



UNITED NATIONS
Office on Drugs and Crime

COCA CULTIVATION IN THE ANDEAN REGION

A survey of Bolivia, Colombia and Peru



data collection

data transfer



Government of Bolivia



Government of Colombia



Government of Peru

June 2006

UNODC's Illicit Crop Monitoring Programme (ICMP) promotes the development and maintenance of a global network of illicit crop monitoring systems in the context of the illicit crop elimination objective set by the United Nations General Assembly Special Session on Drugs. It provides overall coordination and direct technical support and supervision to UNODC supported annual illicit crop surveys at the country level.

This report is an excerpt from the UNODC publication "Coca Cultivation in the Andean Region. A Survey of Bolivia, Colombia, and Peru", June 2006. It is based on the annual coca cultivation surveys in Bolivia, Colombia, and Peru, which were conducted jointly by UNODC (ICMP) and the respective Governments. For detailed information on the coca cultivation surveys in each country, please, refer to:

Government of Bolivia/UNODC (2006): Bolivia Coca Cultivation Survey, June 2006.

Government of Colombia/UNODC (2006): Colombia Coca Cultivation Survey, June 2006.

Government of Peru/UNODC (2006): Peru Coca Cultivation Survey, June 2006.

The complete publication "Coca Cultivation in the Andean Region. A Survey of Bolivia, Colombia, and Peru" as well as the country reports can be downloaded from:

www.unodc.org/unodc/en/crop_monitoring.html

The implementation of UNODC's Illicit Crop Monitoring Programme in the Andean countries was made possible thanks to financial contributions from the Governments of the United States of America, the United Kingdom, Spain, Italy, France and Austria.

The boundaries, names and designations used in all maps in this document do not imply official endorsement or acceptance by the United Nations.

This document has not been formally edited.

REGIONAL OVERVIEW

Introduction

In 1998, the United Nations General Assembly Special Session on Drugs (UNGASS) convened in New York. At that meeting, Members States pledged to work towards achieving significant reductions in illicit crop cultivation by the year 2008. To this end, UNODC established an Illicit Crop Monitoring Programme (ICMP) to assist countries assess their progress in meeting UNGASS targets. Through ICMP, UNODC supports the Governments of Bolivia, Colombia and Peru in the implementation of national coca monitoring systems. While these monitoring systems primarily focus on assessing the extend of coca cultivation, over the years they have gradually integrated other important aspects related to the production and trafficking of coca leaf and its derivatives, such as prices or yields.

This report presents the results of the surveys on coca cultivation in the Andean region in 2005, which were conducted jointly by the governments and UNODC. The regional overview in part one summarizes the three country surveys, and discusses their results in a regional context. Part two reviews environmental issues, which play an important role in the discussion on coca cultivation in recent years. The following parts present the detailed results from Bolivia, Colombia and Peru.

FACT SHEET - ANDEAN COCA SURVEYS FOR 2005

	2004	2005	Variation
Global coca cultivation	158,000 ha	159,600 ha	+1%
Colombia	80,000 ha	86,000 ha	+8%
Peru	50,300 ha	48,200 ha	-4%
Bolivia	27,700 ha	25,400 ha	-8%
Farm-gate value of coca cultivation		US\$ 1,330 million	
Colombia (coca products) ¹		US\$ 843 million	
Peru (coca leaf)	US\$ 304 million	US\$ 307 million	+1%
Bolivia (coca leaf)	US\$ 240 million	US\$ 180 million	-25%
Farmgate value of coca cultivation in % of GDP			
Colombia		0.7%	
Peru	0.4%	0.4%	
Bolivia	3.0%	2.1%	
Global cocaine production	937 mt	910 mt	-3%
Colombia	640 ¹ mt	640 mt	0%
Peru	190 mt	180 mt	-5%
Bolivia	107 mt	90 mt	-16%
Average wholesale price of cocaine			
Colombia (in main cities)	US\$ 1,710/kg	US\$ 1,860/kg	+9%
Peru (in producing regions)	US\$ 890/kg	US\$ 890/kg	0%
Bolivia (in main cities)	US\$ 1,800/kg	US\$ 1,800/kg	0%
Europe	US\$ 45,830/kg	US\$ 47,690/kg	+2%
United States	US\$ 22,070/kg	n.a.	
Reported eradication of coca cultivation			
Colombia	142,786 ha	170,042 ha	+19%
Peru	10,399 ha	12,232 ha	+18%
Bolivia	8,437 ha	6,073 ha	-28%
Reported seizure of cocaine (HCl) in South America	264 mt	n.a.	
Colombia	188 mt	<i>173 mt</i>	
Peru	7,3 mt	<i>2,2 mt</i>	
Bolivia	0.5 mt	<i>1.3 mt</i>	
Reported seizure of cocaine in			
West and Central Europe	79 mt	n.a.	
North America	196 mt	n.a.	

Note: Figures in *italics* are preliminary.

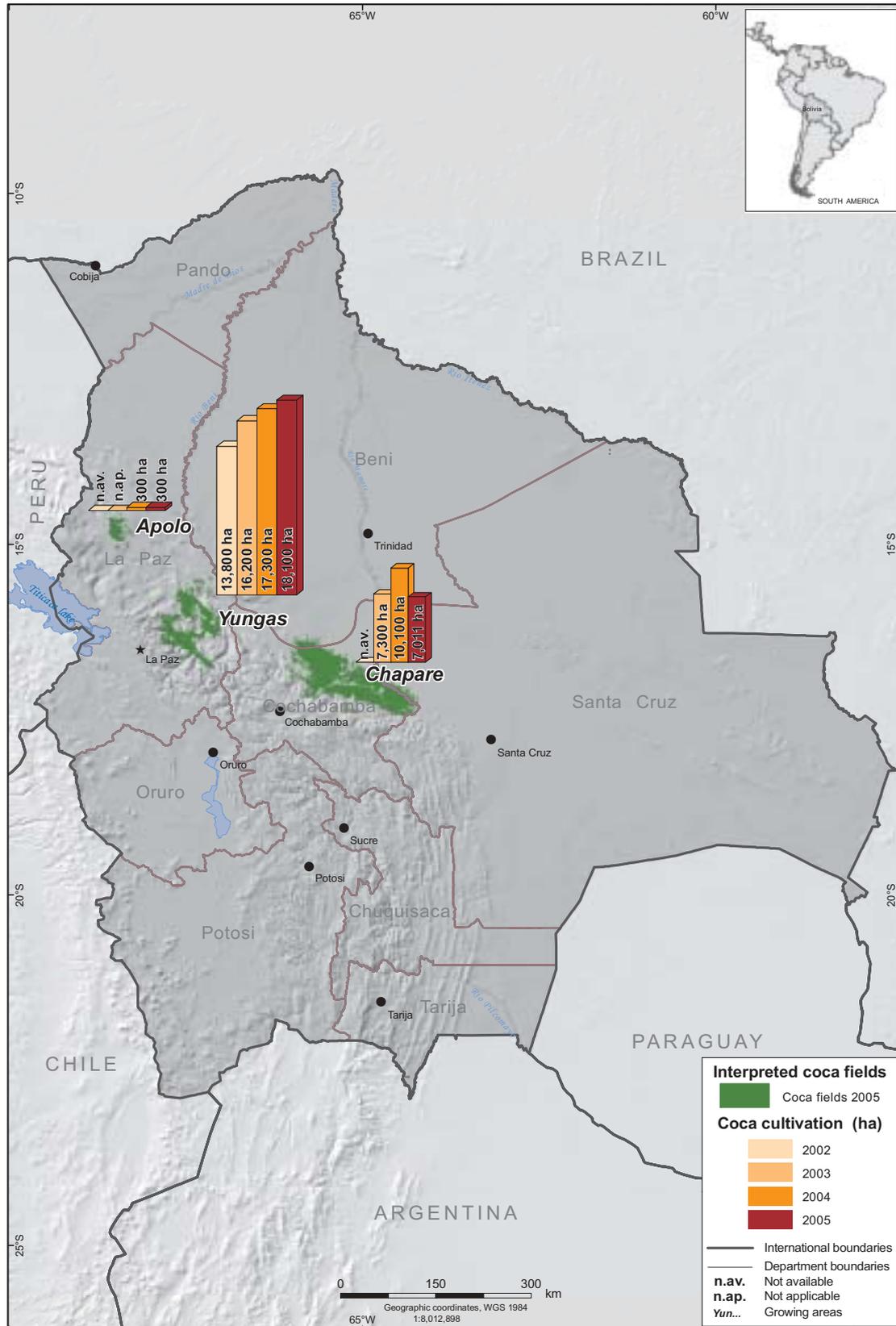
¹ Colombian cocaine production for 2004 has been revised following the field findings obtained in 2005. Farm-gate values for 2004 are not available due to a change in methodology.

