolating Todos Santos. This caused a large part of the population of that hamlet to leave in favor of the new communities of San Miguel and Chipiriri, which became major settlement centers in the Chapare after about 1950 (Flores and Blanes 1984:82).

3) promote self-sustaining economic and population growth;

4) increase public services available in the area; and

5) reduce coca production (the source of cocaine).

The report also identified seven areas for concentration, to be integrated with one another and organized internally to support the objectives contained in the guidelines. These areas of activity were 1) technology transfer; 2) provision of agricultural credit; 3) promotion of agroindustry; 4) zonal market development; 5) secondary road construction; 6) electrification; and 7) the installation of potable water systems.

The OAS diagnostic study identified two issues central to current Chapare development. One is the high level of social stratification that characterizes the settler population, and the other concerns the impact of economic development on the environment and on coca (Erythroxylon sp.) production. The OAS study found major social and economic differences between the 38 percent of Chapare settlers who arrived in the area through participation in state-sponsored colonization projects, and the other 62 percent, who moved into the area using their own resources. The spontaneous settlers tended to be among the wealthier smallholders in their areas of origin, and, at the time of the OAS study, most held off-farm jobs in the Chapare's lumber industry or were involved in commercial activity between the Chapare and the city of Cochabamba. This off-farm employment provided spontaneous settlers with an income to live on while waiting for their agricultural land to come into production, and to hire laborers and invest in agricultural inputs. Sponsored settlers, on the other hand, were among the poorest members of the populations from which they came, and few of them held steady off-farm jobs (OAS 1984:182).[3]

The OAS study also noted that promoting economic development in the Chapare

---

[3] In his global evaluation of new lands settlement projects, Scudder (1981, 1985) found wealth differences between spontaneous and sponsored settlers to be a general phenomenon worldwide. Spontaneous settlers tend to be the wealthier members of their home communities, and sponsored settlers tend to be poorer. Because of the greater resources that spontaneous settlers take to a new area, spontaneous settlements tend to show superior economic performance to sponsored ones during their early years. Over time, as spontaneous settlers deplete their own resources and the resources offered to sponsored settlers through state and private institutions take effect, differences in economic performance tend to disappear. The ultimate success of a settlement area, in terms of economic returns and environmental sustainability, is a function of development policies formulated at national and international levels that shape the production opportunities available to settlers.

could have negative environmental impacts, and that it could actually result in increased coca production, at least in the short term. The improvement and expansion of the area's road network was conceded to be particularly questionable in this regard. Enhancing market access through road construction and rehabilitation would encourage accelerated settlement in the Chapare and increase the accessibility of lands unsuited for agriculture, thereby increasing the risk of large-scale environmental degradation resulting from development efforts. The OAS further recognized that strengthening agricultural production and marketing infrastructure would at the same time improve the conditions for coca production. The OAS accepted that the immediate response from coca producers would be to increase production, but felt that the importance of coca to the Chapare economy would diminish as crops promoted by development institutions became profitable (OAS 1984:187, 190).

Despite these caveats, the OAS specialists were confident that the Chapare could support major regional development. They noted, for example, that, despite primitive production technology, the farmers of the region were producing in 1976 some 39 percent of Bolivia's plantains, 32 percent of its citrus, and 20 percent of its rice, when only 6 percent of the region (156,000 hectares) was occupied. Agricultural production was held to be limited primarily by the inadequate transportation system, and most particularly by the poor secondary road network (OAS 1984:181).

The information gathered about forestry production also implied substantial development potential. Logging was the initial impetus for settlement in the Chapare, 75 percent of which remained forested in the mid-1970s, with the extent of forest cover ranging from about 96 percent in steeply sloping upland areas to about 61 percent in the alluvial plains where most settlers were concentrated. Yet forestry and logging practices were less than ideal. OAS observers noted that the large lumber companies operating in the region had not efficiently exploited the forest resource. On the one hand, they were wasteful, ignoring government replanting requirements, burning off uncommercial wood, and abandoning areas after using only about 1 percent of the trees they felled. On the other, the industry operated well below its capacity, with the 26 sawmills in the region processing only about 60 percent of their 30,000 cubic meter annual capacity. In fact, Chapare sawmills processed only about half of the lumber harvested, sending the rest as logs for processing in Cochabamba. Thus, there appeared to be considerable potential for growth both through improvements in tree harvesting practices and through changes in market relations, which would permit more of the Chapare's lumber to be processed in the Chapare and provide additional revenues and employment opportunities (OAS 1984:181).

1.1. Developing the Chapare: Economic Crisis and Coca Leaf

The ambitious plans for the Chapare had not contemplated two critical factors that would convert the area into a battleground of international dimensions for competing political ideologies and economic interests. One was the limited capacity of much of the Cochabamba tropics to support sustained agricultural development. The other was the exponential growth of the international market for cocaine. Because of steep slopes and poor soils, many sectors of the Chapare are not suitable for corn and rice, which are the basis of the production systems managed by smallholding settlers in Bolivia and elsewhere in the South American tropics. A somewhat greater portion of the area can sustain perennial tree crops, but many ecologists argue that the bulk of the Chapare is suitable only for forestry or should be left undisturbed in protection forests. The technical limitations of the Chapare environment for agriculture make coca an ideal crop for smallholder agriculture. It grows well on poor, rocky soils and requires of the producer little in the way of technical skill or cash inputs.

Coca leaf has been used for millennia in the Andes for legitimate curative, ritual, and commercial purposes, but the growth in demand for cocaine in the U.S. and Europe created a vast and illicit international market for it that quickly surpassed Bolivia's longstanding domestic consumption. The Chapare provided an ideal setting from which to supply the new market. First, the rugged conditions that inhibit agricultural development facilitate monitoring the comings and goings of outsiders; at the same time the area's proximity to the city of Cochabamba by road, and to Santa Cruz by air (and now, since late 1988, by a new highway), permits the necessary communication and exchange between farmers and those involved in the processing and commercialization of cocaine.

Most of the mushrooming coca leaf production in the late 1970s and the 1980s was processed into cocaine paste and powder, and did not enter into the legally recognized internal market, where it is bought to be chewed. The boom in cocaine manufacture in response to the spread of the drug's use in the northern hemisphere raised coca prices. Many of the thousands of migrants and new settlers in the area were attracted by the relatively high profits to be made in coca leaf cultivation. Development projects could offer no substitute to the earnings provided by coca, nor could they suggest alternative crops that would be as well adapted to the difficulties of marketing and transport. While requiring a large investment of labor at the establishment of the grove, coca leaf has the virtue of a high value-to-weight ratio. It is more easily processed than other tropical crops, is not perishable, and can be transported by animal or on human backs where roads are inadequate.

Furthermore, efforts by development agencies to devise and promote alternatives to coca production have been hampered by eradication and interdiction activities, which have resulted in violence against large numbers of settlers and workers in the Chapare, but few arrests of major figures in the narcotics industry (Kline 1987). This, combined

with previous erratic and unreliable implementation of promised development activities, has called into question the true purposes of development projects in the Chapare for many settlers, who have become increasingly suspicious that development activities are little more than a smoke screen to obscure their repression by Bolivian and international institutions.

The most important factor in the emergence of the Chapare as a center of coca leaf production for narcotics was the vast and nearby population of rural poor, in the southern part of the highland (altiplano) region, and in the intermontane valleys of Cochabamba, Chuquisaca, and Potosí departments. The course of economic change in Bolivia has caused systematic underdevelopment of these areas, making it increasingly difficult to earn a living through agriculture and obliging a large portion of the population to seek off-farm employment. For several centuries, life in these areas of the countryside has been intimately linked to Bolivia's mining economy, first to silver, then, beginning in the late nineteenth century, to tin. During periods of high international mineral prices, the region provided the mines with labor and food.

Since the implementation of the agrarian reform that began in 1953, the rural highlands and valleys of central Bolivia have been the source of a large-scale migration to Bolivia's cities and tropical lowlands, as well as to neighboring countries. The migration has taken a number of forms: seasonal wage-labor migration, long-term residence in another area with remittances to family at home, and permanent out-migration. It is driven by a combination of factors. One is that the agrarian reform, while providing smallholders with greater freedom of movement through its removal of much of the landlord class, did not reorganize agricultural production so as to improve the productivity of rural labor or control the process of fragmentation of landholdings through sale and inheritance. In addition, in the years following the reform, living costs for rural smallholders have increased though revenues from agriculture have fallen. State support for rural education, electrification, and road construction implied new expenditures on the parts of rural communities. Following initial declines, the output of most major food crops increased between 1955 and 1960, but despite the increased production, agriculture's contribution to GDP declined as a result of declining domestic prices for agricultural commodities.[4] As a result, many poor rural families found themselves increasingly dependent on off-farm income to cover their survival costs.

Climatic adversity and changes in international market conditions have at different times accelerated this overall trend of impoverishment and outmigration. A severe drought

---

[4] The only major crop for which production did not increase was wheat, which competed directly with the wheat provided in the food-aid component of the U.S. economic assistance package to Bolivia. The main reason for the decline in domestic prices was competition from subsidized food imports from the U.S. (e.g., Gordon 1977:40).

in 1983 made life impossible for many families throughout highland Bolivia, with northern Potosí being particularly hard-hit.[5] In 1985, a second economic catastrophe struck the bottom strata of Bolivian society: international tin prices collapsed when the London Metal Exchange terminated tin trading--the result of an unfavorable shift in exchange rates and the accumulated debts of the International Tin Council. Bolivia's principal legal export industry fell into ruin. Between August 1985 and August 1986, 30,000 workers lost their jobs. The Banco Central de Bolivia estimated the unemployment rate to be 20 percent at the end of 1985, and, according to the Central Obrera Boliviana (COB), the figure would approach 30 percent by the end of 1986 (Crabtree et al. 1987:20).[6] The impact on families not directly employed by the mining industry--but dependent upon it--has never been measured. Many families went to the cities, especially Cochabamba and La Paz, and others sought to make a new start in Bolivia's settlement areas. Of these, the Chapare became, for most, the destination of choice, not only because of its relative proximity to their homes, but also because coca production offered an immediate source of wage labor and the promise of a profitable crop once new settlers had time to bring their own fields into production.

The collapse of the mining economy and the drought of 1982-83 were part of a complex of circumstances that massively dislocated the Bolivian economy. They had much to do with Bolivia's declining capacity to make payments on the substantial foreign debt

---

[5] Generalized drought conditions prevailed for two years. A number of areas, including the provinces of Campero and Mizque, experienced subnormal rainfall and correspondingly poor harvests for four consecutive years.

[6] The government went beyond imposing austerity on the industry, which had been substantially nationalized following the 1952 Revolution, and used the crisis as an opportunity both to cut its losses in the deficit-ridden state mining sector and to attack the FSTMB, the union representing the miners, as well as the umbrella organization for Bolivian labor, the COB. A substantial portion of the union leadership was jailed, exiled, or went into hiding. When interviewed about how his government had been able to overcome opposition to austerity measures, the Minister of Planning who designed the plan and subsequently became his party's presidential candidate replied, "Los mandamos al Beni, asi de simple (We simply shipped them to the Beni)" (Los Tiempos 12 July 1989, P. B1). Thus, workers not only lost their jobs, but the institution that had represented their interests for three decades was effectively decapitated. Deprived of an institutional mechanism for presenting their case to the nation, families were forced to rely on their own meager resources and in effect "voted with their feet."

An account of the interactions of the roles of tin consumer and producer countries who were members of the International Tin Council, the London Metal Exchange, and international exchange rate policies in Chapter 3 of Crabtree et al. (1987).

incurred during the 1970s, when the country was under the Banzer regime. The effects of these disasters were exacerbated by an ill-conceived attempt, in 1983, by the Siles government to unlink the exchange rate of the Bolivian peso from the U.S. dollar. Coming at a time when the mining industry was entering a period of crisis, so that revenues were increasingly inadequate to make payments on the largest debt burden in the country's history, the impacts of this *desdolarización* were disastrous. Bolivia experienced an astronomical rate of inflation, which was estimated to exceed an annual rate of 14,000 percent at its peak in 1984. Only the Soviet Union at the time of the Bolshevik Revolution and Germany during the Weimar Republic have experienced comparable rates of inflation during the twentieth century. One of the effects of the inflation was to cause even middle-class salaries to evaporate. Only those who had access to dollars or another hard currency enjoyed any protection. With little foreign investment (because of the debt) and the collapse of Bolivia's principal industry, coca leaf and cocaine provided to entrepreneurial groups--both within the national elite and of more humble class backgrounds--one of their primary sources of dollars.

2. THE DYNAMICS OF RURAL OUT-MIGRATION

The social problems that oblige a substantial part of the population of the valleys of central Bolivia to migrate in search of work or a new life have their roots in the relationship of the area to the country's mining economy, and in the conditions of agricultural production that resulted from the way the 1953 agrarian reform was implemented. Central Bolivia has historically supplied labor and foodstuffs to the mining economy. From the colonial period through most of the nineteenth century, silver mining, centered around the city of Potosí, was the dominant mining activity. Beginning in the last quarter of the nineteenth century, however, tin mining, centered around the city of Oruro and in mining centers in Northern Potosí, grew dramatically in importance, and dominated Bolivia's export-driven economy until the collapse of international tin prices in 1985 (see Hillman 1984; Mitre 1981; Crabtree et al. 1987).

Early in the colonial period, agricultural interests based in the valleys of Cochabamba and mining interests based in Potosí competed with one another for control of the Andean peasantry, whose labor both required. One of the first tasks confronting Viceroy Toledo in the 1570s was to mediate this competition by creating a semi-proletarianized labor force for the Potosí mines, and in this context a kind of labor migration first emerged. As early as the sixteenth century, from all over the southern Andes, communities were forced to send workers to the mines for labor service. Some temperate valley zones were exempted from the labor draft for fear their inhabitants could not withstand the rigors of the high mining camps and to ensure the uninterrupted production of their agricultural products, but the Cochabamba region was required to provide laborers (Larson 1988a:80-81).

The decline in native populations during this period made the burden of providing such workers especially onerous, but communities developed ways to avoid sending laborers to the mines by tendering money instead, money earned from the sale of agropastoral products (Cole 1985; Rasnake 1988). Migrant workers who actually went were expected to return to their home communities after their term of service. Nevertheless, many stayed in the mining centers and assimilated into the stratum of the more highly paid independent mineworkers known as mingas, most of whom apparently lost their links to the ethnic groups from which they had originally come (Bakewell 1984:81-136).

As the colonial economy evolved, the role of the agricultural areas was increasingly to supply the mining and administrative centers with agricultural products. In this enterprise smallholding producers, because they did not attach a value to their own labor-power, were able to undercut the prices that large estates needed to be profitable. In fact, large estates could only count on making money in drought years, when production was so low that smallholders consumed most of what they grew and had little left to sell. Because their landholdings were small and located in the least favorable areas, however, many smallholders could not support themselves from agriculture despite the fact that they dominated the markets in most years. Off-farm occupations were thus important early in the history of central Bolivia. In areas close to Cochabamba such as the Valle Alto, artesanal industries producing textiles, pottery, gunpowder, and other commodities provided smallholding families with important sources of income. Similarly, by the end of the eighteenth century, smallholders dominated the production and sale of bread in the city of Cochabamba, undercutting and eventually eliminating the established bakers' guild (Larson 1988a:202-205). Also during this period, smallholders continued to leave their home areas to work on agricultural estates, as artisans in the towns, and in long-distance transport, as well as in the mines.[7] Settlement of tropical areas by highland migrants also has a long history (Saignes 1985).

