1.3 The global cocaine market

Cocaine has been a popular recreational drug for decades, and while demand appears to be on the wane in its largest markets, it has gained popularity in an ever widening range of countries. 'Cocaine' comprises at least two distinct drug products: powder cocaine on the one hand, and a range of cocaine base products, mostly falling under the heading of 'crack', on the other. Powder cocaine produces a more subtle effect, is more expensive to use, and has become emblematic of economic success in some circles. Demand has emerged in many developing countries, particularly among elites. Crack is cheaper, more intense, and associated with prostitution and street crime. Traditionally, crack use was rare outside the United States of America and the United Kingdom, but this also appears to be changing, especially in Latin America and parts of Africa.

Starting in the 1960s and 1970s, global production, trafficking and consumption of cocaine rose strongly. Until the mid-1960s, global cocaine seizures were measured in the tens of kilograms annually. In recent years, they have been in the hundreds of tons. Based on seizure figures, it appears that cocaine markets grew most dramatically during the 1980s, when the amounts seized increased by more than 40% per year. The number of countries reporting cocaine seizures has also grown during this period, from 44 in 1980 to 87 in 1990 and 123 in 2008.[1]

1 UNODC ARQ.

1.3.1 Dimensions

Supply, demand and value

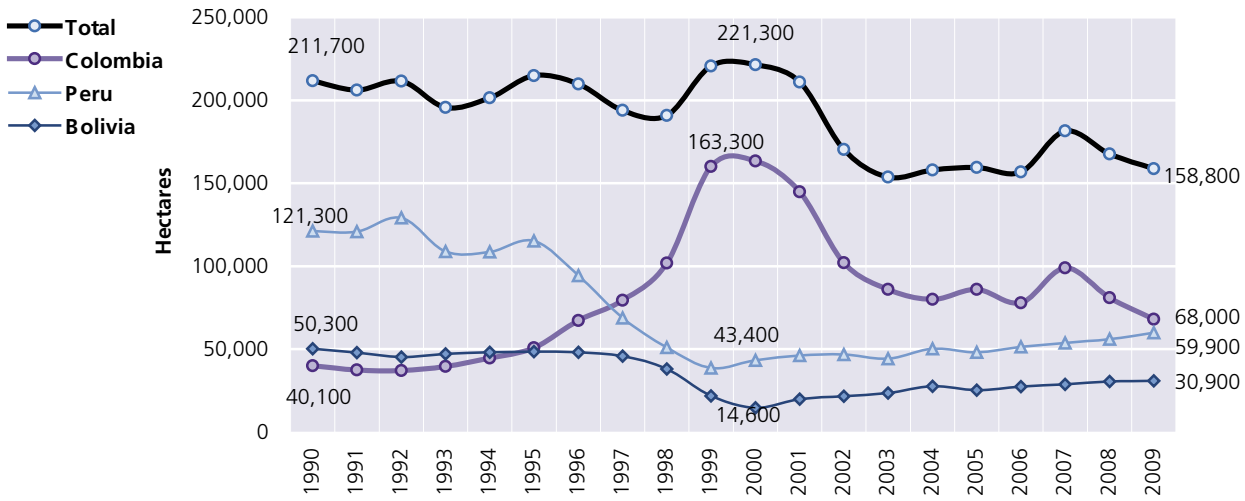
The extent as well as the pattern of global cocaine production have changed significantly over the last four decades. From the end of World War II until the late 1990s, almost all the world's coca bush (the raw material for the manufacture of cocaine) was grown in Peru and the Plurinational State of Bolivia, and since the 1970s, most of this output was refined into cocaine in Colombia. This increased over time and, in 1997, coca cultivation in Colombia exceeded that of the traditional growers for the first time.

In the twenty-first century, the pendulum has swung back again. Coca cultivation in Colombia decreased by 58% between 2000 and 2009, mainly due to large-scale eradication. At the same time, it increased by 38% in Peru and more than doubled in the Plurinational State of Bolivia (+112%), and both of these countries have acquired the ability to produce their own refined cocaine. Despite the increases in Peru and the Plurinational State of Bolivia, the net decline in the global area under coca cultivation over the 2000-2009 period was significant, amounting to 28%. A far smaller area is now under coca cultivation than in any year of the 1990s.

In 2008, an estimated 865 metric tons (mt) of pure cocaine were produced. This was the lowest level in five years and considerably less than a year earlier when over 1,000 mt were produced. A further decline on a year earlier seems to have taken place in 2009 though final figures for 2009 are not yet available. In 2008, Colombia appears to have been responsible for about half of

Fig. 20: Global coca bush cultivation (ha), 1990-2009

Source: UNODC



global production, with Peru contributing over one third and the Plurinational State of Bolivia making up the balance.

The process of analysing the production of cocaine is complex, though, because the amount of cocaine that can be produced out of a given plot of land varies over time and between areas. Productivity has grown in some areas due to improvements in both farming and processing techniques, but eradication has pushed some cultivation into less suitable areas, decreasing yields. Improvements in laboratory efficiency increased again cocaine production. In the end, the hectares of cultivation (determined through satellite and ground surveys) are multiplied by an average kilogram-per-hectare coca leaf yield figure and coca-leaf to cocaine transformation ratios to generate a cocaine production estimate. When these ratios are updated, they can create misleading year-on-year trends (like those seen between 2003 and 2004). The long-term trends should be more accurate (provided the coca yields and transformation ratios were accurately measured). It appears that, despite radical changes within countries, total cocaine output has been fairly stable over the last decade. This perception may still change, however, once updated and properly verified information on the different ratios for the different countries (and for the various coca producing regions in these countries) becomes available.

Global cocaine seizures have grown greatly over the last decade, suggesting that a declining amount of the drug is actually reaching the markets - unless there is more production than presently accounted for. Most of the increase in seizures came from South America while

Fig. 21: Global cocaine production, 1990-2008

Source: UNODC

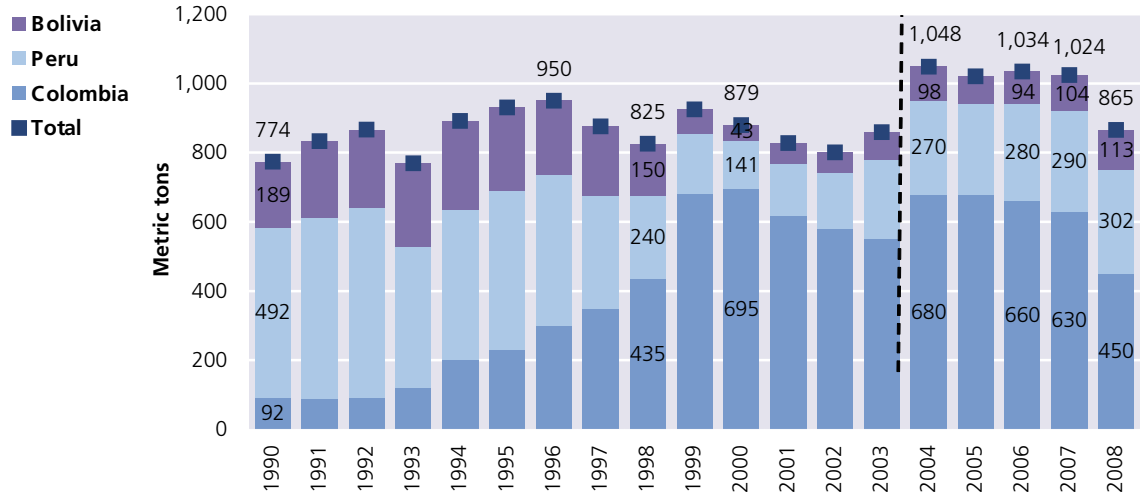
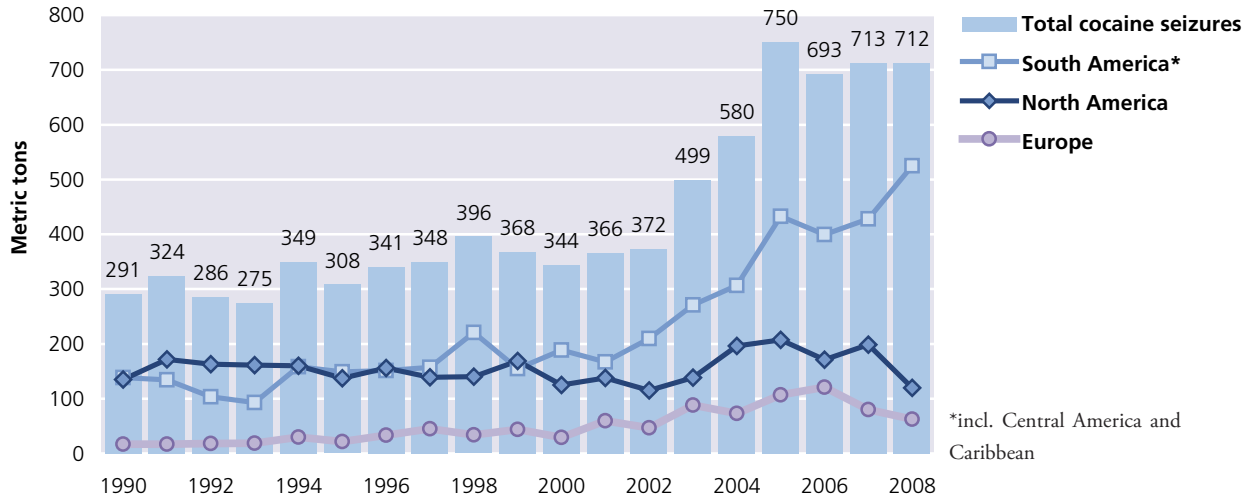