Map 1: Coca cultivation density in the Andean Region, 2005



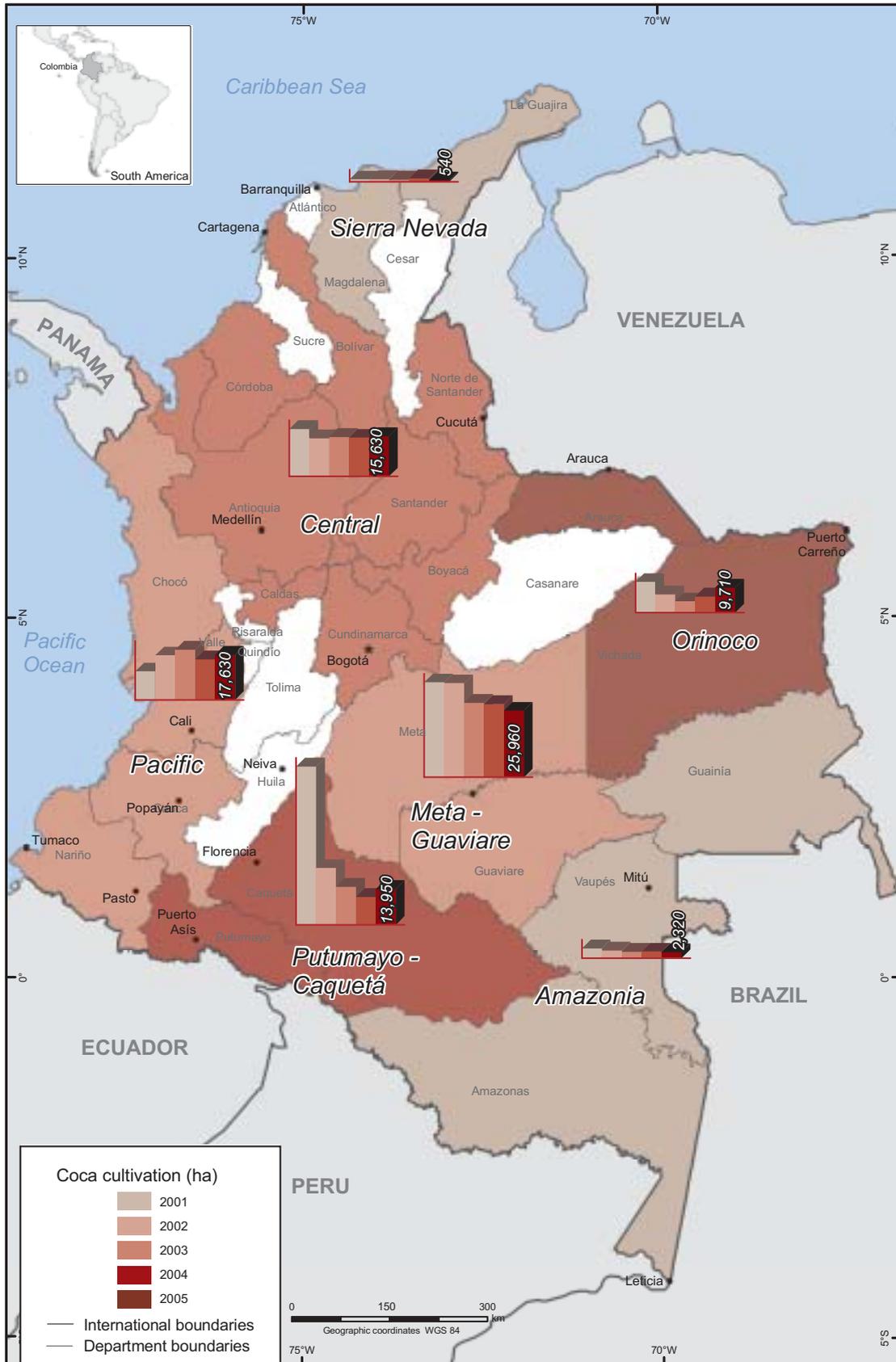
Sources: Governments of Bolivia, Colombia y Peru, National monitoring systems supported by UNODC
 The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations

Map 2: Coca cultivation by region in Bolivia, 2001 – 2005



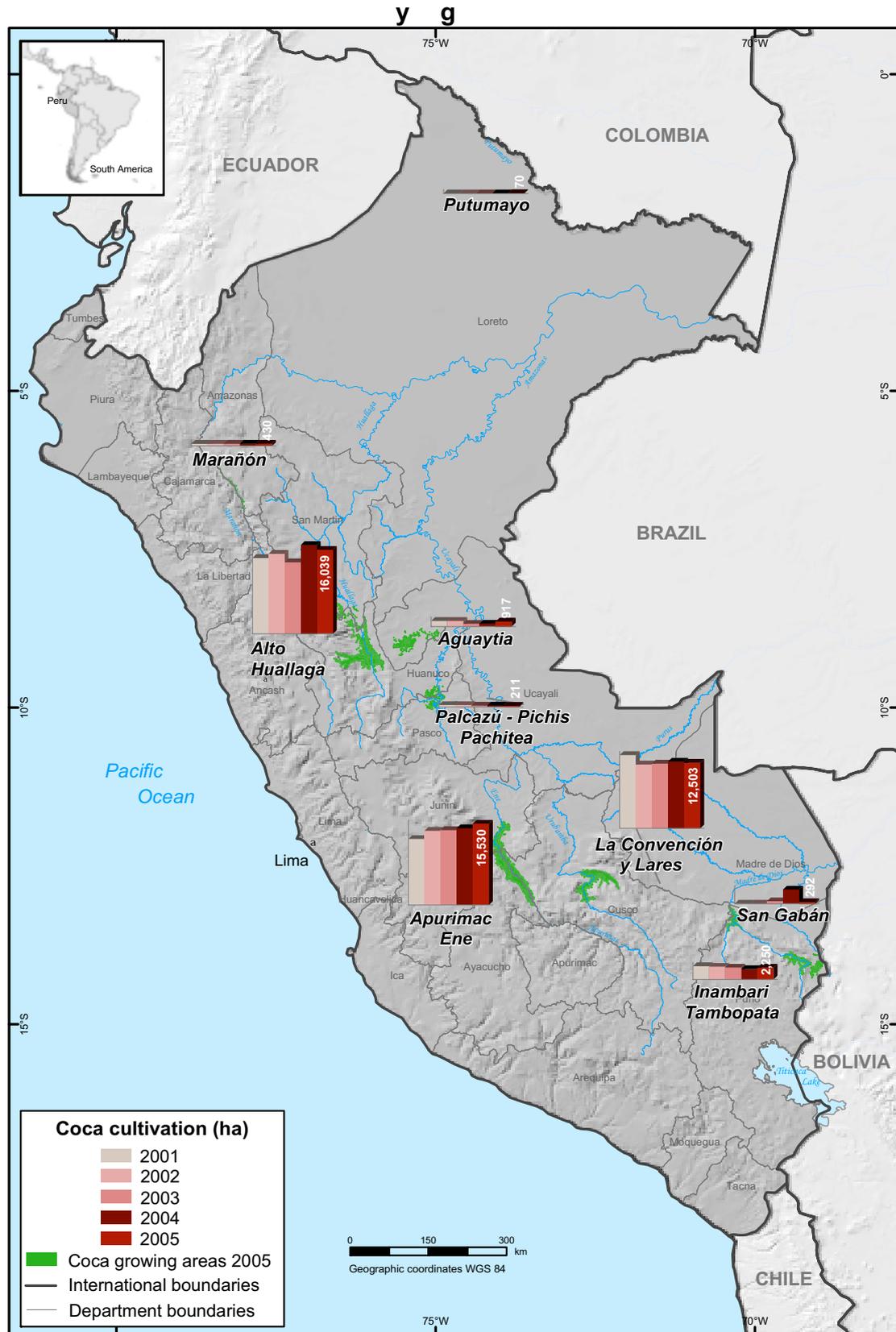
Source: Government of Bolivia - National monitoring system supported by UNODC
 The boundaries and names shown and the designation used on this map do not imply official endorsement or acceptance by the United Nations

Map 3: Coca cultivation by region in Colombia, 2001 – 2005



Source: Government of Colombia - National monitoring system supported by UNODC
 The boundaries and names shown and the designations used in this map do not imply official endorsement or acceptance by the United Nations

Map 4: Coca cultivation by region in Peru, 2001 – 2005



Source: Government of Peru - National of monitoring system supported by UNODC

The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations

Coca cultivation in the Andean region

In 2005, coca cultivation in the Andean region increased by only one percent from 158,000 in 2004 to 159,600 hectares. This small hike reflects an 8% increase of cultivation in Colombia, while coca cultivation in Bolivia and Peru fell by 8% and 4% respectively.

The majority of all coca cultivation, 54 percent, continues to take place in Colombia, Peru remains second with 30 %, and Bolivia, with 16 %, is in third place. There was no indication of large levels of coca cultivation outside Colombia, Peru and Bolivia.

Figure 1: Coca cultivation in the Andean region (ha), 1994 - 2005

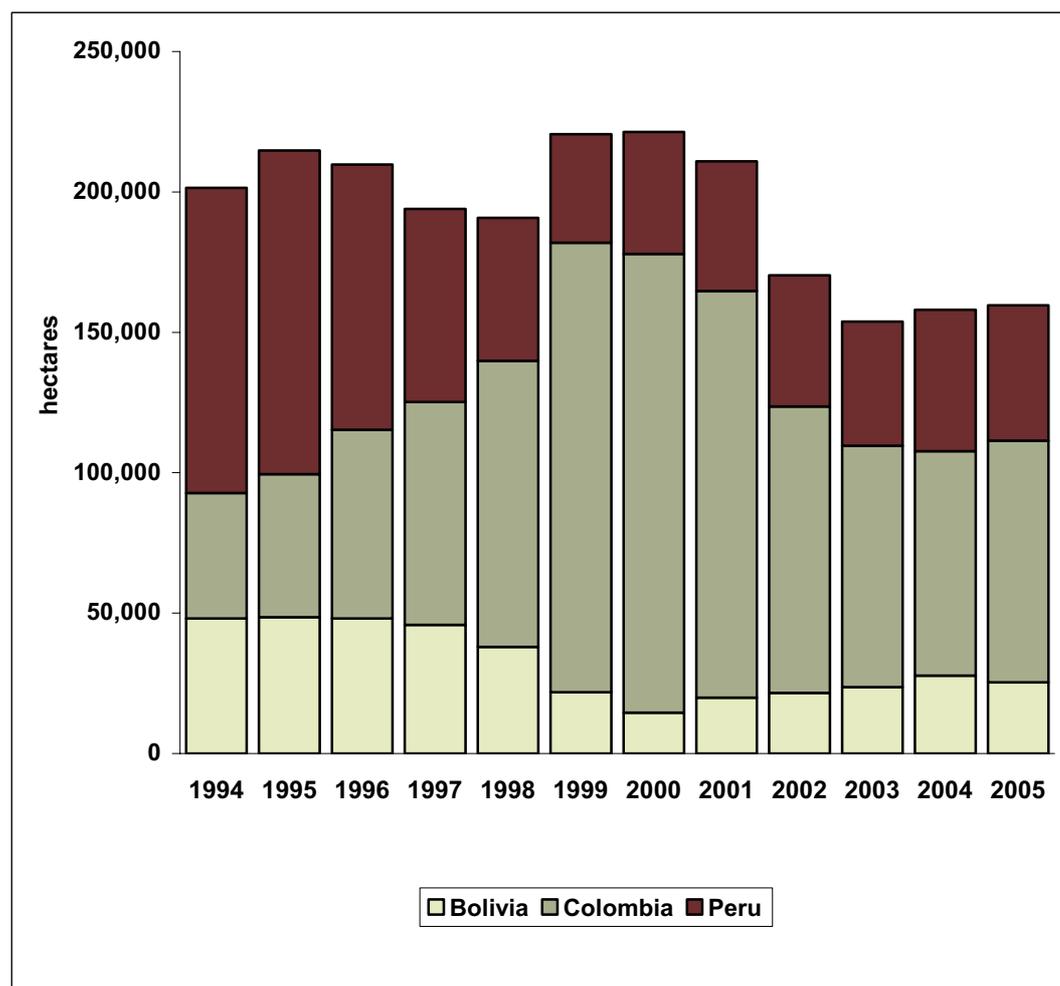


Table 1: Coca cultivation in the Andean Region (ha), 1994-2005

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	% change 2004-2005
Bolivia	48,100	48,600	48,100	45,800	38,000	21,800	14,600	19,900	21,600	23,600	27,700	25,400	-8%
Peru	108,600	115,300	94,400	68,800	51,000	38,700	43,400	46,200	46,700	44,200	50,300	48,200	-4%
Colombia	44,700	50,900	67,200	79,400	101,800	160,100	163,300	144,800	102,000	86,000	80,000	86,000	8%
Total	201,400	214,800	209,700	194,000	190,800	220,600	221,300	210,900	170,300	153,800	158,000	159,600	1%

