

THE ANTI-DRUG POLICY, AERIAL SPRAYING OF ILLICIT CROPS AND THEIR SOCIAL, ENVIRONMENTAL AND POLITICAL IMPACTS IN COLOMBIA

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INTRODUCTION

Colombia's impetus to cultivate cannabis emerged as a result of the eradication actions undertaken since 1975 under the aegis of 'Operation Condor' in Mexico. Between 1976 and 1979, Colombia was the main producer of marijuana, its chief market being the United States. Due to this shift in production and as an extension of the measures taken in Mexico, Colombia has been the focus of the forced-eradication policy through herbicides since 1978.

The decision to spray illicit crops from the air also depended on the changes taking place in Colombia as a producer of illegal raw materials. Colombia's illegal drug economy began to focus on the processing and exporting of cocaine after a temporary decrease in cannabis production, which relocated to Mexico in 1989. The raw materials needed for this were imported from huge coca fields in Peru and Bolivia.

As a result, the socioeconomic, political and military importance of the different drug-trafficking organizations increased throughout the eighties. The main purpose of anti-drug policy was to dismantle the organized crime groups active in the illegal drug trade. Extraditing traffickers to the U.S. became a pivotal issue at a governmental level. The terrorist objective of the traffickers was to wage war against the various government agencies and civil groups combating them.

In the early 1990s, new conditions transformed the Colombian scenario that had been typical of the 1980s:

1. The drug economy became diversified with the presence of opium poppy crops, the processing of heroin, and its trafficking to the U.S.

2. The war waged against the government by the first drug cartels intensified, giving way to an increase in the number of regional organizations exporting drugs

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to new markets in Western and Eastern Europe and the U.S. This period culminated in the death of Pablo Escobar, 'drug baron' and head of the Medellín Cartel.

3. The presence of these new, decentralized trafficking organizations stimulated the demand for raw materials, such as basic cocaine paste and poppy latex. This, added to the farming sector's economic crisis at the end of the 1980s, led to an unprecedented growth of coca-bush fields. Colombia became the world's leading producer of coca in the 1990s. With this transfer of production, a new scenario was created, as Colombia became the chief producer of coca in the entire Andean region.

4. As the number of coca fields increased, a shift in demographic patterns typical of coca-producing regions took place. It was characterized by growing rural and urban migration to environmentally fragile zones typical of the Amazonian environment, where most of the coca leaf is produced, or to zones where opium poppy thrives, which are located in the upper Andean forests and highlands. The proliferation of illicit crops fostered decisions to fumigate these areas, actions that adversely impacted these communities that had gradually become singularly dependent on the drug economy.

From the time that marijuana was first planted in the 1970s, Colombia has been subjected to illegal eradication trials that have been carried out with the tacit support of the government. Officially, the government has also conducted its own aerial spraying with herbicides. Both legal and illegal spraying and open-field trials with paraquat (1978), triclopyr (September 1985) and tebuthiuron (April 1986) have taken place. The use of glyphosate is legal and it has been applied since 1986.¹

The pressure exerted by the U.S. government to fumigate with herbicides other than glyphosate increased in Colombia by the end of the 1990s, due to the failure of this chemical alone. Consequently, experiments with imazapyr were carried out (August 1998) during the last few years, trials with and applications of hexaxinone (Velpar) were conducted, and tebuthiuron (Spike) came into use once more.

Criticism of the environmental impacts of these glyphosate substitutes, however, together with the poor results achieved in supply reduction effects, have stimulated the initiation of biological methods. The Colombian Amazon region is now under threat as an experimental site for the application of the *Fusarium oxysporum* fungus. It is meant to destroy coca leaves in the Andean zone, according to research results of the U.S. Department of Agriculture and the U.S. State Department. Both the United Nations Drug Control Policy (UNDCP) and the Colombian government initially backed this research under the political aegis of "Plan Colombia."²

The biological actions pose multiple and complex questions regarding their impacts on human health and the environment: It is impossible to ensure that the fungus will only act on the coca leaf; its effects on the ecological balance (aerial and soil micro-organisms, fauna, flora, etc) are unknown; a sudden increase in the presence of a given organism may affect the entire tropical forest area; a great number of *Fusarium oxysporum* species are pathological and contain over 250 enzymes that may be activated or deactivated, depending on environmental

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conditions and on the presence of human beings with low defenses in the area. These factors, in effect, characterize the Amazon region's population, including the indigenous communities. This biological approach seriously threatens biodiversity and the environment.³

The increase in diverse illicit crops becomes more and more complex due to the territorial control exerted by different armed groups that are involved in the production and processing of illicit substances. Control is also being exerted along both ground and air routes used to send drugs outside the country and to smuggle arms. The primary players in the country's armed conflict obtain financial gains in this fashion, which they then use to strengthen their logistics and war-waging capacity.

U.S. anti-drug policy influences the Colombian armed conflict both directly and indirectly. The line between counter-insurgency and anti-drug policy has become blurred. The current policy has evolved from actions meant to curtail drug demand into national security considerations, reinforcing military involvement in Colombia's armed conflict. This situation even affects fumigation decisions.

*AERIAL SPRAYING AND THE SUPPLY REDUCTION POLICY IN COLOMBIA*⁴

In the best scenario, the aerial spraying of herbicides meant to cut off the supply of raw materials used to produce illegal substances – by physically destroying plantations in their natural state – only manages temporarily to halt illegal production. These actions do not affect demand for the raw materials needed to produce psychoactive substances, however. Thus, the demand for basic cocaine paste, or for poppy latex to produce heroin, only serves to stimulate the development of new, multiple, and diversified sources to compensate for the temporary decrease in illegal raw materials.

The forced-eradication policy has simply displaced the problem, multiplying the environmental damage caused by installing and maintaining illicit crop acreage and making the first transformation of raw materials required by drugs exporters. In this sense, one of the weakest aspects of the illicit-crop destruction strategy lies in its virtual lack of influence on the demand for basic cocaine paste and poppy latex needed for processing cocaine and heroin.

As time passes, the successful interruption of the flow of raw materials lasts between four months to a year in areas where forced eradication is undertaken. This is the time needed to regenerate the crops that were not totally destroyed or to plant new crops. Aerial spraying does not permanently affect the illegal crop cycle. This explains why, regardless of the most dramatic forced-eradication efforts, the strategy never attains the success expected of it. Furthermore, planting new sites is almost always accompanied by an increase in the price of raw materials, which in itself promotes more initial production and processing.

The supply-reduction effort has proven to be a failure because it does not modify the structural mechanisms involved in the illegal cycle in any substantial way. The U.S. General Accounting Office acknowledged this failure as far back as 1979: the

structural dimensions of the anti-drug battle affect other scenarios besides crops. These unintended consequences are either underestimated, or the capacity of the so-called source countries to influence them is negligible.⁵

Between 1992 and 1998, 2,438,336 liters of glyphosate were sprayed on the national geography. Table 1 reveals that the following crops were affected:

TABLE 1
GLYPHOSATE SPRAYED IN COLOMBIA DURING THE 1992-1998 PERIOD

Crop	Liters	Gallons
Opium poppy	540,979	142,912
Coca	1,897,357	501,228

Source: Colombian Antinarcotics Police

Altogether, a total \$53,211,497 was spent on the glyphosate spraying program between 1992 and 1998. Of this money, \$24,483,783 was used to purchase the herbicide and \$28,727,714 to finance the operation. These sums were spent in an attempt to control 19,472 hectares of opium poppy (in 1992), and a coca area of 46,400 hectares (in 1994).

Comparison of the amount of opium poppy hectares planted in 1992 with the number that existed in 1998 are problematic, however. None of the anti-drug authorities has been able to define accurately the size of this area. The characteristics of opium production and the fact that legal crops may camouflage illicit crops make it impossible to calculate accurately the total number of hectares planted. In a highly inconsistent fashion, the authorities estimate that, for 1999, 6,100 hectares were planted.

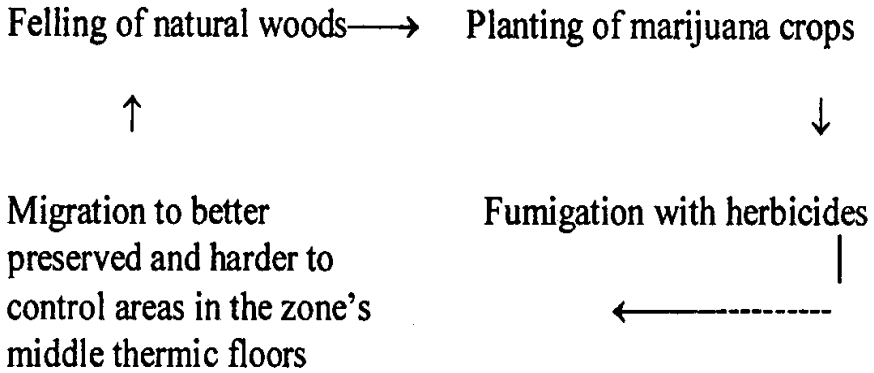
In the case of coca, it is easier to determine the degree to which the supply-reduction strategy has failed. Between 1992 and 1998, \$19,051,676 was spent fumigating coca crops with glyphosate, yielding operational costs in the order of \$22,354,164. This means that there was a total expenditure of \$41,405,840 without counting the investment in aircraft, anti-narcotic bases and interdiction infrastructure, although the data needed to estimate these types of costs do exist.

According to the U.S. Departments of State and Defense, nearly \$625 million in equipment (helicopters and fixed-wing aircraft, weapons, ammunition, training and logistical support) were supplied to the Colombian National Police and the Colombian Armed Forces between the fiscal years of 1990 and 1998. The end result of this investment was staggering; during that period, the initial coca-growing area actually tripled in size. This suggests that the nearly \$41 million in overhead costs and \$625 million in military aid, corresponding to almost an entire decade of funding, were a total waste, given their stated objectives.

As suggested earlier, there are structural conditions inherent in the supply-reduction policy that help to explain its continuing failure: In the first place, forced

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eradication, like most anti-drug actions, promotes crop displacement. This was first established during efforts undertaken in the 1970s, when the Sierra Nevada de Santa Marta region was sprayed in an attempt to eradicate cannabis. At that time, the problem simply shifted from the lowlands to the highlands and, thus, from a strategic consideration to an environmental one. It negatively affected the ecological balance in water-producing woodland areas, since new illicit crops were planted to replace those that had been eradicated. This method of handling the problem is graphically represented below.