Over time, the terms of trade between the agricultural and mining economies tended to deteriorate. As this occurred, the provision of direct labor power to the mines again became increasingly important to the valleys of Cochabamba and neighboring departments. Large estates contracted labor on behalf of the mines, frequently obligating part of their resident peasant population to work there. With the completion of the railroad links between Oruro and Cochabamba in 1917, centers of artesanal production such as the Valle Alto could not compete with manufactured imports, and many members of freeholding communities also were obliged to seek employment in the mines. This relationship was strongly influenced by the international price of ore, so that in periods

---

[7] One of the most notable demographic characteristics of the colonial period was the exponential growth of that population category known as forasteros or strangers, who left their ethnic groups to reside elsewhere, often to avoid forced labor service or taxation.

of high prices, central Bolivia exported large numbers of people to the mining areas. During periods of low ore prices, agricultural areas reabsorbed part of the mining population, providing some of the unemployed miners with a means of feeding themselves and their families (Dandler 1984; Harris and Albó 1984:36-54; Klein 1982a, 1982b).

The agrarian reform focused primarily on land redistribution and did little to address issues of labor productivity. Furthermore, the Movimiento Nacionalista Revolucionario (MNR) government was not concerned with changing the dominance of the mining industry in the Bolivian economy. As a result, the changes wrought by the new order did little to address the historical conditions of underdevelopment in the valleys of Cochabamba and surrounding regions. Areas under the control of the haciendas were released from this form of political domination, but throughout the central valleys, families found that the lands they held after the reform did not generate sufficient revenue to satisfy their consumption requirements. The material conditions of most of the supposed beneficiaries of the reform were not substantially improved.

In fact, the collapse of the manorial economy and the corresponding rise in the cash requirements of rural families meant that the possibilities of economic development based on agriculture actually declined. Many families left the rural areas altogether, searching for employment as agricultural and construction workers in Bolivia's cities, in Argentina, or in the emerging commercial agricultural areas of Santa Cruz department (Dandler and Balán 1986; Heath 1969; Stearman 1985; Whiteford 1981). Others moved into lowland settlement areas such as northern Santa Cruz and, later, the Chapare River valley (Blanes 1982; Flores and Blanes 1984; Hess 1980). Many more fell into a pattern whereby agricultural production, whether for family consumption or for the market, had to be combined with seasonal or part-time wage labor in order for families to satisfy their basic subsistence needs. In southern Bolivia, for example, more than two-thirds of all rural households engage regularly in some form of off-farm wage labor, and in some areas nearly 90 percent of the families depend upon off-farm income (USAID/MACA 1981). This situation is widely associated with rural underdevelopment throughout Latin America (Deere and Wasserstrom 1980).

Large-scale migration out of central Bolivia has, in reality, been fundamental to the economic growth experienced by the country since the agrarian reform. The expansion of commercial agriculture in Santa Cruz, for example, has been predicated upon the availability of a large pool of migrant labor from Bolivia's highland and valley areas. In Santa Cruz, the agrarian reform did not expropriate and redistribute the large estates. Rather, it encouraged them to define and regularize their boundaries through formal land titling instead of enforcing claims to land through local custom and coercion as they had done in the past. The agrarian reform was supported by massive foreign assistance that provided the resources for transforming the estates into modern commercial agricultural enterprises. During the 1950s, Bolivia was the world's largest recipient of U.S. foreign assistance under the Point Four program (Heath 1969:258).

The combination of regularization of landholdings and international economic support was successful in promoting a rapid expansion of commercial agriculture in Santa Cruz. Initially, the expansion was based upon the production of corn, rice, and sugarcane, which were already important crops in regional agriculture. Later, as the technical capacity of the large farms improved, corn and rice became almost exclusively smallholder crops, while such industrial export crops as cotton and soybeans became major elements of commercial agriculture.

Despite rapid technological innovation with respect to cropping systems and some inputs, however, commercial enterprises have been slow to replace manual labor through mechanization (Riviere d'Arc 1980). Initially, the commercial enterprises attempted to draw on the resident lowland peasantry for workers, but a large part of this relatively small population took advantage of the agrarian reform to settle on land outside the redefined estate boundaries. The demand of the emerging commercial enterprises for workers coincided with an expanding search for off-farm employment by highland and valley peasants.

The dependence of commercial agriculture in Santa Cruz on migrant labor from central Bolivia has grown over the years. Although Santa Cruz quickly became a principal destination for seasonal migrants from the highlands and valleys, commercial agriculturalists have consistently found the supply of workers insufficient. The state actively recruited poor highland and valley dwellers on behalf of Santa Cruz farmers. It was particularly active under the Banzer dictatorship, when troops were used as laborers to assist with the cotton harvest in 1973, after a campaign jointly sponsored by the Ministerio de Asuntos Campesinos y Agricultura and the ostensibly private Asociación de Productores de Algodón failed to recruit enough workers from the ranks of highland and valley smallholders (Gill 1987:69-70).[8]

In summary, migration to the Chapare is a recent manifestation of a much broader social process with deep historical roots. It is based on the underdevelopment of Central Bolivia's agricultural economy, which resulted from the region's dependence on the country's mining economy for which it supplies laborers and foodstuffs. The negative

---

[8] This infamous PROMIGRA 73 project grew out of state support for Santa Cruz cotton producers, who were enjoying a boom in cotton prices (that collapsed in 1974). The project epitomized a period of intensive recruitment of poor smallholders from the highlands and valleys to work for the commercial agricultural enterprises of Santa Cruz. State authorities and representatives of private institutions made extravagant promises--most of which were never kept--to convince people to migrate to Santa Cruz. During this period, it was not uncommon for people to be taken against their will to work for the commercial enterprises.

effects of this external linkage were exacerbated by an internal organization based on extremely inequitable land distribution. Thus the large estates, occupying the best lands, earn most of their revenues through speculation on food prices and rent collection, rather than through the sale of agricultural commodities. Independent peasant producers undercut the large estates during most years because they did not attach a value to their own labor in calculating the price at which they could sell their goods. As they were consigned to the more marginal agricultural lands, however, from an early date many families found agricultural revenues insufficient to cover their living expenses. Some families combined agriculture with craft production, or found employment in regional industries such as gunpowder and textiles. As the mining economy grew and the agricultural economy of Cochabamba stagnated during the twentieth century, ever larger numbers of people became involved in mining: as workers in the mines or associated enterprises, as purveyors of food and other goods, and as labor contractors.

Events in the post-agrarian-reform period have deepened, and in some cases, actually been predicated upon, the underdevelopment of central Bolivia's agricultural economy. The agrarian reform itself dramatically increased the number of people who were actively seeking off-farm employment. Such events as the economic crises of 1956-60 and 1982-85, the drought of 1983-85, and the 1985 collapse of the international tin market and its aftermath, also contributed dramatically to the numbers of rural dwellers who could no longer earn a living on their farms. Economic growth such as that experienced by Santa Cruz and, more recently, the Chapare depended on the availability of poor smallholders willing to work for low wages.[9] Economic development policy, at the level of the national government and as defined by the major international donors, focused on the rapid development of export agriculture in Santa Cruz (e.g., Gill 1987; Heath 1969), and on modernizing the mining industry in order to make it more competitive internationally (e.g., Gordon 1977).

To the extent that the agricultural regions of the highlands and valleys figured into planning at this level at all, it was as a reservoir of cheap labor. The reorganization of

---

[9] Bascopé (1982) notes that the rapid expansion of coca production in Bolivia followed quickly upon the collapse of cotton prices in 1974. Considerable evidence suggests that the initial expansion of large-scale investment in coca production was led by some large-scale cotton growers who had received substantial state support and encouragement to increase cotton production rapidly during the preceding years, so that they were overcommitted to cotton and in an extremely vulnerable financial position when the price drop occurred. Bascopé also cites considerable evidence that the cotton growers received continuing state support to promote investment in alternative crops, and that coca figured prominently among these. International financial connections, physical infrastructure, and access to national and international agricultural development assistance facilitated substantial involvement in narcotics by the Santa Cruz agricultural elite (see Healy 1986).

agricultural production in order to supply the domestic market with food was not seriously pursued, a lack of attention influenced by the failure of poorly conceived and implemented efforts to promote community-based collective agriculture or various cooperative models. Efforts in this area quickly became the nearly exclusive domain of nongovernmental organizations working with small numbers of people at the local level. In any case, the commodity production that would have resulted from efforts to develop the agricultural economy of the highlands and valleys would have had to compete directly with subsidized agricultural imports, which were a major part of the aid packages of international donors, particularly the United States. The ideology that arose to justify this official approach to development was based on the assertion that the highlands and valleys are overpopulated, and that little may be done to develop the region until this is altered, primarily through a redistribution of the national population into the tropical lowlands.

Bolivia's modern economic history has been built on efforts to make the economy ever more responsive to the forces of supply and demand in the international market, and to create a geographically mobile rural population willing to work in whatever area of export production is experiencing growth at a given moment. With the economy organized so that international forces of supply and demand operate without hindrance, it is not possible to ban particular commodities or declare certain migratory destinations off limits--despite the dramatic market growth of cocaine. Widespread participation of the rural poor in the narcotics industry will shrink only if alternative activities offer sufficient income-earning possibilities to attract labor from coca and cocaine production in the Chapare.

The social history of Bolivia's central valleys provides a number of implications for any concerted efforts to affect rural-rural migration to the coca-producing areas of Cochabamba, and for efforts to reduce cocaine production in the Chapare generally. First, settlement of the Chapare is intimately linked to underdevelopment of the home areas of the migrants. It is the latest phase of a migratory process driven by the relationship of these agricultural areas to the mining economy; reducing the participation of the population of the central valleys in narcotics production lies in reversing the processes responsible for this underdevelopment. Second, because the Chapare is one migratory destination along with a number of other regions, efforts to reduce migration in general would imply that the impact cannot be restricted to the Chapare alone. Reducing migration to the Chapare will require reducing the pressures that prompt outmigration from the highlands to other migratory targets as well.

3. USAID EFFORTS IN THE CHAPARE

While US international development efforts had supported earlier activities in the tropical region of Cochabamba--most notably, the construction of the highway from the city to Puerto Villarroel mentioned previously--the first efforts to address the issue of

reducing coca leaf cultivation came in 1977 with the PRODES project, the Proyecto de Desarrollo y Sustitución (Development and Substitution Project), which established itself both in the Chapare and in the Yungas of La Paz, another coca leaf area. PRODES, which was funded directly by the Bureau of International Narcotics Matters of the Department of State, was largely conceived as a research endeavor which would investigate the possibilities of substituting coca cultivation with other tropical crops; its product would be a project proposal, to be funded by USAID, which would move from study and design to implementation.

While it was originally planned that PRODES would be made more operational in 1981, project activities were greatly decreased after 1980 with the bloody coup of General Luis García Meza. García Meza's contempt for the U.S. human rights policy, as well as clear links between his government and cocaine traffickers, led to an almost total cessation of USAID activities in Bolivia until the return of civilian government in October 1982 when the UDP (Unidad Democrática y Popular, or Democratic and Popular Unity) government of Hernán Siles Zuazo took office; PRODES, with its other source of funding, was maintained at a very low level of functioning during this interval.

The period of military control of the Bolivian government had permitted an enormous expansion of drug-related activities in the Chapare. Even after the UDP came to power in late 1982, the newly installed civilian regime could not assert its authority in the area and by the end of the year had effectively lost control of the Chapare to the narcotics traffickers. Police units left the zone, and efforts at repression of cocaine manufacturing were stymied for well over a year. These years were the period of the area's great boom in coca leaf production and cocaine paste processing. The sheer movement of people into and out of the Chapare was itself astonishing: a 1981 estimate, for example, had 400,000 people and 29,000 vehicles moving into and out of an area that, only fourteen years before, had a population of fewer than 25,000 inhabitants (Flores and Blanes 1984:82, 141). The population thus increased dramatically, both in terms of temporary migration and permanent settlement, as thousands flocked from the highland valleys to take advantage of the new economic opportunities made available by coca-leaf processing (Healy 1986).

In August, 1983, Bolivia signed an agreement with USAID to establish a new development effort in the Chapare, the Chapare Regional Development Project (CRDP), but project administrators were at first hesitant to send their people into the Chapare, both out of fear for the safety of employees and because of the political risks involved in undertaking a U.S.-financed development project in an area where the authority of the national government did not extend. The new employees of the Secretariat for the Development of the Bolivian Tropics (SDBT)--established by the Ministry of Planning to implement the CRDP--thus endured a year's delay in the inception of their work. Only in August 1984, after the Bolivian government sent troops into the area to regain state control, were they were able to begin, on a small scale, some of the development efforts

that had been contemplated.

In late 1985, a growing realization of the absolute pervasiveness of the cocaine trade in the Chapare led project implementers to reexamine their original assumptions about prospects for success. USAID recognized the futility of attempting to provide development services to small producers without, as an unintended consequence, also dispensing benefits to the drug traffickers. A particularly blatant example of this took place on the occasion of the inauguration of a new road between Villa Tunari and Puerto San Francisco. When the gathered officials questioned the local inhabitants whether or not the road was well constructed, one replied that, indeed, it was so well constructed that the previous evening, before the arrival of the dignitaries, a small airplane had landed on it. This exemplary case of cocaine traders' use of project benefits which were intended for tropical settlers led USAID officials to terminate most project activities in the field.[10]

A year later, in late 1986, an external evaluation of the SDBT (Pool et al. 1986) documented the project's inability to proceed as it was first designed; this contributed to the growing consensus for a reformulation of the CRDP. The evaluators proposed an alternative strategy: if it was indeed impossible to carry out development efforts in the lowlands that would discourage small producers from supplying the international cocaine trade, then a contrasting option would be to improve economic opportunities in the highland valleys from which the Chapare migrants came, both as permanent settlers and temporary seasonal workers. In late 1986 and throughout 1987, the Chapare Regional Development Project thus underwent a transformation from trying to convert lowland coca-leaf cultivators into commercial producers of more acceptable crops, to attempting to slow the flow of seasonal workers from their highland communities of origin into the tropics. This metamorphosis was formally presented in Amendment No. 7 to the CRDP, signed in November 1987.[11]

Until the CRDP was modified, its primary focus had been the attempt to substitute other cash crops for coca and to stimulate, at some level, agroindustrial processing of tropical products. Its meager development activities, however, were often overshadowed by the actions of a special rural detachment of the Bolivian police, the UMOPAR (Unidad Motorizada de Patrulla Rural, also known as the "Leopardos"), which was charged with

---

[10] The principal exception to this was the activity of IBTA-Chapare, the government extension agency also financed by USAID, which was permitted to continue its demonstration efforts. Certain other projects promoted by the SDBT were permitted to move forward as well.

[11] The shift in focus is clear at the financial level, where only 41 percent of the total $61 million of the newly redefined project is specifically earmarked for the Chapare (USAID/Bolivia 1987: Appendix No. 7).

repressing coca production. The UMOPAR, advised by the U.S. Drug Enforcement Administration (DEA), frequently coerced and intimidated peasants to achieve its ends. These policies of substitution combined with police action had proved ineffective for a number of reasons. First, repressive tactics failed to restrict the activities of major narcotics traffickers, while it increased the violence to which rural smallholders were subjected, heightening the mistrust that lowland settlers expressed with respect to any project sponsored by the U.S. Government. Second, emphasizing crop substitution as a means of achieving short-term reductions in coca production ignored the facts that no cropping system had been developed that could substitute for coca in terms of short-run profitability, and that much of the technical assistance intended to promote the production and marketing of other crops would at the same time facilitate the production and marketing of coca.[12] In addition, Chapare migration is, as we have already seen, part of a larger migratory process in which Bolivia's central Andean valleys expel large numbers of people to a variety of destinations. It is the long-term underdevelopment of these areas that has driven the population to participate in coca production.

Further, the Chapare can support sustained agricultural activity of any kind by only a portion of its current population if monocrop coca production is excluded from the agricultural systems. Promoting continued agricultural production in many parts of the region is environmentally detrimental and does not provide a solution to the social problems that prompted people to go to the Chapare in the first place. USAID/Bolivia and SDBT recognized these problems and agreed to reprogram the project and define a new approach.