Fig. 22: Global cocaine seizures (unadjusted for purity), 1990-2008

Source: UNODC DELTA



seizures in North America and Europe declined between 2006 and 2008. Since 2001, Colombia has seized more cocaine than any other country in the world, and seizures have also increased strongly in Central America.[2] Enhanced international cooperation has meant that many shipments are seized before they leave their source country, or before they reach their final destination.

But here again, the analysis is complex because production estimates are made on the basis of pure cocaine, and most seizures consist of a product of uncertain dilution. It appears that the purity of cocaine shipments is declining. Traditionally, they have been around 60% cocaine, but the average purity[3] reported to UNODC declined to 58% in 2007 and 51% in 2008. Keeping these considerations in mind, it appears that a large share of the cocaine produced is seized: around 42%.[4] This share has increased dramatically from a decade ago, when the figure was closer to 24%.

Once purity is accounted for and seizures deducted, it seems that the amount of cocaine available for consumption fell from over 700 mt in the mid-1990s to around 500 mt in 2008.[5]

How does this tally with what is known about global cocaine consumption? Knowledge about cocaine consumption is based on household surveys. Unfortunately, few countries have annual household surveys on drug use, and in some areas of the world (mostly in Asia and Africa), few such surveys have ever been conducted. In keeping with this uncertainty, starting last year, UNODC presents use rates as ranges, rather than point estimates.

In many cases, though, the reason why a survey has not been undertaken is because there is good reason to believe that widespread drug use is unlikely. As a result, the best point estimates are often toward the bottom of the range of uncertainty. For example, it is theoretically possible that cocaine use is widespread in China and India, since no national survey data exist to establish the level of use in either country. But based on what is known about cocaine production, trafficking patterns and the countries themselves (derived from seizures, arrests, treatment and qualitative information), this is highly unlikely. Taking just these two countries out of the picture can have a dramatic effect on global use estimates.

Based on the best reading of the available data, the number of people who consumed cocaine at least once in the previous year may have increased by around 14% between the late 1990s and 2008, with the rate of annual cocaine use basically stable in the last decade, at about 0.4% of the adult population (16 million people in 2008; range: 15-19 millions).

2 It is possible that some of this rise was due to double counting. Enhanced international cooperation could lead to several countries reporting a single cocaine seizure as their own.

3 Unweighted average of wholesale and retail purity data reported by Member States to UNODC in a given year.

4 If reported purities were weighted by the amounts seized, the calculated average purity would be higher, which would result in an even higher interception rate. However, some of the reported seizures are inflated due to double counting.

5 Methods to estimate the potential cocaine production in the Andean region are currently under review and could lead to higher estimates than previously reported. While it is too early to predict the outcome of this exercise, it may help answer the questions raised by a decline of the estimated cocaine availability in recent years, while the number of cocaine users was increasing (though in different regions at various stages of market maturity).

Fig. 23: Cocaine production, seizures and supply to markets, 1990-2008

Sources: UNODC *World Drug Report 2009* and DELTA

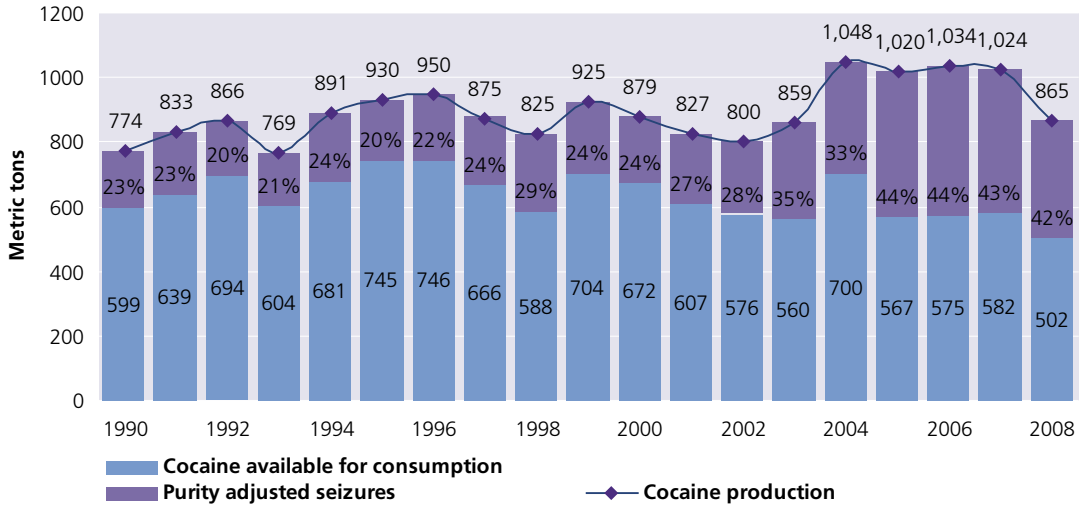
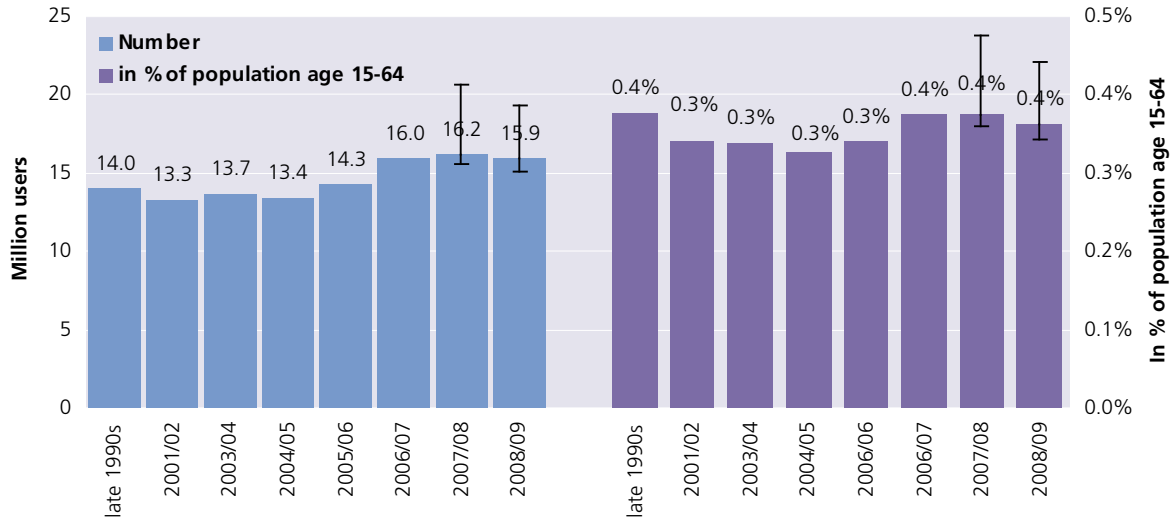


Fig. 24: Annual prevalence of cocaine use at the global level

Sources: UNODC *World Drug Report 2008* and updates based on ARQ



If the amount of cocaine making it to market has declined (from more than 700 mt in the late 1990s to around 500 mt in 2008) while the number of users increased over the past 10 years, then the amount used by each consumer must have declined significantly. Alternatively, one should not exclude the possibility that laboratory efficiency may have increased stronger than is currently reflected in the cocaine production estimates so that global cocaine availability (production less seizures) may have remained stable or increased slightly over the last decade.