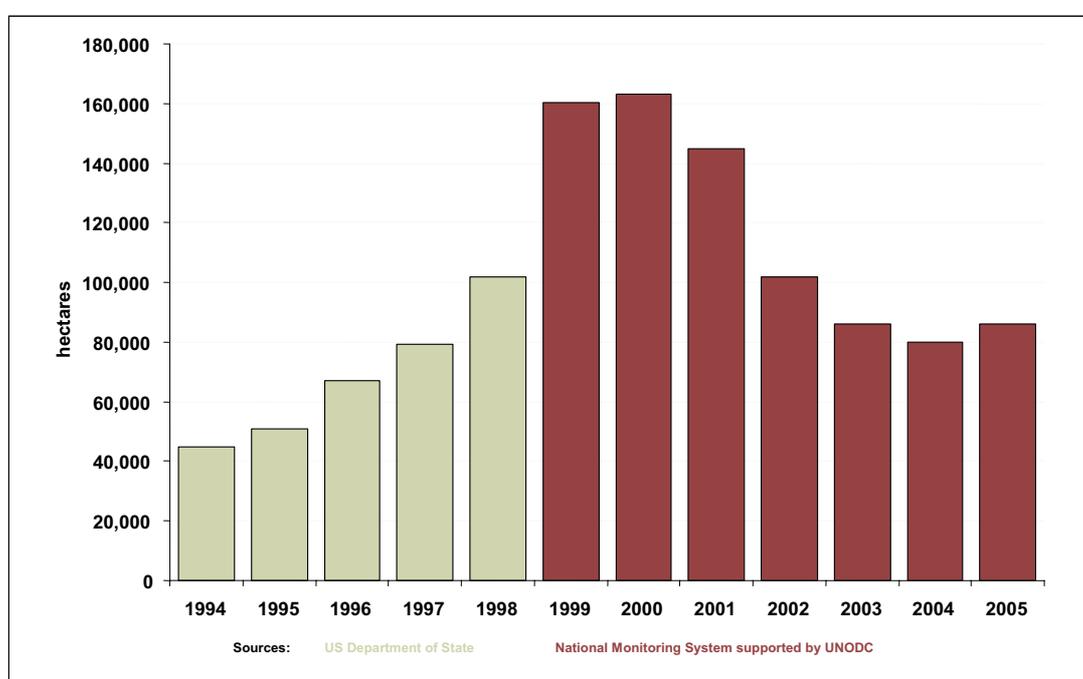
Sources United States Department of States

National Monitoring Systems Supported by UNODC

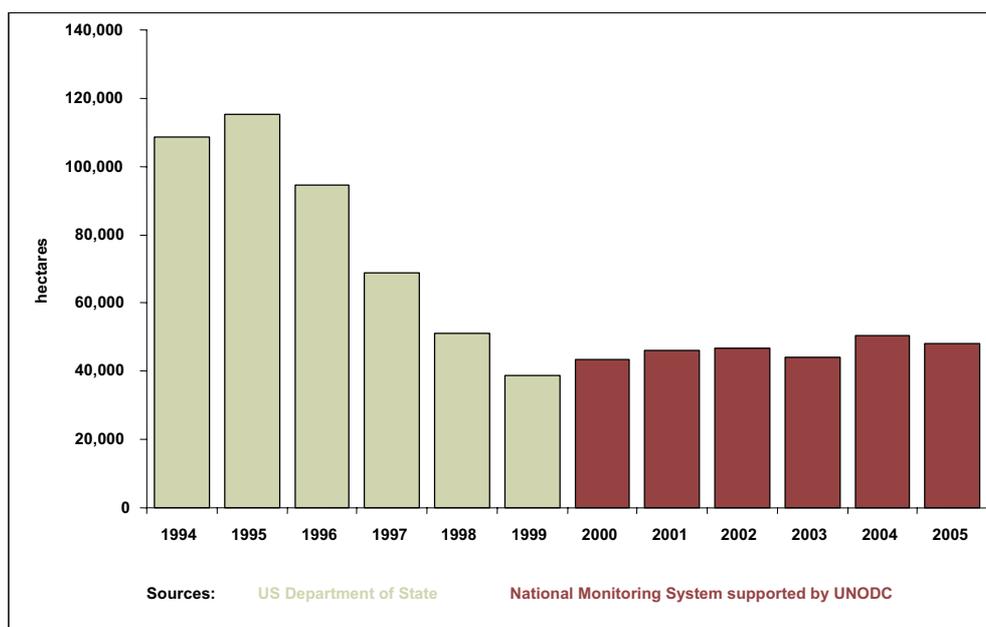
In 2005, the total area under coca cultivation in Colombia increased by 6,000 hectares to 86,000 hectares, a 8% increase compared to late year's estimate of 80,000 hectares, despite the continued eradication effort of the Government of Colombia. This is the first increase following four consecutive years of decrease in Colombia. In 2005, a total of 170,780 hectares were eradicated, including 138,780 hectares through aerial spraying and 32,000 hectares manual eradication. The area under coca cultivation in 2005 was still 47% lower compared to the peak annual estimate of 163,300 ha in 2000. The survey covered the whole country and detected coca cultivation in 23 departments out of 32.

The most important increases between 2004 and 2005 were observed in the departments of Putumayo (bordering Ecuador) and Vichada (bordering Venezuela). Most of the new coca fields in Putumayo were established on the foot hills close to the border with Narino and Cauca Departments, where spraying is particularly difficult. The largest decrease took place in the Department of Norte de Santander at the border with Venezuela where some important alternative development projects have been implemented.

Figure 2: Coca cultivation in Colombia (ha), 1995-2005

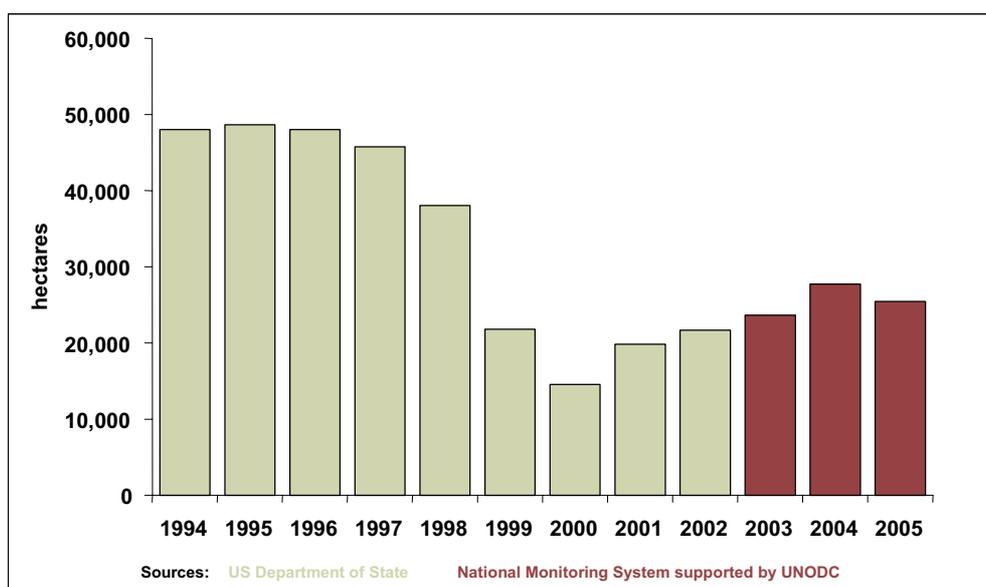


In 2005, the total area under coca cultivation in Peru was estimated at 48,200 ha. This represents a decrease of 4% over the estimate of 50,300 ha for 2004. The decrease was mainly due to the eradication campaigns implemented in the department of San Martin in Alto Huallaga region and San Gaban valley. In these two regions alone, coca cultivation decreased from 4,000 ha in 2004 to 670 ha in 2005. This decrease was slightly offset by increases in others regions of Alto Huallaga, and by relatively small increases in Apurimac-Ene and Aguaytia. Despite the decrease between 2004 and 2005, coca cultivation in Peru remained the second largest after Colombia. It represents 30% of the 2005 global coca cultivation, compared to 33% in 2004. A percentage that remained much lower than ten years ago, when coca cultivation in Peru accounted for 54% of the cultivation in the world.