The revised project was designed by a team contracted by USAID/Bolivia through the SARSA Cooperative Agreement and the Development Strategies for Fragile Lands (DESFIL) project. This team accepted the earlier recommendation to concentrate its attention on the home areas of migrants to the Chapare rather than on the Chapare itself. The revision called for approximately half the resources that had been budgeted for crop substitution activities in the Chapare to be redirected to three provinces of Cochabamba that are experiencing significant outmigration: the provinces of Campero and Mizque, in the southern part of the department; and the province of Esteban Arce, in Valle Alto area, not far from the city of Cochabamba.

A new CRDP component was designed to increase on-farm revenues and off-farm income-generating opportunities through regionally focused support for improved agricultural production and natural resource management, infrastructure, and regional

---

[12] It will be recalled that the OAS study discussed in the introduction argued that economic development activities in the Chapare could provide a long-term solution to the problem of coca production, but that in the short term such a strategy would probably increase coca production.

agroprocessing facilities. Implementation was to be carried out by NGOs already conducting development activities in the targeted areas and by the smallholding communities themselves, with the SDBT providing financial and logistical support and overall coordination. It was hoped that by providing support for groups already working in the area, the project could show rapid results and that more of its resources could go into development activities in the field than if it were necessary to support the SDBT or some other Bolivian government organism in developing the institutional capacity to administer the activities directly. These changes were incorporated into Amendment 2 of the CRDP Project Paper as the Associated High Valleys (AHV) component of the CRDP, which was approved in November 1987.[13]

The revised project was discussed in negotiations between the Bolivian Government and the Confederación Sindical Unica de Trabajadores Campesinos de Bolivia (CSUTCB). The CSUTCB represents the interests of coca producers in the Chapare, through their local community unions, or *sindicatos*, and is a member organization of the Central Obrera Boliviana (COB). The purpose of the negotiations was to agree on a plan for reducing the area of the Chapare dedicated to coca production while taking into consideration the need of coca producers to earn a living. In an agreement signed on 6 June 1987, the Bolivian government agreed to place greater emphasis on alleviating the social and economic problems that drive the rural poor into producing coca leaf for the narcotics industry. In return, the coca growers agreed to cooperate with the government in reducing the production of coca leaf for narcotics manufacture. In the months following the agreement, Bolivian growers voluntarily removed 550 hectares of land from coca production. This was the largest recorded reduction in area dedicated to coca production.

Even before the November 1987 signing of Amendment 7, however, the revised CRDP began to encounter serious problems. In July 1987, soon after signing the agreement with the CSUTCB, the government promulgated Decreto Supremo 21666, which reorganized the agencies responsible for the repression of narcotics production and trafficking and for development efforts intended to reduce participation in these activities. The new law created a national council to coordinate efforts against illicit drug use and trafficking (Consejo Nacional contra el Uso Indebido y Tráfico Ilicito de Drogas), which would be presided over by the Foreign Minister of the Republic and include the participation of the Ministers of Defense, the Interior, Planning, and Peasant Affairs. The Consejo Nacional was made responsible for establishing state policy with respect to the repression, interdiction, and prevention of the illicit production, trafficking and use of narcotics; the rehabilitation of persons involved in these activities; and the elaboration of development activities intended to provide an alternative to participation in the illicit

---

[13] The project paper establishing the Associated High Valleys component of the CRDP was the second amendment to the original project; it was formalized in Amendment No. 7 to the bilateral agreement that sanctions the project.

narcotics industry. These policies were to be outlined in the Integrated Plan for Development and Substitution (the Plan Integral de Desarrollo y Sustitución de Cultivos, or PIDYS).

All this was to be accomplished through three new state entities, each with broad powers related to the elimination of illegal drug production and trafficking: the Subsecretariat for Alternative Development and Coca Substitution (Subsecretaría de Desarrollo Alternativo y Sustitución de Cultivos de Coca), which was placed under the jurisdiction of the Ministry of Peasant Affairs and Agriculture (Ministerio de Asuntos Campesinos y Agricultura, or MACA); the Subsecretariat of Social Defense (Subsecretaría de Defensa Social), which was placed under the Ministry of the Interior, Migration, and Justice (Ministerio del Interior, Migración y Justicia); and the Special Antinarcotics Force (Fuerza Especial de Lucha contra el Narcotráfico), which also depends on the Ministry of the Interior and is composed of members of the different branches of the armed forces and the national police. The Subsecretariat for Alternative Development, soon called the SUBDESAL, was also designated as the executive secretary of Consejo Nacional, making this, in effect, a position of "first among equals" in relation to the heads of the other newly created state entities.

The document establishing the SUBDESAL granted it wide powers, placing the Subsecretariat in charge of:

1) coordinating the various economic sectors involved in implementating the policies designed by the Consejo Nacional;

2) generation and coordination of bilateral and multilateral cooperation needed to implement the Integrated Plan, or PIDYS;

3) technical direction of projects and programs to reduce the amount of land dedicated to narcotics production and participation in the narcotics industry;

4) counterpart relations with the various bilateral and multilateral agencies cooperating to support the implementation of the PIDYS; and

5) a general authorization to develop any other activities that it saw as falling within its areas of responsibility.

In its first months, the SUBDESAL struggled with the formulation of a coherent program. Its young and inexperienced staff created ambitious plans for direct action with little capacity, at first, to implement them, and with more enthusiasm than analysis in their goal to transform the area of its responsibility, the coca economy. It was clear from the first, however, that whatever SUBDESAL's plan would eventually be, it would focus on the areas of production in the Chapare and the Yungas. In spite of the reformulation of

the CRDP's activities toward the places of origin of lowland settlers--the so-called high valleys--the principal emphasis of the Subsecretariat would be the tropical lowlands.

This emphasis was encouraged by the apparent early success of efforts to reduce coca cultivation. Just when voluntary reductions by coca producers seemed totally unfeasible, many smallholders in the Chapare decided to cut down at least some of their groves. This change of heart had several clear economic incentives. In June 1986, Operation Blast Furnace, a joint military campaign by Bolivia and the United States against cocaine manufacturing sites and depots in the Beni and northern Santa Cruz, engendered an abrupt decline in the price of coca leaf. Many producers, presumably tired of constant harassment by the police and uncertain that coca prices would return to their pre-Blast Furnace levels, agreed to accept the cash payment offered by the government for coca reduction. That cash payment was not insignificant: even before a recently established credit program greatly increased the financial resources available for those who agree to eradicate a portion of their coca,[14] farmers could receive $2,000 per hectare of coca reduced, creating a ready source of cash for many without necessarily taking them out of the coca-leaf cultivation business.[15]

The locations where reduction was taking place were (and continue to be) very dispersed, while the rhythm of reduction has varied but is frequently quite slow. At first, and continuing into the present, community-level development has been restricted to only a few sites, and the benefits of the cash compensation payments have generally not gone beyond the cultivators who have been able to engage the attention of the government's measuring squad, the Dirección de Reconversión Agrícola (DIRECO).[16]

Nevertheless, the reduction, though piecemeal at its beginning in late 1987, took many by surprise. Just as this comparatively successful eradication program began, the wheels of bureaucracy turned, to achieve approval of the amendment that formally established the high valleys project. While the degree to which the SUBDESAL then

---

[14] The average amount given in credit to small producers in the Chapare since the program was established in late November, 1988 is $8,199. The 101 loans granted as of March 6, 1989, financed a reduction of only 77.5 hectares (personal communication, Ney López, Credit and Financial Advisor to the PADC).

[15] A producer can "reduce" any proportion of his coca that he may choose and still receive a prorated payment based on the $2,000 per hectare figure. Some have speculated that many farmers may be reducing old groves whose future production would not bring in an amount as great as that granted for reduction.

[16] Where such financial payments went, in the sense of how they were invested by recipient families, would make an interesting study of economic strategies of the peasant smallholders.

accepted the premise of AID financing for development in the places of origin as a valuable strategy is still uncertain, what soon became abundantly apparent is that another provision of the amendment to the CRDP would force AID and the SUBDESAL into a protracted and unhappy conflict that would last over a year and, before being resolved, would take a heavy toll on the participants. Because of fear that the benefits of development activities in the Chapare--especially roads and other infrastructure--would continue to advance the interests of the narcotics traffickers, AID placed a strict conditionality on its development assistance: except for the payment for acreage reduction, Chapare residents could not receive further development assistance unless 70 percent of the coca acreage controlled by the individual and the community was destroyed. Given persistent and widespread opposition to reduction, and the fact that even those who were taking advantage of the cash payments were not reducing all their holdings but rather only a portion that they themselves chose, such a condition seemed unattainable. This strict limitation on Chapare activities meant that much of the new financing in Amendment No. 7 was earmarked for the high valleys, on the assumption that no Chapare community would, in the near future, meet that level of eradication.

This conditionality was exceedingly frustrating for the officials of the SUBDESAL, who saw as their job convincing Chapare farmers to reduce their coca leaf cultivation by offering such community development projects as potable water, roads, or school buildings. From their perspective, U.S. policy (and the promise of financing) insisted on the reduction of coca leaf in the area, yet the conditionality took away the financial tool that would permit them to reach agreements with coca producers. Moreover, funding that by their reckoning should have been supporting their labor in the Chapare, was now to be spent in the highlands.

The frustration was augmented when a major breakthrough in coca reduction took place in the Chapare community of Villa Nueva, a settlement in the foothills of the Andes. Its leader, an older man long settled in the Chapare, challenged his community to cut down the coca groves jointly. He approached government authorities, who promised community development funds for a series of productive projects if Villa Nueva became the first community to free itself of dependence on coca. In the excitement generated by the prospect of an early success in the alternative development plan, the details of conditionality were apparently left incompletely specified, or it was assumed that an entire community's willingness to participate, even if the 70 percent conditionality was not strictly met, would move AID to release funds for development actions. Villa Nueva thus became a kind of test case for a return to development activities in the Chapare, and the newly organized team in the Subsecretariat in La Paz enthusiastically developed plans for extending this success to other areas.

While these events were occurring in the Chapare, the restructured Program for Alternative Development of Cochabamba (or PADC)--which had been the main coordinating agency for the CRDP under its former name, the Secretaría del Desarrollo

del Trópico Boliviano (SDTB)--was preparing to begin its activities in the highland southern district of the department. Thus, the exhilaration expressed by the new team at the SUBDESAL, and its members' expectations that the PADC would eagerly join their efforts in the Chapare, presented the latter institution with a dilemma: this collided both with the redesign of the project and with the strict conditionality incorporated into the amendment, which provided the PADC with a detailed plan for action in the communities of origin of Chapare migrants.

Thus a major structural contradiction developed within the CRDP that lasted essentially to the end of 1988: the PADC, the major implementer of the project, was confronted with two external masters with two different sets of priorities and goals: USAID/Bolivia, with a considerable investment in time and effort in the redesigned project in the southern highland valleys of Cochabamba; and the Subsecretariat for Alternative Development and Coca Substitution, with its limited interest in regional development in the south, its central concern with the Chapare, and its own set of demands on the time and energies of the technical staff.[17] Both agencies want to see coca production reduced. However, at the moment when Bolivian-U.S. bilateral agreements directed activities toward the high valleys and made actions in the lowlands very difficult by limitating work in communities that had not met the high reduction goal, the staff of the PADC encountered a newly invigorated agenda for work in the Chapare. This created a problem for coherent work and planning within the institution.

Perhaps the sense of disillusionment on the part of the Bolivian counterpart agencies was made even greater by pressures exerted by U.S. officials for passage of a law that would declare coca leaf production illegal, while simultaneously U.S. development assistance was bound to the strict 70 percent conditionality. The coca law--known as the Coca and Controlled Substances Regulation Act (the Ley del Régimen de la Coca y Sustancias Controladas)--was one of the most difficult and sensitive political issues that the Bolivian congress faced in 1988; the debate unleashed a firestorm of public criticism and protest that, at moments, pitted the U.S. Embassy and the Paz Estenssoro government against a broad spectrum of parties and organizations within Bolivia.

The bill, however, finally passed in June, after a series of amendments and compromises. Coca leaf production for internal consumption was protected, although restricted to two provinces in the Yungas of La Paz, where up to 12,000 hectares can be

---

[17] Under present agreements, USAID/Bolivia conceptually has no direct control over the PADC but rather channels its relationships through the SUBDESAL. Nevertheless, the plan developed in the project amendment implies considerable influence by USAID in determining project activities. At this writing, two USAID contract employees, with offices in the PADC, are responsible for administering activities conducted with AID support. The employment of a third, direct-hire coordinator is being contemplated.

cultivated legally.[18] In the Chapare, termed a "transitional area" in the law, coca leaf cultivation will be phased out gradually, over a ten-year period. In that time, no producer will be forced to eradicate, and those who do will be compensated, will be eligible for credit, and will have the opportunity to participate in community development projects. According to the law, technical assistance and plant materials will be made available so that those who curtail their coca growing can substitute other crops that will, ideally, yield comparable replacement income. The use of herbicides for coca eradication was forbidden by the law in all areas of production. Finally, new coca plantations will not be permitted in the Chapare.

The total amount to be reduced over the ten years is some 35,000 hectares, with yearly goals established to reach that final extension. For 1989, the voluntary eradication goal set by the Bolivian government is 5,000 hectares.[19]

Finally, the law declared illegal a third area of very recent expansion of coca-leaf cultivation in the region of Yapacaní, department of Santa Cruz. Coca producers in this sector have a one-year grace period to reduce their coca plantations, during which time they will be compensated and eligible for credit. The bulk of eradication in early 1989 is expected to come from this region.

Frustration and conflicts between the SUBDESAL and AID management of the Chapare Regional Development Project reached a climax in September 1988, and the AID project manager stepped down. Soon afterward, AID/Washington sent an observation team to reconsider the question of conditionality in the Chapare part of the project. In light of the newly adopted law and the progress made in reduction, this team recommended that the conditionality requirement be greatly liberalized. The recommendation was accepted, and in December a high USAID official announced that the conditionality requirement would be lowered from 70 percent reduction of coca cultivation to only 10 percent for individual participation in the credit program, and to 30 percent for communities to take advantage of assistance in infrastructural projects.

---

[18] Only 8,000 hectares are currently grown there, which means, of course, that coca cultivation can be expanded in this area.

[19] The bilateral agreement between the U.S. and Bolivia has adopted this figure as the goal that will signify that adequate progress has been made in coca reduction. Interim goals have been set--1,300 hectares by April 30, and a total of 3,000 hectares by August 31. These partial goals condition the disbursement of U.S. Economic Support Funds to Bolivia but failure to meet them will not affect AID activities. If, however, the final goal of 5,000 hectares is not met by 31 December 1989, that failure could be the motive for an across-the-board suspension of all AID activities in Bolivia, not only those associated with the Chapare Regional Development Project.

For the PADC, however, the last months of 1988 were a trying time. The Associated High Valleys project, around which nearly all PADC activities were to be oriented, was stymied at every turn. Indeed, the highland component, with the healthy financing promised it in the project amendment, was held hostage, in a sense, by those authorities who wanted to bring about a change of priorities within AID with respect to work in the Chapare. The lack of common goals around the highland activities prevented approval of the 1988 Operating Plan until late September. Project proposals for high valleys work submitted by the PADC technical staff were either rejected or allowed to languish in a bureaucratic limbo. With changes in CRDP management within AID, PADC staff and advisers found themselves in the uncomfortable position of being the only advocates of what seemed to be an orphan project; communication with AID largely ceased while the new manager worked to ease conditionality restrictions in the Chapare and to repair the damaged relations with Bolivian counterparts. As plans for 1989 activities were made, AID reassigned all direct financing to the Chapare, largely to support efforts of the Instituto Boliviano de Tecnología Agropecuria-Chapare (IBTA) to produce sufficient seed and plant stock to supply farmers who reduce their coca cultivation. The high valleys component, for which some $4,000,000 had been programmed in 1988, saw its budget cut to $2,000,000 for 1989, to be financed by the more uncertain funding of P.L. 480.[20] At the end of 1988, the PADC national technical staff was, in its entirety, fired.