How well does all this jell with expert opinion about global drug trends? One of the questions asked in UNODC's Annual Reports Questionnaire (ARQ) concerns perceptions about trends in each drug market. This allows countries who do not conduct surveys to highlight what they see as emerging drug issues. If these responses are amalgamated to create an index,[6] this index is rising, suggesting that a growing number of countries indicate that cocaine is a growing problem. If these responses are weighted by the estimated cocaine-using population, however, the global trend is downwards in recent years, in keeping with the decline in use in the United States, the largest national cocaine market. A clear divergence can be seen between the responses of developed (OECD) and developing countries: use is perceived to be declining in the former and increasing in the latter.

6 For 'strong increase' 2 points are given; for 'some increase '1 point; for stable: 0 points; for 'some decline' 1 point is deducted and for 'strong decline' 2 points are deducted. The average at the global level is then calculated.

Fig. 25: Global trends in cocaine use as perceived by government experts, 1992-2008

Source: UNODC ARQ

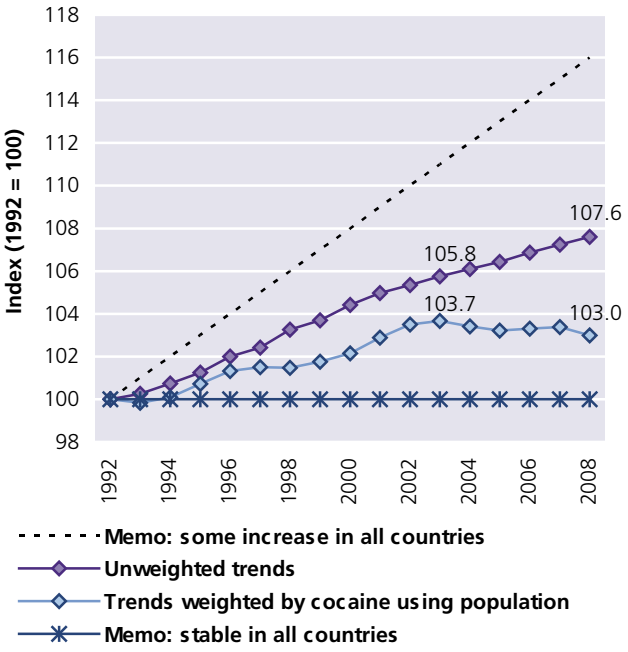
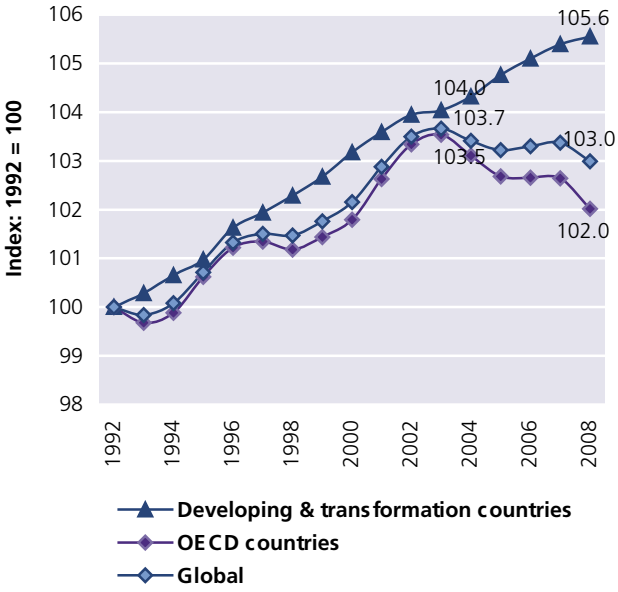


Fig. 26: Global trends in cocaine use, OECD versus non-OECD countries, as perceived by government experts (based on trends weighted by cocaine using population), 1992-2008

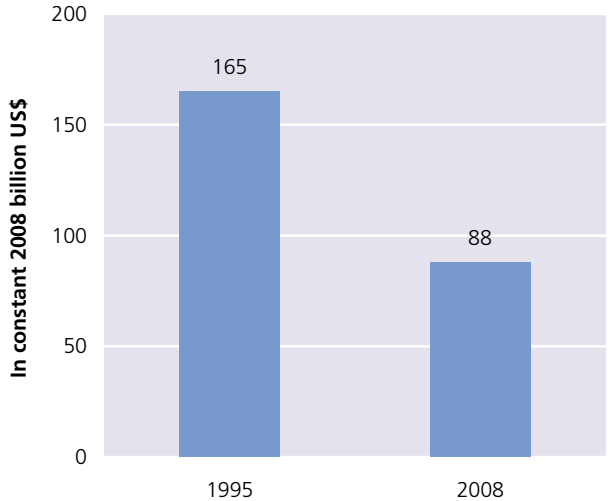
Source: UNODC ARQ



How has this affected the value of the global cocaine market? The value is most certainly lower than it was in the mid-1990s, when prices were much higher and the US market was strong. For 1995, UNODC estimated the retail value of the global market at US$117 billion.[7] Expressed in constant 2008 US dollars, this would be equivalent to US$165 billon in 2008. The corresponding figure for 2008 would be US$88 billion (range: US$80–US$100 bn), suggesting the value has halved in this 13-year period. The global cocaine retail sales were equivalent to 0.15% of global GDP in 2008, down from 0.4% of global GDP in 1995. Nonetheless, the value of global cocaine retail sales in 2008 were still higher than the gross domestic product (GDP) of 123 out of 184 countries for which the World Bank provided estimates for the years 2007 or 2008.

Fig. 27: Global cocaine retail market in billion constant 2008 US$, 1995 and 2008

Source: UNODC estimates[8]