Figure 3: Coca cultivation in Peru (ha), 1995-2005

In 2005, the total area under coca cultivation in Bolivia was estimated at 25,400 ha, a decrease of 8% over to last year's estimate of 27,700 ha. The decrease at the national level was due to a decrease in the Chapare region, where coca cultivation decreased by 31% between 2004 and 2005. The decrease in Chapare was attributed to the compliance of the farmers to the agreement of October 2004 between the Government and coca growers federation, limiting coca cultivation to 0.16 ha by family.

Coca cultivation in the Yungas increased by 5% between 2004 and 2005 to reach 18,100 ha. The Yungas remained the most important region for coca cultivation in Bolivia, accounting for 71% of the total cultivation in 2005. The total estimate of 25,400 ha also included 12,000 hectares in the Yungas (47% of total cultivation), permitted by the Bolivian Law No. 1008 (Law on the Regime Applicable to Coca and Controlled Substances, 1988) for traditional uses such as leaf chewing, medicinal preparations and coca tea. Further, the total included an additional 3,200 hectares of coca cultivation temporarily authorized in October 2004 by the Bolivian Government in the Chapare region.

Figure 4: Coca cultivation in Bolivia (ha), 1994-2005

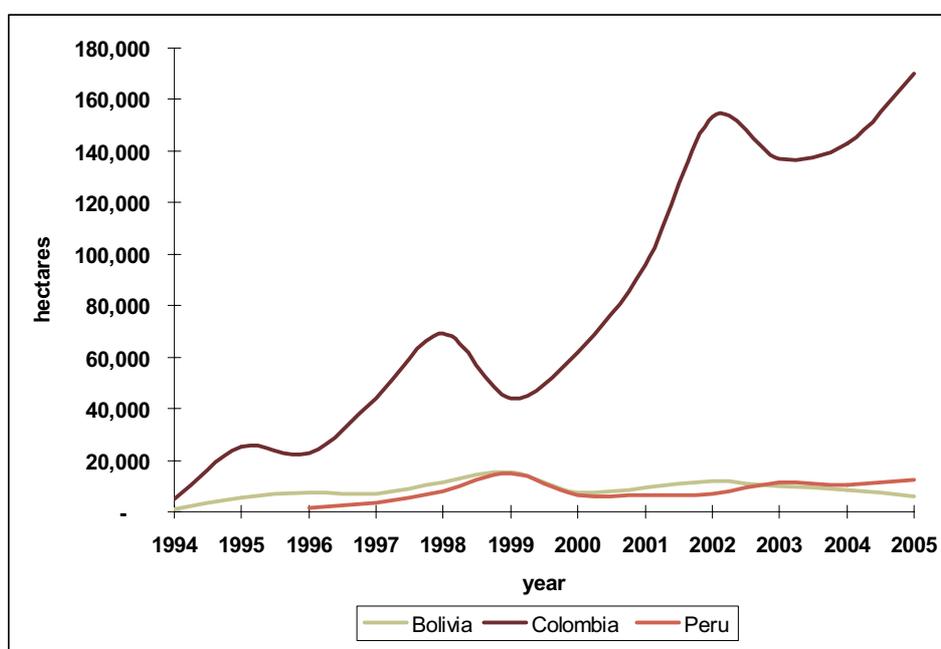
Eradication

In 2005, eradication reached record levels in Colombia, while there was a slight increase in Peru and some decrease in Bolivia. Overall, the levels of eradication remained high in the three countries in 2004.

Reports from the Colombian Government show that 138,775 hectares were sprayed, representing an increase of 2% compared to last year. For the first time in 2005, spraying activities were implemented in the departments of Chocó, Cundinamarca and Valle. In addition to spraying, manual eradication of 31,287 hectares of coca cultivation was reported, a record compared to previous years. The total of both types of eradication (spraying and manual) amounted to 170,042 hectares in 2005.

The Government of Peru reported the eradication of 12,232 ha of coca fields in 2005, of which 8,966 ha were eradicated as part of a forced eradication programme and 3,266 ha as part of a programme of voluntary eradication. Total eradication increased by 19% compared to 2004. In 2005, the Bolivia reported the eradication of 6,073 ha of coca fields. No eradication was reported in the Yungas of La Paz. The level of eradication decreased by 28% compared to 2004. In Peru and Bolivia the eradication of coca cultivation is exclusively manual.

Figure 5: Eradication of coca bush in Bolivia, Colombia and Peru (ha)



Production of coca leaf and derivatives

Bolivia and Peru have areas where coca has been traditionally grown for local use of coca leaf. In Colombia, traditional use of the coca leaf can be considered marginal, and virtually the entire coca leaf production is destined for cocaine production. Therefore, farmers in Colombia trade leaves as fresh or process them to coca paste or cocaine base in small “kitchens” located on the farm. In Peru and Bolivia, farmers trade sun-dried leaves and, in both countries, the sun-dried coca leaf trade for traditional, commercial or industrial uses is regulated by the Government. Leaves traded outside the controlled market are destined for cocaine production.

In Colombia, the Government, jointly with UNODC, implemented a coca leaf yield survey, which indicated that the coca leaf yields were higher than previously thought, establishing at 6,300 kg/hectare/yr of fresh coca leaf (equivalent to 2,700 kg/hectare/year of sun-dried coca leaf). With the information provided by the farmers for coca paste and cocaine base production, and the conversion factors provided by Operation Breakthrough for conversion to pure cocaine, the

average annual yield per hectare for pure cocaine hydrochloride reached 7.7 kg/hectare, compared to 4.7 kg/hectare previously used. Based on this data, the total cocaine production in Colombia for 2005 reached 640 metric tons cocaine.

In Peru, assuming an average sun-dried coca leaf yield of 2,200 kg/ha, the total sun-dried coca leaf production was estimated at 106,000 metric tons. Of this amount, a study of the National Institute of Statistics and Computer Science estimated that about 9,000 metric tons corresponded to the annual demand for coca leaves for traditional, commercial or industrial uses. The balance is used for cocaine production. Assuming a cocaine yield per hectare of 4.1 kg/ha – similar to the average yield obtained in 2004 - the total rounded cocaine production in Peru was estimated at 180 metric tons. Thus, cocaine production in Peru decreased by 5% compared to 190 metric tons produced in 2004.

In Bolivia, the overall area under coca cultivation produced an estimated 42,000 metric tons of sun-dried leaf, of which 30,900 metric tons were estimated to be available for cocaine production. The potential cocaine production in Bolivia amounted to 90 metric tons in 2005. This corresponds to a decrease of 16% compared to the 2004 estimate of 107 metric tons. The significant decrease in cocaine production reflects the large decrease in coca cultivation in the Chapare region (-31%) where coca leaf yield was more than two times higher than elsewhere in the country (2,700 kg/ha compared to 1,200 kg/ha sun-dried leaf).

Potential cocaine production in Colombia accounted for 70%, Peru for 20% and Bolivia for 10% of the global potential cocaine production of 910 metric tons.

