Alternative Development and Supply Side Control in the Drug Industry: 

The Bolivian Experience*

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Introduction

Coca cultivation, cocaine manufacturing and the socio-economic and socio-political context in which these processes are taking place is receiving increasing attention from social science researchers. Within the debate on the production, trade and consumption of drugs in source countries, concern is shifting from policy analyses on the macro level to the study of the supply side processes on the local and sub-regional levels, and to the effects of the various strategies designed to influence supply.

The small-scale production of coca in the Andean countries did not develop into the 'cocaine business' until the mid 1970s. The industry began to boom by the early 1980s, showing spectacular growth in a context of increasing economic crisis and plummeting growth rates.

In the coca producing Andean countries, the state has been on the defence with its inability to fulfil many of its core responsibilities such as providing justice and personal security to its subjects. The situation has generated a process whereby the state and the system it represents is losing legitimacy. The growing gap between legality and socially acceptable behaviour has opened the door to widespread corruption and an explosive growth of criminal and non-criminal underground economies.2

The rise of cocaine production and trafficking form part of this development. Its illegality is greatly affecting the market structure and the strategies of the market parties involved – producers, sellers and consumers – and has turned violence into a resource whose real or potential use has become an almost 'normal' element of market competition. The enormous money interests at the various phases of production and trade have led the entrepreneurs involved to defend market positions at all costs.

Within two decades, coca growing has expanded from the relatively small areas where it was cultivated for traditional consumption to regions covering large parts of Bolivia, Peru and Colombia. Expansion in the near future into Ecuador, Venezuela, Brazil and Guyana is not unthinkable.

Coca is an 'easy' crop and coca cultivation does not require intensive preparation. The simple tasks of clearing the field by 'slash and burn', preparing the seedbeds, transplanting the seedlings, maintaining the field and harvesting

* This article is based on visits to Bolivia in 1992, 1994 and 1996 and on field research in the Chapare area in April-May 1996. I thank Alistair White, David Mansfield, Allison MacEwen Scott and Henri Bak for their support.
the leaves can easily be performed – and often are – by poor migrants with no agricultural background. Coca flourishes on steep slopes in poor soils that are often less suitable for the cultivation of other cash crops, does not need expensive inputs and is resistant to most diseases. The shrub matures rapidly. Depending on soil conditions and climate, the first crop of leaves is picked after eight to fifteen months. The leaves are harvested three to four times a year. Converting the leaves into coca paste involves a relatively simple process that does not require the use of complicated equipment. The processes to produce cocaine base and cocaine, though more complex, are not overly elaborate or difficult. The input in raw materials is produced locally, and most of the precursor chemicals used in the manufacture of coca paste, cocaine base and cocaine are easily obtained. In fact, the industry is perfectly adapted to the conditions of an underdeveloped rural economy: the manufacturing process is not capital intensive, does not have large economies of scale, does not require large amounts of skilled labour and uses production processes that are relatively easy to organize. The basic raw material is eminently marketable. Despite price fluctuations, coca cultivation guarantees a basic income to peasants in a way few other crops can. These characteristics explain the flexibility with which the industry has been able to respond to the fluctuations in demand in consumer countries, to changes in anti-drug policies and to repressive operations by the military and law enforcement personnel. They also explain why it has been so difficult to find an alternative to the industry.4

The most favoured strategy today of controlling the supply side of the drug industry in source countries is ‘alternative development’. It is being actively promoted by multilateral organizations, by the governments of source countries and by those countries that have become a preferred destination of the cocaine traffic. The objective of alternative development is to create the economic and social conditions to enable peasant households to realize sustainable levels of living that will eliminate the need for drug crop cultivation. The methodology is based on the integration of crop substitution, rural development and law enforcement initiatives.5 The emphasis on each of these components has varied between regions and also between donors in the field of development cooperation. The strategy as such was defined at the end of the 1980s in response to the failure to control coca supply through both the narrowly defined crop substitution projects and the more broadly defined integrated rural development programs.

However, alternative development has been less than a success. General economic and socio-political dynamics in source countries, international pressures to produce quick results in coca crop reduction and the economics of coca production undoubtedly have contributed to negative development. Research on the micro level has also shown that the results of alternative development programs are strongly affected by peasant household strategies, and by the ability of programme officers to take these strategies into account, to recognize the specific regional socio-economic, cultural and environmental circumstances.

DIRECO – Dirección de la Reducción de la Coca
IBTA – Instituto Boliviano de Tecnología Agropecuaria
PDAR – Proyecto de Desarrollo Alternativo Regional
UMOPAR – Unidad Móvil de Patrullaje Rural
es that influence household drug crop cultivation, and to incorporate these insights into their programs. Furthermore, despite considerable efforts to the contrary, coca cultivation has spread from the traditional areas to the colonization frontiers in Bolivia, Peru and Colombia.

Alternative development was expected to be more effective than the other approaches by combining a broad strategy of regional development with a policy of law enforcement that was to go beyond simple repressive action. At the core of this strategy was the recognition that the supply side in coca producing countries has complex economic, social, political and cultural dimensions in addition to the agronomy and micro economics of the industry. Thus, in the 1990s the strategy of alternative development was widened to include the development process in those regions that feed the migration to coca producing areas. At the same time, the growth of the legitimate sectors of the economy was supported through debt relief, balance of payments support, and preferential trade schemes. The idea behind these actions was that coca production feeds on marginal socio-economic and ecological conditions in areas weakly integrated into the nation state. A steadily growing legitimate economy in combination with a state apparatus responsible for providing basic needs would eliminate the necessity for drug crop cultivation. The international aid community wholeheartedly embraced alternative development as the strategy to control coca supply, and started financing programs in this area.

The programme of alternative development in Bolivia offers a good example and an interesting case of the almost insurmountable problems encountered by this strategy. It has been forcefully promoted in Bolivia by national and international parties involved in drug control. In this paper we will analyze the factors impacting on the effectiveness of alternative development as a strategy towards drug crop reduction, and conclude with a discussion of the various policy alternatives in the area of supply side control.