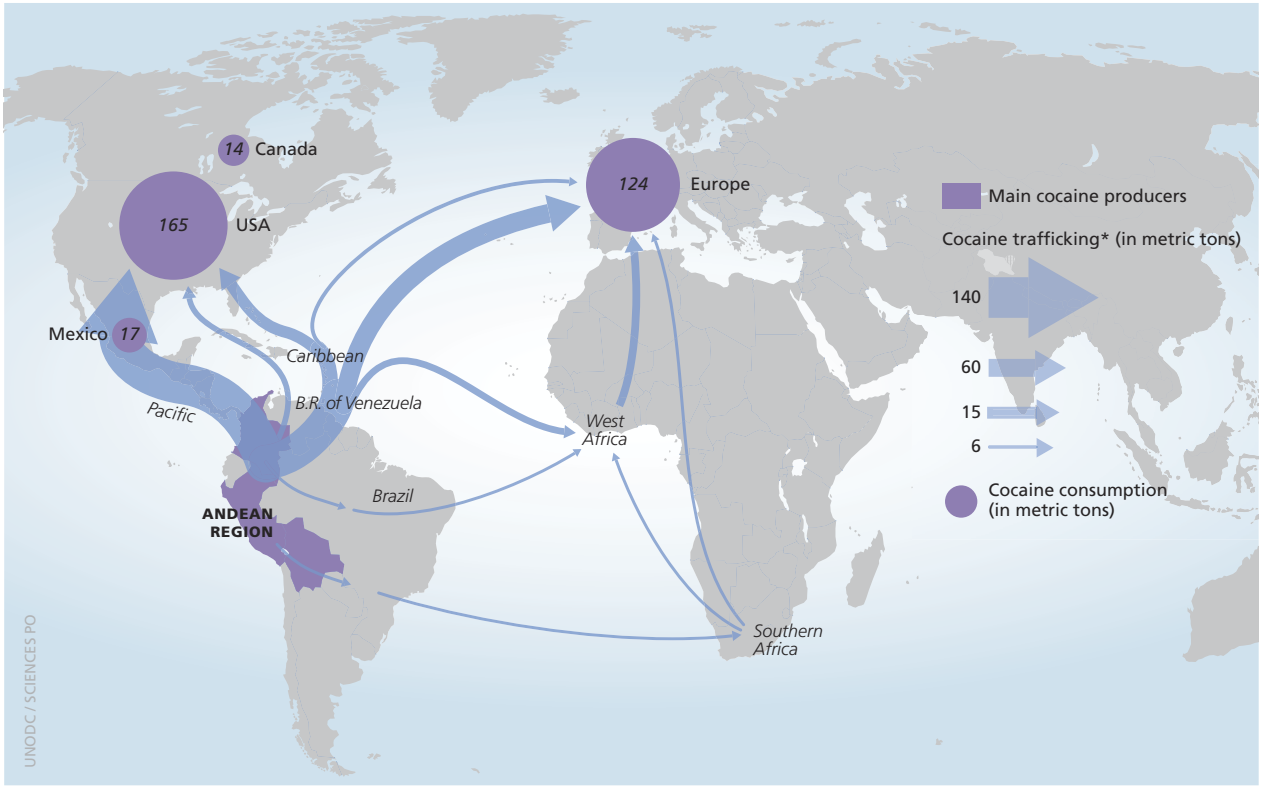


7 UNDCP, *Economic and Social Consequences of Drug Abuse and Illicit Trafficking*, Vienna 1997.

8 UNDCP, *Economic and Social Consequences of Drug Abuse and Illicit Trafficking*, Vienna 1997; World Bank, *World Development Indicators 2009*; UNODC estimates for 2008 based on UNODC ARQ; UNODC, "Estimating the value of illicit drug markets" in UNODC, *2005 World Drug Report*, Volume 1: Analysis, pp. 123-143; ONDCP, *What America's Users Spend on Illegal Drugs*, December 2001; United Nations Department of Economic and Social Affairs, Population Division, *World Population Prospects: The 2008 Revision*, 2009; SAMHSA, *National Survey on Drug Use and Health*, Rockville MD 2009, and previous years; FBI, *Uniform Crime Reports* (2002-2008); ONDCP, *Arrestee Drug Abuse Monitoring Program - ADAM II 2008 Annual Report*, Washington D.C, April 2009; ONDCP, "Cocaine Consumption Estimates Methodology", September 2008 (internal paper); US State Department, *International Narcotics Control Strategy Report*, March 2010; ONDCP, *The Price and Purity of Illicit Drugs: 1981-2007*, Report pared by the Institute for Defense Analysis for ONDCP, Washington, July 2008; US Drug Enforcement Agency analysis of STRIDE data; Health Canada, *Canadian Alcohol and Drug Use Monitoring Survey 2008*; Instituto Nacional de Salud Pública, *Encuesta Nacional de Adicciones*, 2008; EMCDDA, *Statistical Bulletin 2009*; European Centre for Social Welfare Policy, *Two Worlds of Drug Consumption in Late Modern Societies*, Vienna 2009; UK Home Office, *Sizing the UK market for illicit drugs*, London 2001; Home Office, *Measuring different aspects of problem drug use: methodological developments*, Home Office Online Report 16/06, London 2006; and various other Government reports.

Map 6: Main global cocaine flows, 2008

Source: UNODC, *World Drug Report 2009,* and UNODC calculations, informed by US ONDCP, *Cocaine Consumption Estimates Methodology*, September 2008 (internal paper).



Global volume and distribution

Although cocaine use appears to be growing in developing countries, the vast bulk of the production is destined for two major overseas markets: North America (6.2 million users in 2008) and Europe (4 to 5 million users, of which 4.1 million were in the EU and EFTA countries).[9] The largest emerging market in the developing world is seen in the South America, Central America and Caribbean region, with some 2.7 million users. Estimates are far less certain for use levels in Asia and Africa.

Current estimates suggest that about 500 mt of pure cocaine were available for consumption in 2008, of which around 480 mt were actually consumed. The rest was either stocked or lost in transit. Based on what is known about production, seizures, use levels and use rates, a likely global distribution of the 480 mt of cocaine consumed in 2008 is presented in a separate table. This table suggests that more than 320 mt, or around two thirds, is consumed in the mature cocaine markets of North America (41%) and West Europe (26%). Latin America is not far behind, however, suggesting that more attention should be paid to this growing market.

These estimates remain tentative, with substantial uncertainty in Asia and Africa in particular, but they are generally in keeping with the distribution of global cocaine seizures.

Based on this distribution and what is known about prices and purities, it is possible to place a retail value on each regional market. Due to much higher purity-adjusted retail prices, the estimated value of the market in Europe (US$34 billion) is almost as large as that of North America (US$38 billion). Surprisingly, the third largest cocaine market, in economic terms, is the Oceania region, worth an estimated US$6 billion, due to very high retail prices.

Global impact

The use of cocaine constitutes, first of all, a major health problem. Cocaine use results in tens of thousands of deaths each year worldwide. After the opiates, cocaine is the most problematic drug globally, and it is indisputably the main problem drug in the Americas. Out of the 5.3 million people who used cocaine at least once in the United States during 2008, 1.9 million also used cocaine in the previous month, of which almost 1 million were found to have been dependent on cocaine.[10] In other

9 The 27 countries of the European Union (EU) and the four countries of the European Free Trade Association (EFTA).

10 Substance dependence was based on the definition of the 4th edi-

Table 8: Tentative distribution of global cocaine consumption (purity-adjusted), 2008

Source: UNODC estimates[11]

	Estimated number of users (in millions)	Grams per user per year	Amounts of pure cocaine consumed (in mt)	In %
North America	6.2	31.6	196	41%
EU/EFTA	4.1	30.2	124	26%
South America, Central America, Caribbean	2.7	35	95	20%
Africa	1.3	20	26	5%
Asia	0.7	20	14	3%
East and South-East Europe	0.5	26	13	3%
Oceania	0.4	25	11	2%
World (rounded)	**15.9**	**30.1**	**480**	**100%**

Table 9: Tentative distribution of the global cocaine market in billion US$, 2008

Source: UNODC estimates[12]

	Amounts consumed (in mt)	Average retail price (in US$ per gram)	Average purity at retail level	Purity-adjusted prices	Value (in billion US$)
North America	196	108	56%	192	38
EU/EFTA	124	101	37%	273	34
South America, Central America, Caribbean	95	11	66%	17	2
Africa	26	22	34%	65	2
Asia	14	142	73%	195	3
East and South-East Europe	13	125	48%	260	3
Oceania	11	291	53%	549	6
World – total (rounded)	**480**				**88**

words, out of the people who used cocaine in the previous year at least once, 18% were dependent on it. This is a higher proportion than for any other drug except heroin. Figures for the year 2007 showed that out of 1,000 people who used crack cocaine in the previous 12 months, 116 entered treatment for substance abuse, a slightly higher proportion than for methamphetamine (102) and a significantly higher proportion than for drug use in general (30) or for the use of alcohol (6).[13]

While the share has declined, almost half of all people entering drug treatment in the Americas do so due to cocaine (46%), and the share in Europe increased from 3% in 1997/1998 to 10% in 2008. In West Europe, the share is almost 15%.

Trafficking in cocaine also constitutes a security threat, financing organized crime and insurgencies in a number of countries, including the FARC in Colombia and the Shining Path in Peru.

Cocaine trafficking is also linked to corruption. Trafficking in cocaine both thrives on corruption and breeds corruption. Rising trafficking of cocaine via countries neighbouring the cocaine production centres in the Andean region led to rising levels of corruption, while high levels of corruption in a number of West African countries have certainly been a facilitating factor for the establishment of cocaine transit traffic via this region.

tion of the Diagnostic and Statistical Manual for Mental Disorders (DSM-IV).

11 Sources the same as for footnote 8, except UNDCP, *Economic and Social Consequences of Drug Abuse and Illicit Trafficking*, Vienna 1997; World Bank, *World Development Indicators 2009*; ONDCP, *The Price and Purity of Illicit Drugs: 1981-2007*, Report prepared by the Institute for Defense Analysis for ONDCP, Washington, July 2008; US Drug Enforcement Agency, based on STRIDE data.

12 Sources the same as for footnote 8, except UNDCP, *Economic and Social Consequences of Drug Abuse and Illicit Trafficking*, Vienna 1997; World Bank, *World Development Indicators 2009;* ONDCP, *The Price and Purity of Illicit Drugs: 1981-2007*, Report prepared by the Institute for Defense Analysis for ONDCP, Washington, July 2008; US Drug Enforcement Agency, based on STRIDE data.