Nevertheless, what appeared at times to be the premature demise of high valleys activities has instead turned out to be only an unfortunate delay. In early January 1989, USAID contracted a team of six agricultural and natural resource specialists to work exclusively on the high valleys component. This group, along with the SARSA associates of the CRDP, has moved rapidly toward fleshing out a concrete plan of action in the high valleys. AID/Bolivia, which recognizes that previous delays have drastically shortened the time available for work until the project activities end in late 1990, is currently designing an extension of the CRDP through 1994 at a higher level of funding than is currently the

---

[20] This did not include money allocated for the road between Aiquile and Mizque, which was funded separately. Of the approximately $4 million programmed for 1988, only $140,000 was actually disbursed. The P.L. 480 funds referred to here are generated by subsidized food commodity sales from the U.S. to Bolivia under the Title I provisions of P.L. 480 legislation. The revenues generated by the Bolivian government from the sale of these commodities in the wholesale market are used to pay the U.S. for the food at an agreed upon rate that is well below the market price. Part of the remainder goes into the Bolivian treasury, and normally finances a substantial part of the "counterpart contribution" to USAID-funded development projects. Another part goes into a fund administered by a Bolivian agency under USAID supervision to support local institutions in conducting development activities.

case. At the same time, greatly increased levels of support will become available for the Chapare, which will serve to lessen concern of Bolivian development officials that inadequate resources are being assigned to the tropics.

The high valleys activities of the CRDP will apparently be implemented, then, and the hypothesis that underlay the redesign of the program--that concerted investments designed to improve economic opportunities in the communities of origin of Chapare migrants can, under certain conditions, reduce the flow of temporary migrants to the Chapare and perhaps even encourage some Chapare migrants to return home--will be tested. Let us turn now to a discussion of the particular economic constraints that shape the actions of the rural producers of the highland areas of Bolivia, the point of origin of the Chapare migrants.

4. THE SMALLHOLDERS OF THE SOUTHERN DISTRICT: DEVELOPMENT ISSUES

The reformulation of the Chapare Regional Development Project has, then, moved toward addressing the issues of economic stagnation in the highland valleys from which many Chapare laborers migrate. The PADC, on the recommendation of the SARSA-DESFIL consulting team, has chosen as its area of activities the contiguous provinces of Campero and Mizque (the "southern district" of Cochabamba department in the categories of Bolivian planners), and the area around the nearby valley town of Tarata, in the province of Esteban Arce, the latter only 28 km from the city of Cochabamba (Tables 1 and 2). The population of these two areas is estimated to number about 65,000, made up overwhelmingly of smallhold agricultural producers who retain--especially in the southern district--many cultural characteristics and agricultural practices from their Andean past.[21]

The two areas contrast notably in terms of population density, involvement in the market, and, apparently, in their history of migration to other areas. The Tarata area forms part of the general zone of intensive highland agriculture of the Central Valley of Cochabamba, with long historical links to the city in marketing, migration, and artisanry, and an active, economically diversified and entrepreneurial smallholder population.[22] The

---

[21] Table 3 provides a breakdown of population by canton and population center for the two southern provinces and the district within Esteban Arze province that fall within the area of the project's activities. The data are taken from the 1976 census (Censo Nacional de Población y Vivienda); there has been no national census since.

[22] Larson (1988a:184, 202-209, 258-262, passim) has described the active involvement (continued...)

southern district, on the other hand, has developed a more extensive agricultural regime in an area that covers some 8,200 km^2 (or about 3,200 mi^2) of rough mountainous terrain. Only about 2 percent of the total is considered to have "moderate to good agricultural potential" (CUMAT/SDTB 1987; Dickinson et al. 1988:14), so that the southern district is characterized by an impoverished smallholder economy based on small-scale agricultural production complemented by herding.

TABLE 1. Population estimates based on the 1984 National Agropastoral Census:

PROVINCE	URBAN POP.	RURAL POP.	TOTAL POP.	EXTENSION KM2	DENSITY INH/KM2
Campero	7,024	33,615	40,639	5,550	7.32
Mizque	2,142	32,283	34,425	2,730	12.61
E. Arce	3,903	32,788	36,691	1,245	29.47
Total	13,069	98,686	111,755	9,525	11.73
Overall for Cochabamba Dept.	404,844	549,946	956,790	55,631	17.17

TABLE 2. Estimated population and growth in the Southern District based on the National Statistical Institute's Atlas Censal:

YEAR	CAMPERO	MIZQUE	DISTRICT TOTAL	TARATA AREA
1950	21,254	18,171	39,425	
1976	31,787	27,337	59,124	7,456
1984	35,736	30,861	66,597	7,122

SOURCE: INE Atlas Censal, CIDRE
Demographic growth rates:

Campero = 1.54%
Mizque = 1.57%

[22](...continued)
of the Valle Alto population in a range of nonagricultural petty commodity production to supplement inadequate income from agriculture.

TABLE 3. Southern District and Tarata: Population by sex, household, and occupied living units, by geographic area (1976 Census)

DEPT. PROV. CANTON	POPULATION			HOUSEHOLDS	OCCUPIED LIV UNIT
	TOTAL	MEN	WOMEN		
Dept. Cochabamba	720,952	349,958	370,994	164,497	161,863
Prov. Campero	31,787	15,809	15,978	7,217	7,176
Cantón Aiquile	13,527	6,673	6,854	2,944	2,986
Cantón Omereque	4,498	2,322	2,176	1,010	999
Cantón Villa Granado	3,393	1,689	1,704	766	767
Cantón Quiroga	4,626	2,257	2,369	1,170	1,166
Cantón Laguna Pampa	786	397	389	174	173
Cantón Pasorapa	4,957	2,471	2,486	1,101	1,085
Prov. Mizque	27,337	13,347	13,990	6,295	6,274
Cantón Mizque	9,417	4,706	4,711	2,153	2,139
Cantón Tin Tin	3,215	1,541	1,674	768	768
Cantón Vicho Vicho	1,442	675	747	335	334
Cantón Molinero	3,776	1,822	1,954	857	853
Cantón San Vicente	2,046	1,004	1,042	488	487
Cantón Vila Vila	2,416	1,176	1,240	546	546
Cantón Sivingani	1,307	630	677	305	305
Cantón Ayapampa	3,738	1,793	1,945	843	842
Total Southern District	59,124	29,156	29,968	13,512	13,450
Prov. Estéban Arze	28,963	15,536	13,437		
Cantón Tarata	3,591	1,665	1,926		
Cantón Arbieto	3,864	1,693	2,172		
Total Area de Trabajo PADC	7,455	3,358	4,098		
Total D. Sur y Tarata	66,579	32,514	34,066		

SOURCE: Instituto Nacional de Estadística, Censo Poblacional y de Vivienda 1976.

Rainfall in both zones is sparse, averaging around 500mm (19.7 inches) per year in Aiquile and Mizque and even less in Tarata[23]; it is concentrated in just a few months of the annual cycle, from December through March. Water is therefore a major limiting factor in any expansion of agriculture in both Tarata and the southern district. In the valleys of Mizque province, with year-round water resources from small rivers, gravity-fed irrigation systems make agriculture a somewhat less risky proposition. In the rainfall areas of Campero, where irrigable land is very circumscribed, drought years and the consequent loss of crops are common.

Human settlements around Tarata are located at 2,750 meters above sea level; communities are relatively continuous and nucleated, reflecting the population density in the area of 29.47 persons per square kilometer. In the southern district (where we encounter population densities in Mizque and Campero provinces of 12.61 and 7.32, respectively), settlements are dispersed both internally, with a low degree of nucleation, and one from the other, except along the various river basins in Mizque (Instituto Nacional de Estadística 1984: II Censo Nacional Agropecuario). In this area, most settlements are found at altitudes ranging between 1,800 and 2,200 meters above sea level.

From as early as the seventeenth century, the southern district, which will largely occupy our attention in the coming pages, was characterized by large estates that were abolished only after the 1953 MNR Agrarian Reform. An extensive hacienda economy evolved based on traditional agricultural products and herding that, after the 1952 Bolivian agrarian reform, developed into a smallholder agropastoral economy of limited resources. The haciendas seemingly erased most forms of native Andean and colonial social organization (especially the local variant of the *ayllu* that is still found among Andean peasants in the Norte de Potosí, just to the south). Many other indigenous patterns, modified by centuries of involvement in the market and by subjection to colonial and republican governments, are still apparent, however. Most of the smallholders speak Quechua as their native language, use centuries-old technologies and cultivation techniques, and follow kinship and festival patterns that are apparently rooted in an indigenous tradition. Residing in the towns of the area is a hispanicized population with varied roots: the remnants of the hacienda class, merchants and artisans, schoolteachers and government employees, and some commercial farmers who own small- to medium-sized properties.

---

[23] Rainfall averages between 1959 and 1980, taken from Pinto (n.d.), are 441 mm (or 17.4 inches) for Tarata; 543 mm (21.4 inches) for the town of Mizque; and 514 (20.3 inches) for Aiquile, the capital of the province of Campero.

4.1. The Rural Economy of Central Bolivia

The smallholders of southern Cochabamba department are the primary consumers of their own agricultural production. This allows them to subsidize their participation in the very limited wage labor market, working for wages insufficient to cover their consumption needs. Most residents were validated in their land tenure by the Bolivian agrarian reform of 1953, but in the three decades since those rights were acquired, many holdings have been subdivided through inheritance and sale. Thus a great number of peasant agriculturalists in the southern district, and in the Bolivian highlands in general, cannot make a living through agriculture, regardless of what improvements might be made through technological innovation, better farm management, or improved market conditions. Even where this is not the case, agriculture frequently assumes the role of subsidizing participation in the wage labor market or in other farm activities rather than that of generating family income.

The result is that satisfying family consumption requirements rather than maximizing production for market is the primary goal of farm work. A recent study conducted in Chuquisaca department, for example, showed that the number of crops found on a farm is inversely related to the farm's area (Brush 1987; MACA/CORDECH 1984, cited in Painter et al. 1984a). Farmers who own enough land to earn an acceptable living specializing in the production of a particular commodity or group of commodities tend to do so, while those who do not treat agriculture as part of a diversified production strategy for satisfying consumption needs. Such a strategy in no way precludes production for market among smallholders but it does contribute to a condition of labor scarcity that limits the ways in which production may be expanded.

Because one of the important roles of agriculture for rural families dependent on off-farm sources of cash income is to reduce the portion of that income that must be spent on basic food needs, they try to minimize cash expenditures associated with farming. This means that they are reluctant to hire wage labor, relying instead on being able to work harder and longer during periods of peak activity. Such households are also disinclined to invest in labor-saving technology unless they are sure it will result in an immediate increase in net revenue at least equal to the cost of the investment. Further, when labor resources are tightly stretched, families frequently forgo such normal management practices as maintaining irrigation systems, terracing, contour cultivation, and close management of livestock, sacrificing the long-term stability of their production systems in order to satisfy immediate consumption needs.

The importance of off-farm income is thus critical for understanding the nature of pressures to migrate to the Chapare and elsewhere. Moreover, it raises a number of questions about how to reduce migratory pressures by reversing the underdevelopment that has characterized the central Bolivian valleys. If agriculture alone is insufficient to ensure household reproduction, then smallholders must engage in other kinds of income-

generating activities (Dandler et al. 1982; Dandler 1984; Alfaro Lazo 1981). Beyond the need for buying staple foods, an ever greater proportion of consumption necessities has come to include items not produced on the peasants' lands: tools and agricultural inputs, for instance, as well as such consumer goods as clothes and processed foodstuffs. While some of these necessities--obtaining coca leaf, for instance--are centuries old (Platt 1987:474), in recent decades the number of such consumer goods considered essential has increased dramatically. In addition, money is required for taxation and for certain direct services--paramedic or doctors' fees, costs associated with schooling, and the like.

These factors have been pushing peasant producers into an expanding involvement in the market economy, both through producing commodities for sale and through selling their labor. Most peasants adopt a diversified set of economic strategies (cf. Dandler 1987; Painter 1984, 1986) that includes such activities as cultivating cash crops and processing animal products for the market; wage-labor employment within the district (in town, or on larger agricultural holdings); artisan production; petty commerce; transportation; and migration to new areas in search of wage labor or to establish productive enterprises in different ecological zones. Because the remuneration that may be earned through these various economic activities is usually low, however, families must maintain involvement in a number of them in order to earn enough income to satisfy their consumption requirements.[24]

A number of important consequences result for the regional economy and ecology. For example, as families are required to invest more of their labor resources in off-farm activities, their capacity to manage soil and water resources declines. Activities such as maintaining irrigation systems and erosion control structures are neglected, because, although these are recognized as important for maintaining the land's productivity, the needed labor investment yields no immediate income. Livestock raising assumes relatively greater importance, because animals are one of the few options available for saving hard-earned income, and because the labor requirements are less than those of crop cultivation. Over time, agricultural productivity declines, intensifying the pressures to seek off-farm income, so that a feedback relationship is established between the stagnation of the agricultural economy and environmental degradation.[25]

The economic opportunities pursued by the smallholders are strongly influenced by their economic position in the regional society. While most may legitimately be termed

---

[24] This is the source of a seemingly paradoxical situation, where rural areas characterized by high rates of unemployment and underemployment are also areas of chronic labor scarcity (see Brush 1977; Collins 1987).

[25] For a detailed case study of this type of phenomenon see Collins (1988).

poor in the sense that their incomes are low and they have inadequate access to health care, education, credit, and technical assistance, their resource endowments vary considerably. Areas of significant differentiation in the rural population include the size, quality, and location of landholdings, the labor resources available, the possession of nonagricultural labor skills that are in demand, and the extent of relationships with wealthier members of the society that may be translated into relatively stable and secure off-farm employment. Some of these variables are demographic in origin; that is, they are the social outcomes of the biological reproduction and aging of rural families. For example, households tend to be poorest with respect to land and labor at the beginning and ending of their life cycles. Other variables are the products of social differentiation, with implications for class formation in the countryside. Access to irrigated land, to nonagricultural skills, and to stable off-farm employment is highly unequal, and the inequities tend to be reproduced or exacerbated from one generation to the next by social and institutional mechanisms.[26]

4.2. Implications for the CRDP

Such differentiation is important for understanding the nature of the migrant population in the Chapare and for devising strategies to slow migration into that area. As noted in Section 1, social differentiation has been an important aspect of settlement in the Chapare from the outset. It has persisted since the 1970s, when it was cited in the OAS rural development plan for the Chapare and, in many respects it has become more pronounced. For example, many Chapare farmers have been successful enough to have established permanent homes and businesses in the city of Cochabamba. They now rent their Chapare lands to other farmers. Thus, Chapare landowners of varying degrees of wealth exist, in addition to a substantial population of renters. The largest group in the Chapare, however, is the population of wage laborers, on whom the narcotics industry depends to pick and transport leaves, and to provide the foot power required to stomp the leaves in tanks or tubs of diluted sulfuric acid, releasing the cocaine and other alkaloids. While the number of laborers in the Chapare remains high throughout the year, its membership is constantly changing, as individuals move in and out of the area in response to labor demands of the agricultural cycle at home and wage-earning opportunities elsewhere.

---

[26] For discussions of processes of demographic and social differentiation--how they work, and their implications for development--see Collins (1983) and Deere and de Janvry (1979).