Bolivia’s Involvement in the War on Drugs: International Dimensions

Actions by the Bolivian government have long been related to the yearly bilateral agreements on drug control signed with the United States government. Failure to comply with these agreements leads to sanctions by the United States government under the term decertification. These sanctions consist of suspending all US assistance for the current and subsequent fiscal years until evidence of effective policies in combatting coca production, apprehending ‘coca criminals’, controlling money-laundering practices and monitoring the trade in precursor chemicals has been shown. Continued funding of the United States Agency for International Development (USAID) project and programme assistance has also been made dependent on compliance with the United States Foreign Assistance and Anti-Drug legislation as well as with the yearly bilateral agreements.

Concerning the main coca producing region of Chapare in Bolivia, the US government pressed for the establishment of a law enforcement agency directed towards coca eradication and crop substitution known as the Office of Coca Reduction (DIRECO), the deployment of a Drug Enforcement Administra-
tion (DEA)-trained police force, a Rural Patrol Unit (UMOPAR) of a thousand men, and an approved eradication scheme.\textsuperscript{11}

Law number 1008, introduced in 1988, constitutes the legal basis for coca eradication.\textsuperscript{12} It defines the parameters for coca cultivation, includes annual eradication targets, compensation, alternative development as a condition to eradication, voluntary uprooting of coca plants by manual and mechanical methods and the distinction – much desired in a traditionally coca-growing country like Bolivia – between legal and illegal coca cultivation. This broad and somewhat ambiguous piece of legislation offers wide opportunities for discretionary action by the Bolivian government and has led to a continuous process of interpretation and reinterpretation in negotiations with the various actors involved. The law, enacted under strong international pressure, was preceded by the involvement of the US government in the area of narcotics control assistance dating back to 1972. In the seventies, US activities focused on assistance to those police organizations combatting drug production and trafficking. Year by year the involvement – through USAID – deepened and expanded to other areas to include the study of alternative crops, rural development in the coca-growing regions and other areas connected with them through migration, as well as general economic support and military assistance.\textsuperscript{13}

The implementation of the eradication and compensation programme as defined by Law 1008 was assigned to DIRECO, which sought signed agreements with individuals and communities. The total acreage to be eradicated was set at 5,000 hectares per year. Eradication was to be compensated per hectare of 40,000 plants by payment in cash of US$2000 and an amount of US$500 to be allocated for development assistance ‘programmes of immediate impact’: roads, schools, drinking water and cattle breeding. The achievements of DIRECO in eradication are impressive, at least on paper. Between 1986 and 1996, 32,383 hectares of coca, 1,901 hectares of new coca and 245,510 m\textsuperscript{2} of seedbeds were reported eradicated.\textsuperscript{14} However, the US Department of State has maintained that between 1986 and 1994, the total area planted actually increased from 35,915 to 49,158 hectares, and that in fact 1.5 hectare of coca was replanted for each hectare eradicated (see Table 1).

The difference between ‘gross’ and ‘net’ reductions in coca cultivation has been a source of continuous debate between the United States and the Bolivian governments. The eradication objectives defined in the yearly bilateral agreements are interpreted by the US in terms of net reductions. These are established according to the estimates of new cultivations based on satellite images of sample areas. According to the US government, only in 1990, 1991 and 1992 were net reductions realized, although they did fail to meet the objectives. The Bolivian government was forced to increase repression and to give more attention to the destruction of new cultivations and seedbeds. The net reduction realized in the year 1990 appears related to the slump in the coca price which sparked a rush on DIRECO by peasants seeking to eradicate their coca in exchange for the compensation offered.\textsuperscript{15} In other years, aggregate changes in the level of coca cultivation show little variance in response to widely fluctuating prices of coca leaf.\textsuperscript{16} Apparently the lack of alternative crops that have a secure market as well as expectations concerning future price increases of coca will continue to motivate rural households to maintain one or two acres
of coca as a safety-net. In addition, increasing numbers of coca growers are compensating income losses resulting from falling coca leaf prices by switching to basic processing activities and producing coca paste and cocaine base in simple jungle labs. Confronted with these phenomena, the Bolivian government has shown an increasing tendency to use force during eradication activities. 17

Table 1: Total coca cultivated and eradicated in Bolivia, 1986-1995

<table>
<thead>
<tr>
<th>Year</th>
<th>coca cultivated (hectares)</th>
<th>coca eradicated (hectares)</th>
<th>new coca eradicated (hectares)</th>
<th>coca seedbeds eradicated (sq. metres)</th>
<th>price per carga (Bs)</th>
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<tr>
<td>1986</td>
<td>35,915</td>
<td>303</td>
<td>0</td>
<td>0</td>
<td>151</td>
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<tr>
<td>1987</td>
<td>41,402</td>
<td>1,042</td>
<td>0</td>
<td>0</td>
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<tr>
<td>1988</td>
<td>50,400</td>
<td>1,475</td>
<td>0</td>
<td>828</td>
<td>152</td>
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<tr>
<td>1989</td>
<td>55,400</td>
<td>2,439</td>
<td>167</td>
<td>9,554</td>
<td>153</td>
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<tr>
<td>1990</td>
<td>58,400</td>
<td>7,806</td>
<td>281</td>
<td>55,763</td>
<td>75</td>
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<tr>
<td>1991</td>
<td>53,386</td>
<td>4,628</td>
<td>859</td>
<td>39,029</td>
<td>164</td>
</tr>
<tr>
<td>1992</td>
<td>50,649</td>
<td>4,957</td>
<td>191</td>
<td>24,092</td>
<td>160</td>
</tr>
<tr>
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<td>49,600</td>
<td>2,252</td>
<td>147</td>
<td>13,500</td>
<td>250</td>
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<tr>
<td>1994</td>
<td>49,158</td>
<td>2,132</td>
<td>107</td>
<td>4,932</td>
<td>238</td>
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<tr>
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<td>-</td>
<td>5,436</td>
<td>146</td>
<td>96,910</td>
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<tr>
<td>1996a</td>
<td>-</td>
<td>1,215</td>
<td>14</td>
<td>1,781</td>
<td>217</td>
</tr>
</tbody>
</table>

Sources:
2. Data DIRECO-Chapare, April 1996.
3. Data DIRECO for January-March 1996 only.