This phenomenon has now been observed for more than 25 years, during which time the illegal drug economies and the policies designed to combat them have coexisted.

In the second place, the forced-eradication strategy of aerial fumigation has never had any far-reaching effects in Colombia. The dynamics of world drug markets reveal that new temporary incomes are provided in the areas where eradication actions have previously been undertaken. This certainly holds true for cannabis and opium poppy in Colombia and is likely to be the case for coca as well.

*ILLICIT CROPS IN COLOMBIA AND THE POLICIES DESIGNED TO COMBAT THEM
THE CASE OF CANNABIS PLANTS*

Regarding the forced eradication of cannabis crops in the Colombian Sierra Nevada de Santa Marta, a behavior similar to that formed in many other poppy and coca growing areas may be identified. This change has been positively marked since 1983, for production has increased, although fumigation accounted for 40% to 77.6% of eradicated areas (see Table 2).

TABLE 2
PRODUCTION AND FORCED ERADICATION OF MARIJUANA CROPS IN COLOMBIA
1982-1987 (HAS.)

Year	Production(a)	Eradication (b)	% Eradication/ production	% Increase in production	% Growth over the difference in a-b
1982	6,500	857	13.2	-	-
1983	9,400	1,048	11.15	46.15	66.6
1984	10,000	4,000	40	6.4	19.53
1985	8,000	6,000	75	-20	33.3
1986	12,500	9,700	77.6	56.25	525
1987	13,085	8,000	61.13	4.7	367.3

Source: Estimates made by the author based on information provided in the International Narcotics Control Strategy Report INCSR

From 1988 onward Colombia began to decrease its cannabis-growing areas, but this is more easily explained by the loss of competitive leverage on the international market than it is by fumigation efforts. In effect, Mexico overtook Colombia as a major supplier of cannabis beginning in 1989, even managing to increase the world supply of the psychoactive substance (see Table 3). Even if the decrease in cannabis-growing areas in Colombia could be attributed to fumigation, the policy's mid-term weakness is remarkable. By 1993, there had been a significant resurgence in cannabis plant crops, once again surpassing the Mexican production. This trend continued throughout the 1990s.

Finally, the reduction of cannabis-growing areas between 1988 and 1989, the increase of opium poppy fields beginning in the 1990s, and the substantial increase in the amount of coca-growing areas in the middle of the nineties – the last two substances pulling the greatest economic weight – resulted in aerial spraying more often being carried out on coca and opium poppy production areas.

THE CASE OF OPIUM POPPY

In the early 1990s, several Washington government agencies and some leading U.S. newspapers made serious allegations about Colombia's diversification of illegal drug production. They contended that these changes were motivated by increased demand for heroin in the U.S. at the end of the 1980s and the beginning of the 1990s. These claims were empirically suggested by visible indicators such as increases in drug purity, lower, more sustainable prices and, above all, an upsurge in drug abuse-related hospitalizations. While the U.S. made these accusations, the

TABLE 3
PRODUCTION OF MARIJUANA IN LATIN AMERICA
1988 - 1996 (Tons)

Year	Mexico	Colombia	Jamaica	Belize	Others	Total
1988	5,655	7,775	405	120	3,500	17,445
1989	30,200	2,800	190	65	3,500	36,775
1990	19,715	1,500	825	60	3,500	25,600
1991	7,775	1,650	641	49	3,500	13,615
1992	7,795	1,650	263	0	3,500	13,208
1993	6,280	4,125	502	0	3,500	14,407
1994	5,540	4,138	208	0	3,500	13,386
1995	3,650	4,133	206	0	3,500	11,489
1996	3,400	4,133	356	0	3,500	11,389

Source: International Narcotics Control Strategy Report, U.S. Department of State

traffickers simultaneously waged a high-profile war against the Colombian government in their all-out struggle against extradition.

In effect, Colombian racketeers have successfully managed to penetrate and profit from the latest trend in the North American illegal drug market. What first appeared as a quiet presence of Colombian heroin eventually came to be regarded as a threat to U.S. security. This point of view was more dramatically expressed as reports on the fast-paced, dynamic increase in the number of poppy fields in Colombia filtered through.

Simultaneously, several official reports and analyses, as well as some U.S. mass media, began to denounce the growing presence of 'Colombian heroin' in the opiate market, a heroin characterized by its high degree of purity:

Unidentified groups dominate Colombia's heroin trade. However, some evidence points to links with the chief Cali and Medellín groups... Indicators show that the proportion of heroin produced in Colombia will increase very rapidly in a very short time lapse...⁶

Meanwhile, on the domestic political front opium poppy cultivation and the heroin trade were associated with extreme levels of danger and violence. This, coupled with the impact of narco-terrorism, helped to justify the fact that President Gaviria's government (1990-1994) framed its anti-drug policy as an integral component of a 'Strategy to Overcome Violence.' In order to justify the decision of spraying opium-poppy fields with glyphosate, the National Narcotics Council (the country's major anti-drug agency) issued a press release:

Opium poppy is a crop that has begun to spread substantially throughout the national territory, *representing a potential and increasing danger to the country's*

public order and a complementary source of violence, acting against the country's economic development, not forgetting that its by-products – opium, morphine and heroin – are extremely dangerous mind-altering substances for their consumers.⁷

This highly criminalized connotation of opium-poppy cultivation led to the initial refusal to consider any possibility of putting into practice alternative development programs in opium poppy areas. References to the rise in opium poppy production were almost exclusively associated with drug-trafficking organizations. No mention was made of the serious crisis undergone by the farming sector and the peasant economy, in particular. The same was true of the coffee sector, where no state policies existed to assure stabilization and modernization. Thus, there had been a substantial increase in illicit crop production, in general, and a radical change in the countryside's patterns of specialization, in particular.⁸

Through a serious misreading of the problem, opium poppy production was labeled as the cause of the heroin traffic. Consequently, the farmers from the Andean region dedicated to growing opium poppy were completely criminalized.⁹

With much difficulty, and with respect to very specific areas, only among the indigenous communities of the Cauca region did a relation of causality between poverty, marginalization, and the rise of illegal crops in their areas of settlement come to be identified. This, however, did not generate a change in how opium poppy production was perceived.

President Gaviria vehemently defended Washington's recommendations, going so far as to identify the production of illicit raw materials with drug trafficking itself. Therefore, areas in which illicit crops were produced, therefore, were indiscriminately incorporated into the government's strategy for overcoming violence. Criminalizing images of the phenomenon were added to this, which contributed to completely effacing the economic or social roots behind the Andean region's illegal economy. In this sense, the decision taken in January 1992 to fumigate illegal crops was virtually a declaration of war against the communities growing these crops.

These actions contributed greatly to the symbolic construction of an *enemy*. *Stigma* was attached to any dissident voices criticizing the strategies being used to tackle the problem. Even those who opposed criminalizing consumers were targeted. For example, a group defended the Colombian Supreme Court's decision to declare unconstitutional some articles in the 'Statute on Mind-Altering Substances' (Law 30/86), which held that criminalizing small personal doses of illegal drugs could not be justified.

In this context, even the most timid attempts to make distinctions in the use of eradication methods, based on technical expertise and on considerations of a social or environmental order (crop association, the presence of family dwellings, etc.), were disregarded when it came to spraying glyphosate.

With forced-eradication operations underway, the practice of using civil airports to establish anti-narcotics bases has also been launched. This has happened in Neiva, Popayán and Chaparral, cities equidistant to rural opium-poppy/growing areas.¹⁰

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SOCIAL IMPACTS: DISPLACEMENT OF THE POPULATION

One of the indicators that the anti-drug police identify as the basis for establishing the success of opium poppy fumigation is to translate the sums allegedly not realized by the guerrilla into its cash equivalent. That is, forced-eradication actions have come to be regarded as counter-insurgency actions. This is how Police General Rosso José Serrano expressed it in April 1992:

Until now, 1,040 hectares have been fumigated. ... the guerrilla groups operating in that part of the country have stopped realizing a profit of more than five thousand million pesos.¹¹

In the second place, these actions were meant to provoke the return of the settlers and peasants who had previously been displaced to the upper regions. In the words of the same Police General:

The intention of the police is to discourage the settlers planting these crops – who will be forced to return to their places of origin when their crops are destroyed – especially in the South (of the Departments) of Huila and Caquetá, so that they will then return to legitimate activities.¹²

However, the social response to these attempts, grounded in the socio-economic conditions already mentioned, does not support this contention.¹³ The anti-drug authorities themselves have confirmed the real demographic changes generated by the policy:

After the fumigation here in Huila, the people who were not from Rionegro, La Iquira, La Plata, Belalcázar¹⁴ and wherever else we went, are returning to their places of origin, *but others are arriving*.¹⁵

Thus, the effect of fumigation of marijuana on the Sierra Nevada de Santa Marta replicated itself in the case of the opium poppy, only in a much more complex way and covering a much broader geographical area. In this case, displacement directly and severely affected the Andean Mountain forest. In general, water production and the entire complex environment of the Andean region were negatively affected by the deforestation caused by setting up new opium poppy production areas.

The irrational approach featured in the anti-narcotic strategy aggravates these problems. Paradoxically, the policy is based on the premise that the environmental impact of illicit crops is negative, although it actually compounds these negative effects by forced eradication. The anti-narcotic authorities have chosen to ignore the real costs of this policy, although its harmful effects are unquestionable.¹⁶

LACK OF CREDIBLE FIGURES ON OPIUM POPPY PRODUCTION IN COLOMBIA

When attempting to clearly determine the effects of fumigation with respect to its main objective – the destruction or significant decrease of illicit-crop acreage – one of the main difficulties is the lack of accurate statistics on the number of planted hectares and on the dynamics of illicit-crop growing in the short and medium term. The chief difficulties are:

1. The policy of forced eradication itself makes it almost impossible to collect statistics on illicit crops. The policy has repercussions on several fronts:

- The productive capacity of the fumigated crops not destroyed is revitalized through the intensive use of fertilizers.
- Replanting takes place in the same sites where fumigation formerly took place.
- “Intercropping” opium poppy with legal crops is undertaken, and security procedures for cultivators are installed to offset the presence of strangers.¹⁷
- Crop displacement becomes one of the most common mechanisms.