13 SAMHSA, *Treatment Episode Data Sets (TEDS)* and SAMHSA, *National Survey on Drug Use and Health.*

Fig. 28: Cocaine as primary drug of abuse among persons treated for drug problems*

* unweighted regional averages.
Sources: UNODC ARQ and *World Drug Report 2006*; UNODCCP, *World Drug Report 2000*

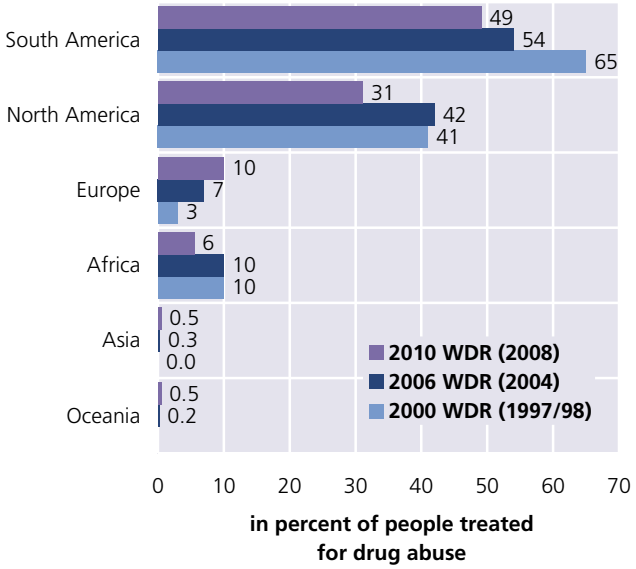
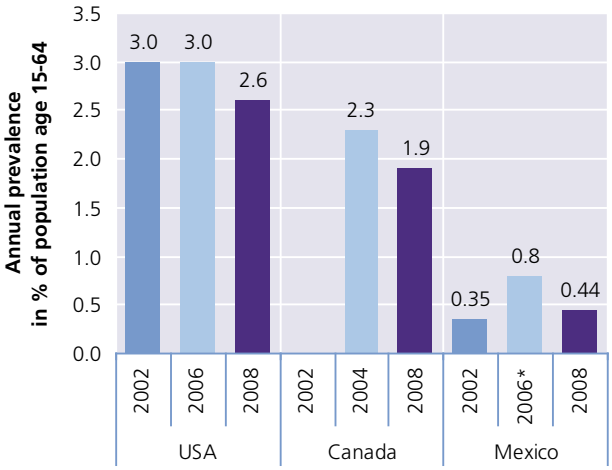


Fig. 29: Annual prevalence rates of cocaine use in North America among the population aged 15-64, 2002-2008

* 2006 data for Mexico: UNODC estimates, extrapolated from household survey results in Mexico City.

Sources: SAMHSA, *Results from the 2008 National Survey on Drug Use and Health (and previous years)*; CONADIC, *Encuesta Nacional de Adicciones 2008*; Health Canada, *Canadian Alcohol and Drug Use Monitoring Survey 2008*; UNODC, *World Drug Report 2009* (and previous years)



1.3.2 Cocaine from the Andean region to North America

North America is the largest regional cocaine market, with some 6.2 million annual users, close to 40% of the global cocaine-using population. The United States remains the single largest national cocaine market in the world, but this market has declined since the early 1980s. In 1982, an estimated 10.5 million people in the United States had used cocaine in the previous year.[15] In 2008, the figure was 5.3 million, about half as many. This long-term decline occurred despite falling prices and can be attributed to a number of causes, including increased prevention, treatment (complemented by the establishment of 'drug courts') and 'social learning.' Crack cocaine became a stigmatized drug in the second half of the 1980s, and powder cocaine also became less fashionable.

This long-term demand-driven decline appears to have been complemented by a recent, more dramatic, supply-driven one. The annual prevalence rate of cocaine use in the United States fell from 3% of the adult population in 2006 to 2.6% in 2008.[16] Recent declines have also been reported in Canada, with adult annual use rates falling from 2.3% in 2004 to 1.9% in 2008.[17] Household surveys in Mexico showed an increase after 2002. However, results from a survey in Mexico City in 2006 suggest that cocaine use may have actually declined between 2006 and 2008, following a strong increase between 2002 and 2006.[18]

14 Unweighted results are shown as for a number of developing countries data from only a few hospitals or drug treatment centers is available. Nonetheless, for most regions, changes in the proportion of treatment demand for cocaine seem to reflect rather well underlying actual trends in the relative importance of cocaine in total drug-related treatment demand. The only exception is Africa. The alleged 'decline' in the proportion of cocaine-related treatment demand for Africa between 2004 and 2008 is a statistical artifact. For this year's *World Drug Report* all estimates older than 10 years were removed. This did not impact much on most regions, except Africa. It reduced significantly the number of country estimates available for Africa. The 'decline' for Africa is thus basically due to a different and very small sample of reporting African countries, but not to any actual decline of cocaine-related treatment demand there. On the contrary, in the limited number of African countries where comparable data are available, the proportion of cocaine in total treatment demand appear to have increased.

15 US Department of Health and Human Services, Substance Abuse and Mental Health Services Administration (SAMHSA), *1995 National Household Survey on Drug Abuse, Report #18,* Rockville, Maryland, 1996.

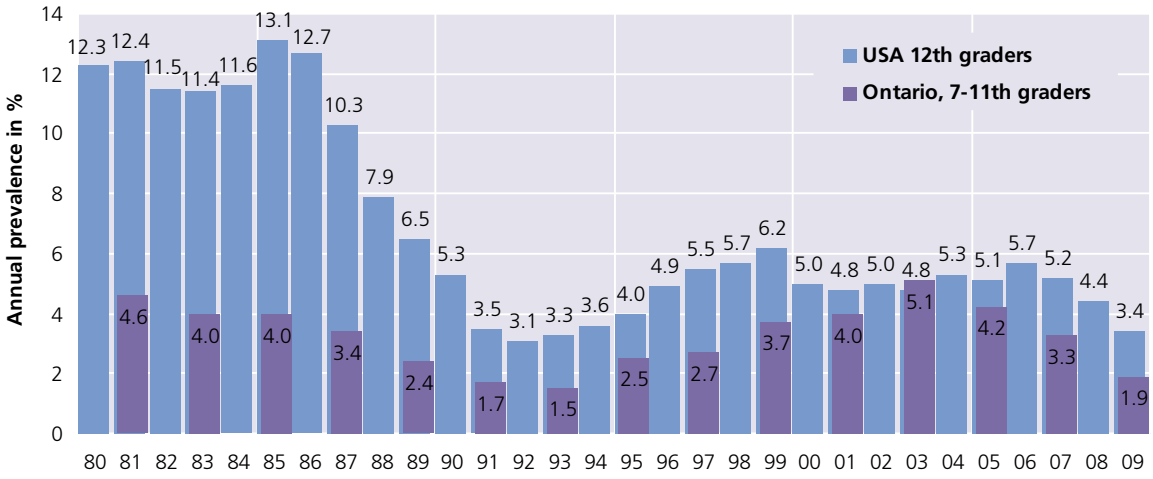
16 SAMHSA, *Results from the 2008 National Survey on Drug Use and Health.* The data were re-adjusted to the internationally comparable age group 15-64.

17 Health Canada, *Canadian Alcohol and Drug Use Monitoring Survey 2008,* Ottawa 2009. The decline from 1.9% of the population age 15 and above in 2004 to 1.6% in 2008 is equivalent to a decline from 2.3% to 2.0% if the numbers are re-adjusted to the internationally comparable age group of those aged 15-64.

18 Massive increases, followed by a decline seems to be indirectly also confirmed by general population household surveys conducted in Mexico in 2002 and 2008. While lifetime prevalence of cocaine use doubled, from 1.23% in 2002 to 2.4% in 2008, annual prevalence rose by 'just' 25% from 0.35% in 2002 to 0.44% in 2008.In other words, lifetime prevalence rose by almost 1.2 percentage points while annual prevalence rose by 'just' 0.1 percentage points. Such results would be only possible if large sections of society started experimenting with cocaine but gave it up again at some point between 2003

Fig. 30: Annual prevalence of cocaine use among high school students in the United States and Ontario (Canada), 1980-2009

Sources: NIDA, *Monitoring the Future;* OSDUH, *Drug Use Among Ontario Students, 1977-2009*



The same recent and dramatic decline can be seen in school surveys in the United States and Canada, where student use has almost halved in three years.[19] In 2009, the perceived availability of cocaine among US students reached its lowest level since 1978. A strong reduction in availability is also confirmed by US law enforcement. Despite ongoing efforts to fight the drug trade, US cocaine seizures along the border with Mexico fell by 40% between 2006 and 2008 and remained at the lower level in 2009, while heroin, marijuana and methamphetamine seizures all increased.[20]

The strong drop in cocaine use is also reflected in forensic data. Cocaine positive hair tests among the US workforce, reflecting use over the past three months, showed a 40% drop in just two years, from 5.3% in 2007 to 3.2% over the first two quarters of 2009.[21] The share of the US workforce that tested positive for cocaine, as detected by urine analysis (reflecting use over the last two to three days), showed a 58% decline between 2006 (0.72%) and the first two quarters of 2009 (0.3%).

and 2007. This in turn would suggest that the annual prevalence of cocaine use was already higher at some point between 2003 and 2007, with a peak probably around 2006, followed by a decline in the most recent years. Alternatively, more than 50% of all annual cocaine users would have had to give up their habit every year between 2002 and 2007, which is not very likely. Moreover, the proportion of cocaine in total drug treatment demand declined in recent years, from 37.1% in 2006 to 33.9% (UNODC ARQ).