The major donor to alternative development, both nationally and in the region of Chapare has been USAID. The government of Bolivia has provided the counterpart funds that paid for the organizations in charge of planning and implementing the eradication and alternative development effort in the department of Cochabamba. USAID's funding for both direct and indirect alternative development projects between 1983-1997 has totalled US$567 million. Its support of alternative development in Bolivia has operated at the micro and macro level. At the micro level USAID has supported agricultural research, given marketing assistance, advanced credit, constructed rural infrastructure and organized services to help farmers shift from illicit to legal activities. Trade and investment initiatives have also been promoted in order to create jobs and promote trade in the legal economy. At the macro level the US government has offered balance of payments support to cushion the economy during its transition away from coca-derived income and to encourage free market economic growth. In the Chapare region specifically, the programmes of alternative development have absorbed more than US$200 million between 1989 and 1996. Most funds were provided by USAID and the United Nations Drug Control Programme (UNDCP).18 This avalanche of aid money gave the Chapare the appellation ‘most funded region’ in Latin America.

What has this development effort produced? USAID's activities in the field of alternative development were channelled through two major projects: the Chapare Regional Development Project (CRDP) and the Cochabamba Re-
rational Development Project (CORDEP). The CRDP became operational in 1984 and was given the task to reduce the dependence on coca production by providing direct assistance, constructing infrastructure and securing access to markets for alternative crops. The project began with a total budget of US$40.1 million, but suffered great delays in its implementation. In practice, the development objectives were subordinated to the goals of the drug control campaign. Advances in payments were made conditional to advances in coca eradication.

In 1986, after an evaluative study had established that the drug situation in the Chapare had grown totally out of control, the project was redesigned to include a strategy directed towards the improvement of economic and social conditions in the Cochabamba uplands, which was the expulsion area of migrants wanting to move to the Chapare. Subsequently, in 1987 half the budget originally assigned to the CRDP was reallocated to the Associated High Valleys Project (AHV) to stem the flow of migrants into the Chapare. The new CRDP, however, suffered from institutional weaknesses that undermined its effectiveness as a development organization and thus had difficulty coordinating its various development activities. It practised a top-down approach towards the peasant population that excluded active involvement and participation by the sindicatos, bypassing the legal provisions in Law 1008 that explicitly recognized them as legitimate actors. In addition, the CRDP became the object of political machinations.

In 1991 USAID launched CORDEP with the intent to correct some of the errors that CRDP had made. Greater emphasis was given to the problems of crop substitution and the development of national and international market outlets for alternative crops. It selected six crops that were to be promoted as substitutes for coca. In addition, access to credit was facilitated and management of projects was improved. A system of monitoring and continuous evaluation of project activities was introduced. The project operated with a budget of US$120 million for a five-year period; one third was to be contributed by the Bolivian government. Part of these government efforts were channelled through the Programme of Alternative Regional Development (PDAR), a Bolivian government agency.

The Bolivian Institute of Agricultural Technology (IBTA), was organized to function under the CRDP umbrella as an alternative development instrument. But because of its academic orientation, it focused on the technological aspects of the cultivation of certain crops and the maximisation of yields under controlled conditions and gave little attention to the marketability of any of the crops it was experimenting with.

International actors other than the United States and Bolivian governments have also participated in the 'war of drugs'. The most prominent was the United Nations Drug Control Programme (UNDCP) which initiated activities in 1985 through a US$21 million programme directed toward the reduction of coca cultivation in the Yungas region. After 1988 it began developing projects in the physical and social infrastructure (roads, electricity, drinking water, basic sanitation) and in the agricultural and agroindustrial sectors in the Chapare region. Contrary to the actions of the Bolivian government and those of USAID, its programs were not conditional to the realization of eradication targets. Over the years this led to tensions between UNDCP and the US gov-

Through the years, the eradication strategy has been one combining the 'carrot' and the 'stick'. The 'carrot' consists of cash compensation, 'immediate impact' development projects and elements of the wider programme of alternative development. The 'stick' is wielded by the anti-drug police unit UMOPAR which is responsible for interdiction efforts. They are supported by the Bolivian Air Force and Navy operating on the rivers in the department of Beni. UMOPAR is heavily subsidized by the United States government with an annual contribution between US$10 and US$15 million. It is trained and supported by United States Army Special Forces and DEA personnel. Plans to involve the Bolivian army in counter-narcotics operations met widespread resistance in Bolivian society, and were halted in 1992.24

**Alternative Development in the Chapare: A Mission Impossible?**

The Chapare region25 in the Department of Cochabamba was populated in the 1950s by waves of migrants directed towards the Eastern part of the country following a policy of national integration initiated by the Bolivian government. The 1963 National Colonization Plan designated the Chapare as a preferred destination. As people were encouraged to migrate to the region, especially those living in the desperately poor areas on the Andean Altiplano, the Chapare experienced rapid population growth. In the course of this process, many migrants remained part of a 'floating population', i.e. they 'floated' between living in the Chapare region and areas of expulsion in the Cochabamba uplands. In 1987 at the time of the coca boom, the Chapare population had grown to a total estimated between 196,000 and 234,000, the difference having to do with the difficulty of calculating this floating population.26

The colonization process in Chapare had three different modalities, each resulting in different settlement patterns, interests and production strategies: permanent migration, semi-permanent migration and agricultural-worker migration. There are differing attitudes towards alternative development amongst these categories. For semi-permanent migrants, a reduction in the importance of coca would limit the possibilities of combining agricultural activities in their communities of origin with those in the Chapare. For agricultural workers, less coca would mean less employment and more need to look for other destinations of migration. There is also a significant number of ex-miners amongst the permanent and semi-permanent migrants escaping from a marginal existence in their comunidades on the Altiplano or from narrow valleys in western Bolivia.