2. Denying that the behavioral response to forced eradication is an independent variable with respect to the dynamics of illicit-crop growing makes it practically impossible to compile credible statistics.

TABLE 4
CULTIVATED OPIUM POPPY AREAS VS. ERADICATED AREAS

Year	N. of Has.	Manual eradication	Aerial eradication	Total eradicated
1990	1,500			
1991	2,900	1,497		1,497
1992	19,472	2,583	8,382	10,965
1993	14,167	1,592	8,179	9,771
1994	20,274	1,777	3,328	5,105
1995	6,540	1,607.5	3,466	5,073.5
1996	2,100	527.9	7,421	7,948.9
1997	6,600	19	6,331.4	6,350.4
1998	6,100	-	2,658.8	2,658.8

Source: Colombian Antinarcotics Police

In the first case, 20,274 hectares of opium poppy were estimated to exist in 1994, the largest area in the history of this crop in Colombia. The following year, after eradicating 5,105 hectares, the estimate was 6,540 hectares. Therefore, in theory the authorities have suggested that the acreage planted with illicit crops decreased by 13,734 hectares, 7,194 hectares more than those that were already sprayed.

Of course it is not possible to know which of the above figures are accurate or inaccurate. It could have been in the number of hectares said to have been planted. Or the real eradication figures could have been in error. The latter explanation does not seem very plausible, however, since the authorities are clearly interested in showing progressively larger eradication capacity each year. Other questions arise when the 1996 estimates are examined. According to the figures supplied, there were a total of 2,100 hectares of opium poppy, but 7,421 hectares were fumigated in the same year (See Table 5 and Graph 1).

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Finally, let us observe the recurrence of a third type of mistake that actually helps demonstrate the lack of plausibility in the existing estimates. Opium-poppy cultivation, particularly when it first began, spread throughout the Departments of Huila, Tolima, Cauca and the *Serranía de Perijá* in the Department of Cesar. Due to the series of aerial sprayings concentrated over these four sites, there is an increase in illicit-crop production in other areas, which is represented as “others” in Table 5.

TABLE 5
ESTIMATED AREA OF ILLICIT OPIUM POPPY CROPS
PER DEPARTMENT OR NUCLEUS

Year	Huila	Tolima	Serranía del Perijá	Cauca.	Others	Total
1990	450	525	150	225	150	1,500
1991	870	1,015	290	435	290	2,900
1992	5,527	5,965	55	3,600	4,325	19,472
1993	4,184	4,553	105	1,788	3,537	14,167
1994	5,823	5,159	105	4,784	4,403	20,274
1995	615	4,335	585	705	300(*)	6,540
1996	200	1,300	350	250	- (*)	2,100
1997	200	1,300	450	150	4,500	6,600

Source: Colombian Antinarcotics Police

Having set the stage for aerial spraying in the four departments specified above during 1995, the category “others” decreased to an estimated 300 opium poppy hectares, after displaying a trend above the 4,000 hectares in 1994. In 1997, the figure for “others” once again includes more than 4,000 hectares. Inconsistencies in these figures are a reflection of the flaws in the current policy directed against poppy cultivation.

THE CASE OF COCA

In global terms, coca production has remained stable in the Andean region, in spite of decreased cultivation in some countries. Table 6 presents the series of estimates made by the U.S. State Department from 1992 to 1998, based on projections.

Throughout this seven-year period, and taking into account that government estimates are known for underestimating the extent of the production areas, a relative stabilization of the global production area is observable. At the very least, decreases are so slight that they could have no significant influence on the region’s productive potential.

Based on the ratio of hectare yield, an increase in the net productive potential can be observed in the region. In 1998 the production of coca leaf was 293,700 tons; it

GRAPH 1
CULTIVATED OPIUM POPPY AREAS VS. ERADICATED AREAS

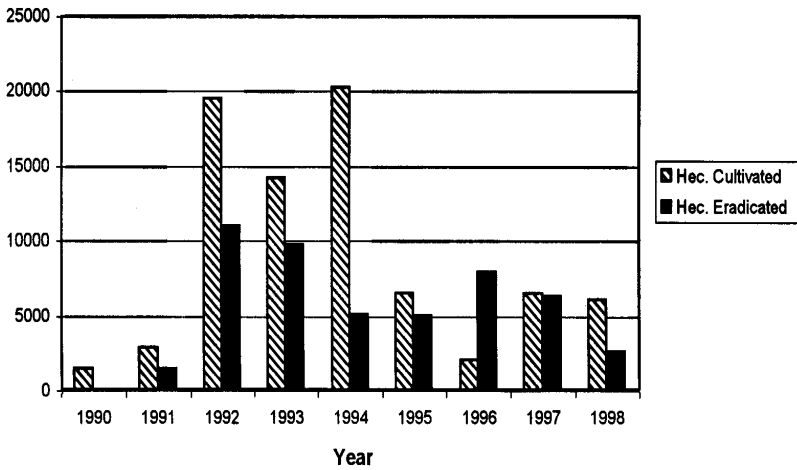


TABLE 6
COCA AREAS IN THE ANDEAN REGION 1992-1998

Year	Bolivia	Peru	Colombia	Global Area	% compared to previous year
1992	45,500	129,200	41,206	215,906	-
1993	47,200	108,800	49,787	205,787	- 4.7
1994	48,100	108,600	46,400	203,100	- 1.3
1995	48,600	115,300	53,200	217,100	+6.9
1996	47,000	95,000	69,200	211,200	- 2.7
1997	46,000	68,800	79,100	193,900	- 8.0
1998	38,000	51,000	101,800	190,800	-1.8

Source: U.S. Department of State and Colombian Antinarcotics Police

then climbed to 303,600 tons in 1996, a trend that continues in the years that followed. In Table 7, we examine this trend more closely.

The eradication of a specific number of hectares is equally neutralized, therefore, by the rise in production yields, which tend to steadily increase. The compensation offered by Colombia between 1992 and 1996 to the Andean region's productive potential is highly visible, since there was a circumstantial decrease in the number of coca hectares in Peru beginning in 1992.¹⁸

This phenomenon of 'substitution' intensifies between 1995 and 1999, becoming even more remarkable if we take into account that Colombia happens to be the country targeted with the most aggressive eradication efforts throughout the

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1990s. For this reason, the growth of new coca areas behaves as an independent variable with respect to the forced eradication of illicit crops.¹⁹

TABLE 7
NET POTENTIAL COCA LEAF PRODUCTION OF COUNTRIES
1988 - 1998 (METRIC TONS)

Year	Bolivia	Peru	Colombia	Ecuador	Total
1988	78,400	187,700	27,200	400	293,700
1989	77,600	186,300	33,900	270	298,070
1990	77,000	196,900	32,100	170	306,170
1991	78,000	222,700	30,000	40	330,740
1992	80,300	155,500	29,600	100	265,500
1993	84,400	155,500	31,700	100	271,700
1994	89,800	165,300	35,800	-	290,900
1995	85,000	183,600	40,800	-	309,400
1996	75,100	174,700	53,800	-	303,600
1997	70,100	130,600	98,500	-	-
1998	52,900	95,600	s.d.	-	-

Source: International Narcotics Control Strategy Report, U.S. Department of State 1997

In the case of cocaine, eradication efforts surge unexpectedly beginning in 1995, preceded by several trials conducted in the Colombian Amazon in mid 1994. In spite of achieving eradication levels between 33.3% and 52.8% of Colombia's total planted area, this did not mean a suspension in the growth rates that were observable from 1992 to 1998. The coca-cultivated surface in 1998 was two and one-half times larger than the cultivated area recorded for 1992. Graph 2 illustrates this ratio.

TABLE 8
COCA AREAS IN COLOMBIA VS. ERADICATED AREAS 1992-1998

Year	Area	Eradicated Areas	% Eradication over Areas
1992	41,206	944	2.3
1993	49,787	846	1.7
1994	46,400	1,420	3.0
1995	53,200	25,402	47.7
1996	69,200	23,025	33.3
1997	79,100	41,797.2	52.8
1998	101,800	49,527.47	48.7

Source: Colombian Antinarcotics Police

GRAPH 2
COCA AREAS IN COLOMBIA VS. ERADICATED AREAS 1992-1998

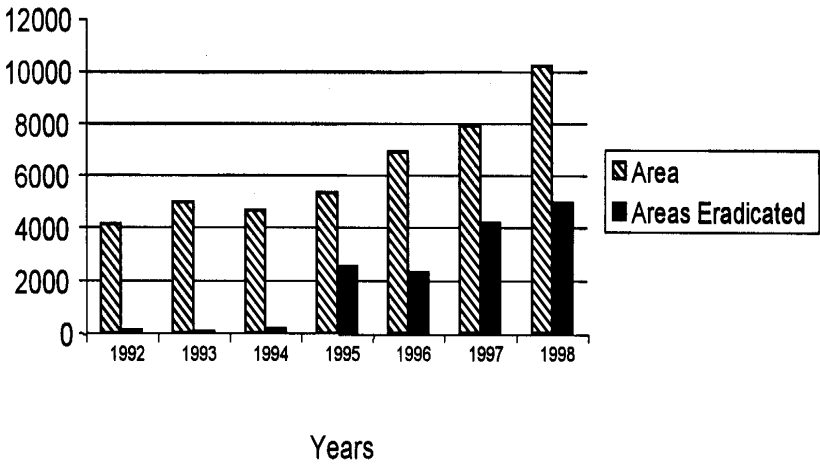


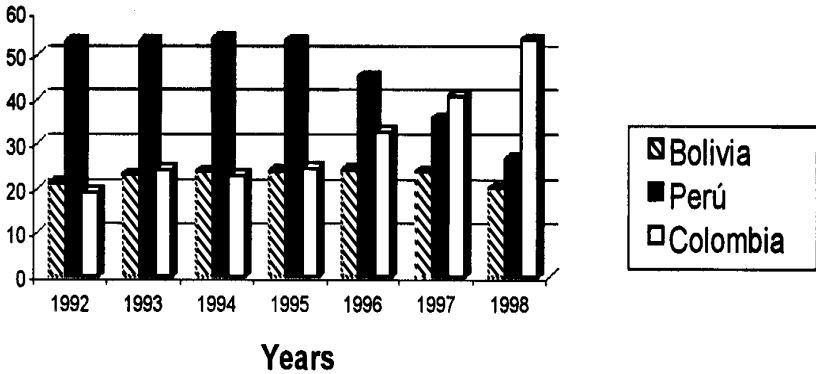
TABLE 9
PARTICIPATION PER COUNTRY WITH RESPECT TO GLOBAL
COCA AREA IN THE ANDEAN REGION 1992 - 1998

Year	Bolivia	Peru	Colombia
1992	21.07	52.87	19.08
1993	22.93	52.87	24.19
1994	23.68	53.47	22.84
1995	23.92	53.10	24.50
1996	24.23	45.0	32.76
1997	23.72	35.48	40.8
1998	19.91	26.72	53.35

Source: Drawn up by the author utilizing data from the U.S. Department of State and the Colombian Antinarcotics Police

Colombia owned 53.35% of the total area devoted to coca production in 1998, although in 1992 it had only a modest share of the Andean area (19.08%). The Columbian “market share” of coca has grown substantially since 1995, when aerial spraying of coca began in the Colombian Amazon region. This participation is represented in the following graph.