4.2.1. Crop Substitution in the Chapare

The patterns of differentiation and class formation that characterize migration to the Chapare hold implications for efforts to curb participation in the narcotics industry. To the extent that crop substitution efforts respond to producers' needs and to the land use limitations imposed by the Chapare environment, and to the extent that good faith can be established between the producers' sindicatos and state implementing agencies, some growers may opt for alternatives to coca cultivation over the medium to long term. One can expect the receptiveness of producers to depend on such factors as the sort of land tenure arrangement under which they are operating; the resources they have invested in establishing themselves as farmers in the Chapare; their view of the agricultural potential of their land outside of coca production; and the extent to which they see the Chapare as a new home, as opposed to the extent to which they think of coca cultivation as a means of earning enough money to live in relative comfort in Cochabamba (or their original home areas).[27]

Beyond these considerations, however, are several other factors that bear on crop substitution. First (as noted in Section 1), mid-1970s advocates of promoting economic development in the Chapare as a means of curbing participation in coca production warned that the short-term response to development would be to increase coca production. USAID has been sponsoring crop substitution programs in the Chapare since 1978, but activity on the ground remains in a very early stage because U.S. economic assistance has been suspended at different junctures, and because the Bolivian government lost control over the area during part of the Siles administration. Thus, although the Bolivian government has established reduction goals for 1989 and the U.S. has made achievement of these goals a condition for continuing economic assistance, it is difficult to imagine how crop substitution efforts, no matter how well executed, will significantly reduce coca production during 1989.[28] Carrying out the threat to suspend economic assistance is likely

---

[27] Each of these factors is a research issue in itself. IDA/SARSA is currently conducting a study with the Bolivian research institution, CERES (Centro de Estudios de la Realidad Económica y Social), to gather more specific information. The study consists of a review of all previous studies of Chapare settlement in order to systematize the information that has already been gathered, an analysis of the socioeconomic data gathered by DIRECO on producers who have elected to participate in the program to reduce coca cultivation, and fieldwork to be conducted through the producers' sindicatos in the Chapare. The results of this research will be reported in a future Working Paper.

[28] The Bolivian government established trimesterly reduction goals, with increasing increments, under the 1988 narcotics law. The goals call for 1,300 hectares to be reduced by 31 March 1989, an additional 1,700 hectares by the end of August, and 2,000 more

(continued...)

to be counterproductive, however, because it would be yet another disruption to implementing development processes that will help diversify the Chapare economy.

Second, the disappointing results of crop substitution thus far are not a function of inadequate funding alone. Rather, they can be traced to the difficulties of establishing a sustained and credible presence in the Chapare by the institutions charged with carrying out crop substitution efforts. These difficulties arise from the erratic implementation of the project noted above, and from the fact that development efforts have never been established as conceived and executed independently of police repression. Many farmers feel that development activities are the bait in a trap that will quickly close on them once a sufficient number have become involved, not only because the erratic implementation of development activities lends itself to being interpreted as a lack of seriousness about development, but also from the suspicion that these activities contain a hidden agenda of repression. The suspicion is heightened by the fact that the U.S. is the major funder of both development efforts and police repression. The distinction between support for the police administered from the U.S. Embassy and development assistance administered by USAID is not a compelling one for farmers.[29] In addition, there have been incidents in which shortly after a grower community has assembled to meet with development officials--before its members had dispersed back to their fields--it was raided by police. At least one of these raids resulted in the deaths of several farmers. Farmers have generally accepted development workers' explanations that they knew nothing of police plans to raid the community, but the perception remains that, at best, the development workers are being used as dupes by the police.

The institutions charged with development in the Chapare have not, to date, been able to spend the funds allocated for them. Because of the problems discussed above, they have not evolved the institutional capacity to absorb and make effective use of the funds allocated to them. In addition, considerable work needs to be done to gain the collaboration of farmers if money spent in the Chapare is to yield the desired results.

---

[28](...continued)
by the end of the year, bringing the total 1989 reduction called for by law to 5,000 hectares. While the U.S. may or may not choose to consider the intermediate targets, failure to reach the 5,000-hectare year-end reduction goal will result in the suspension of economic assistance. At this writing, reduction efforts are falling well short of stated goals.

[29] These concerns were given added weight when, in August 1988, the USAID officer responsible for the CRDP was obliged to take a leave of absence. The ensuing changes in management style--including a more closed decision-making process and greater consultation with the Embassy Chargé d'Affaires--created the widespread perception that development efforts were being directed from the Embassy for repressive purposes. This perception was communicated to farmers through their sindicatos.

Crop substitution efforts in the Chapare must establish institutional stability, so that promised development efforts can move ahead with continuity. Such continuity will go a long way toward eliciting active support and cooperation from coca growers, by providing evidence that the promises of development assistance are substantive and not a "smokescreen" for repressing them. In the meantime, given the demonstrated lack of institutional capacity on the part of SUBDESAL and the PADC to utilize the funds already allocated, and given that economic stagnation in Bolivia's rural economy is an important force driving Chapare migration, increasing the funds allocated to crop substitution in the Chapare at the expense of other USAID/Bolivia development projects is likely to be counterproductive, to the extent that it has any impact on events in the Chapare.

Promoting crop substitution in the Chapare is not a simple matter. Beyond the institutional issues outlined above, production conditions in the area itself are complex because many producers are growing coca on land that cannot sustain annual crop production, or, in some cases, any agricultural production. The issue of satisfying producers' needs while recognizing the land use limitations of the Chapare is complicated from a technical perspective because it implies the need to promote multiple production *systems* (not individual activities) adapted to the varied conditions found in the Chapare. It is complicated from a socioeconomic perspective because, although there are indications that farmers would be willing to grow less remunerative crops than coca in exchange for adequate technical and financial support and security from repression, they are unable to stop producing coca and forgo its cash income while they wait for profitable alternative production regimes to be developed and made available to them. Individual producers and communities may elect to reduce coca in return for cash payments and/or development assistance proffered by the state, but one can assume that reductions in one area will be offset by increases in coca cultivation in another over the short term.

4.2.2. Wage Labor Migration

Regardless of how successful development efforts in the Chapare ultimately prove to be, the direct beneficiaries will be only a small percentage of the region's population. The bulk of the population of some 215,000 people[30] in the Chapare at any one time are not permanent residents but migrants, who move in and out of the area with some regularity. A small percentage are merchants and truckers who carry food and other products into the Chapare from Cochabamba, bringing modest--and diminishing--quantities of tropical products out, and hauling large--and increasing--numbers of wage laborers back

[30] Population estimates for the Chapare vary widely, precisely because of the large number of people constantly moving in and out. This figure represents the central tendency in the population estimate calculated by the DESFIL project (DESFIL 1987).

and forth. Wage laborers form the largest social category of the Chapare population. By and large, they come from the poorest strata of Bolivia's rural society. Many are landless, and those who are not tend to occupy the most marginal dryland areas of central Bolivia's semiarid valleys.

It difficult to design a development effort in the Chapare that will benefit the wage laborers; indeed, the impacts of a successful development and crop substitution program will be detrimental to a large portion of them. Successful innovations in production will be less labor intensive, as farmers will not be willing or able to hire as many workers as they do now for crops that are less profitable than coca. Labor demand is also likely to be more seasonal under any new production regimes established in the Chapare, offering migrants less flexibility for coordinating wage labor in the Chapare with agricultural activities in their home areas. In addition, the land area farmed in the Chapare will decline because of the limitations in land-use capability discussed earlier.

Thus, effective Chapare development will almost certainly force large numbers of rural workers to seek alternative migratory destinations. Given the lack of economic opportunity in Bolivia, and given that coca may be grown anywhere in Bolivia's humid tropical lowlands, the most likely result of successful development and interdiction in the Chapare is that the geographic center of narcotics production will shift to another region, and that the rural poor will continue to provide an ample supply of cheap labor.

The most promising way of avoiding such a scenario is to promote economic opportunities that provide alternatives to wage labor migration to the Chapare and elsewhere. Success will reduce both the current supply of labor available to the narcotics industry and the susceptibility of the rural poor to being drawn back into narcotics production elsewhere in Bolivia in the event that the industry is successfully displaced from the Chapare. However, little attention has been paid to the development of sociological hypotheses and models that link present patterns of migration to the possible impacts of particular development projects in the Andean highlands. In the following pages, we will consider some of these impacts as we examine the circumstances of the region's smallholders and the potential effects of certain kinds of projects. Since the fundamental purpose of the high valleys activities of Chapare Regional Development Project is to discourage migration by improving the life situation of these smallholders at home, their present situation and the potential for its amelioration must be at the core of the enterprise.

4.3. The Smallholders of the Southern District: Production

To analyze the complex of elements that must be taken into account in efforts to improve production and productivity, we adopt from classical economics as analytic categories the factors of production: land, capital, and labor. Each is conditioned by

socioeconomic processes that constrain the likely outcomes of development initiatives. Land and water distribution, access to capital, levels of productivity, and the availability of labor power all enter into the equation for improving production and the subsequent distribution of economic rewards. Underlying these are the realities of social class formation, a result primarily of the ownership or control of the means of production, but one that is also mediated through other, less tangible factors--concepts of group and ethnic identity, historical precedents that are reinforced by past structural patterns (and that retain an ideological weight even after such structures have changed), and the control of state institutions.

During 1989 the PADC, with SARSA technical assistance, will undertake a detailed study of the area, focusing on the characteristics of the rural economy and the dynamics of migration. Until the results of this study are available, our analysis of the agricultural economy will necessarily be partial. Nevertheless, we can make the following preliminary assessment of the restrictions and potentialities of the area.

4.3.1. Access to Land and Agriculture

Land distribution is unequal, and the holdings of most rural families are of inadequate size and quality to support them. In Mizque, members of the local elite report owning from five to ten hectares of irrigated land.[31] Most rural families' holdings tend to be considerably smaller, however, with very little of it irrigated. Based on the 1984 agricultural census, 57 percent of the landholdings in Mizque Province are less than 3 hectares in area, and the largest cohort of landholdings is between 1 and 1.99 hectares (Table 4). CIDRE (1987:197) reports that, in an area near the town of Mizque, where smallholders have recently settled on irrigated lands, 51 percent of families owned less than 2 hectares in 1985. The mean size of landholdings in the area is 2.5 hectares, and 31 percent own more than 4 hectares.

[31] One hectare equals 2.47 acres.

TABLE 4. Reported landholdings based on the 1984 Agricultural Census: Mizque Province

TAMAÑOS DE LAS UA (HAS)	TOTALES UA	%	HAS	%	USO DE LA TIERRA (%) %	AGRICOLA	PASTOS	MONTE BOSQUE	Nº AGRICOLA
Total Provincia	3854	100	13.135.80	100	100	86	11	2	1
De menos de 0.99	576	15	189.08	1	100	81	1	1	18
De 1 a 1.99	851	22	1.055.33	8	100	95	3	1	1
De 2 a 2.99	753	20	1.629.96	12	100	93	5	1	1
De 3 a 3.99	479	12	1.502.52	11	100	92	6	1	1
De 4 a 4.99	303	8	1.249.27	10	100	90	7	1	2
De 5 a 9.99	545	14	3.337.22	25	100	88	10	1	1
		91		68					

In Campero Province the situation is similar. The 1984 agricultural census reports that, while 15 percent of the land is in units of between 5 and 9.99 hectares, 54 percent is in holdings of less than 3 hectares in size. As in Mizque, the largest cohort of holdings is that ranging between one and 1.99 hectares (Table 5).

TABLE 5. Reported landholdings based on the 1984 Agricultural Census: Campero Province

TAMAÑOS DE LAS UA (HAS)	TOTALES UA	%	HAS	%	USO DE LA TIERRA (%) %	AGRICOLA	PASTOS	MONTE BOSQUE	Nº AGRICOLA
Total Provincia	4816	100	39.371.32	100	100	35	8	56	1
De menos de 0.99	530	11	223.42	1	100	77	1	1	21
De 1 a 1.99	1085	23	1.439.58	4	100	93	1	1	5
De 2 a 2.99	965	20	2.207.43	6	100	94	1	1	4
De 3 a 3.99	690	14	2.238.95	6	100	91	3	3	3
De 4 a 4.99	399	8	1.697.47	4	100	90	5	3	2
De 5 a 9.99	746	15	4.843.11	12	100	80	9	8	3
		91		33					

In Esteban Arce Province, with its denser population, the most frequent property size was between 1 and 2 hectares; 60 percent of the agricultural units had a total extension of less than 2 hectares. At the same time, the overwhelming majority of the land was used for agricultural purposes (more than 93 percent), and there is a notable absence of pastoral and forested lands (Table 6).[32]

TABLE 6. Reported landholdings based on the 1984 Agricultural Census: Esteban Arce

TAMAÑOS DE LAS UA (HAS)	TOTALES UA	%	HAS	%	USO DE LA TIERRA (%) %	AGRICOLA	PASTOS	MONTE BOSQUE	Nº AGRICOLA
Total Provincia	5809	100	13.218.35	100	100	86	7	1	6
De menos de 0.49	870	17	186.44	1	100	79	1	0	20
De 0.5 a 0.99	893	15	619.02	5	100	93	1	0	6
De 1 a 1.99	1642	28	2.210.24	17	100	96	2	0	2
De 2 a 2.99	1037	18	2.385.52	18	100	94	5	0	1
De 3 a 3.99	522	9	1.717.62	13	100	94	4	0	2
		87		54					

Agricultural crops produced in the southern district are the typical complex expected at about 2,000 meters above sea level in Andean valleys: corn and potatoes as the primary food crops; wheat, barley, and other grains; vegetable crops like onion, lettuce, and tomato; tree crops such as avocado, apple, and chirimoya; grapes; and peanuts. These crops will provide the basis for any production projects that might improve smallholder income until research and practice demonstrate the feasibility of introducing new crops.

[32] Preliminary studies indicate that these figures are useful for conveying the general profile of land distribution, but the numbers themselves must be regarded with some suspicion. For example, a recent land survey conducted by the nongovernmental organization CEDEAGRO, found wide discrepancies between previously reported holdings and the land surfaces actually belonging to one farmer or another "on the ground." Similarly, in interviews conducted by SARSA researchers in dryland farm areas around Aiquile, many smallholders have reported holding from 7 to 10 hectares of unirrigated land. A possible explanation is that land not dedicated to crop cultivation has been underrepresented in agricultural surveys. These discrepancies emphasize the need for additional information to assess such issues as the role of livestock in household production and the potential for increasing rural incomes through innovations in land use.

CIDRE's (1987:169-183) production estimates for these crops for the province of Mizque suggest that four times as much land is dedicated to corn production as to potato, the crop that falls second in the list of land surface utilized. One-and-one-half times more land goes to corn than to all the other crops combined. Similar crop proportions (perhaps even more favorable to corn) are likely to be true of Campero province. While careful studies of productivity are yet to be carried out, estimates of corn yield suggest that one metric ton is typically harvested per hectare (CIDRE 1987:168), or about 900 pounds per acre.[33]

Such low productivity can be improved by access to greater volumes of water through irrigation (although the figure for Mizque already includes a considerable percentage of lands receiving at least some irrigation). In areas with irrigation, maintenance of the system is usually organized at the community level through popular consensus and the appointment of communal *jueces de agua*; the exact mechanisms vary from place to place. Yet considerable inequality of access to irrigation water, even in lands that it can reach, is reported.

The percentage of smallholders who actually obtained titles to their lands in the period after the 1953 Agrarian Reform, when the larger estates were broken up, is not yet known, nor is the degree to which titles currently held would be considered valid because of subsequent changes in ownership. Most smallholders, however, claim to have titles to their land. Other forms of land access, such as tenancy, sharecropping, and renting, are also practiced in the southern district, though their relative incidence in insuring land access remains to be determined.

Land tenure is clearly a major factor determining smallholders' standard of life in their home communities. The distribution of landholdings and water is such, as we have argued, that many peasant families have insufficient means to cover their own subsistence needs. Even with the Agrarian Reform in the Mizque-Campero area, the kinds of land that became available for redistribution may not have been of the highest quality. Research is needed to determine if, for example, the best bottomlands remained in the hands of former hacendados, as the law in fact permits. Related questions that will be investigated in forthcoming research include whether or not lands were distributed to only a certain segment of the peasant population, such as those living at the time on the haciendas. This would have left other groups landless or with holdings too small to

---

[33] This is less than 12 percent of what an American farmer expects from his corn crop. The Alabama Agricultural Stabilization and Conservation Service reports an average corn yield of between 130 and 150 bushels per acre in a typical year, with a conversion factor of 56 pounds per bushel shelled and 70 pounds in the ear. This gives a range of between 7,280 and 10,500 pounds per acre.

provide even minimal subsistence. Further, we need to know if there existed among the recipients a process of stratification that still has implications for landholding today. Similar queries can be made in relation to irrigation and access to water.