All these migrants have brought their own backgrounds of fixed organizations of comunidades and peasant and miners' sindicatos with them to the Chapare.27 Here, the sindicatos – often named after former mining camps – have come to represent and defend communal interests. The 607 sindicatos in
Chapare are organized into 54 centrales, which in turn are united in five federations. Through the years, the sindicatos have been the core institutions in Chapare society. Often, and in the absence of state institutions, the sindicatos have filled the institutional void, organizing access to land, taking care of essential infrastructure such as constructing rural roads, schools and health centres, maintaining order in the community and, above all, providing a link to the political system and official institutions at regional and national levels. In the 1980s the federations of coca growers became one of the most important pressure groups in the country, filling a gap left by the decline of miners' unions.

Coca growers have not always presented a united front on the question of coca eradication and alternative development. The major federations have maintained an ironclad resistance to eradication unless totally compensated by the successful introduction of other marketable crops and/or other economically realistic alternatives. Minor federations have generally been more conciliatory.

Peasant Household Strategies

In the Chapare, various categories of colonos have developed their own survival strategies in which coca plays a crucial role. When organizing alternative development programmes, it is indispensable to have a greater understanding of the role and function coca has as a subsistence guarantee. Knowledge of the various household strategies is the key to understanding crop diversification and the importance of coca cultivation.

The family household is the principal source of labour in the Chapare. As family labour becomes available, land under cultivation expands. The larger the family, the more possibilities there are of cultivating an additional part of the plot with crops that require more work (banana, pineapple, palmheart, rice). Harvesting the coca leaves may require contracting outside help who may be paid in cash or a share of the crop. Those who manage a poza — a small coca paste producing lab — contract additional labour called los pisacocas. Here are the areas of work for the floating population of temporary migrants who move back and forth to the Chapare following the calendar of tropical agriculture. Crops generating a cash income allow the possibility of contracting outside labour. Coca is obviously such a crop.

Over the last thirty-five years, the Chapare peasant economy has developed based on the size of family plots from between ten to twenty-five hectares. Approximately one hectare is used to cultivate food crops for family consumption, another hectare is cultivated with coca and/or other market crops, and the rest lie fallow (crops are rotated). There is no mono-cultivation of coca excluding other crops; it seldom occurs that one family household manages more than two hectares of coca. In the eastern part of the Chapare, a relatively less humid region, peasant families may manage a few cows for milk in addition to the activities mentioned above.

The fallow fields and a large proportion of the area not being used at any time for crop cultivation has to do with the generally low quality of the soil and the lack of an economic incentive to intensify the existing cultivation by using fertilizers. The present pattern of cultivation results from a clear rationale and logic found in situations such as the Chapare where the frontier is shifting and
ample possibilities for settlement remain available. In contrast, more fertile soil covering an area of some 30,000 hectares sells at US$1000 per hectare. It is more suitable for banana cultivation, one of the crops that has been promoted within the programme of alternative development as a substitute for coca.

New peasant families settling on the Chapare frontier cut down sections of the forest and sell the valuable trees to sawmills in Cochabamba in order to earn a start capital to buy seeds and simple tools. After a small part of the family plot is cleared by the ‘slash and burn’ method, rice is planted as a subsistence crop because it yields the best results given the initial fertility of the recently cleared areas. Coca is either planted with the rice, or later in combination with other foodcrops like yuca or maize. As the coca plants grow, cultivation of the other crops is shifted to other areas. The agricultural census held from July 1992 to June 1993 estimated 18,940 hectares of only coca, and 6,214 hectares of coca planted in combination with other crops. The total of 25,124 hectares comes to much less than the 35,300 hectares estimated by DIRECO in 1993.32 The census counted 25,268 agricultural units cultivating coca amongst the total number of 32,986 units registered.33 Most peasant households without coca eradicated their coca with financial compensation and support for alternative crops or one cow in exchange for one hectare of coca) under the programme of alternative development. Such households are found in areas where a better quality of soil permits cultivation of alternative crops with a certain degree of success and profitability. Peasants give up coca only when they have an alternative source of income which can liberate them from the continuous harassment of security forces and permit them to survive, even though they may have to work harder and earn even less from alternative crops.

The cultivation of coca leaf sold either in the local market or directly to the narcos generates a gross annual income from US$1500 to US$1700 per hectare (1996). Average coca growers produce 1.9 tons of coca leaf annually in three to four harvests and earn from US$35 to US$55 per 50kg load, or from US$700 to US$1100 per ton. The more successful alternative crops cultivated on the more fertile soils can produce comparable gross incomes, but need a considerably higher investment in man-hours and costly inputs such as fertilizers and pesticides. In a situation of almost unlimited access to new land, the amount of work expended to achieve a certain level of income is more important than the production per hectare. Moreover, alternative crops suffer from the hot and humid conditions and require fungicides, pesticides and herbicides. The gross annual income per hectare of coca permits the household members to cultivate some subsistence crops and experiment with some alternative crops. It pays for the children’s schooling, buys other staples and seeds, fertilizer, tools, and animals that cannot be self-produced. However, it is not enough to enable the household to advance up the social ladder and leave peasant life behind.

Crop substitution programmes often operate with the objective of generating an annual gross household income from US$2500 to US$5000. This goal is not within the reach of most individual households. An annual gross income of US$2000 under ideal conditions of climate and soil and with a successful, marketable alternative crop would seem more realistic. Agricultural labour to be contracted outside the household has to be paid a daily wage between US$4 and US$5. These rates are high for Bolivia and – leaving aside the other factors
involved – may have already complicated a transition from coca to those alternative crops that would need a larger input of additional labour. The high level of agricultural wages results in part from the demand for additional labour in harvesting and transporting coca leaves and producing coca paste, and in part from labour scarcity resulting from the many opportunities for an individual to clear his own plot.