Figure 6: Global cocaine production (metric tons), 1990-2005²

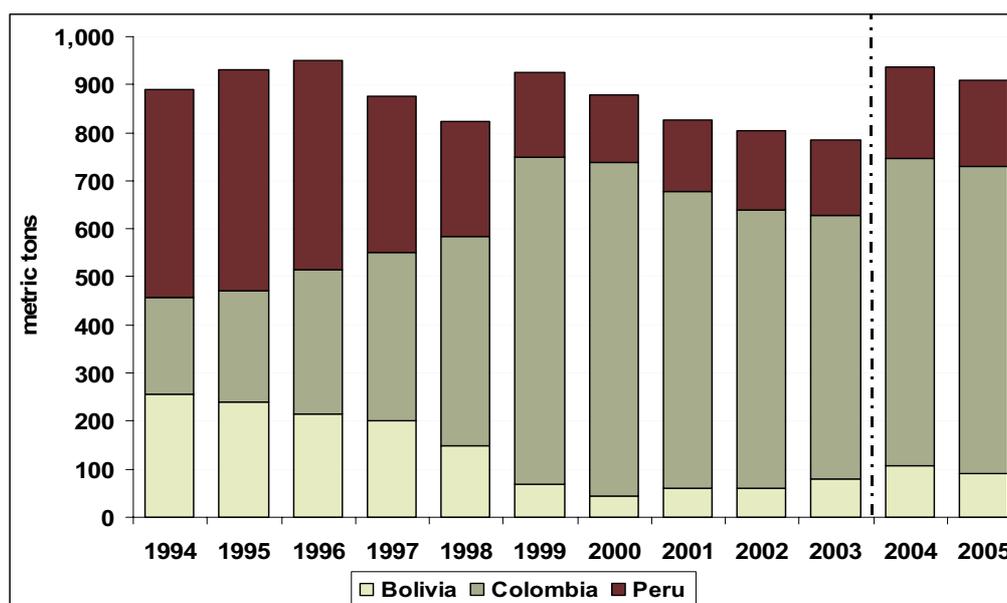


Table 2: Potential cocaine production in the Andean region (metric tons), 1994-2005

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	% change 2004-2005
Bolivia	255	240	215	200	150	70	43	60	60	79	107	90	-16%
Peru	435	460	435	325	240	175	141	150	165	155	190	180	-5%
Colombia	201	230	300	350	435	680	695	617	580	550	640	640	0%
Total	891	930	950	875	825	925	879	827	805	784	937	910	-3%

Source: UNODC World Drug Report 2006

² Colombian cocaine production data for 2004 and 2005 is based on new field research.

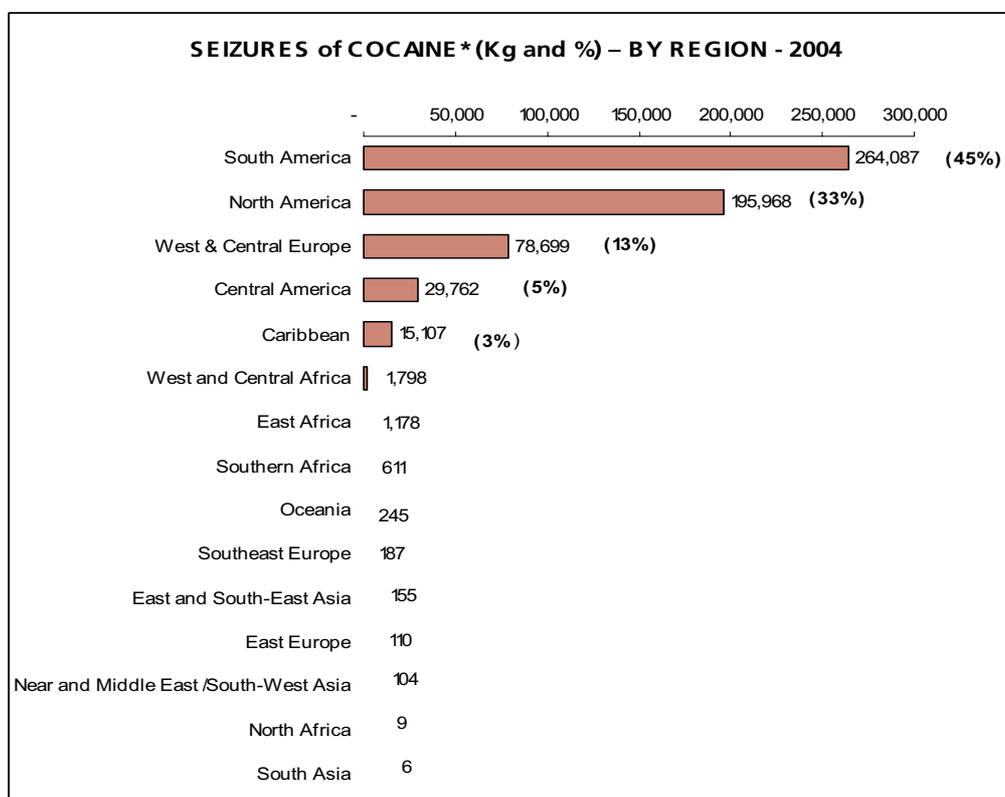
Cocaine seizures and seized coca processing laboratories

Global cocaine seizures increased by 18% to 588 metric tons in 2004, the highest figure ever recorded. This followed an increase in global cocaine seizures of 34% in 2003. The increase in cocaine seizures appears to be largely the result of better cooperation among law enforcement services and improved sharing of intelligence information.

Most of the globally intercepted cocaine in 2004 was seized in the Americas (86%). South America accounted for 45%, North America for 33% and Central America & the Caribbean for 8% of global seizures.

For the third year in a row, Colombia topped the ranking of world cocaine seizures, with almost 188 metric tons cocaine hydrochloride (HCl) and cocaine base seized in 2004, 32 per cent of the world total and the highest such figure ever reported from any country. This clearly reflects the strong enforcement efforts undertaken by the Colombian authorities over the last few years. An analysis of the trafficking patterns done by the Colombian authorities revealed that more than half of the country's seizures took place at the ports; 60% of the cocaine left the country via the Pacific coast and 40% via the Atlantic coast in 2004.

Figure 7: Global cocaine seizures by region, 2004



Source: UNODC, Annual Reports Questionnaire Data / DELTA

In Peru, seizures of coca paste and cocaine hydrochloride decreased, but destruction and seizures of coca leaves increased between 2004 and 2005. Seizures of cocaine hydrochloride decreased from 7,3 mt in 2004 to 2,1 mt in 2005, while seizures and destruction of coca leaves increased from 916 mt to 1,525 mt. There were, however, regular operations of the anti-narcotics police to destroy coca maceration pits and clandestine laboratories.

In 2005, the Government of Bolivia reported the seizure of 886 metric tons of coca leaves, representing a spectacular increase of 470% compared to the reported seizures of 155 metric tons in 2004. The increase in seizure of coca leaf can be attributed to the strengthening of the special

force for the control of coca leaves, which included the control of additional roads, and improvement in equipment and infrastructure.

In addition, it should be noted that 2.1 metric tons of coca leaves from Peru were seized mostly in La Paz department, representing 0.2% of the total seizure in Bolivia. These seizures occurred mainly during the Bolivian dry season, when there is less coca leaf available in Bolivia.

In 2004, Governments reported the destruction of 8,208 coca processing laboratories worldwide, an almost four-fold increase since 2000 when 2,104 laboratories were reported destroyed.