GRAPH 3
PARTICIPATION PER COUNTRY WITH RESPECT TO GLOBAL
COCA AREA IN THE ANDEAN REGION 1992 - 1998



THE STRATEGIC OBJECTIVE OF ILLICIT-CROP AREA REDUCTION: BALANCE

Beginning on February 11, 1994, the aim of anti-drug authorities was to destroy illicit crop areas totally within two years. Although the Samper administration intensified fumigation between August 1994 and August 1998, the results of these efforts were a resounding failure. There are two strong indicators of the strategy's lack of success:

1. The relation between the area planted when fumigation began (45,550 hectares) and the number of hectares sprayed between 1994 and 1998 (140,858); that is, an area three times larger than the planted area existing in 1994 was fumigated. This means that:

- Fumigation did not discourage production.
- Fumigation fostered displacement, which created new production niches in previously untouched areas and strengthened undetected incipient coca fields that eventually became new production areas.

2. The Colombian anti-drug authorities have adopted as a criterion for the effectiveness of the use of herbicides a "real kill" average of 85% for coca and 92.5% for opium poppy. Aerial spraying was concentrated (84%) in the Amazonian Departments of the Guaviare and Caquetá. This means that, if 85% of the crops were destroyed, the total area should have decreased to 3,945 hectares in Guaviare and 1,755 hectares in Caquetá (see Table 10 and Graph 4).

TABLE 10
RELATION OF EXISTING COCA AT START OF FUMIGATION (1994) VERSUS AREA FUMIGATED
BETWEEN 1994-1998 BY DEPARTMENT (IN HAS.)

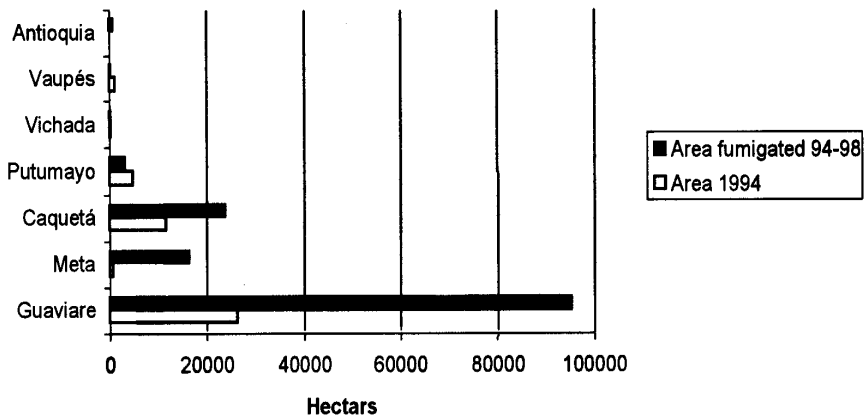
Department	Area 1994	Fumigated Area 1994-1998
Guaviare	26,300	95,362
Meta	900*	16,451
Caqueta 11,700	23,993	
Putumayo	5,000	3,311
Vichada 400*	432	
Vaupés	1,250*	349
Antioquia	0	960
Total	45,550	140,858

Source: Colombian Antinarcotics Police

* Data available at the end of 1993

Not only was there no decrease in the dimensions of the cultivated area, the destroyed crops were replanted and production increased significantly (in the case of Guaviare, there was a repositioning of the number of initial hectares plus an increase of 56,250 hectares). This explains why an area three times as large as the coca area in the Guaviare and two times as large as the coca area in the Caquetá were fumigated. The same phenomenon holds true at the national level.

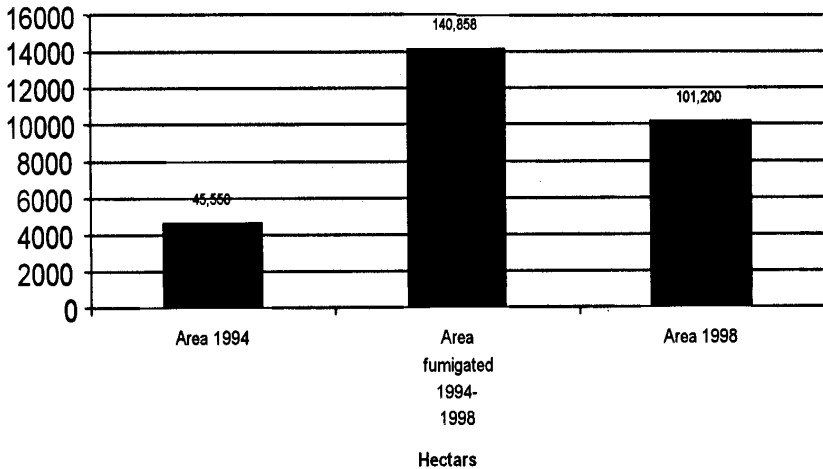
GRAPH 4
RELATION OF EXISTING COCA AT START OF FUMIGATION (1994) VERSUS AREA FUMIGATED
BETWEEN 1994-1998 BY DEPARTMENT (IN HAS.)



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In effect, comparing the initial area planted, the area fumigated, and the current planted area, demonstrates that these efforts have been a failure (see Graph 5). The original cultivated area increased 122% (in spite of spraying the equivalent of 209%). Thus, the rate of cultivated coca acreage grew significantly, despite the radical measures that had been imposed.

GRAPH 5
RELATION OF EXISTING COCA AT START OF FUMIGATION (1994)
AND AREA FUMIGATED (1994-1998) IN COLOMBIA



Confronted with these facts, Washington offered an explanation for this failure – the alleged harmless character of glyphosate – verifiable by examining the relatively low levels of “real kill” among sprayed coca plants. In effect, anti-drug authorities acknowledged an average of only 27.58% “real kill” in fumigated areas between 1996 and 1998. Table 11 illustrates glyphosate’s inefficiency.

It also reveals the real explanation for the failure. Even if we accept these estimated destruction rates, it is inconsistent that the basic eradication figure for 1998 should be 60,000 hectares if 46.47% of the fumigated coca was destroyed in 1997. However, by 1998, coca acreage had increased to 101,800 hectares, 70% of the initial area predicted. More than the alleged harmlessness of glyphosate, this demonstrates that the problem is linked to the proliferation of the illegal drug economy on the global market and to the permanent nature of both internal and external structural conditions favoring the production of illicit crops.

Despite this evidence, Washington continues to ignore the facts. Anti-drug authorities remain determined to fumigate coca zones completely and also advocate

TABLE 11
AREA, FUMIGATION AND REAL KILL OF COCA IN COLOMBIA 1996-1998
(ACCORDING TO U.S. ANTI-DRUG AUTHORITIES)

Year	N. of Has.	Area Fumigated	Real Kill	% over Fumigated Area
1996	67,200	16,053	2,500	15.57
1997	79,500	41,451	19,265	46.47
1998	101,800	65,930	13,650	20.70

Source U.S. Government Data

even more drastic measures, such as joint actions by the police and the army and greater involvement of U.S. military advisors.

COLLATERAL EFFECTS OF FUMIGATION ON THE ENVIRONMENT

Besides its failure to reduce the expansion of illicit crop areas, the forced-eradication policy implemented against coca, poppy, and marijuana production has had collateral effects. These cannot be quantified yet, given the incipient nature of Colombia's environmental heritage inventory²⁰ and the fact that, in order to carry out a sound assessment, some basic research would need to be undertaken.

What can be determined already is the high cost of the environmental impact caused by the installation, control, and management of illicit crops and by the chemical components used in the coca paste-processing phase (not only herbicides or fertilizers). Although this impact is related to the production of illicit crops at its initial phase and can well be seen as such, a causal relation between the forced eradication policy and its displacement effect should also be recognized, with all the environmental damage this implies. The first effect is deforestation, which in some cases shows a ratio of one hectare of cultivated coca equaling one and one half, and even two hectares, of slash and burn. Here, the repositioning and spread of coca crops has meant the deforestation of between 152,700 to 203,000 wooded hectares.

It is illogical to argue that the current fumigation policy can offset the environmental impacts made by growing illicit crops, when chemical spraying brings with it such harmful environmental effects as to aggravate the already negative effects exerted by illicit crops, both directly and indirectly. For example:

- Illegal spraying of cannabis was conducted in Colombia, using paraquat herbicide, between 1978 and 1984.
- A violation of dosages and technical guidelines for aerial fumigation with glyphosate has been observed. Through various trial tests, it was originally determined that an average of 2.5 liters/hectare of the active ingredient

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glyphosate should be used in the destruction of marijuana and poppy crops. In the case of coca, a dosage of 10.41 liters/hectare was fixed in 1993, without any prior technical analysis. Today, we know that an average dosage of 13.47 liters/hectare is being used. At the same time, glyphosate formulas seeking to increase the herbicide's resistance are being applied in environments that have a great deal of rainfall, such as the Amazon region.²¹

According to the recommended guidelines, coca is being sprayed using a treatment that surpasses all ordinary technical specifications. In the case of Roundup, the recommended dosage is seen in Table 12.