Another factor has recently emerged to further complicate a transition to other crops. More peasants have begun to produce basic coca paste and cocaine base themselves, for the production process is very simple. Gross annual household income based on the production of cocaine base can increase from US$1700 to about US$2300.\textsuperscript{34} It is not clear how many households are involved in such operations. Official sources put the number of pozas, the primitive coca paste producing laboratories, at 10,000 – an estimate that may be somewhat inflated.\textsuperscript{35}

\textit{Crop Substitution: a Realistic Option?}

The physical conditions in the Chapare region are less than favourable for agriculture. The climate is excessively humid: in certain areas an average annual precipitation of 6000mm has been registered. Deforestation under these extreme physical conditions leads to rapid exhaustion of the soil and danger of lateritization and saturation with aluminium, leaving a toxic and barren soil with little trace of phosphorus and potassium. The lack of a sustainable exploitation of the available resources and subsequent soil degradation leads to a continuous extension of the agricultural frontier and concomitant destruction of the Chapare ecosystem. Since crops have to be rotated constantly, intensive agriculture is not possible in most areas. The total area applied to agricultural activities or forestry of any kind covers 420,000 hectares; the total number of peasant households number approximately 33,000.

The projects supporting crop substitution have been in operation since 1987. An important role in this area has been played by the aforementioned Chapare-based Bolivian Institute of Agricultural Technology (IBTA), financed by USAID. Over the years IBTA has attempted to promote a range of other crops as an alternative to coca, all of which have failed. In the process, the peasants have lost any confidence they may have had in the programme. However, since 1990 IBTA has been pursuing a different strategy by promoting the substitution of coca with a number of new crops that – according to the results of their research – can successfully be grown in certain areas of the Chapare, depending on soil conditions, and that at the same time can be marketed nationally and internationally. These crops are banana, pineapple, palmheart, \textit{maracuya}, and black pepper. IBTA has concentrated on producing the seedlings of these crops and relinquished its research and extension work in the area of subsistence crops (rice, corn, yuca) to several national NGOs operating in the region and to the American USAID-financed NGO of Planning Assistance.\textsuperscript{36}

The problems that presented themselves are so typical for coca-growing regions in Latin America. A transition to alternative crops is hampered by the inaccessibility of the regions, their distance from the markets, the lack of physical infrastructure (roads, water, electricity), lack of technical assistance, lack of access to inputs (seedlings, fertilizer, pesticides, etc.). In short, the entire
contextual support system for such a transition is often lacking, and even in the most favourable situations the competition with coca is not easy. Those in the Chapare who have planted banana under optimal conditions (best soils, high input of fertilizers, pesticides, etc., improved varieties) need two hectares of bananas to match the gross income from one hectare of coca. Furthermore, the initial investment for bananas is three times and the use of labour 1.7 times as high as for coca. Pineapple, presented as a crop with the potential to secure a competitive household income, is a similar case. The other alternative crops that were recommended require extensive care, inputs in fertilizers and disease-controlling chemicals, in addition to technical financial support and the organization of market outlets.37

Crop substitution has been supported since 1988 by a credit programme. The problems accompanying crop substitution have led to a high degree of delinquency in the credit accounts (45 per cent).38 A 1992 evaluation study shows that participants in the credit programme who eradicated coca and doubled the area taken into cultivation and applied crop diversification, in the process suffered a drop of 30 per cent in their net income, while investing an extra effort of fifty workdays per year.39

It comes as no surprise that the great majority of peasants in the Chapare continue to cultivate coca. Yet, during our fieldwork we discovered amongst them a general willingness to accept the eradication of coca as long as they have another source of income that guarantees survival and allows them to earn a small extra income, even if they would have to work much harder. The crop substitution programmes promoted until now have not been able to provide such a guarantee. The assumption of a direct link between the programme of alternative development and the economic compensation given for each hectare of eradicated coca has proved to be highly unrealistic. It was planned that the compensation for one year’s income from coca would immediately generate the income to be produced by alternative crops without taking into consideration the time these crops needed to grow and ripen. In addition, the seedlings of the alternative crops were often unavailable in sufficient quantities. As a consequence, those peasants who agreed to eradicate their coca often cultivated coca elsewhere or replanted it after being confronted with the problems of crop substitution.

Within the programme of alternative development in the Chapare was the development of agro-industries as a supplement to crop substitution. International organizations, amongst them UNDCP and the United Nations Industrial Development Organization (UNIDO), were especially active in this area. In 1988, the UNDCP-programme in the Chapare started with five small agro-industries: two plants to produce banana and yuca meal, two plants to produce aromatic oils and flavourings and one plant to extract glucose from bananas. When these projects failed to meet objectives, the UNDCP transferred the administration of the plants to UNIDO in 1992, which in turn passed the ownership of the plants to the association of producers in 1995. At that time only one of the plants was in operation. Other initiatives to industrialize coffee, tea, rubber and cacao were taken in the late 1980s, but today the only one still functioning is Agroté, a small tea factory operating at 40 per cent capacity. It continues to be hampered by low yields of tea plantations in the area.

The dairy factory project ‘Milka’ was started in the Chapare in 1988 at an
investment of over four million dollars, which at the time represented 83 per cent of the total amount of agroindustrial investment in the Chapare. The plant was oversized and is presently operating at twelve per cent capacity. It appears to be another ‘white elephant’: a technically advanced facility unable to operate at full capacity for lack of inputs, and producing a line of products difficult to sell on the local market.

Several plants were designed as pilot projects (the banana, yuca and *kudzú* meal plants) but lacked the dimensions to have a decisive impact, even if the planning had been right. Regrettably this was not so. For now, the banana, yuca and *kudzú* meal plants are paralysed. They had been operating with unsuitable technology using sun energy and woodfuel as energy sources. The meal that the plants were producing could not compete on the local market with similar products of the area, notably cornmeal. The plants producing aromatic oils and flavourings such as menthol and citrin had major problems securing basic inputs due to plant disease.