4.3.2. Herding and the Peasant Economy

Most peasant households combine agricultural production with small-scale herding. The villages close to the town of Mizque--which appear somewhat better endowed with lands than other settlements in the area--are reported to average about 1.5 head of cattle and 7 sheep per household (CIDRE 1987:197, 212, 213). In nonirrigated areas or zones with limited irrigation, households maintain larger herds. For example, in a survey carried out in early 1987 of 410 households to the north of Aiquile, the provincial capital of Campero, households interviewed who report owning the animals have an average of seven head of cattle (cows, bulls and oxen), ten sheep, and 11 goats.[34] Residents of Puca Puca, just north of Aiquile, reported in the late 1970s that they owned, on average, nine to ten head of cattle, four burros, 15 sheep, and 15 goats, in addition to other livestock. Over 86 percent of the participants in the study owned cattle (Hatch 1981:189).

Small livestock--sheep and goats--are usually kept in corrals close to the houses and grazed on surrounding hillsides, which are nearly denuded of vegetation. Cattle are herded in the *montes*, more distant highland grazing areas that are largely unpopulated and uncultivated. Owners of cattle in the monte allow their animals to roam within the large but delimited tracts that belong to their communities, occasionally hiking to these grazing areas to check on their stock. In higher inhabited areas, away from the valley floors, smallholder reliance on herding becomes even more central to the economy. Here, households frequently take on the herding of livestock belonging to agriculturalists in the valleys, often under disadvantageous terms.

4.3.3. Capital and Credit

A second set of issues revolves around access to agricultural inputs and capital. Most smallholders currently employ little in the way of technological inputs. Many now buy some chemical fertilizers and pesticides, but the high cost of these products[35] prevents

---

[34] Of the 407 respondents, 126 reported having no goats at all; some 3,093 goats were claimed to be owned by the interviewees.

[35] Urioste (1987:73) shows that the relationship between prices received for agricultural goods and costs of agricultural inputs deteriorated so much that in 1982 inputs cost, relatively speaking, four times as much as in 1976.

their consistent and correct use.[36] The best mix of inputs for particular soil and water conditions is to be investigated for the southern district in coming months; research by farming systems advisers will focus on the techniques that can best be employed by smallholders with limited ability to finance capital investments.

Greater mechanization does not appear to hold great potential for increasing agricultural productivity. Tractor use is largely limited to the bottomlands of the Mizque Valley belonging to the hispanicized, town-based elite. These wealthier farmers rent tractor services to the largely Quechua-speaking rural population.[37] The rugged terrain of the area and frequent crop losses due to drought keep agricultural productivity low to the point that tractors will probably remain a poor investment outside of the areas in which they already operate.

There is evidence that rapid gains in yields and crop quality could be made on the bottomlands of the wealthier farmers through improved and expanded use of mechanized production techniques, fertilizer, improved seed, and better design and management of irrigation. Such an expansion could generate additional employment opportunities for some nearby dryland farmers and provide an alternative to migration. This must be approached with some care, however. Economic growth benefiting primarily the existing local elite could lead to a process of land consolidation, as, for example, by farmers in the valley bottom purchasing adjacent dryland areas in order to increase the pasture available for their growing herds. The number of people displaced by such a process would rival the number of people able to secure employment as agricultural workers. The end result would be to displace rural families and exacerbate existing inequities, increasing migratory pressures rather than diminishing them.

Projects financed by the PADC are likely to increase the opportunities for the production of crops for market and the manufacture of dairy products for the urban

---

[36] The recently established Programa de Control Integrado de Plagas (PROCIPLA, or Integrated Pest Control Program), financed by the PADC, has found a disturbing lack of knowledge about safe utilization of pesticides among the smallholders of the southern district. Used pesticide containers are stored with food and used in food preparation; potent insecticides in powder form are stirred by hand when prepared for application.

[37] The renting of tractors by poor farmers has become more important in recent years because of the labor scarcity imposed by the need to migrate. The low prices of agricultural produce would make renting tractors too expensive for most farmers. However, the need to continue agricultural production to subsidize participation in the wage labor market, combined with the labor scarcity migration imposes, makes tractor rental a necessary expense. Paying for the tractor becomes an additional cash expenditure required for survival, and creates additional pressure to migrate.

market. Many small farmers in the southern district already sell some portion of the potatoes, peanuts, vegetables, and cheese that they produce.[38] They will now attempt to expand output of these commodities. Such expansion is unlikely to occur without credit, since increased production will require higher capital expenditure and the use of more agricultural inputs. Although the provision of credit is a major component of the PADC plan, none has been disbursed yet in the southern district.[39] The problems and possibilities of credit in the region will be the topic of a SARSA-sponsored study to begin shortly.

In recent years, two formal credit institutions have made loans available to small farmers in the southern district: the Bolivian Agricultural Bank (Banco Agrícola de Bolivia, or BAB), which has long had offices in both Aiquile and Mizque; and Centro de Desarrollo Agropecuario (CEDEAGRO), a private voluntary organization that has worked for the past five years in the province of Mizque. The Agricultural Bank's ability to deliver credit to smallholders is deficient. Under the Banzer government, the state purchased the commercial debt of large commercial farmers in Santa Cruz when it became clear that they were not going to repay the loans they had received. This debt was then made the responsibility of the BAB, which was unable to collect because of the political strength of the farmers. This severely diminished the institution's ability to make new loans. In addition, the BAB has suffered frequent mismanagement that, in combination with high rates of inflation after 1982, essentially drove it into bankruptcy. It currently functions on a small scale in the two towns; but one can only characterize its present administration at the local level as capricious.[40]

Those who seek credit from state institutions like the BAB also encounter problems of adequate documentation, especially of land titles, which bank employees demand before granting loans. Those who have titles have frequently not brought them up to date after land divisions through inheritance; the lands continue in the names of their forebears. Bank employees often use such situations to deny applications, claiming the lack of clear

---

[38] In contrast, maize produced is used in household consumption.

[39] A credit program supported by P.L. 480 funds was recently instituted in the Chapare; to date nearly a million dollars has been obligated to these tropical settlers, all of whom have reduced their areas of coca leaf cultivation. While the credit program was also to begin in 1989 in the high valleys, no funds have been allocated for credit. Given the overwhelming pressure for credit as a reward for coca leaf eradication, it seems unlikely that credit will be available in the high valleys until new funds are assigned to the project.

[40] The manager in Mizque, for example, decided to deny credit in 1987 to all peasant producers because of a dispute with several borrowers and supposed insults to his honor. The same official has denied credit to a well-established peasant farmer with medium-sized holdings because, at age forty, he remains unmarried.

titles.

CEDEAGRO moved into credit in 1986, after funds became available through an emergency agricultural credit program developed under P.L. 480 after a recent drought. CEDEAGRO made credit available in the form of agricultural inputs (especially chemical fertilizer) through a program sponsored by FENACRE (Federación Nacional de Crédito), the national association of savings and loans institutions. CEDEAGRO's experience with credit has not been happy, however. Poor harvests over the last two years, combined with an influx of relatively cheap contraband fertilizer from Peru (which made the price of the legitimately imported product provided in the loan program seem inordinately expensive), has led to a high rate of loan delinquency. The organization, which used its headquarters and the home of its director as collateral to secure the loans for its smallholder clients, faces an uncertain future if the ultimate creditor, the P.L. 480 fund, chooses to call in the outstanding credit. For its part, CEDEAGRO argues that to force those with outstanding loans to pay is to risk the financial stability of a substantial number of peasant households, perhaps, to their migration from the zone.

The other source of credit, in the absence of more formal avenues, is that of personal loans from *prestamistas,* wealthier peasants or townspeople who make short-term loans at extremely high rates of interest. The functioning of prestamistas in the southern district will be studied in some detail. It seems evident, however, that because of such indebtedness smallholders may find themselves obliged to sell their products at inopportune moments and at disadvantageous prices. Smallholders may thus find themselves at the mercy of the prestamistas, who can use the interest gained for further capital accumulation.

Formal credit mechanisms should ameliorate this vicious circle, but there are already some indications that replacing the prestamista with formal credit may not be the whole answer to improving smallholders' ability to accumulate capital. Some development workers argue that credit is pernicious for Andean smallholders, because of the high risk of crop failure in the arid climate, the difficulties of entering the market on favorable terms, the weakness of extension programs that would offer technical assistance to the farmers, and the restrictions made by the lending agencies as to terms. If credits are used only for financing ongoing operating costs--the purchase of fertilizers, for example (or, worse, if they are used for family subsistence or for supporting social expenditures)--rather than for capital investment on the farm, they may exacerbate the risks of peasant agriculture (Urioste 1987:72). Agriculture remains an uncertain enterprise, and credit terms, which are often granted only for short periods and are due immediately after harvest, put smallholders into as difficult a situation as if they had borrowed from the prestamista: to repay the debt after a poor harvest, they may even lose their holdings (as CEDEAGRO has also argued) or be forced become labor migrants seeking work outside the area.

As the PADC develops its credit programs, for 1990, the terms under which credit will be provided and the mechanisms employed for its distribution should be tailored to the results of the forthcoming credit study, so that credit will not act as yet another push factor for migration. While our recommendations may be modified as the results of the credit study become available, certain preliminary determinations can be made on the basis of experience in the Chapare. There, documentation requirements have been relaxed so as to make credit more easily available; PADC advisers are recommending that the same policy be adopted in the southern district. Documentation requirements should be kept to a minimum, as the poorest farmers are the least likely to have current titles. In place of titles, affidavits by community leaders or neighbors that confirm an individual's plot ownership could substitute for formal titles; other alternatives are surely available. In addition, the terms of repayment should be designed so as not to place a fatal fiscal burden on the borrowers finances.

Interest rates should probably be below the present 13 percent market rate for the poorest borrowers, although present plans place interest at this standard rate. Means should be devised to shift borrowing and repayment from individuals to groups. Borrowers' associations could take joint responsibility for their members, with shared penalties for nonpayment. This would act as an incentive for repayment by group participants, since repayment would be the concern not only of the lender but also of fellow borrowers. Where an individual is unable to repay his share for reasons acceptable to all, the group could guarantee future reimbursement. Credit must be tailored to the group's ability to repay, and longer loan periods should be adopted to prevent distress marketing at low harvest prices for debt repayment. While credit for the poorest farmers may not be at concessionary rates, credits used for capital improvement (as opposed to the simple purchase of inputs) should be treated preferentially. The credit program should also include provisions for crop insurance for climatic conditions leading to generalized crop failure.

4.3.4. Labor: Mobilization and Availability

The complex scheduling of tasks required by a diversified peasant economy can lead to real labor shortages at particular moments in the annual cycle, as Collins (1984, 1987) has shown in the case of highland Aymara small farmers. As the economy becomes more highly monetarized, such shortages can become acute for the poorest peasants, as they divert labor time from their own holdings to those of wealthier neighbors who pay them wages (Collins and Painter 1986:16; Watts 1987). Similarly, labor migration--especially when it is expected to be relatively highly paid, as is the case in the Chapare--may stimulate chronic labor shortages in the home areas.

As we learn more about the forms of labor mobilization that exist in the area, whether through kinship and "precapitalist" reciprocal labor exchanges at the individual

and communal levels, through wages, or through other hierarchical relationships of obligation, we may be able to analyze the cyclical patterns of labor shortages. We hypothesize that present strategies employed for the mobilization of labor serve to maximize household income and security. In certain instances, these strategies coalesce well with labor migration, where the wife remains at home to manage the farm with the assistance of neighbors and kin who accept the validity of traditional labor exchange practices, while the husband travels to work elsewhere (Harman 1984).

Painter has suggested that the difficulties of life in the Chapare are such that a "dollar-for-dollar" replacement in income is not necessary in order to dissuade migrants to remain in their home areas (1987b:11). Present plans call for projects that will greatly increase labor demand in the highland valleys as a substitute for migration (USAID/Bolivia 1987:7, 19). Projects must, however, phase in increased labor requirements over a period of time; this will give beneficiaries the opportunity to see the potential value of participation and permit them to readapt labor patterns. Projects that have high labor requirements at the outset may not be practical, since the lack of available labor may not permit activities to advance at an acceptable rate. This could easily lead to disappointment and perceived failure. Because of their role in managing the household economy in the absence of their husbands, women must also be seen as key figures in project planning. Their free labor availability may be extremely limited, however, as a result of the double duty they take on while their husbands work elsewhere. Again, projects not tailored to the constraints that smallholders face will not succeed (cf. Painter 1987b:16-17).

4.4. Exchange: Participation in the Commodities Market

If in fact there is a great increase in production as a result of careful project planning--in improving irrigation systems, land output, and the appropriate use of inputs; in ensuring or inducing the availability of sufficient labor; and through a balanced credit program--then attention must shift to the question of the relation of smallholders to the market. The terms of trade that exist between rural producers and urban markets, and the degree to which rural producers can benefit from increased participation in the commodities markets, are core issues that the PADC must consider in program planning.

We have as yet little direct data for the southern district of Cochabamba on the terms of exchange between goods sold by the small producers and those they must buy for consumption. Producer price levels for agricultural goods have reportedly suffered considerable deterioration in real terms in Bolivia as a result of the extremely high inflation of recent years. Input prices have increased, wages have remained stagnant, and producers have little power to affect market prices. Attempts to create peasant markets, where producers bypass intermediaries by selling directly to consumers, have not been successful in spite of considerable investment in infrastructure. In the regional

marketing center of the city of Cochabamba, for example, the peasant market constructed some years back stands empty and unused.

Before initiating specific activities related to marketing, a series of preinvestment studies is needed. These will attempt to determine what proportions of different agricultural outputs are marketed by smallholders (keeping in mind their internal socioeconomic differentiation); and the procedures by which these crops or herding products are marketed--who buys them and at what prices, how they are transported to the local market and beyond, and how these patterns differ according to crop.

Socioeconomic differentiation, both among the peasant strata and between them and wealthier rural producers, will be a research priority. Questions include the following: At what point do the smallholders lose control of their products in the marketing process? Who are the intermediaries in bulking? What role do local owners of transport play? Are the prestamista credit considerations discussed above indeed a factor in marketing? We also need to know about seasonality: What prices do producers receive and do how these fluctuate throughout the year? When do different peasant strata sell their products and under what conditions and terms? These and related questions will reveal a great deal about the means of extraction of surplus from smallholders and identify who benefits from these processes.

For the hispanicized town populations in the southern district, petty commerce is clearly important: numerous small shops line the streets of Aiquile, Mizque, Omereque, and even smaller settlements. Here, members of the locally dominant class take advantage of their control of transport and of capital to import consumer goods required by the smallholders and, presumably, to bulk and export at least some agricultural goods obtained in weekly markets. Commerce has traditionally been a basic economic activity of peasant women in the central valleys of Cochabamba as well. Whether peasant women are equally involved in commerce in the small settlements of the high southern valleys of Cochabamba--whether, for example, some peasant producers purchase the agricultural commodities of their neighbors for bulking and marketing--is another topic that requires research.[41]

---

[41] For example, Watts (1987) has described a cycle of marketing and consumption among Hausa millet farmers in which the poorest smallholders sell their products at the distress prices characteristic of the harvest season in order to pay taxes and repay loans to their richer neighbors. Six months later their subsistence stores are exhausted and they are back on the market, this time as consumers, buying millet at much higher prices. In this way, a considerable grain surplus is extracted from producers and made available to urban markets. At the same time, richer peasants profit doubly from their poorer counterparts: both when they buy grain from them at low prices and when they later sell

(continued...)