19 The reduction was 40% between 2006 and 2009 in the USA and 50% in Ontario, which accounts for more than a third of Canada's total population.

20 National Drug Intelligence Center, *National Drug Threat Assessment 2010*, Johnstown, February 2010.

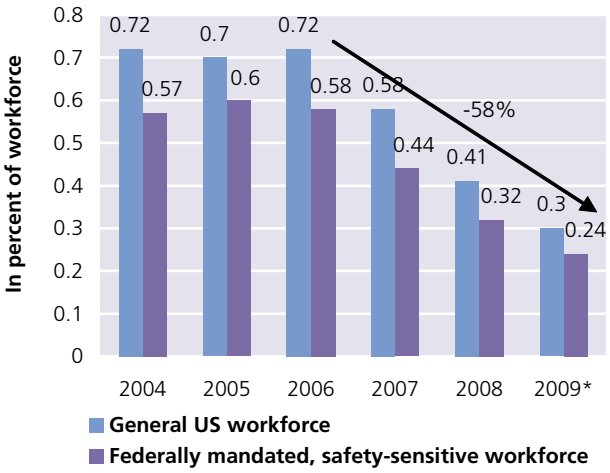
21 Quest Diagnostics, *New Hair Data Validate Sharp Downward Trend in Cocaine and Methamphetamine Positivity in General U.S. Workforce* Madison, N.J, 20 November 2009 and The Medical News, *Quest Diagnostics reports sharp downward trends in cocaine and methamphetamine use*, 20 November 2009.

While the forensic tests are not administered to a representative sample of the US population, some 6 million people undergo these tests, almost 100 times as many as those interviewed in household surveys (69,000 in 2008).[22]

Fig. 31: Positive tests for cocaine use among the US workforce, 2004-2009*

* Positive tests for cocaine use among the general US workforce (5.7 million tests in 2008) and among the federally mandated, safety-sensitive workforce (1.6 million tests in 2008). Data for 2009 refer to the first two quarters only.

Source: Quest Diagnostics, *Drug Testing Index*

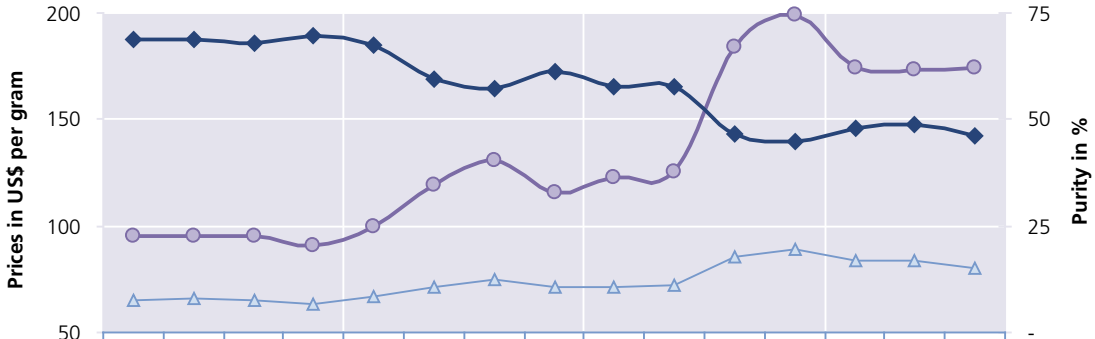


The recent decline (since 2006) appears to have been mainly supply-driven, caused by a severe cocaine shortage. This shortage is also reflected in rapidly falling purity levels and a consequent rise in the cost per unit of pure cocaine. While street prices remained fairly

22 SAMHSA, *Results from the 2008 National Survey on Drug Use and Health.*

Fig. 32: Average of all cocaine purchase prices in the United States, January 2006-September 2009

Source: US Drug Enforcement Agency



	1 Qtr	2 Qtr	3 Qtr	4 Qtr	1 Qtr	2 Qtr	3 Qtr	4 Qtr	1 Qtr	2 Qtr	3 Qtr	4 Qtr	1 Qtr	2 Qtr	3 Qtr
	2006				2007				2008				2009		
Purity adjusted prices	95.1	95.4	95.1	90.6	99.5	119.4	130.9	115.7	123.2	125.1	184.3	199.5	174.4	173.2	174.0
Unadjusted prices	65.2	65.7	64.8	63.2	67.0	70.9	74.8	70.9	71.1	71.9	85.7	89.2	83.9	84.2	80.4
Purity (in %)	68.6	68.9	68.1	69.8	67.4	59.4	57.2	61.3	57.7	57.5	46.5	44.7	48.1	48.6	46.2

stable throughout this period, purity dropped dramatically, resulting in an effective doubling of the real price of cocaine between 2006 and 2009.

There are several reasons for this shortage. Interdiction has stiffened in Colombia, Central America and Mexico. Cartel violence in Mexico has also disrupted supply routes. Perhaps most importantly, production has declined in Colombia, the primary source of cocaine for the United States market, and production in Peru and the Plurinational State of Bolivia continue to be directed towards Europe and the Southern Cone. The fact that the US market is almost exclusively supplied by Colombian cocaine (rather than Peruvian or Bolivian) has been established scientifically. Forensic analyses of cocaine seized or purchased in the United States have repeatedly shown that nearly 90% of the samples originate in Colombia.[23]

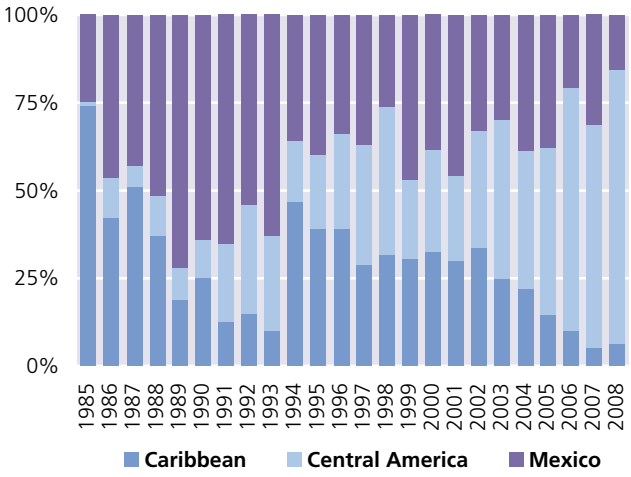
Cocaine is typically transported from Colombia to Mexico or Central America by sea (usually by Colombian traffickers), and then onwards by land to the United States and Canada (usually by Mexican traffickers). The US authorities estimate that close to 90% of the cocaine entering the country crosses the US/Mexico land border, most of it entering the state of Texas and, to a lesser extent, California and Arizona, through the relative importance of Arizona seems to be increasing. According to US estimates, some 70% of the cocaine leaves Colombia via the Pacific, 20% via the Atlantic and 10% via the Bolivarian Republic of Venezuela and the Caribbean.[24] The routes have changed over the years.

23 US State Department, Bureau for International Narcotics and Law Enforcement Affairs, *International Narcotics Strategy Report*, Vol. I, March 2009.

24 National Drug Intelligence Center, *National Drug Threat Assessment 2009*, December 2008.

Fig. 33: Distribution of cocaine seizures in Central America, the Caribbean and Mexico, 1985-2008