TABLE 12
RECOMMENDED DOSAGES FOR LEGAL USES OF ROUNDUP

Doses (in liters/Ha.)	Type of use
2-3	Annual weeds
4-6	Perennial weeds
1.5	To increase content in saccharose
1	As drying agent in sorghum

- The poor results obtained in the effective reduction of illicit crop acreage made the issue figure more prominently on the bilateral US-Colombia agenda, already characterized by a high level of “drug-related” discourse, through the new demands being exerted via diplomatic channels.²² Domestic debate was again stimulated by U.S. government anti-drug authorities.

A technical paper issued by a consortium of Colombian enterprises directly or indirectly involved with the environment pointed out the serious risks, for the country, of carrying out Washington’s demands regarding the use of herbicides like tebuthiuron:²³

- The residual effect exerted by tebuthiuron’s high persistence²⁴ can cause soil infertility and block the natural regeneration of vegetation for a prolonged period of time, favoring erosion and desertification processes at the core of the ecosystems exposed to it.²⁵
- Tebuthiuron’s nonselectivity affects the first link of the trophic chain constituted by vegetation (autotrophes), interfering, to different degrees, with the various links in the web of terrestrial and aquatic ecosystems, since

plant death and the alteration of species variety causes a reduction in the availability of foodstuff and modifies niches and habitats.

- Tebuthiuron's high mobility amplifies the area exposed to its effects, since it may be transported via rainfall towards surface water or through leaching to groundwater. Severe precautionary measures are required with respect to the latter, given that most of the areas in which the country's groundwater aquifers are located have not yet been identified, nor their degree of vulnerability determined.
- Considering the characteristics of the Amazonian edaphological landscapes and taking into account the area's precipitation (40mm to 50mm at a time), the rainfall intensity surpasses the soil's seepage capacity. Thus a sheet of rainwater is formed, favoring the herbicide's movement to areas outside those of application and in the direction of surface water, with subsequent damage to terrestrial and aquatic plants.

In spite of the logical force of the joint document issued by this group of Colombian experts, whose claims may be extended to include the actions of other chemicals, such as imazapir, the use of several such chemicals has not been suspended. On July 29 and 30, 1998, for example, the Human Rights Ombudsman's Office (Defensoría del Pueblo) took four samples of the substances sprayed from aircraft fumigating coca fields in Puerto Guzmán, Department of Putumayo. The samples reached the Laboratory in the Faculty of Environmental Engineering at the Los Andes University on August 3, 1998. In a technical paper issued by the University the following October 29th, the presence of the herbicide imazapyr²⁶ was confirmed in all four samples. This presence violates environmental norms, health norms, and legal dispositions on the use of herbicides. Under the present circumstances, the dangerous trials that anti-drug authorities are carrying out do not comply with any of the existing norms.

According to the accusation launched by the Environment Ombudsman's Office, when imazapyr is sprayed:

... Great expanses of natural vegetation that still existed in the proximity of the settled areas have been destroyed. Near the hamlet of Santa Rosa, at the end of the month of July (1998), in the Quemado Lagoon, hundreds of hectares of natural woods were destroyed. This lagoon ecosystem is very special because it is an egg-laying and hatching center for fish species, a major refuge and habitat for birds, mammals, and other animal species that have now become scarce along the banks of the tributary rivers flowing into the Putumayo. It has been confirmed that no illegal crops existed several kilometers around this lagoon.

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Likewise, in the Middle and Lower Caguán regions, in the Department of Caquetá, fumigation with glyphosate conducted between April and November 1998 severely affected rubber plantations, cacao, fruit trees, food crops (*pancoger*),²⁷ fodder, water sources, lagoons, and wetlands (*cananguchales*). These crops were all part of the few local alternative development programs being carried out under the direction of the San Isidro Parish in Remolino del Caguán.

AERIAL SPRAYING AND DAMAGE TO AMAZONIAN INDIGENOUS COMMUNITIES

The indiscriminate nature of the anti-drug war also affects other vulnerable sectors, such as indigenous communities. Areas like the Nukak Natural Reserve, located in the heart of the Colombian Amazon, are under extreme pressure caused by the mobile dynamics of illicit crop planting, which is promoted both by the state's forced eradication efforts and the insurgency's use of coca production to finance the war.

At present, displacement of coca fields has violently penetrated the Nukak reservation, with population flows going from North and West (displacement of crops fumigated along the banks of Inírida, Tomachipán, El Capricho, Sabanas de la Fuga, etc., in the Guaviare Department). To the South, intense conflicts are taking place due to the fact that fumigation is being shifted from Miraflores (Guaviare) toward the communities inhabiting the Vaupés.

Departments located on the Orinoco River and in the Amazon region, like Vaupés (45.2% indigenous population), Vichada (89% indigenous population consisting of eight ethnic groups distributed into 41 reservations and occupying 34.6% of the territory), Guainía (50% indigenous population lodged in 18 reservations) begin forming part of the geopolitics of war, that is, of the intersection between drug traffic and armed combat. A preventive approach to the conflict, much less to the all-engulfing phenomenon of illicit crops and drug trafficking, simply does not exist for these communities.²⁸

THE ANTI-DRUG POLICY AND THE STATE'S LOSS OF LEGITIMACY

Institutional weakness and the internal chaos associated with forced eradication decisions seriously affect the Colombian state structure, giving rise to one of the policy's most dramatic consequences: illicit crop fumigation makes the state lose legitimacy, deepening the obstacles that already exist to strengthening the national democratic institutions.

INSTITUTIONAL PROCEDURES

The Colombian state has often acted without setting clear rules, especially with respect to foreign intervention in forced eradication. The use of illegal mechanisms, such as the introduction of paraquat in the mid-seventies, and the dangerous and illegal open-field trials conducted with a series of herbicides meant to replace glyphosate, blithely disregard the well being of society.

The Colombian state lacks clear procedures with respect to the defense of civil, economic, and environmental rights for those who, in one way or another, are affected by the continued use of glyphosate, regardless of its dangers. Arbitrary guidelines prevail, and there is a permanent lack of respect for those who demand that the state comply with established legal procedures.

FUMIGATION AND ALTERNATIVE DEVELOPMENT PROGRAMS

Forced-eradication efforts advanced in complex war scenarios also make it difficult to follow technical recommendations adequately. Glyphosate spraying at distances above 10 meters from the ground, a procedure justified by the possibility of lethal guerrilla attacks, increases the risk of accidental exposure if the chemical were to drift elsewhere. This has serious and observable environmental impacts on primary and secondary forests, water flow and Amazonian hydrologic systems, and also on the civil population and the handful of alternative income generating projects undertaken in regions where coca- and poppy-based economies are thriving.

Given the fact that coca and poppy crops are illegal (thus it is difficult to contest the damages caused by fumigation), the individuals affected simply cannot appeal to the authorities. Therefore, such damages tend to be seriously underestimated. To give just one example, in several towns in the Amazonian Middle and Lower Caguán, which were undertaking rubber and cacao planting projects promoted by the local Catholic parish, 42 families lost the crops that they had been growing for between two and six years, due to mistakes made by the Antinarcotics Police. Like everywhere else this has happened, aerial spraying affected food crops, home vegetable gardens, fodder, fish breeding tanks, etc.²⁹

By simultaneously contributing to forced displacement, aerial spraying disturbs the organizations in the communities that constitute the main axis for legal and innovative alternative processes. What these organizations are ultimately seeking is to rebuild the social tissue in areas that the state has routinely neglected. Fumigation reinforces the lack of viability of alternative development programs, since it generates socio-economic problems that the government has no capacity to resolve through legal alternatives, either at the short or medium term.

THE PARTICIPATION OF SOCIETY

The Colombian state lacks the mechanisms to involve the whole of society in issues such as aerial spraying, which affect the country's environmental, economic, and cultural heritage as well as its sovereignty.

Instead of representing collective interests, the state simply becomes one more stakeholder, behaving like any other private stakeholder and using its political clout to its advantage. This affects the very nature of the state as enforcer of the rule of law and as an organizational order orienting society's multiple interests.

Although Colombia has implemented the anti-drug policy imposed from abroad to varying degrees and with contrasting emphasis, depending on the government in office, in the long term the state has undermined its own essence. This is reflected in the exclusion and criminalization of a large percentage of the indigenous population. This behavior is particularly evident in the indifference and lack of institutional presence in at least one third of the national territory. To protest against this situation, over 200,000 settlers, day laborers, and petty trade merchants participated in a three-month march in the South of Colombia in 1996. This movement helped to bring attention to the differentiation and discrimination that an ample social sector is enduring.

The geographical, regional, and social discrimination caused by forced eradication is reflected in the differential treatment meted out to the various production zones. Their demographic, economic, and political weight has helped some areas to abolish forced eradication by holding mass protests. With respect to the environment and the effects on state legitimacy, however, this approach is at best ambiguous. For example, the *Sierra Nevada de Santa Marta* Mountain Range, where fumigation was brought to a halt, is just as fragile as the Perijá Mountain Range or the Amazon region in its bio-diversity, and yet the last two areas have been sprayed intensely since 1992. Their equality before the law is simply ignored. Ultimately, political interests prevail over the general character of the existing norms.

Given the impact of forced eradication on the communities in the settlement areas and on the Andean peasant and indigenous population, as well as the effects of illicit crop production and anti-drug measures on the enormous diversity of both the tropical rain forests and the mountain forests, the forced-eradication policy should be the result of broad processes of participation. It should involve legitimate decision making mechanisms that commit all the actors implicated both in environmental damages and in the other consequences that these state decisions generate.

Curtailling the illicit crop area alone would be a significant success of the anti-drug policy, and the damage now being inflicted by constant displacement would be reduced. This objective, however, conflicts with the interests of the politicians seeking legitimacy before voters in the countries with serious drug abuse problems. These politicians are more interested in showing "victories," real or not, to a misinformed public.

A strategy geared toward stabilizing the area where illicit crops are produced might rally support, if the role of regionally oriented communities were acknowledged. It would highlight respect for the various agreements reached between the state and society. It would also be a start toward creating the socio-economic, environmental, and ethical conditions needed to avoid dependence on a single illegal economy, creating a new scenario that might reduce the damages and risks of illicit crop production.