Beyond the varying productive capacities of smallholders and the control of marketing and transport by more powerful social groups, a number of seasonal mechanisms may exist that worsen the economic situation of the poorest. Transport in the southern region is also in the hands of the urbanized town dwellers of Mizque and Aiquile, and smallholders must resign themselves to accepting the prices set by this group. Some peasant producers have recently acquired trucks of their own; for example, a number of small villages on the Aiquile-Mizque road have residents who own them. The resources for these investments reportedly come from temporary wage labor or the cultivation of coca fields in the tropical lowlands of the Chapare. The effects of this process on the relationship with town truckers (or whether the new truck owners will assimilate themselves to the latter's practices) need to be monitored.

For the southern district of Cochabamba, marketing mechanisms should be examined in relation to the cycle of household reproduction to see if similar internal stratifying principles are at work. The degree to which richer smallholders may purchase and market the products of their poorer compatriots, lend them money or inputs, have them work on their lands for reduced wages or by calling on nonwage "reciprocal" practices, or use their labor for other ends all need to be explored. Again, if the poorest peasants have the greatest propensity to migrate to the Chapare or to other areas, then the particularities of such stratifying relationships must be known in order to formulate practices or projects that might ameliorate the conditions of labor and production for the poorest stratum.

To substantiate these patterns, we need first to carry out basic research to delineate the present circumstances of access to the market. Only through an understanding of these mechanisms will the PADC be able to design programs for marketing the products of smallholders that allow the benefits of increased production to reach these smallholders, rather than remaining with intermediaries and transporters. Special sensitivity must be shown about the relationship of social hierarchy that exists between the Quechua-speaking peasant producers and the urbanized residents of the central towns, who, as we have already pointed out, often control commerce and marketing in the district. The hypothesis that the poorest producers are more likely to migrate suggests that they, not the middle peasants or the "richer" town mestizos, should be those who profit from marketing planning and assistance.

Other strategies that could bring about a more favorable position of the smallholder in the market lie in the realm of organization. Projects that are supported by the PADC

---

[41](...continued)
it to them at high.

should strengthen the hand of smallholders by helping them to organize their marketing and to articulate their demands. This might best be accomplished through producers' associations or marketing groups, possibly with provision of means to allow them to market their products directly, bypassing intermediaries--for example, the purchase of vehicles, or special contractual arrangements with transporters who would bid for the association's business. The alternatives should be worked out in relation to particular groups and objectives, but the overall goal is to develop ways of empowering the smallholders of the southern district in marketing their products, so that as a group they have greater weight in the determination of prices and conditions of sale.

The larger problem, of altering the overall terms of trade between country and city, is not a goal that the Program can itself achieve. Such terms of trade are grounded in broader national economic policies that assign to peasant producers the role of providing cheap food for the cities--a topic to which we shall return below (see, for example, Alvarez 1980, 1983).

4.5. Migration as a Strategy in a Diversified Peasant Economy

Migration to work for wages is a central issue for the PADC, since the intent of the development activities in the high valleys is to reduce the flow of migrants to the lowlands where coca leaf is produced. As we have seen, the pattern of labor migration is itself quite old, linked to the development and growth of capitalist enterprises both inside and outside Bolivia. Long-distance movement to sell one's labor for wages thus is not new. What is new--or at least renewed--is the scale of participation and the concurrent growth of capitalist labor markets in the cities, in agricultural enterprises, and in the coca-producing areas of the country. The seasonal migration and settlement in the Chapare that has grown up in the late 1970s and 1980s has brought with it a devastating focus on coca production because of the relatively high profits and wages obtainable from the leaf and from its processing. Population in the Chapare has thus increased from about 11,000 in 1950 to as many as 290,000 in 1987 (Blanes 1987:220; USAID/Bolivia 1987:5).

Rates of migration to the Chapare from the southern district and Tarata have not been definitively established through research, but a preliminary estimate from 1987 suggests that about 1 in 3 of heads of household left the area that year to work in the coca-producing areas of northern Cochabamba department.[42] We must, of course,

---

[42] This figure is an approximation from a survey of 400 smallholder households carried out by staff of the Secretariat for the Development of the Bolivian Tropics in the area around Aiquile. Unfortunately, the survey suffered from a series of design flaws that (continued...)

distinguish between the temporary labor migrant and those smallholders who have left the highlands (even if only semipermanently) to establish a primary or secondary productive unit in the lowlands--clearing land, planting coca, and installing themselves as residents there. The forthcoming studies will confirm or modify our figures and help us to analyze more adequately the social and economic characteristics of migrants.

It is assumed that the temporary labor migrant is typically young, male, and poor.[43] If we focus on the age group of young men between the ages of 15 and 30, preliminary estimates for the southern district suggest that the percentage who migrate is considerably higher than the figure mentioned above; informal measures suggest that as many as 75-80 percent of this group migrate for short periods to the Chapare. Given the risk of illness, abuse, and arrest in the Chapare, individuals, as has already been suggested, generally resort to migration only if they are economically disadvantaged in their home communities. They may have less land than their neighbors, or may not be as active in commerce or artisan production. Temporary migrants are likely to go alone or with several friends and may not stay in the Chapare for an extended period. Rather, they makes themselves available for whatever short-term labor may appear--harvesting coca, carrying, weeding, or working through the night in a *pisada,* where coca leaf is transformed into low-grade cocaine paste. Their goals may be modest: they may hope to save enough through their sojourn in the Chapare to invest in land or in some capital good, or simply to purchase some consumer item. Economic considerations, always fundamental in migration decisions, appear to outweigh other considerations for the temporary migrants; such motives as upward mobility, educational advancement, and family ties, which cross-cultural research shows to be important in cases of rural-urban movement (De Jong and Fawcett 1981), appear to be less important.

A second group whom the Project hopes to affect are households who have established themselves more permanently in the Chapare. When Blanes studied lowland migrants in the early 1980s, he found that most were young families in their period of growth, with a complex division of labor among family members and wives playing a central role in marketing (Blanes 1987:224-229). If life becomes too chaotic and insecure in the Chapare for these people, and if programs of repression succeed in keeping coca prices below the cost of production, such families may be encouraged to return to their

---

[42](...continued)
make its results less than reliable. For one thing, the average age of those interviewed--all were male--was 35 years; given the overall youth of the population and the short life expectancy, as well as the fact that older heads of households in other areas are known to stop migrating, this result undoubtedly understates migration rates.

[43] Certainly, popular opinion holds that this floating population is largely made up of young men, teenagers, and those in their early twenties.

home areas, especially if they see that development activities have increased their likelihood of earning a decent living.

If the PADC discovers through research that there are clearly demarcated class correlations, which are linked to the propensity to migrate so that wealthier peasants, commercial farmers, and townspeople are less likely to migrate than the poorest smallholders,[44] then the need to focus project activities on the poor is reinforced. Investments that do not improve the poorest stratum's economic position (or that inadvertently undermine it) may well exacerbate, and not diminish, migration. It is thus necessary to confront the various proposed activities of the PADC with two questions: who migrates to the Chapare, and what impact would the proposed activity have on that migration?

4.6. Migration and Natural Resource Management

Migration patterns out of the highland communities also reflect the relationship between the multiple constraints on smallholder agriculture and perceived ecological decline in the areas of origin. For lowland areas of Central America, deterioration of the ecological underpinning of agriculture is alarmingly clear (Collins and Painter 1986). While any observations at this juncture about the impact of changes in highland agriculture on the environment must be tentative, we can point to several factors that may lead, in the future, to diminished agricultural productivity in the highland valleys of southern Cochabamba and that must be taken into account in the planning of projects in the area.

First, such deterioration should not be attributed to a lack of knowledge or understanding on the part of peasant producers. We can assume that they are masters of a complex "peasant science"[45] that guides them in their actions. Brush (1987) has noted that in many areas of the Andes, larger populations than most scientists believe advisable have managed to secure a livelihood without significant environmental damage, through careful management strategies. Andean agriculturalists are highly versed in crop varieties, methods of water control, the use of organic fertilizers, the structure and composition of soils, and a host of other technical issues.

This knowledge, derived through millennia of practical experimentation, serves

---

[44] This was the situation encountered by Deere and de Janvry in Cajamarca, Peru, in the mid-1970s, when they found that migration and wage labor was a much more important source of income for the poorer landholders than it was for wealthier peasants and farmers (1979:605).

[45] The term appears in Watts (1987).

them in the day-to-day management of their fields and ensures a consistent return for their efforts in spite of difficult climatological conditions. Control of frost and the ability to take advantage of microecological niches is an Andean specialty. Complex decision-making throughout the agricultural cycle, which adjusts actions to variations in rainfall, temperature, and numerous other conditions, is taken for granted.

Yet ecological decline may occur even when farmers have the knowledge needed for good management. Bernstein has suggested the idea of a "reproduction squeeze" to link the unequal exchange that smallholders experience and ecological decline (cited in Watts 1987). The deteriorating terms of trade between commodities produced by peasant farmers or wages they receive, and consumption items purchased, lead them to restrict consumption and/or intensify production. If they do the latter, the poorest peasants, who are the most affected, may "overexploit" their own land and labor to increase their incomes. This leads to a reduction in fallowing cycles, the use of more marginal lands, or an unsustainable "mining" of the agricultural resources at their disposal.

Labor availability plays a role in potential ecological deterioration. If, in order to improve their income, households have assigned a significant proportion of their labor resources to wage labor, either within the home area or in migrant labor zones, maintenance of farm infrastructure or traditional management arrangements may be forgone in favor of activities that more directly yield income. When labor migration becomes generalized, it may also have repercussions on wider organizational practices beyond the individual household, practices that serve to maintain the social infrastructure. The absence of laborers at key moments may deter those who remain at home from undertaking such activities as communal cleaning of irrigation canals or wall building. While yields may remain unaffected for a while, in the long term the agricultural foundation, and thus the general ecological potential, is diminished. Especially in work associated with water control, failure to care for the infrastructure may lead to consequences beyond lowered yields, such as silting, erosion, and run-off flooding.

This deferral of infrastructural work due to labor migration may, as we suggested previously, become a vicious circle: smallholders opt to migrate in order to earn money, at the expense of the upkeep and repair of their agricultural infrastructure. As time passes, the resulting decline in production forces them more completely into the migratory pattern.

A shift to more extensive agricultural and herding techniques, which require less labor, may be another effect of labor migration. Thus, smallholders in arid areas may decide to expand their flocks of goats and sheep in the effort to ensure a subsistence base, abandoning elements of a more intensive production regime. Since more men than women migrate, herding, which is usually in the hands of women and children, may be perceived to be the best option for increasing savings and income. Larger herds, especially of small ruminants, will put even greater pressure on the brush and small trees that typify

this arid zone, leading to a loss of slope vegetation, increased erosion, and less humidity.

A second major pressure on the uncultivated areas of the region is the collection of firewood. Smallholders collect wood for their own uses, and they also sell it to urbanites, particularly in the areas around the two towns of Aiquile and Mizque. While harder to tie directly to patterns of migration, the sale of firewood is another source of income in the attempt to sustain the diversified smallholder economy.

Several indicators in the Mizque-Campero area reveal that deforestation is already a serious problem. Those who collect fuel report that they spend more time and travel farther to gather it. Several older peasant farmers reported that when they were young, the slopes around the town of Mizque, now denuded and brown, were covered with brush and trees. Erosion is increasing throughout the area, carrying away riverbank fields and widening the river bed, thereby shrinking the amount of land usable for agriculture. The towns of Mizque and Omereque are regularly threatened by flooding in the rainy season, which is thought to be caused by faster runoff in the upper reaches of the region's rivers due to the clearing of ground cover.

Watershed management studies, planned for 1988 but not carried out, still need to be done. Other plans being formulated for expanding the forest products component in the High Valleys activities include establishment of communal tree nurseries and reforestation of the area using, commercially valuable species. What needs to be done, however, is to develop means of linking these efforts both to the realities of available labor and to current herding and agricultural practices. For example, reforestation programs require acceptance and support by all. Both women and children herd animals; if they are not active participants in such projects, these programs will fail. Reforestation projects must consider the issue of incentives, such as the production of economically valuable tree species for rotational harvest, the planting of forage species, the right to use protected trees for house building or chicha brewing, or even a trade-off of sponsoring a highly desired community project in the valleys for community cooperation in forestry activities. The goal of maintaining vegetation around a dry stream bed many miles away from a community, for water management and conservation purposes, is not likely to win community acceptance in the absence of economic incentives.

Other factors that relate the overall constraints of the smallholder economy and migratory patterns to ecological decline will doubtless be discovered in the course of forthcoming research in the southern district. These relationships must undergird project planning in the area as it develops.

5. ECONOMIC DEVELOPMENT AND THE WAR ON DRUGS

The Chapare Regional Development Project has decided to expand its activities into the highlands because of perceived links between the kinds of economic and ecological constraints just discussed and migration patterns to the Chapare. We return, then, to the Chapare, where we began, and to the issue of the perceived future role for the Chapare in the Bolivian economy, because it is the vision of the Chapare held by the different actors in the story that conditions their response to the "coca/cocaine dynamic," as Bolivian government officials like to call it.

U.S. policy in relation to Bolivia has, at present, one overriding goal: to control and eventually suppress drug trafficking in cocaine. It is difficult, to say the least, for U.S. policymakers (especially those unfamiliar with the country) to envisage Bolivia in any way except as the source of what is perceived to be the mushrooming and potentially uncontrollable problem of cocaine and its derivative, crack. The spectacle of murders in drug disputes in the streets of Washington, or gang activities in Oklahoma City, shapes at a profound level the distrustful attitudes that most North Americans express toward Bolivia. Policymakers and development specialists alike are thus confronted with political pressures to achieve what seems on the surface a relatively simple goal: to eradicate coca leaf. Given these pressures, U.S. policy continually runs the risk of falling into a narrowly defined police strategy, which is that of attempting to cajole and compel the government of Bolivia into taking repressive action against the source of coca leaf, the small producers--a relatively powerless group that is easier to control than the larger traffickers.

But most authorities--presumably U.S. Embassy policymakers included--recognize that the political realities of Bolivia do not allow success for a simple plan of eradication. An alternative has been adopted that entrusts to the development experts the role of implementing projects and improvements in the Chapare, as a counterbalance to paramilitary operations. It would be overly pessimistic to assign a wholly cynical motivation to those who are carrying out development activities in the Chapare; individually, many are dedicated professionals who argue that, in the long term, the dependence on coca production can be broken in favor of a more benign tropical agriculture. Yet the reality remains that the threats of repression by U.S.-financed and -trained UMOPAR police and other forces of control are an ever-present background to any attempts to further development goals.

Moreover, while coca production will remain legal in the Chapare for many years, attacking the source remains a primary U.S. policy objective. In this context, development efforts in the Chapare become, in the last analysis, a rather small carrot, while the underlying stick is the threat of repression and eradication. Development activities in the Chapare--and in the "Associated High Valleys" ("associated" both in the realities of migration and labor use as well as in the decision-making of AID)--are thus restrained by changing evaluations of the situation in relation to drugs.

The route of eradication via gradual and peaceful substitution, which is to say, the route of solving the problem through economic development, clearly is an attractive one. Yet the irony of this course of action is that it attempts to reverse what has been for Bolivia the basis of its economy for centuries. In many ways, the cocaine industry continues the long-standing pattern of raw materials export, which has been at the base of the Bolivian economy from colonial times to the recent past. The dependence on cocaine export is parallel in many respects to the mining economy, and to the export of rubber, quinine, and other tropical products, except that in this case the processed commodity is illegal. Notwithstanding, the impact of cocaine export on social life--on the mobilization of labor, the distribution of wealth, the distortion of national productive patterns, the creation of enclaves--is very similar to the impact of legal export commodities in other Third World countries. Cocaine brings with it the supposed benefits and the real harm that commodity exports create in underdeveloped countries around the world.