Source: UNODC ARQ/DELTA

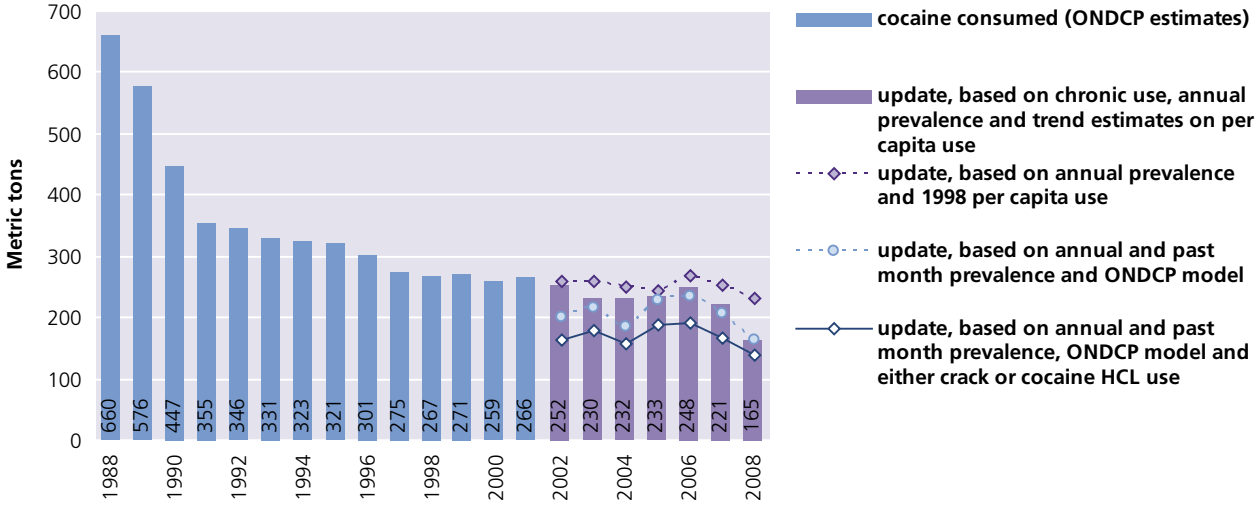


Direct cocaine shipments from Colombia to Mexico have been moved by a wide variety of marine craft, recently including self-propelled semi-submersibles, often transporting several tons of cocaine (typically between 2 and 9 mt). In 2008, 29.5 mt of cocaine were seized by the Colombian navy on board semi-submersibles in the Pacific Ocean, equivalent to 46% of all seizures made at sea by the Colombian authorities in the Pacific (64.5 mt). A few semi-submersibles have been detected on the Atlantic side as well. The Colombian Government reported seizing 198 mt of cocaine in 2008; 58% in the Pacific region and 31% in the Atlantic region.[25]

25 UNODC and Government of Colombia, *Colombia Coca Cultivation Survey*, Bogota, June 2009.

Fig. 34: Estimates of cocaine consumption in the United States, 1988-2008

Sources: Multiple sources[26]



In addition, the Bolivarian Republic of Venezuela has emerged as a prominent trans-shipment location for cocaine destined for Europe and the United States, according to Colombian, US and European sources, reflected, inter alia, in strong increases of Colombian overland cocaine shipments to the Bolivarian Republic of Venezuela. Cocaine transiting the Bolivarian Republic of Venezuela en route to the USA frequently departs by air from locations close to the border with Colombia for destinations in the Dominican Republic, Honduras and other Caribbean and Central American countries, as well as Mexico.[27]

Moreover, the importance of the Central American countries as trans-shipment locations has increased in recent years. Most of this cocaine is destined for Mexico and the United States, though some is also locally trafficked.

Routes and volumes

Calculating the amount of an illicit drug consumed in a country is complicated, even in a country as rich in data as the United States. In 2001, the US Government estimated that national cocaine consumption had declined from 660 mt in 1988 to 259 mt in 2000.[28] If these calculations were extended based on more recent annual prevalence data, the figure would be 231 mt for 2008.

This simple extension, however, may not capture the strong decline in recent years. A simplified model, recently proposed by the US Government,[29] results in a consumption range of 140 to 164 mt in 2008.[30] A third method, suggested by a think tank, would put the figure at less than 175 mt.[31]

26 For data 1988-2000: ONDCP, *What America's Users Spend on Illegal Drugs,* December 2001; for 2001 data: Drug Availability Steering Committee, *Availability Estimates in the United States*, December 2002; for 2002-2008: UNODC estimates based on SAMHSA, *2008 National Survey on Drug Use and Health,* Rockville MD 2009, and previous years; FBI, *Uniform Crime Reports* (2002-2008); ONDCP, *Arrestee Drug Abuse Monitoring Program - ADAM II 2008 Annual Report,* Washington D.C, April 2009; ONDCP, *Cocaine Consumption Estimates Methodology*, September 2008 (internal paper).

27 US Department of State, *2010 International Narcotics Control Strategy Report*, March 2010.

28 The last comprehensive attempt to measure the size the US cocaine market entitled *What America's Users Spend on Illegal Drugs* was published by the Office of National Drug Control Policy (ONDCP) in 2001. The report estimated the number of chronic and occasional cocaine users, and multiplied these numbers with a per capita expenditure estimate, derived from interviews with arrested persons who had used drugs. Based on these dollar amounts, the actual amounts consumed could be calculated.

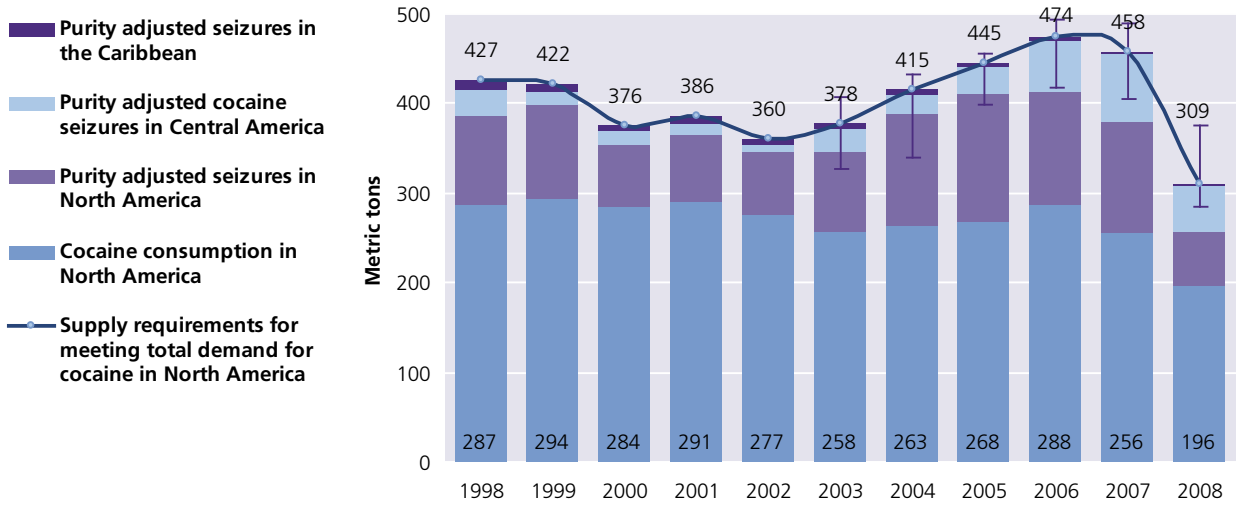
29 The simplified ONDCP model assumes that 20% of the monthly cocaine users consume 0.5 grams of cocaine per day while the remaining 80% consume 0.5 grams per week. This gives an average consumption of 57.3 grams of cocaine per month. Non-monthly annual users are assumed to consume 4 grams of cocaine per year. In the case of crack-cocaine it is assumed that 30% of the monthly users consume 0.75 grams per day and the remaining 70% consume 0.75 grams per week. This gives, on average, 109.4 grams of crack-cocaine per year for monthly users. The annual excluding monthly users are assumed to consume 6 grams of crack-cocaine per year. (ONDCP, *Cocaine Consumption Estimates Methodology*, September 2008, internal paper). Adding cocaine HCL and crack-cocaine consumption estimates, the model results in overall per capita consumption of 31 grams of cocaine per user in the USA in 2008.

30 The problem here is that the US household survey provides estimates on overall cocaine use (that is, cocaine HCl and crack-cocaine) and then gives an estimate on the number of crack cocaine users. Assuming that no crack user in the US consumes cocaine HCl, the cocaine HCl users can be 'calculated' by subtracting crack cocaine users from all cocaine users; assuming that all crack-cocaine users also consume cocaine HCl, the cocaine HCl figure would be identical to the overall cocaine figure. Applying the first interpretation, cocaine use would have amounted to 140 tons in 2008; applying the second interpretation, cocaine use would have amounted to 164 tons in 2008.

31 Institute for Defense Analyses, *History of the US cocaine market (supply and consumption)*, presentation given to the UNODC expert group meeting: "The evidence base for drug control in Colombia: lessons learned", Bogota, 9-10 November 2009.

Fig. 35: Cocaine demand (consumption and seizures), North America, 1998-2008

Sources: Multiple sources[32]



There is a fourth method which makes use of new data to reclassify the users and calculate the amount of cocaine a user consumes in a year.[33] Applying these figures to the 2001 model suggests a total US consumption of 165 mt in 2008.[34] The four methods show a range of 140 to 231 mt, with the final method (165 mt) falling within this range of values.

The simplified method proposed by the United States can also be applied to the survey data available from Canada and Mexico, producing estimates of around 17 mt of cocaine for Mexico and 14 mt for Canada in 2008. Adding this to US consumption results in a total North American cocaine consumption of some 196 mt for the year 2008.