In 1992 (when all plants were in production), the total gross value of agroindustrial production in Chapare was calculated at 4.2 per cent of the projected value. Its gross production value was equivalent to the value produced by 220 hectares of coca. The failure of these projects of agro-industrial development has been another factor undermining the peasant’s confidence in crop substitution as part of a programme of alternative development.

All these activities in agro-industry appear to be isolated efforts, implemented without a connection to a broad plan of development within which they should have had a logical place and function. Other new initiatives in the area of agroindustry are being developed: a fruit juice plant (on the basis of citrus fruits), palmheart canning plants, and packing plants for banana and pineapple. However, here as well, there is no logical connection to a sectoral strategy or to a more general development plan for the region.

*Alternative Development in the Chapare: Evaluative Comments*

The alternative development programme in the Chapare has mobilized great sums of money. Between 1989 and 1995 US$220 million have been spent in the region, mostly by USAID and UNDCP, but the results do not live up to the expectations generated by great amounts invested. The peasants in the region continue to live their precarious existence of subsistence agriculture under the worst living conditions and suffer from the effects of increasing military pressure. Local and national institutions involved in alternative development continue to confront a seemingly hopeless task of eradicating 5000 hectares annually. In the absence of a viable alternative, the peasants in the Chapare try to survive either by resisting the reduction of their plots planted with coca, possibly by transferring the cultivation to a more distant, less accessible area, or – in case of eradication – diversifying their economy by expanding the area covered with traditional crops. Out-migration to other areas such as Santa Cruz or the northern Argentina is another option. Also, an increasing number of peasants maintain their households and their level of living by processing the coca leaves into coca paste.

The programs of crop substitution have failed to create an alternative for coca cultivation and those peasants who have participated feel defrauded. The
projected results have never been achieved. Profitability has remained at low levels due to low quality soils, lack of inputs, the problematic nature of the crops recommended by IBTA/Chapare, the lack of technical assistance and other kinds of support (e.g. there is not one bank in the entire Chapare). The small volumes of alternative crops that had been produced did not find a suitable market. The various programs were introduced without any technical and economic feasibility studies, which should have included an investigation of the marketability – either in the internal or the external market – of the various crops that were recommended. The ecological consequences of the activities that were undertaken in the area were never taken into consideration. There was and is no systematic and sustainable management of forest resources.41 The consolidation of systems of production replacing coca cultivation is a long-term process during which the cultivation of subsistence crops has to be guaranteed and support services have to be organized. Both are at the moment almost totally lacking.

The failure of the agroindustrial enterprises to meet their objectives and to serve as a spearhead for further agricultural and agro-industrial development within the context of alternative development should figure prominently in any study on the blunders of international development aid. The absence of an adequate general institutional framework for the planning and execution of development, the lack of coordination between the institutions and organizations working in the region, and the non-existence of integration between alternative development and sustainable development have made these development initiatives isolated attempts with a high risk of failure.

It is tempting to attribute the failure of alternative development to a deficient planning system operating with overly ambitious goals to be accomplished in an unrealistically short time span without adequate institutional support for the organization and development of those activities that could be alternatives to coca growing. And indeed, against the background of the accumulated international experience in rural development, it is hard to imagine being able to change the agrarian structure and practices of an entire region in a few years without an adequate study of the viability of this strategy in terms of environmental factors, specific characteristics of the promoted crops, their economic productivity, markets to be developed, and institutional support.

However, this is too easy a conclusion. The programme of alternative development within the present national and international political and economic conjuncture has many characteristics of a mission impossible. Despite all the rhetoric, financial aid for crop substitution as part of long-term development assistance has received less attention and a much smaller percentage of the programme's total budget than law enforcement, military counter-narcotics support and forced eradication. It is clear that a strategy which does not give proper attention to development issues will be dominated by the laws of economics. Where coca growing is suppressed, it will undoubtedly reappear in another neighbouring area. The flexibility of drug traffickers will continue to contribute to a situation where coca growing moves from place to place.

Heavy international pressure to show results in terms of hectares of eradicated coca has worked against a development-oriented strategy based on detailed studies at the micro level. These studies would have to analyze the motivations and circumstances determining household coca cultivation, the influence of
development efforts and law enforcement interventions, and the priorities individual households take into account when considering the alternatives to the cultivation of coca.

Instead of such an analysis, coca growers have been approached as a homogeneous group, ignoring the diversity amongst them and the multi-functional role coca cultivation has had for the individual household. The socio-economic differences amongst the peasant population, the variety in migration background and the degree of permanence in settlement, all factors impacting on crop decisions, are being ignored. Rather, alternative development programs have adopted a uniform approach, emphasizing a high economic return per hectare as the one and only motivating force in crop decisions. However, the motivations of individual households are varied and often will go beyond simple economic rationality. This also helps to explain the variations in coca cultivation at the level of the household, as well as at the regional and subregional levels. In practice, compensation and crop substitution may primarily favour those households that are already better off and which produce coca solely as a source of extra income. In their case, social and legal pressures may work better. In the case of those totally dependent on their income from coca for survival, more attention should be given to the cultivation of food crops and off-farm employment.

Recognition of the crucial role the sindicatos play in the lives and labour of the peasants should be basic to the definition of any strategy in the Chapare that tries to convince peasants to convert from coca cultivation to alternative crops. Traditionally, those national and international institutions involved in alternative development have shown a preference for top-down planning and execution of policies and have consulted the unions and federations of coca growers only when threatened by heavy conflict. The sindicatos, however, are the true representatives of the peasant households and their logical partners in the definition of a differentiated response – depending upon motivation and resources – to the efforts at coca eradication. They could also assist in developing a more appropriate balance between the ‘carrot’ (compensation, alternative development, etc.) and the ‘stick’ (law enforcement, forced eradication) for each of the segments of the coca-growing peasant population.

Supply Side Control in the Drug Industry: What Can Be Done?