Similarly, export commodity production often, though not always (exceptions are coffee and cocoa), relies on labor migrants as a primary basis of its work force. We also find a continuation in the Chapare of well-established patterns in Bolivia: the scheme of lowland development in Santa Cruz, for example, also relies on cheap labor from highland communities. As has been argued for some time (Deere 1976, de Janvry and Vandeman 1987, Kahn 1978, Wallerstein 1979), wages for migrant workers who are smallholders at home are often artificially low since the capitalist enterprises that employ them do not bear the costs of familial reproduction and support. As in the case of unequal exchange within commodities markets described above, this is yet another of the "multifarious ways peasants have subsidized the export sector" (Larson 1988b:77) as well as the national capitalist economy. This condition of surplus extraction in the labor market is another facet of peasant producers' lack of power to affect the terms of trade with the wider economy. Increased participation in the labor market through seasonal migration, forced by the necessity to diversify and encouraged by governmental policy, becomes virtually inevitable for a large percentage of the rural producers in the highlands.

Except for its illegality, then, coca and cocaine present many of the same labor demands and marketing characteristics of other export crops. The pressures on lowland export agriculture in Bolivia are especially great now that the traditional source of exchange revenues, silver and tin mining, is no longer the basis for the export economy. The production of agricultural commodities for the international market is therefore a replacement for tin and silver, and here, as elsewhere in Latin America, the system relies on the semiproletarianization of peasant farmers through their seasonal participation in

labor markets.[46]

This reality therefore make doubly difficult the policy requirement of singling out one tropical product and attempting to reverse the productive dynamics around it. The current labor migration to the lowlands was not initiated by coca leaf,[47] and it will not end even if coca production were to disappear. It has been U.S. development policy, generally and in the case of Bolivia, to support the expansion of highly capitalized commodity exports. The PADC thus finds itself adopting an approach that goes against forty years of efforts to develop export agriculture in the lowlands. In this case, U.S. development planners will need to rethink their past support of intensified, capitalized agroindustry in order to strengthen a sector that has consistently been ignored in Bolivia, highland peasant agriculture. Such are the ironies--the contradictions--that the PADC must face, and that make the prospects for success less bright.

Finally, the conflict remains between those who see the Chapare as a fragile environment that can only sustain a limited population (greatly exceeded by the expansion of the past decade for coca leaf production), and those--continuing in the development perspective of past Bolivian governments--who would work to stimulate and expand settlement in the area (although at the same time maintaining that the economy underlying expanded settlement should not be based on coca leaf).

The Program for the Alternative Development of Cochabamba and the Chapare Regional Development Project are caught in the midst of that debate. At one level, the PADC's emphasis on the communities of origin of Chapare migrants pushes it in the direction of strengthening small-scale, semi-subsistence agriculture, a major departure from past policies in relation to agriculture, and one of the first development initiatives sanctioned by the Bolivian government that attempts to stimulate peasant agriculture and discourage migration to the lowlands.[48] Yet, as we have already pointed out, faith in the lowlands is not easily shaken: recent events within the Chapare Regional Development Project, such as the dramatic lowering of conditionality, the amount of coca that must be cut down before Chapare residents are eligible for development assistance, create incentives for lowland settlement of the sort that reformulating the CRDP for work in the Associated High Valleys was designed to discourage.

---

[46] In some cases, as in Colombia coffee production, peasant agriculture provides the basis for export commodities. Of course, in other areas peasants become fully proletarianized as workers on large estates and plantations.

[47] Although one could argue with some accuracy that, centuries ago, much migration to the lowlands did revolve around coca production.

[48] At the same time, however, a new paved highway between Cochabamba and Santa Cruz via a lowland route through the Chapare continues under construction.

6. REFERENCES CITED

Alfaro Lazo, R. N.
1981 Movilidad espacial de la fuerza de trabajo en el Valle Alto de Cochabamba:1971-1978. M.A. Thesis. Quito, Facultad Latinoamericana de Ciencias Sociales (FLACSO).

Alvarez, E.
1980 Política agraria y estancamiento de la agricultura en el Perú, 1969-1977. Lima: Instituto de Estudios Peruanos.

1983 Política económica y agricultura en el Perú, 1969-1980. Lima: Instituto de Estudios Peruanos.

Bakewell, P.
1984 Miners of the Red Mountain: Indian Labor in Potosí, 1545-1650. Albuquerque: University of New Mexico Press.

Bascopé Aspiazu, R.
1982 La veta blanca: coca y cocaina en Bolivia. La Paz.

Blanes, J.
1982 De los valles al Chapare. Cochabamba: CERES.

Brush, S.
1977 The Myth of the Idle Peasant. In Peasant Livelihood. R. Halperin and J. Dow, eds. Pp. 60-78. New York, NY: St. Martin's Press.

1987 Diversity and Change in Andean Agriculture. In Lands at Risk in the Third World. P. D. Little and M. Horowitz, eds. pp. 271-289. Boulder, CO: Westview Press.

CIDRE
1987 Monografía de la provincia de Mizque. Cochabamba: Centro de Investigación y Desarrollo Regional.

Cole, J.
1985 The Potosí Mita, 1575-1700. Stanford: Stanford University Press.

Collins, J. L.
1983 Fertility Determinants in a High Andean Community. Population and Development Review 9:61-75.

1984 The Maintenance of Peasant Coffee Production in a Peruvian Valley. American Ethnologist 11(3):413-438.

1987 Labor Scarcity and Ecological Change. In Lands at Risk in the Third World. P. D. Little and M. Horowitz, eds., pp. 19-37. Boulder, CO: Westview Press.

1988 Unseasonal Migrations: The Effects of Rural Labor Scarcity in Peru. Princeton, NJ: Princeton University Press.

Collins, J. L. and M. Painter
1986 Settlement and Deforestation in Central America: A Discussion of Development Issues. Working Paper No. 31, Cooperative Agreement on Human Settlements and Natural Resource Systems Analysis. Binghamton, NY: Institute for Development Anthropology.

Crabtree, J., G. Duffy, and J. Pearce
1987 The Great Tin Crash: Bolivia and the World Tin Market. London: Latin America Bureau (Research and Action) Ltd.

CUMAT/SDTB
1987 Valle Alto, Cochabamba: Areas con probable potencial agrícola. La Paz: Capacidad de Uso Mayor de la Tierra.

Dandler, J.
1982 Economía campesina en los valles y serranías de Cochabamba: procesos de diversificación y trabajo. Cochabamba: CERES.

1984 Campesinado y reforma agraria en Cochabamba (1952-1953): Dinámica de un movimiento campesino en Bolivia. In Bolivia: la fuerza histórica del campesinado. F. Calderón and J. Dandler, eds. Pp. 201-239. Cochabamba: CERES and UNRISD.

1987 Diversificación, procesos de trabajo y movilidad espacial en las valles y serranías de Cochabamba. In La participación indígena en los mercados surandinos. O. Harris, B. Larson and E. Tandeter, eds. pp. 639-682. La Paz: CERES.

Dandler, J. and J. Balán
1986 Marriage Process and Household Formation: The Impact of Migration on a Peasant Society. Report prepared for the Population Council. La Paz.

Dandler J. et al.
1982 Economía campesina en los valles y serranías de Cochabamba: procesos de diversificación y trabajo. Cochabamba: CERES.

Deere, C. D.
1976 Rural Women's Subsistence Production in the Capitalist Periphery. Review of Radical Political Economics 8(1):9-17.

Deere, C. D., and A. de Janvry
1979 Demographic and Social Differentiation among Northern Peruvian Peasants. Journal of Peasant Studies 8(3):335-366.

Deere, C. D. and R. Wasserstrom
1980 Household Income and Off-farm Employment among Smallholders in Latin America and the Caribbean. Paper presented to the Seminario Internacional sobre la Producción Agropecuaria y Forestal en Zonas de Ladera en América Latina, sponsored by CATIE. Turrialba, Costa Rica. December 1-5.

de Janvry, A. and A. Vandeman
1987 Patterns of Proletarianization in Agriculture: An International Comparison. In Household Economies and Their Transformations, Morgan D. Maclachlan, ed. pp. 28-73. Landover, MD: University Press of America.

De Jong, G. and J. T. Fawcett
1981 Motivations for Migration: An Assessment and a Value-Expectancy Research Model. In Migration Decision Making: Multidisciplinary Approaches to Microlevel Studies in Developed and Developing Countries. Gordon De Jong and Robert W. Gardner, eds. New York: Pergamon Press.

Dickinson, J., M. Painter, M. Ehrlich, E. C. French, and J. Oosterkamp
1988 The Associated High Valleys Project in Cochabamba, Bolivia. DESFIL Working Paper. Washington, DC: Development Strategies for Fragile Lands.

Fifer, J. V.
1982 The Search for a Series of Small Successes: Frontier Settlement in Eastern Bolivia. Journal of Latin American Studies 14:407-432.

Flores, G. and J. Blanes
1984 ¿Dónde va el Chapare? Cochabamba, Bolivia: CERES.

Gill, L.
1987 Peasants, Entrepreneurs, and Social Change: Frontier Development in Lowland Bolivia. Boulder, CO: Westview Press.

Gordon, R. F.
1977 United States Aid to Bolivia, 1953-1972. Ph.D. dissertation. Government and Politics Department. University of Maryland. College Park, Maryland.

Harman, I. M.
1984 Women and Cooperative Labor in the Southern Bolivian Andes. Women in International Development Working Papers, No. 65. Lansing, Michigan: Michigan State University.

Harris, O. and J. Albó
1984 Monteras y guardatojos: campesinos y mineros en el norte de Potosí. La Paz: CIPCA (originally published 1974).

Hatch, J.
1981 Nuestros conocimientos: prácticas agropecuarias tradicionales en Bolivia. Volumen II: Región de los valles templados. Washington, D.C.: Rural Development Services and USAID.

Healy, K.
1986 The Boom within the Crisis: Some Recent Effects of Foreign Cocaine Markets on Bolivian Rural Society and Economy. In Coca and Cocaine: Effects on People and Society in Latin America. D. Pancini and C. Franquemont, eds. Pp. 101-143. Cambridge, MA: Cultural Survival, Inc.

Heath, D. B.
1969 Land Reform and Social Revolution in Eastern Bolivia. In Land Reform and Social Revolution in Bolivia. By H.C. Beuchler, C. Erasmus, and D.B. Heath. New York, NY: Praeger Publishers.

Hess, D.
1980 Pioneering in San Julian: A Study of Adaptive Strategy Formation by Migrant Farmers in Eastern Bolivia. Ph.D. Dissertation. Anthropology Department. University of Pittsburgh. Pittsburgh, PA.

Hillman, J.
1984 The Emergence of the Tin Industry in Bolivia. Journal of Latin American Studies 16:403-437.

Instituto Nacional de Estadistica
1984 Censo agropecuario nacional. Ms. Cochabamba and La Paz: Instituto Nacional de Estadística.

Kahn, J.
1978 Marxist Anthropology and Peasant Economies: A Study of the Social Structures of Underdevelopment. In The New Economic Anthropology. John Clammer, ed. New York: St. Martin's Press.

Klein, H.
1982a Bolivia: Evolution of a Multiethnic Society. New York, NY: Oxford University Press.

1982b Bolivia: una historia general. La Paz: Editorial Juventud.

Kline, David
1987 Bolivia: How to Lose the Coke War. The Atlantic 259(5):22-27.

Larson, Brooke
1988a Colonialism and Agrarian Transformation in Bolivia. Princeton: Princeton University Press.

1988b Bolivia Revisited: New Directions in North American Research in History and Anthropology. Latin American Research Review 23(1):63-90.

Los Tiempos
1989 12 July.

Mitre, A.
1981 Los patriarcas de la plata: estructura socioeconómica de la minería boliviana en el siglo XIX. Lima: Instituto de Estudios Peruanos.

OAS
1984 Integrated Regional Development Planning: Guidelines and Case Studies from the OAS Experience. Washington, DC: Department of Regional Development, Secretariat for Economic and Social Affairs, Organization of American States.

Painter, M.
1984 Changing Relations of Production and Rural Underdevelopment. Journal of Anthropological Research 40(2):271-292.

1986 The Value of Peasant Labour Power in a Prolonged Transition to Capitalism. Journal of Peasant Studies 13(4):221-239.

1987a Unequal Exchange: The Dynamics of Settler Impoverishment and Environmental Destruction in Lowland Bolivia. In Lands at Risk in the Third World. P. D. Little and M. Horowitz, eds. pp. 164-191. Boulder, CO: Westview Press.

1987b Social Issues in the Development of the High Valleys of Cochabamba, Bolivia. Social Science Report Submitted to USAID/Bolivia. Working Paper. Cooperative Agreement on Settlement and Resource Systems Analysis. Binghamton, NY: Institute for Development Anthropology.

Painter, M., O. Freudenthal, and F. Quitón
1984a Analysis of Small-scale Agriculturalists in Camargo. Report prepared for USAID/Bolivia. La Paz: U.S. Agency for International Development.

Painter, M., C. Perez C., M. Llanos A., S. Hamilton, and W. Partridge
1984b New Lands Settlement and Regional Development: The Case of San Julian, Bolivia. Working Paper 15. Binghamton, NY: Institute for Development Anthropology.

Pinto Amaya, E.
n.d. Estudio pluviométrico del Departamento de Cochabamba. Cochabamba, Universidad de San Simón, Facultad de Ciencias Agrícolas. Tésis de Ingeniero Agrónomo.

Platt, T.
1987 Calendarios tributarios en intervención mercantil. La articulación estacional de los ayllus de Lípez con el mercado potosino (siglo XIX). In La participación indígena en los mercados surandinos. O. Harris, B. Larson and E. Tandeter, eds. pp. 471-558. La Paz: CERES.

Pool, D. J., D. Adams, C. Boonstra, G. L. Morris
1986 Evaluation of the Chapare Regional Development Project. Gainesville, FL: Tropical Research and Development, Inc.

Rasnake, R.
1988 Domination and Cultural Resistance: Power and Authority among an Andean People. Durham, NC: Duke University Press.

Riviere d'Arc, H.
1980 Public and Private Agricultural Policies in Santa Cruz (Bolivia). In Land, People, and Planning in Contemporary Amazonia. F. Barbira-Scazzocchio, ed. Pp. 154-161. Cambridge: Cambridge University Centre of Latin American Studies.

Saignes, T.
1985 Los andes orientales: historia de un olvido. La Paz: CERES.

Scudder, T.
1981 The Development Potential of New Lands Settlement in the Tropics and Subtropics: A Global State-of-the-Art Evaluation with Specific Emphasis on Policy Implications. Washington, D.C.: Agency for International Development.

1985 A Sociological Framework for the Analysis of New Land Settlements. In Putting People First: Sociological Variables in Rural Development. M.M. Cernea, ed. Pp. 121-153. New York, NY: Oxford University Press.

Stearman, A. M.
1985 Camba and Kolla: Migration and Development in Santa Cruz, Bolivia. Orlando, FL: University Presses of Florida.

Urioste, M.
1987 Segunda reforma agraria: campesinos, tierra y educación popular. La Paz: Talleres CEDLA.

USAID/Bolivia
1987 Project Paper, Chapare Regional Development. Amendment 7. La Paz: USAID/ Bolivia.

USAID/MACA
1981 Encuesta agropecuaria de la región de los valles del sur de Bolivia. La Paz: U.S. Agency for International Development/Ministerio de Asuntos Campesinos y Agropecuarios.

Wallerstein, I.
1979 The Capitalist World-Economy. Cambridge: Cambridge University Press.

Watts, M.
1987 Drought, environment and food security: some reflections on peasants, pastoralist and commoditization in dryland West Africa. In Drought and Hunger in Africa, Michael H. Glantz, ed. Cambridge: Cambridge University Press.

Whiteford, M.
1981 Workers from the North: Plantations, Bolivian Labor, and the City in Northwest Argentina. Austin, TX: University of Texas Press.

Wiggins, S.
1976 Colonización en Bolivia. Sucre, Bolivia: ACLO.