The destruction of laboratories and production sites reflects the fact that most processing of coca leaf into cocaine takes place close to the cultivating areas in Bolivia, Colombia and Peru. This is true for both the intermediate products coca paste/base and the final product, cocaine hydrochloride. Bolivia, Colombia and Peru reported more than 99 per cent of the global total.

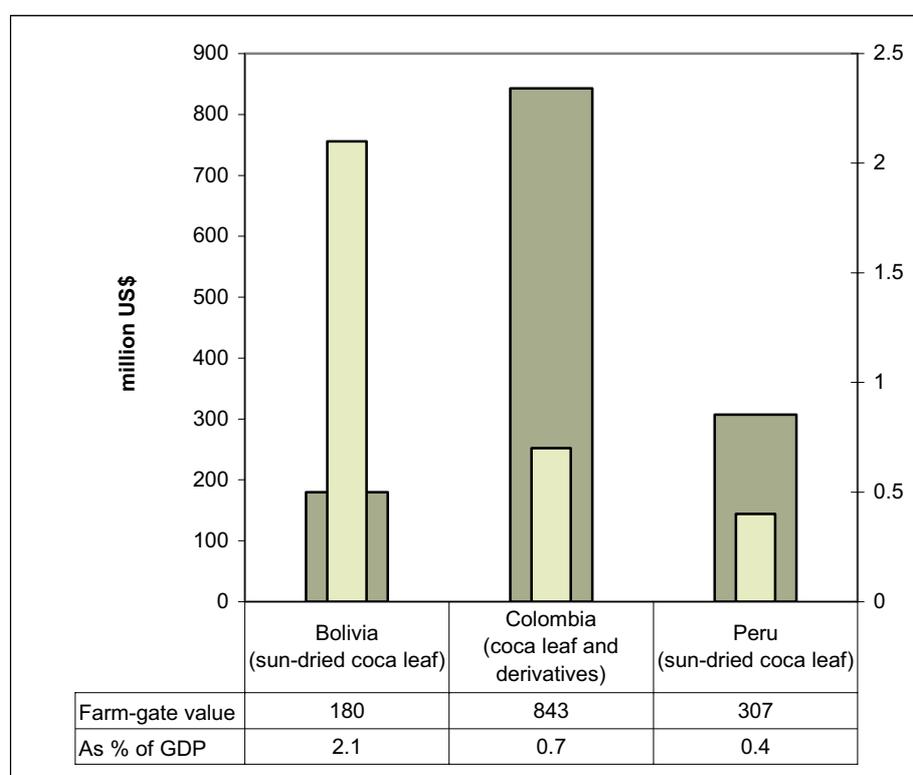
However, some differences exist between the three main coca cultivating countries. Whereas in Bolivia and Peru, destroyed laboratories almost exclusively produced coca paste and cocaine base, some 13 per cent of all coca processing laboratories destroyed in Colombia were manufacturing cocaine. Ninety-four per cent of the 256 cocaine processing laboratories destroyed worldwide were located in Colombia.

Farm-gate values and farm-gate prices

Farm-gate values of coca cultivation in Bolivia and Peru are based on sun-dried coca leaf production. For Colombia, the farm gate value is based on the total production of each product sold by the farmers (fresh leaf, coca paste and cocaine base).

The total farm-gate income value resulting from coca cultivation in Colombia was estimated at about US\$ 843 millions in 2005. This is equivalent to 0.7% of the 2005 GDP and 6% of the GDP of the agricultural sector. It should be noted however that this value does not take into account production costs like herbicides, pesticides, fertilizers and wages.

Figure 8: Potential farm gate value of coca cultivation as % of GDP



In Peru, the potential farm-gate value of the sun-dried coca leaf production amounted to about US\$ 307 million, estimated from the sale of 106,000 metric tons of coca leaf at 2.9 US\$/kg in 2005. This represented about 0.4% of the 2004 GDP estimated at US\$ 68.6 billion .

Farm-gate value of coca leaf production in Bolivia reached US\$ 180 million in 2005. This estimate took into account the total value of the controlled market, as well as the farm-gate value of coca leaf outside this market. Total value was equivalent to 2.1% of the country's GDP for 2005 (US\$ 8.4 billion) or 12% of the value of the agricultural sector in 2003 (US\$ 1.5 billion).

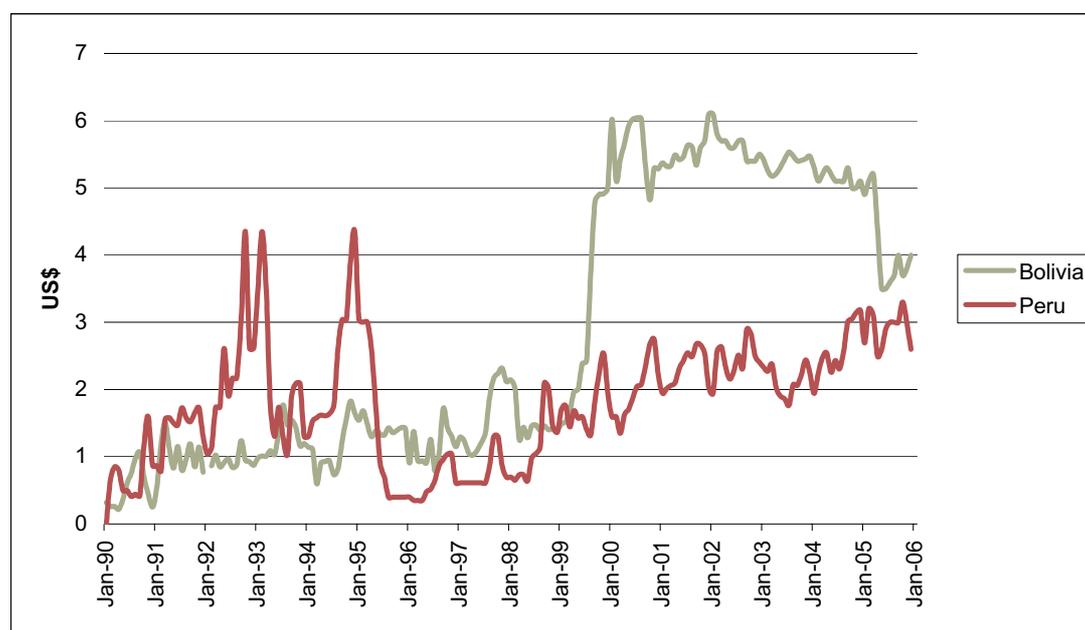
Although the farm-gate value of coca leaf in Bolivia is the smallest among the three countries, it is equivalent to a much higher proportion of the GDP compared to Colombia and Peru. This indicates the relative importance the coca sector has for the Bolivian economy.

Farm-gate prices

Prices for illicit products are subject to several factors besides the reactions to supply and demand. One should take into consideration that coca cultivation in many areas takes place under the control of armed groups or under the influence of drug cartels that tend to monopolise the coca trade and impose their prices and conditions on the farmers. Besides this, eradication efforts, changes in the currency exchange rate between the local currency and the US dollar, price increases or decrease of agricultural inputs or precursors all play a role in determining price levels.

In Bolivia and Peru, the markets for sun-dried coca leaf are regulated by government institutions. Typically, prices on the government controlled markets are lower than those obtained outside these markets. Coca leaves not traded through the government controlled channels are destined for cocaine production.