THE STATE, FUMIGATION AND OVERALL PRINCIPLES OF LEGITIMACY

Considering the information just presented, the measures being taken to allegedly defend democracy in the hemisphere, which is said to be threatened by drugs, end up violating the principle of democracy in practice, not only because of the phenomena associated with the illegal drug traffic, but also due to the forced eradication policy itself. It is brandished as the *leit motif* of the anti-drug struggle in the name of liberty and the defense of society, although this is far from what is actually taking place.

By undertaking forced eradication measures, a process that contravenes the normative development of a modern state has occurred. Instead of the Colombian state giving priority to defending the principles that are fundamental to the democratic existence of its society, it is trying to establish a normative pattern that justifies and defends forced eradication. Aerial spraying is said to belong to the realm of national security. Under this guise, it is exempt from any demands to curb the indiscriminate use of chemical agents. In effect, its permissiveness in implementing this policy not only detracts from the state's own legitimacy; it turns the Colombian state into one of the main generators of environmental insecurity.

The war tactics surrounding aerial spraying, expressed in operational guidelines and statutes typical of an armed conflict, violate the basic rights of communities. This has repercussions for the political and military goals of the insurgency and helps foster a certain legitimacy among those who have taken up arms along a great part of the national territory. This phenomenon is expressed in the armed response capacity of the insurgency against the aircraft and aircraft personnel in charge of aerial spraying.

In general, the issue of illicit crops in the context of an armed conflict takes several main paths:

The illegal drug economy is an important source of income for the armed groups active in Colombia's war scenario. The territorial control historically exerted over the colonization areas abandoned to their lot by the state has eventually led the guerrilla to benefit also from the economic response of the communities that began to produce the raw materials needed for psychoactive substances. The levy (*gramaje*) paid by peasants and the taxes imposed on drug dealers for the use of their laboratories, airstrips, and harbors needed to transport drugs has become a substantial source of income for these guerrillas.

A recent study showed that, through different illegal mechanisms, the guerrilla earned approximately \$2.4 billion between 1991 and 1996, a sum equal to 5.25% of the country's GNP.³⁰ Distribution by income-generating activities can be seen in Table 13.

Between 1991 and 1996, the annual incomes derived from the taxes levied on drug trafficking were estimated at \$152 million, an amount that increased in the last three years, since the insurgency also shares in the commercialization process of raw materials and in the taxes levied on other phases of the process carried out in areas under their control. The most recent figures set the annual incomes to be at \$300 million.

TABLE 13
SOURCES OF INCOME OF THE GUERRILLA 1991-1996

Activity	Incomes (U.S. million)	%
Drug-trafficking	1,067	44.45
Robbery and extortion	657	27.36
Kidnapping	525	21.89
Investments and money laundering	151	6.30
TOTAL	2,400	100

Source: Portafolio newspaper, March 10, 1998

Comparing these amounts with the profits netted by Colombian drug dealers after carrying out their illegal export operations, which are estimated at \$2.5 billion, we are not strictly before another group of organized crime when referring to the guerrilla, but before a political and military organization that reaps part of the benefits of the drug economy (around 12% of estimated earnings) and diverts it to a war effort.

In spite of the above, Washington presently dedicates the greatest share of military aid given to Colombia to combating the insurgents, while the drug dealers (who control 88% of surplus profit) have once more quietly reestablished their organizational structures throughout the country.

As we have mentioned, the forced eradication of illicit crops via fumigation conducted through the use of mechanisms inherent to a war situation, is leading to serious deterioration of the basic human rights and threatening the security of the communities inhabiting the coca areas. Under these circumstances, an armed response becomes the only response mechanism possible. The forced eradication policies adopted by Bogotá and Washington contribute to legitimizing the very existence of the insurgency (see Table 14).

TABLE 14
VIOLENT ACTIONS OF THE INSURGENCY AGAINST
FUMIGATION CREW AND AIRCRAFT 1995-1997

Attacks	Year				Total
	1994	1995	1996	1997	
Aircraft damaged	3	5	19	13	40
Aircraft downed	14	21	11	8	54
Helicopters damaged		3			3
Killed	9	22	0	1 ³¹	32
Wounded	7	43	1	9	60

Source: Colombian Antinarcotics Police

DISCUSSION

The recent U.S. decision to create an elite anti-narcotic corps within the Colombian army is bound to become a source of escalation of the internal conflict, since it will intensify the war approach to an illegal economy now involving one third of the national territory, an area with over two million inhabitants.

Thus a dangerous transition is taking place, from a policy originally proposed to reduce the supply of illicit substances to the concept of the *enemy* (indispensable in order to justify war), unilaterally targeting insurgent organizations, which, in effect, do control the greater part of the territories dedicated to the production of illegal raw materials. Attributing the term narco-guerrilla to the guerrilla is part of a political discourse that makes this justification valid; it creates a source of new images depicting the anti-drug commitment of U.S. politicians, who then use these images before their constituents to make even more dramatic references to a demand for psychoactive substances that never decreases in their own domestic markets.

The military handling of the drug phenomenon has increasingly contributed to erasing the line between drugs and armed conflict. In this sense, the distortions caused by Washington's decision-making structures become sharper, in the Colombian case.

The military handling of this matter has stimulated a harmful behavior among law-enforcing institutions and agencies, at times going so far as to give precedence to the anti-narcotics police and placing it above the civil authorities. This division of the national police is acquiring an increasingly militarized profile, as it takes over forced eradication tasks in territories where war is being waged. This instigates another vicious cycle: eradication efforts must be carried out accompanied by war mechanisms, and, in turn, the war is fed by the presence of a state that grants priority to brute force above concerted action with the society involved in this economy. This becomes another self-fulfilling prophecy, thus fueling the narco-guerrilla discourse.

Assigning such a high priority to the anti-drug struggle and forced-eradication efforts implies the erosion of civil, economic, and environmental rights as well as of the rule of law. Thus, the principles allegedly being defended in the name of the anti-drug struggle (democracy, social ethics, sovereignty, and law enforcement, among others) are precisely the most negatively affected when applying current anti-drug policy. As we have already pointed out, the radical implementation of this policy leads to growing foreign intervention in Colombia's armed conflict. This phenomenon is kindled by the most radical sectors in Washington, which simply demand better results from the supply-reduction efforts. This attitude greatly hinders the development of trust among the stakeholders inciting Colombia's domestic war.

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ILLICIT CROPS, ANTI-DRUG POLICY, ARMED CONFLICT, HUMAN RIGHTS AND INTERNATIONAL HUMANITARIAN LAW

The increased use of forced-eradication measures, such as aerial spraying, within the context of the ongoing-armed struggle, implies high social costs in terms of human rights violations and violations of international humanitarian law.

The war treatment inherent to fumigation actions can be corroborated by examining the operational manuals of the anti-narcotics authorities, such as the one designed for *Operation The Shining (Operación Resplandor)* in 1995; the violent attacks of the guerrilla against aircraft engaged in aerial spraying and against anti-narcotics bases; the massacres against the civilian population perpetrated by private and illegal armed groups acting in the name of the anti-guerrilla war; the circumstances under which the security forces advance their counterinsurgency actions (these forces do not accept the neutrality of spaces or actors), and the economic profits derived by all armed actors from drug-trafficking. The above factors make the anti-drug policy an intrinsic part of the Colombian armed conflict.

The main consequence of this militarist behavior is to regard the civil population involved in illicit crop production as an integral part of the domestic war contingents. Thus, the degradation characterizing the Colombian conflict spreads to the entire society in these areas, since these people are the ones most affected by forced eradication and law enforcement measures. Today's frequent massacres cause significant displacement of the population towards urban and rural areas. In general, all of this wreaks havoc on the places formerly seen as alternatives to the serious socio-economic crisis that the country's economy, and the rural sector in particular, are undergoing.

The central state's lack of legitimacy also leads to the different armed groups wielding their own power. They thus become involved in overseeing community life, environmental issues, public administration, employment, public order, etc., all of these under codes typical of a war scenario in which the civil population's basic rights are seriously restricted. Education is seriously affected, and so is the creation of an environmental culture and community participation. In such a climate, draconian short-term mechanisms and the criminalization model eventually invade every aspect of social life.

This situation shatters the much-needed prospects for peace and the live-and-let-live scenario needed to advance programs meant to reduce the damages caused by dependence on illicit crops among a great number of communities inhabiting the south of Colombia and the many poor or recently impoverished in the Andean zones.

Close to \$300 million in military aid was approved in 1999 in the name of the anti-drug struggle, as was \$1.6 billion proposed by the Clinton administration, in order to support "Plan Colombia"; 82% of this aid will be directed at strengthening the military component and carrying out intensive actions against illegal crop fields. Colombia is the third largest recipient of this type of aid in the world. Since these

resources are bound to affect Colombia's internal war, the country's autonomy to solve its internal conflicts is undermined, while the socio-economic and political causes that are the basis for the cultivation of illegal crops continue to be ignored.

As a result of the above, the domestic conflict in Colombia acquires an international dimension, also fueled by constant references to regional insecurity – a discourse that is welcomed by neighboring countries like Peru, for example. At the same time this discourse helps to increase the level of mistrust between Panama, Ecuador, Brazil, and Venezuela. The current regional Andean instability is strongly rooted on marked macro-economic imbalances (fiscal deficit, economic recession, etc.) and aggravated by corruption and the inflexibility of economic adjustment policies that eventually give rise to unemployment, explosive social protest, and political uncertainty. Institutional weakness and the weakness of the political parties compound all of this. The war against drugs conceals the true nature of the problems involved, under the guise of “enemies” disturbing the order needed to consolidate a valid hemispheric economic model.

One of the results is the redefinition of the hemisphere's defense policy for the sake of the war against drugs, which highlights a militarized order that functions under Washington's national security umbrella. Air and marine bases known as Forward Operating Locations (FOL) located in Manta (Ecuador), Aruba, Curazao, and in El Salvador's Colapa International Airport form part of the decisions tending to enlarge the role of the military as a defense mechanism in Central America, the Caribbean, and the Andean region. The creation of several anti-drug squadrons in Colombia; the strengthening of military installations in Villa Tunari, Chimoré, and Ichoa in Bolivia under the coordination of the southern command; and the establishment of military bases for the use of long-range radar³² manifest the growing presence of the U.S. in the region under the justification of the war against drugs.³³

DRUG-TRAFFICKING, STRUCTURAL PROBLEMS, AND ANTI-DRUG POLICIES

Finally, there are structural conditions that permit a perfect scenario for drug traffickers to expand and consolidate their illegal power and advance on the road to various forms of legalization. Government participates in private transactions in order to reach agreements with local and regional powers; and the consolidation of state security forces, whose precarious hold on a legitimate monopoly of power and on the protection of public interest, conflicts with the role they sustain in defending private interests.