Drug production and trade have become big business in Latin America in just a few decades. One country after the other has become involved in the production and trafficking of cocaine (Peru, Bolivia, Colombia), marihuana (Mexico, Jamaica, Colombia), opium (Mexico, Guatemala, Colombia) and other natural or synthetic drugs. Other countries (Haiti, Dominican Republic, Bahamas, Surinam, Ecuador and Argentina) have become participants in the drug trade, and developed into banking centres where proceeds from the drug trade are being laundered (Panama, Bahamas, Uruguay) or served as exporters of precursor chemicals (Brazil).

Estimating the volume of all these activities and their impact on the economy and society of the countries involved is not easy. Precise information on the size and structure of the industry is hard to obtain. Data are manipulated for
political reasons. They are either inflated or deflated – depending on the objectives to be pursued – in a way often bordering on statistical sensationalism. In addition, production and trade show considerable fluctuations as traffickers respond to changes in anti-drug policies and to repressive operations. Finally, there are considerable differences in impact amongst individual drug-producing countries. The total amount earned by the Andean countries in cocaine production and trade is estimated at between US$8 and US$12 billion. The corresponding street value in the United States and Western Europe amounts to a sum between US$46 and US$74 billion (1993). It is estimated that about 50 per cent of the export income will find its way back to the source countries.

The general economic effects of these activities in the Andean countries can be divided into a spending effect and a structural effect. Both are closely interrelated and the overall impact will determine the balance between them. The drug industry has undoubtedly rendered a contribution to economic development in source countries but its macro-economic role has also been a source of headaches for policymakers. The inflow of narco-dollars has boosted hard currency reserves, has facilitated the servicing of the foreign debt and has provided funds for infrastructural development. To launder the revenues derived from the drug trade, traffickers have invested in certain sectors of the economy, especially in construction, public utilities and banking. In Colombia, they have also invested in industrial and service-oriented sectors of a more productive nature. In addition, the drug sector has created employment: in Colombia 150,000 jobs, in Peru 175,000 and in Bolivia 75,000, according to rough estimates.

On the whole, analysts of the economic impact of the drug trade on source countries have alerted the leadership of those countries to the grave negative effects. Traditional export sectors suffer, as do in fact all other areas of the economy that are not directly connected to the production and trafficking of cocaine, resulting in a loss of output and employment and in a deteriorating trade balance. The continual influx of narco-dollars poses a danger of inflation, overvalued exchange-rates for the national currency, a worsening of export positions and reductions in economic growth. It also favours spending on imports rather than domestic goods.

Nevertheless, recent analyses have shown the impact of the drug industry within the national economy of Peru and Bolivia to be declining. The disruptive macro-economic effects are lessening. The cocaine portion of the economy of Colombia has remained considerable and the sector continues to threaten the stability and integrity of the socio-political system. In Peru and Bolivia the cocaine industry is no longer a threat to the state. The growth of the legal economy has opened opportunities outside the drug industry and has also created the conditions for a repatriation of drug-capital. The feverous activity in building construction in the big cities is undoubtedly linked to this phenomenon.

What can be done in the area of supply side control given the interests involved? On a macro level it appears that the most important international actor – the government of the United States – has harboured doubts concerning the possibilities of control from the very beginning. The international programs within the US federal drug control budget consumed only four per cent between 1981 and 1995 and this share of the budget is declining. In the 1990s,
the amounts budgeted also fell in absolute terms from US$707 million in 1992 to US$371 million in 1996. More and more, the responsibility in supply side control is left to the governments of the drug producing countries themselves. The government of the United States is limiting its contribution to support though the DEA and the United States Army Special Forces personnel; compliance with the annual bilateral agreements on eradication is maintained, however, under threat of decertification.

To wipe out coca cultivation, to destroy the jungle labs, to track down the traffickers – and possibly to extradite them to the United States – is no simple affair in the political conjuncture of the Andean countries. Under the present policies, the coca-cultivating peasant population has borne the brunt of the 'war on drugs'. The results in term of a net reduction in hectares planted with coca have been questionable. This has been the case in Bolivia, as well as in Peru and Colombia. The absence of substantial results from the supply control strategies – contrary to what one would expect – does not seem to be a subject of major concern amongst the agencies involved. The policies that are being pursued continue to be internationally sanctioned, despite widespread doubts about their effectiveness by multilateral organizations, the US government and the governments of source countries. For source countries these policies have created access to international development cooperation. Certainly in the case of Bolivia and Peru, this sector has become an important source out of which development projects in the coca regions can be financed. Paradoxically one would need a constant and important presence of illegal cultivation of coca to guarantee continued access to these international sources of funding.

Supply side control finds itself trapped in a 'Catch 22' situation in which it seems as if actions combating coca production are producing the opposite results. The drug industry is a fiercely dynamic one run by entrepreneurs who are daring risk-takers. Their flexibility in adapting to changes in the conditions under which the industry operates is formidable. Paradoxically again, the rising prices of coca at the various stages of production caused by interdiction programs in source countries may have increased the attractiveness of the industry for newcomers. Thus, interdiction may in practice turn into a coca price support program. Under these circumstances, coca leaf-producing peasants are encouraged to increase yields on existing plots or move their coca to more inaccessible areas. Forcible eradication meets with strong resistance by the coca-growing peasants, their unions (Bolivia) or the guerilla movements who have offered them protection (Peru, Colombia). Finally, voluntary eradication and concomitant compensatory programs as part of alternative development provide the physical infrastructure (roads, water, electricity) that also serves the coca sector.

The Andean governments are crucial and essential actors in the implementation of programmes of supply side control. Although convinced of the necessity to respond to international pressures and to contribute to the counter narcotics effort, their weakness makes it difficult for them to comply. Each policy action affecting supply side controls has the tendency to generate a constituency that benefits from it and has an interest in having the policy sustained. These constituencies become entrenched and resist change. The state then avoids confrontation and turns to other urgent priorities in less controversial areas that have more public support.
Prospects for a ‘solution’ seem bleak. No demonstrable success has been achieved in either purely repressive actions directed towards coca cultivating peasants and cocaine producers or the more peaceful, cooperative strategies of crop substitution and alternative development. The only strategy not yet tried is one directed towards regionally based, long-term extensive rural development programmes managed through intensive, personal and patient involvement with the communities and households involved. This would be the designated course of action, given the fact that all other alternatives have long been exhausted.