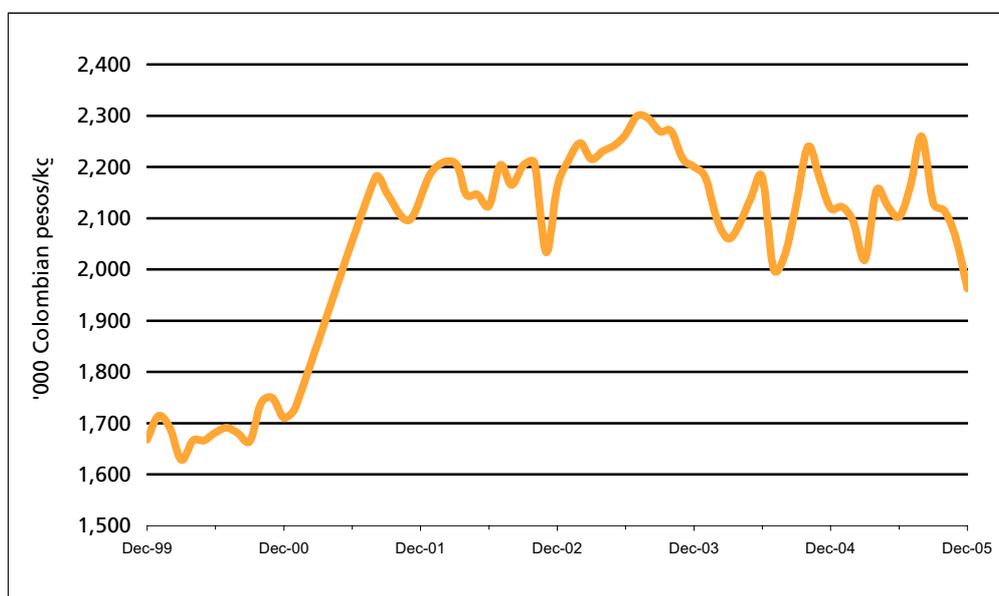
Figure 9: Prices for sun-dried coca leaf in Bolivia and Peru (US\$/kg), 1990 - 2005



Following an increase in eradication, farm-gate prices for sun-dried coca leaf in Bolivia reached a peak of around US\$ 6 in 2000. Since then, prices fell to below US\$ 4 but continued to be substantially higher than in neighbouring Peru (US\$ 2.9/kg in 2005). There, prices have shown a rather steady increase since 1996. This was the year, when prices fell drastically after having reached peaks of over US\$ 4 in the early 1990s. There is some evidence from seizure data that sun-dried coca leaves are trafficked from Peru to Bolivia.

Converted into dry leaf equivalents, prices for fresh coca leaf in Colombia (US\$ 2.56/kg) are comparable to prices for sun-dried leaf in Peru but lower than in Bolivia. After a sharp increase in 2001, which can be seen in connection with the successful efforts of governments to stop the trafficking of cocaine base from Peru to Colombia, prices for coca paste in Colombia tend to oscillate around 2,100,000 Colombian Pesos (US\$ 900) per kilogramme.

Figure 10: Colombia, average price for coca paste (COP/kg), 1999 - 2005



Cocaine abuse in Latin America

A lesser known fact is that South America is the world's third largest market for cocaine use with an estimated 1,981,000 users (2004/5). Prevalence rate of cocaine abuse among the population age 15-64 are as high as those for Europe (0.7%), although considerably lower than in North America (2.3%). The prevalence rate in the main coca cultivation countries is close or above the regional average thus indicating a strong link between illicit crop cultivation, cocaine production and abuse. In Bolivia, which has prevalence rates well over the Latin American average, annual prevalence of cocaine use largely follows the trend of domestic cocaine production. Following strong increases in the early 1990s until 1996, cocaine prevalence rates declined and started increasing again only over the 2000 to 2005 period, reaching 1.6% for cocaine HCl and 1.9% for cocaine base in 2005.

Poverty and development

Despite the obvious geographic association of rural underdevelopment and coca cultivation, it is a much more complex task to assess how coca cultivation and poverty are linked on the household level. Due to the illicit nature of coca cultivation and the security situation in many growing areas, comprehensive data on the household level allowing a direct comparison between coca-growing and non-coca-growing households is scarce. A first assessment can be made by taking into consideration the farm-gate value of coca products and the number of families estimated to be involved in coca cultivation.

Farmers in Colombia, the largest producer of coca leaf, produced US\$ 843 million worth of cocaine base. This translates into a gross per capita income of US\$ 2,500 for members of coca farming households. However, production costs for fertilizer, agro-chemicals, and hired labour have to be deducted from this amount. It seems that even the gross per capita income derived from coca cultivation is well below the average GDP per capita, confirming that coca farmers belong to the economically worse off part of the population. The figures for Peru and Bolivia show a similar scenario.

Table 3: Farm-gate value and per capita income from coca

	Potential farm-gate value of coca products 2005 (million US\$)	No. of households involved in coca cultivation ^a	Per capita income from coca (US\$)	GDP per capita (US\$)
Bolivia	180	40,000	900	974 ^b
Colombia	843	68,600	2,500	2,700 ^c
Peru	307	50,000	1,200	2,490 ^b

a Estimates for Bolivia and Peru are derived from the average field size per household. The estimate for Colombia is based on field research.

b 2004 GDP for Bolivia and Peru, World Bank

c 2005 GDP for Colombia, National Department of Statistics, Colombia

A study on coca yield in conducted by the Government of Colombia and UNODC in 2005 also covered some poverty-related aspects of coca cultivation. When asked for the main reason for growing coca, 55% of the farmers mentioned economic reasons, either mentioning openly the profitability of doing so or the fact that coca leaves and derivatives are easily marketable. Another 28% claimed they had no other choice, and the remaining 17% stated that coca cultivation was part of the local culture.

In Bolivia, Human Development Index (HDI) values for 2001 are available at the municipality level. Coca cultivation was found in 17 out of the 326 municipalities in the country. The average HDI for the coca-growing municipalities was 0.54, indicating that their population is slightly worse-off compared to the non-growing municipalities, which had an HDI of 0.57. However, the difference was not statistically significant, so that this result cannot be interpreted as indicating a generally lower HDI in coca-growing municipalities.

Alternative development is an approach specifically designed to discourage farmers from growing illicit crops. Alternative development programmes contribute to prevention and reduction of coca cultivation as well as to the overall development of the local community. However, alternative development currently reach only a fraction of the population involved in illicit crop cultivation or at risk to do so. Alternative development programmes are being carried out by UNODC in Bolivia, Colombia, Ecuador and Peru.

In Colombia, a study by the Colombian government and UNODC revealed that only 9% of the coca farmers interviewed reported having received any kind of assistance to stop growing coca plants. In fact, only about 6,800 households are being assisted by UNODC through alternative developments projects in the country. Those that do receive assistance, cultivate around 80,000 hectares of licit crops, a figure almost as high as the total area under coca cultivation. In addition, the Colombian government reaches over 31,000 beneficiaries with its forest warden families programme, which provides incentives to communities to reduce coca cultivation and preserve the environment.

Compared to the estimated number of households involved in coca cultivation, Bolivia has the highest proportion of households assisted by UNODC's alternative development programmes. These 9,100 households cultivate about 210,000 hectares of licit crops, seven times the area under coca.

Alternative development projects started as early as 1986 in Peru. The remarkable success in reducing coca cultivation from 129,000 hectares at its peak in 1992 to below 50,000 hectares in 2005 can be attributed to a combination of eradication efforts, air control to prevent the transport of coca paste towards Colombia, and the implementation of alternative development projects. In some areas targeted by these projects such as Bajo Huallaga, coca cultivation virtually disappeared.