These complex scenarios are complemented by alarming levels of impunity and by the growing fragility of the justice system. Subsequently there is a loss of the state's legitimacy, control, and dissuasive power over the hegemonic pretensions of private groups supplanting the state's legitimate use of force. Likewise, the crisis is reflected in the shortcomings of the criminal justice system, also leading to chronic instability in the running of the whole penitentiary system.

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In consequence, drug trafficking has accelerated processes of redefinition in the structure of land tenure through a strong establishment or concentration of hegemonic controls over territories attracting the investment of huge capitals. Private armies have flourished with the support of cattle ranchers, large-scale farmers, and investors. They are presented before public opinion as self-defense groups meant to retaliate for the excesses committed by the guerrillas. At the same time, these groups are heavily involved in forceful expropriations that affect indigenous, peasant, and settler populations in their areas. A great social impact is generated as a result of all this: the dynamics that violence and forced displacement assume becomes more and more serious, reaching greater levels than those generated by illegal production and trade in illicit substances.

Anti-drug strategies either do not consider all the dimensions of the drug problem or regard them as being of secondary importance, given their structural nature, because these strategies seek short-term results. Due to this oversimplified reading of reality, the eradication of illicit crops accounts for the greater share of the military budget used to combat drugs as a whole, thus decreasing the efforts that should be concentrated in completely different directions. These types of distortions are replicated, for example, in the budget stipulated for “Plan Colombia.”

CONCLUSION: THE NEED TO REDRAFT THE FORCED ERADICATION POLICY

From the discussion above, it becomes evident that it is crucial to reflect upon a structural redrafting of the forced eradication policy, focusing on the following issues:

1. The decriminalization of small- and medium-scale growers, in order to facilitate a dialogue between the communities affected and the government, without marginalizing those who depend on the illicit economy.
2. Respect and protection for human rights and recognition of the fact that illicit-crop producers are civilians not directly involved in any combat. The civilian population is the primary victim of the deteriorating armed conflict in Colombia at present.
3. Comprehensive social and environmental policies for areas dependent on the illicit economy, based on sustainable development. Such policies should be designed for long-term results and this demands designing programs to gradually substitute for the illicit economy.
4. Creation of administrative and environmental policies that address both the potential and limits of illicit-crop producing areas. All the alternatives must be grounded on ecological conditions and ensure economic and demographic viability. All policies must ensure community participation so that communal and technical support for community-based projects is guaranteed.
5. Finally, there should be recognition of the fact that the current model (supply reduction focused on illicit crop producing areas) is counterproductive and has

already proven to be a failure. Therefore, anti-drug efforts should no longer focus on the destruction of crops through chemical eradication. Anti-narcotics strategies should seek to halt the demand for illicit crops and the raw materials needed for illegal production on the part of organized crime rings. This approach must be accompanied by long-term decisions meant to address the structural aspects mentioned, unlike current policies, which favor the growth of the drug economy in the country's entire socio-economic and political structure.

APPENDIX A: TERMS USED

Supply-reduction policy

The definition of the United States General Accounting Office is used here:

“The objective of supply reduction is to reduce drug availability for illicit use by making drugs difficult to obtain, expensive, and risky to possess, sell, or consume. Supply-reduction efforts attempt to disrupt the entire chain of production and distribution through substituting and eradicating crops in illegal growing areas abroad, interdicting illicit shipments, arresting and jailing important traffickers, and seizing and confiscating the equipment and fiscal resources needed to operate trafficking networks. The basic assumption is that decreasing availability will result in fewer people experimenting with drugs, fewer experimental users advancing to chronic, intensive use of drugs, and many current drug users abandoning their use and seeking treatment.”³⁴

Level of production of raw materials

The illegal drug economy is a circuit involving various distinct stages. The initial phase of the drug chain is characterized by the production of illicit crops used to extract basic coca paste or opium latex. Peasant producers only participate up to this level. Those who produce raw materials have nothing to do with the crystallization of cocaine, a level typically corresponding to organized crime. This is why evaluating the supply-reduction policy is called for, since its main emphasis is placed on the initial level of the illicit drug process.

The supply-reduction policy at the level of raw material production

1. At the production level: The policy is intended to make it much riskier to become involved in the initial phase of the drug chain. In this sense, the actions carried out under its aegis are geared to discouraging more individuals from participating in production, thus seeking to reduce the supply of raw materials demanded by those in charge of processing illegal substances. Ultimately, it is the physical reduction of the quantity of drugs available on the world market for drugs that are being sought.
2. When the amount of the illicit substances to be traded is decreased together with the prohibition measures implemented that repress the demand, the result is believed to have a dissuasive effect, economically complemented with a rise in costs and making the use of illegal drugs less accessible.

Techniques used in the forced eradication of illicit crops

Historically, four techniques have been used when carrying out forced eradication.³⁵

1. Manual or mechanical destruction by cutting or pulling out plants
2. Chemical spraying by manual or aerial fumigation
3. Burning
4. Biological means

Mechanical destruction and aerial spraying have been the two most commonly used methods. Usually the entities in charge of analyzing herbicide application have considered a wide gamut of chemicals and evaluated their effects, culminating in the selection of a few choice herbicides. A United Nations study carried out in 1976 in order to evaluate the use of herbicides in the destruction of illicit cannabis plant and opium poppy crops among a universe of 60 chemicals resulted in the final selection of five of these herbicides:

1. 2,4-D
2. 2,4,5-T
3. Paraquat
4. Diquat
5. Glyphosate

These herbicides were studied for their *effectiveness* in destroying poppy and marijuana plants, their *cost*, *environmental impact*, and the *logistics* implied (their solubility in water received priority), as well as for their *risks to human health*.

APPENDIX B: METHODOLOGY

PRIMARY SOURCES AND ANALYSIS OF DOCUMENTS

1. Review and analysis of documents on the historical follow-up of the impacts caused by herbicides used against illicit crops compiled by the Colombian Ministry for the Environment
2. Review and analysis of complaints filed by communities affected by fumigation before Colombia's Attorney General Office (*Procuraduría General*) and the Ombudsman's Office (*Defensoría del Pueblo*) between 1978 and 1998.
3. Review and analysis of documents on the use of herbicides to be found in the Colombian Ministry of Health, the Colombian General Accounting Office (*Contraloría General de la República*) and the Ministry of Agriculture between 1978 and 1998
4. Review and analysis of documents related to the mobilizations of peasant communities dependent on planting of illicit crops in the Amazonian Departments of Putumayo, Caquetá and Guaviare
5. Historical review and analysis of documents to be found in the U.S. General Accounting Office (GAO) on the application of the supply-reduction policy in the

Andean region. Upon the basis of this information, a historical reconstruction of the fumigation processes undertaken in Colombia between 1978 and 1998 was carried out. Data on the Mexican, Guatemalan and Venezuelan cases was also examined, in order to complement the historical perspective and identify the main factors involved in fumigation decisions.

SOURCES OF QUANTITATIVE DATA ON AREAS OF CULTIVATION AND FUMIGATION

1. For figures related to cannabis plant production: Annual International Narcotics Control Strategy Report, U.S. Department of State
2. For figures related to opium poppy: the Colombian Anti-Narcotics Police
3. For figures related to coca in the whole Andean region: International Narcotics Control Strategy Report, U.S. Department of State
4. For figures related to coca crops in Colombia: Colombian Anti-Narcotics Police and International Narcotics Control Strategy Report, U.S. Department of State

The statistics on coca production issued by the Colombian Antinarcotics Police and INCSR U.S. Department of State coincide up to 1997. They differ since 1998: the State Department's INCSR estimates 101,800 hectares and the Colombian Antinarcotics Police estimates 70,000 hectares. We have used the estimates provided by INCSR due to serious discrepancies with the statistics compiled by the Colombian Antinarcotics Police, as we already explained in the text.

Ordinarily by 'Anti-Drugs Authorities' we have meant information collected by the Colombian Antinarcotics Police, the National Narcotics Bureau (*Dirección Nacional de Estupefacientes*) and the Environmental Impact Assessment commissioned by this Bureau.

ON ERADICATION FIGURES

We used documentation from the main technical studies carried out by UNDCP and the U.S. government, in order to select the types of chemicals employed. For this methodological exercise, we had access to data on trials made with the chemicals approved by these agencies (glyphosate) and those for which open field trials were suggested (paraquat, tebuthiuron and triclopyr).

In the case of glyphosate, the official database used was one compiled using the daily fumigation reports that include geographical coordinates indicating the exact locations sprayed in each municipality. The database was classified per year, municipality, and department. Monthly reconstructions of the fumigation process were undertaken, in order to establish their rationale and general trends.

On the basis of these coordinates, cartography was made (21 maps) in which the overall geographical fumigation trend was established. Maps of parks and natural reserve areas, territorial occupation (colonization) and alternative development programs in the country's southernmost departments were overlapped, in order to examine how fumigation affects such programs.

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A comparison of the annual acreage was made regarding quantitative data on coca bush and opium poppy areas by using estimates of herbicide effectiveness (percentage of 'real kill'). According to the Colombian anti-drugs authorities, there is an average range of 'real kill' of 85% for coca bush and 92.5% for opium poppy. Based on this criterion, the policy might be evaluated according to the decrease in planted areas.

FIELDWORK

The fieldwork for this study was carried out in the region of the Medio and Bajo Caguán, located in the Amazonian Department of Caquetá. We visited fumigated villages and carried out interviews with community leaders, the people affected by fumigation and those in charge of alternative development programs alike.

This fieldwork made it possible to reconstruct the environmental impacts of the production and processing of coca leaf. Population flows, crop displacement and market sites were identified. Maps were drawn, based on crop continuity, in order to establish the areas of greatest coca-bush concentration. This data was compared with fumigation intensity (number of times aircraft flew overhead). Thus it was possible to identify the areas with the greatest proportion of forced displacement, as well as the destination points of migrants. The purpose of this was to quantify social impacts from the point of view of displacement.