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Notes

1. In the last few years quite a number of studies have been published. We would like to mention: Peter H. Smith, ed., Drug Policy in the Americas, Boulder, Co.: Westview Press, 1992; Bruce, M. Bagley & William O. Walker III, eds, Drug Trafficking in the Americas, Boulder, Co.: Lynne Rienner, 1994; James Painter, Bolivia and Coca: A Study in Dependency, Boulder, Co: Lynne Rienner, 1994; La Mond Tullis, Unintended Consequences: Illegal Drugs and Drug Policies in Nine Countries, Boulder, Co.: Lynne Rienner; Maria Celia del Toro, Mexico’s ‘War on Drugs’, Causes and Consequences, Boulder, Co.: Lynne Rienner; Francisco, E. Thoumi, Political Economy and Illegal Drugs in Colombia, Boulder, Co., Lynne Rienner, 1995; Patrick, L. Clawson & Renselaer, W. Lee III, The Andean Cocaine Industry, New York: St. Martin’s Press, 1996.

2. Colombia presents an extreme case of such development. See Thoumi, Political Economy and Illegal Drugs in Colombia, pp. 2 ff., 133.


4. Thoumi, Political Economy and Illegal Drugs in Colombia, p. 131.


9. The Foreign Assistance Act of 1961 and the Anti-Drug Abuse Act of 1986 and 1988 commits the United States Government to certify drug source and transit countries on the basis of ‘cooperation’. Under this legislation source and transit countries are required to achieve ‘the maximum reduction in illicit production determined to be achievable’, enact legislation concerning extradition, money laundering and monitor precursor chemicals to gain a ‘cooperative status’ and, consequently, be eligible for aid. Failure to gain the status exposes source countries to a number of mandatory and discretionary sanctions.

25. There is some confusion as to the limits of the Chapare region; administratively the Chapare is a province of Cochabamba. In the literature – and also in this paper – the Chapare refers to the Tropical Zone of Cochabamba which also, however, includes part of the provinces of Carrasco and Tiraque.
30. Amongst the households, two per cent own less than five hectares; twelve per cent own between five and ten hectares, twelve per cent own more than 25 hectares, 74 per cent own between ten and 25 hectares. Source: data Instituto Nacional de Estadísticas cited by *Plan Maestro del Trópico de Cochabamba*, p. 18.
31. Coca plantations are absent in the Chapare. Individual households continue to plant only a small acreage of coca, although the size of their plot would allow for more and the price of coca – despite its fluctuations – would make it attractive. One explanation is that households may prefer to plant an acreage that they can manage by themselves without having to hire additional labour. A more decisive factor may be the fear of repression and eradication without compensation by the authorities.
32. The census data are based on estimates the peasants made the size of their own plots and the acreage of each of the crops cultivated; the DIRECO data are based on satellite information and field studies made by DIRECO personnel.
33. Generally, each household will have one plot to cultivate, but some will have more than one. This may include large families with excess labour or families that have eradicated their coca with compensation and have planted again elsewhere on some remote location. This last
mentioned phenomenon seems to happen frequently – according to DIRECO/Chapare (interviews May 1996).

34. The calculations are as follows (data source from interviews UMOPAR/Chapare, May 1996). 359 kg of coca leaf is needed to produce one kg of coca paste or cocaine sulphate. One hectare of coca annually produces an average of 1.9 tonnes of leaf which can be converted into 5.3 kg of cocaine sulphate. In the Chapare one kg of cocaine sulphate sells between US$470 and US$500; after having passed the exit control on the road to Santa Cruz its worth is US$750; at the Brazilian border at Puerto Suárez it is US$950. The average annual income in the Chapare for one hectare of coca converted into cocaine sulphate is 5.3 [*] 485 = US$2570. From this amount the costs of the chemicals (lime, kerosine and sulphuric acid) and personnel (generally four workers, per poza) should be deducted. Estimating those amounts at US$50 per kg of cocaine sulphate leaves an annual net income per ha of coca converted into cocaine sulphate of US$2570 dollars [–] (5.3 [*] 50) = 2290 dollars. In individual cases, according to UMOPAR, production can increase to 7.5 kg cocaine sulphate and an annual net income of US$3500.

35. The pozas are very simple constructions that normally are in use no longer than three days at a time; they are easy to rebuild and transfer to other locations.

36. For an evaluation of IBTA/Chapare, see Painter and Bedoya Garland, Institutional Analysis of the Chapare Regional Development Project, pp. 34-36, interviews IBTA/Chapare, May 1996.

37. Data source: Plan del Trópico, Cochabamba; Field interviews, April/May 1996; an extensive analysis of the results of crop substitution for each of the crops recommended by IBTA has been presented in Menno Vellinga, Cocaine, Dutch Disease and Alternative Development. Utrecht: Geographical Studies of Development and Resource Use, 1997, no. 1, pp. 18-21.

38. Data source: Plan del Trópico, Cochabamba.


40. Data source: UNDCP Head Office La Paz, Plan del Trópico, Cochabamba.

41. The annual deforestation rate for the occupied area is 3.6 per cent which will lead to complete deforestation of the region in less than thirty years. Cf. La Mond Tullis, Unintended Consequences, pp. 169-170; the ecological consequences of the cocaine industry add to this situation. Painter quotes a study by a Bolivian environmental pressure group which had calculated that in 1988, during the coca boom, 30,000 metric tonnes of toxic chemicals had been discarded in addition to 127,000 tonnes of chemicals and saturated coca leaf; see Painter, Bolivia and Coca, pp. 65-68.


45. Clawson and Lee, The Andean Cocaine Industry, pp. 4-33, see also La Mond Tullis, Unintended Consequences, p. 2.