Interviews with individuals occupying key positions, directly involved during the critical stages of development of the fumigation policy were carried out in order to understand the political behind-the-scenes interplay influencing these decisions. We also desired to offer more information regarding the inter-institutional controversy.

NOTES

- ¹ Glyphosate is a systemic, non-selective post-emerging herbicide, used in the annual and perennial control of broad-leaved shrubs and plants. It inhibits the synthesis of amino acids. The most common formula of this herbicide used in farming is Roundup. Its manufacturer is the Monsanto Company. Besides the active ingredient glyphosate, Roundup has 15% of the Polyethoxylated tallow amine surfactant (POEA).
- ² In 2000 the environmental authorities of all Andean countries rejected the use of the Fusarium in their territories, and UNDCP withdrew from the project. Research on other fungi continues, however, as well as US pressure to introduce Fusarium. Declaration released in Lima, Peru, Sept 7, 2000 of the II Ordinary Meeting of the Andean Committee of Environmental Authorities – CAAAM, held in the city of Lima, the 5th and 6th of September, 2000. *United Nations Pulls Out of Plans to Use Anti-Drug Biological Weapons in South America*, Press release from Acción Andina (Bogotá), Sunshine Project (US/Germany), and the Transnational Institute (Amsterdam), November 13, 2000. Project *Formas alternativas, integrales y productivas de protección de la biodiversidad en las*

- zonas afectadas por cultivos de coca y su erradicación*. Ministry of the Environment, Humboldt Institute and Amazonian Institute of Scientific Research – SINCHI, Bogotá, July, 2000.
- 3 Guardiola, M.L., 2000. Communication to Medardo Galindo, Colombian Deputy Ombudsman for Collective and Environmental Rights, April 4, Bogota. On the background and emergence of biological warfare, see Jelsma, M., Un hongo contra la coca, Andean Action International Bulletin, Year 9, No. 1, March 2000; English version: Fungus versus Coca, UNDCP and the Biological War on Drugs in Colombia; Wolfensberger, M., (1999) L'ONU veut gagner la guerre de l'opium avec un champignon. Le Temps, September 13, Geneva. Hogshire, J., (1998) Biological Roulette: the Drug War's Fungal Solution? Covert Action Quarterly, Spring, Washington, DC. Rogers, P., Whitby, S., and Dando, M. (1999) Guerra biológica contra los cultivos. Revista Investigación y Ciencia, August, No. 275.
 - 4 The conceptual framework for this text is based upon Graham, F. (1998) A Global Empirical Review of Drugs Crop Eradication and United Nation's Crop Substitution and Alternative Development Strategies, Journal of Drugs Issues, Vol. 28, No. 3, Spring.
 - 5 United States General Accounting Office GGD-80-4. (1979) Washington, October 25.
 - 6 National Narcotics Intelligence Consumers Committee Report. Regarding the new trend in the US heroin market for that period, see also Drugs Enforcement Administration, DEA, Illegal Drug, Price/Purity Report 1988-1991; General Accounting Office, GAO, (1992) War on Drugs, Heroin Price, Purity and Quantities Seized over the Past 10 Years, May, Washington, DC. United States Department of State International Narcotics Control Strategy Report, (1992) Mid-Year Update Sept. Washington, DC. See also, To Avoid AIDS, Users of Heroin Shift from Injecting to Inhaling It, (1991) New York Times, November 16.
 - 7 Consejo Nacional de Estupefacientes (CNE), (1992) Comunicado del CNE a la opinión pública sobre la erradicación del cultivo de amapola, January 31, Bogota.
 - 8 The so-called "coffee belt" in the Colombian Andean region (1,200-1,900 m) lodged some 350,000 small farmers employing two million people. Between 1986 and 1993, the real income for producers decreased by 56%. The dissolution of the International Coffee Agreement contributed to a dramatic drop in coffee price to 50 cents per pound in 1992 and 55 cents per pound in 1993, after it had reached prices of \$2 per pound in 1986. Between 1992 and 1993 alone, 71.000 jobs were lost due to the coffee crisis and to diseases like the 'broca'. See Vargas R. (compiler) (1995) Drogas, poder y región en Colombia, CINEP, Bogota.
 - 9 Opium poppy grows in the Andean zone between 1,800 and 3,000 m.
 - 10 This unusual and risky situation is bound to spread, among others, and in the case of coca, to the civil airports of San José del Guaviare and Puerto Asís.

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- ¹¹ El Espectador, (1992). El glifosato, un veneno económico, April 20, Bogotá.
- ¹² El Espectador, (1992). El glifosato, un veneno económico, April 20, Bogotá.
- ¹³ About the regional economic and social conditions linked to the macroeconomic behavior of the farming sector following the explosion of opium-poppy cultivation, see Vargas, R. and J. Barragán, (1995), *Amapola en Colombia: economía ilegal, violencias e impacto regional*. En Drogas, Poder y Región en Colombia, CINEP, Bogotá.
- ¹⁴ The most significant share of opium poppy producers is from these small towns in the Huila and Cauca Departments. Iquira was the epicenter of opium poppy production between 1992 and 1997.
- ¹⁵ El Espectador, (1992), Camino de amapolas tu verás. March 16.
- ¹⁶ El Espectador, (1992), Camino de amapola tu verás. March 16. p.13A In this sense, the justifications used by some state officials in charge of anti-drugs decisions are worrisome, characterised, as they are, by their lack of information about what really takes place in the regions in question: "...before the 3000 hectares of Andean forest devastated by opium poppy planters during the past months in Southwest Cauca – said the Anti-Narcotic Director – discussing whether aerial fumigation of glyphosate is convenient is practically useless".
- ¹⁷ This is given at present as a rationale for the behavior of many farmers who, when the opium poppy boom began in the early nineties, even allowed photographers to enter their plots (*chagras*), only to be denounced as '*amapoleros*', that is, as criminals who were thus subjected to the full weight of the anti-drugs actions.
- ¹⁸ These decreases are associated with changes that were already taking place in Colombia as a receiver of the increasing domestic supply of basic coca paste, and due to the changes in the entire regional cocaine market fostered by the situation undergone by the Cali and Medellín cartels. The anti-drugs authorities in Washington attributed this behavior to aerial interdiction actions carried out in the frontier between Colombia and Peru. For an analysis of this point, see the document, *The Drug War in the Skies*, (1999), TNI-Accion Andina, May, Cochabamba.
- ¹⁹ This corroborates one of the theses held by Graham, F., *A Global Empirical Review of Drugs Crop Eradication and United Nations' Crop Substitution and Alternative Development Strategies*, (1998) *Journal of Drug Issues*, Vol. 28, No. 3 Spring.
- ²⁰ See discussion and balance of the situation made in the document issued by the Treasury Inspector of the Republic of Colombia, (1995) *Control de gestión ambiental al uso, manejo y aplicación de plaguicidas en el Tolima Grande*. January 26, Bogotá.
- ²¹ This refers to Roundup Ultra, in use for aerial spraying in Colombia since the end of 1999. Its basic formula being : 1. Isopropylamine salt of glyphosate, the active ingredient, makes up 41 percent of the formulation; 2. Water makes up 44.5 percent; 3. A surfactant blend added to aid penetration of the active

- ingredient into the leaves, makes up 14.5 percent of the formulation. The surfactant blend is a phosphate ester neutralized polyethoxylated tallowamine mixture.
- 22 This demand is voiced in the memorandum written by Myles Frechette, U.S. Ambassador in Colombia, when the Samper presidency came to an end: "To apply, instead of glyphosate, a non-liquid granular herbicide that is not soluble when it rains and can be sprayed from higher altitudes, so that fumigation aircraft cannot be attacked as easily from the ground". See *Semana* (1996) No. 739, July 2, Bogotá.
- 23 Ministry of the Environment, mimeograph (n.d.). Concepto técnico sobre los riesgos ambientales del uso del herbicida tebutiurón en la erradicación de cultivos ilícitos. Bogotá.
- 24 *Persistence* evaluates the quantity of a substance that is not transformed, that is, the degree to which a substance maintains its original form in the environment. It indicates the time it can have biological effectiveness, whether it remains in the original site of application, moves by itself or is transferred to another site.
- 25 Normally, the commercial formula SPIKE 20P, prepared with tebuthiuron (20%) as its active ingredient, reads: "SPIKE 20P's herbicidal activity on the soil may prevent the growth of trees, shrubbery and broad-leaved plants for some years following treatment with it
- 26 Imazapyr (Arsenal 100 SL and 240 SL) is a powerful broad-spectrum systemic herbicide, which is non-selective and has a residual activity. Its mobility is high and thus it is exceptionally likely to contaminate water sources. It is a corrosive agent and causes irreparable eye damage as well as reddening, flaking and scabbing of the skin.
- 27 Mainly cassava and plantain crops.
- 28 El Tiempo, (1999). Report on the destruction, in the Amazonian region, of an urban complex thought to be a top-level command post of the FARC (Armed Revolutionary Forces of Colombia) in Caño chupable (located between Barranco de Mina and Cumaribo) in the Vichada. The national security organisms described the site as part of the route used for drug-trafficking and arm-smuggling, allegedly linked to Brazil and to the clearance zone (zona del despeje). See: Documents from Casa Verde II under Evaluation', June 7, Bogotá.
- 29 This information forms part of the field work carried out in the Middle and Lower Caguán, Department of Caquetá, which served as a basis for the present text.
- 30 Portafolio, (1998). El dinero de la guerrilla. March 10, Bogota.
- 31 This case refers to the accident involving Carrier PNC 280, in which the pilot died on 07-01-97.
- 32 This type of radar, such as ROTH in Puerto Rico, handles drug-related information, is complemented by those already existing in Colombia, Peru, Ecuador, Honduras and Guantanamo (Cuba).

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- ³³ Roncken, T., Base para una guerra perdida ? (2000) La Ventana (La Razón), April 9, Cochabamba.
- ³⁴ United States General Accounting Office, (1979) Gains Made In Controlling Illegal Drugs, Yet The Drug Trade Flourishes», GGD-80-4, October 25, p. 9.
- ³⁵ Graham, F., A Global Empirical Review of Drugs Crop Eradication and United Nation's Crop Substitution and Alternative Development Strategies, (1998) in *Journal of Drugs Issues Vol. 28, No. 3, Spring.*

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