How much cocaine must be produced to satisfy this demand? Seizures along this route are substantial, although these shipments are not pure cocaine. In order to get 196 mt to the consumer, it appears that around 309 mt of cocaine was dispatched from the Andean region destined for North America in 2008. This would represent about half of all the cocaine that leaves these countries, down from around 60% in 1998.

How much is this worth, and who derives the most money out of the supply chain? Calculating the retail value of the US market is a matter of applying the estimated volume consumed to the price data and adjusting for purity. The 2001 US Government calculations, adjusted to constant 2008 US dollars, show a decline of the US cocaine market from almost US$134 billion in 1988 to US$44 billion in 1998. Applying the new figures, it appears this value has fallen further still, to around US$35 billion by 2008.

In other words, the retail value of the US cocaine market declined by about two thirds in the 1990s, and by about another quarter in the last decade. The reason the value did not drop even further in the last 10 years is that the real price (adjusted for purity) has gone up.[35]

32 ONDCP, *What America's Users Spend on Illegal Drugs*, December 2001; Drug Availability Steering Committee, *Availability Estimates in the United States*, December 2002; SAMHSA, *National Survey on Drug Use and Health*, Rockville MD 2009, and previous years; FBI, *Uniform Crime Reports (2002-2008)*; ONDCP, *Arrestee Drug Abuse Monitoring Program - ADAM II 2008 Annual Report*, Washington D.C, April 2009; ONDCP, *Cocaine Consumption Estimates Methodology*, September 2008 (internal paper); Health Canada, *Canadian Alcohol and Drug Use Monitoring Survey 2008* and previous years; CINADIC, *Encuesta Nacional de Adicciones 2002*, Ciudad Mexico, Secretaria de Desarrollo, *Encuesta de Hogares, 2006*; CONADIC and Instituto Nacional de Salud Pública, *Encuesta Nacional de Adicciones, 2008*, UNODC ARQ/DELTA.

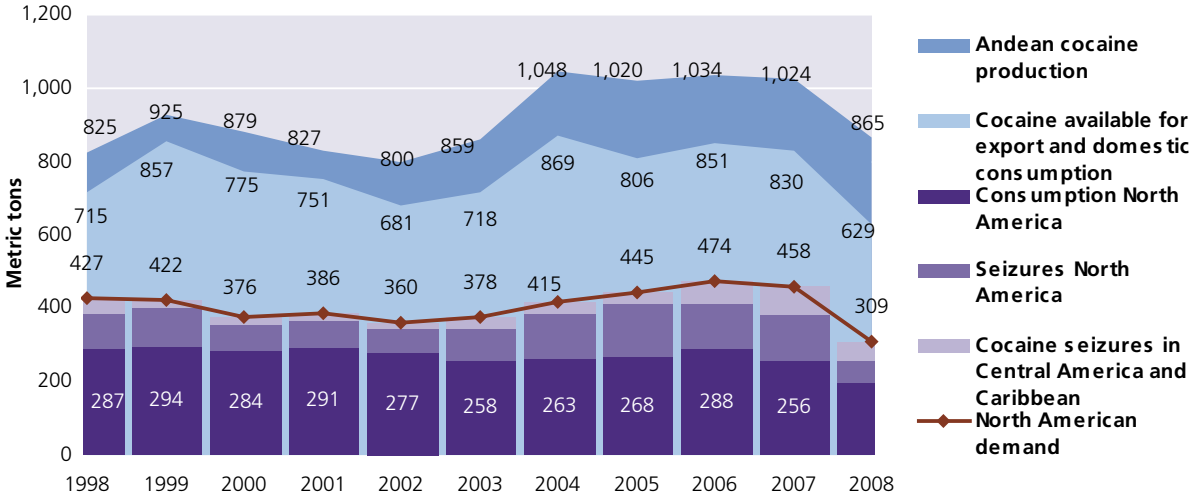
33 For example, new data are available on the number of cocaine-dependent people and heavy cocaine users (using cocaine more than 100 days a year) identified in the National Household Survey on Drug Use and Health (NHSDU). There are also new data on cocaine-positive tests among arrestees, provided in the Arrestee Drug Abuse Monitoring Program (ADAM II). See ONDCP, Arrestee Drug Abuse Monitoring Program, *ADAM II 2008 Annual Report*, Washington D.C., April 2009. This allows an updated definition and estimate of 'chronic use.'

34 The 31 grams of pure cocaine figure is the result of a multiplication of the number of chronic users (2.3 million) with a per capita use of 55 grams per year and a multiplication of the number of occasional users (3 million) with 14 grams per year, This yields a total at 165 tons for 5.3 million users, which gives 31 grams per user in 2008, down from 44 grams per user in 1998 and 66 grams per user in 1988. The per capita use figures were derived from the results of the ONDCP study *What America's Users Spend on Illegal Drugs*, published in 2001. They found average per capita consumption for chronic users to have fallen from 141 grams in 1988 to 106 grams in 1990 and 78 grams in 1998. The model used assumed that the downward trend continued as availability of treatment facilities continued to improve (67 grams in 2007). The downward trend was assumed to have accelerated in 2008, as a result of falling purity levels (55 grams). The decline in per capita consumption for occasional users was less pronounced, from 16 grams in 1988 to 15 grams in 1998, and was thus assumed to have fallen only slightly, to 14 grams in 2008.

35 The calculations were based on the available price data series, provided by ONDCP, ending for the year 2007. For 2008, the purity-adjusted cocaine prices per gram, as reported by the DEA, were used. However, a comparison shows that the two price data series – though both based on STRIDE data – do not correspond, neither in absolute

Fig. 36: Cocaine production and demand for cocaine, North America, 1998-2008

Sources: Multiple sources[36]



Applying similar methods, the 2008 value of the Canadian cocaine market can be estimated at around US$2.4 billion. The domestic Mexican cocaine market is worth much less, due to far lower cocaine prices: around US$300 million in 2008. Adding these values, it appears that the North American cocaine market has declined in value from US$47 billion in 1998 to US$38 billion in 2008. Between 2006 and 2008, the value of the market remained basically stable.

Using price data and volumes for the various points in the trafficking chain, the value accruing to the various market players can be estimated. One study, analysing data from the late 1990s, suggested that there are typically seven layers of actors between a coca farmer in the Andean countries and the final consumer in the USA:[37]

1. The farmer sells the coca leaf (or his self-produced coca paste) to a cocaine base laboratory, operated by the farmers themselves or by various criminal trafficking groups. Sometimes these labs have the capacity to refine the drug further into cocaine hydrochloride.
2. The cocaine base (or the cocaine hydrochloride) is sold to a local trafficking organization which transports and sells the cocaine to a transnational drug trafficking organization.
3. The drug trafficking organization contracts yet another group to do the actual shipping.
4. The cocaine is shipped to traffickers in Mexico.
5. The Mexican traffickers transport the drugs across the US border to wholesalers.
6. The wholesalers sell the cocaine to local mid-level dealers or street dealers across the USA.
7. The street dealers sell the cocaine to the consumer.

The coca farmers in the three Andean countries earned about US$1.1 billion in 2008, down from US$1.5 billion in 2007.[38] Since about half of the exports go to North America, about half the farmer's income is ultimately derived from the North American market. But the share of the value of that market which goes to the

values nor in trends. While the ONDCP price data are supposed to reflect exclusively the retail level, based on the analysis of purity-adjusted prices for purchases of 2 grams or less, the DEA price data series is based on the average price for all cocaine purchases, purity-adjusted and recalculated to represent the average price of cocaine per gram. Though differences in methodology can explain differences in the level, they do not really explain differences in trends. In fact, the bulk of the DEA prices concerns the retail level and the DEA prices should thus – primarily – reflect changes in these prices as well. The differences in the two data sources is not only of academic interest. If the growth rates in prices, as revealed in the DEA data, were applied to the ONDCP price data set, starting as of 2007, the calculations suggest that the overall cocaine market would have slightly increased, from US$33.5 bn in 2006 to US$35 bn in 2008, as the strong increases in prices would have more than compensated for the declines in consumption. Given the large number of reports suggesting that strong price increases took place over the 2006-2008 period, the latter estimates appear to have a higher level of credibility.

36 UNODC, *2009 World Drug Report*, Vienna 2009; UNODC ARQ/DELTA; ONDCP, *What America's Users Spend on Illegal Drugs, December 2001;* Drug Availability Steering Committee, *Availability Estimates in the United States*, December 2002; SAMHSA, *National Survey on Drug Use and Health,* Rockville MD 2009, and previous years; FBI, *Uniform Crime Reports* (2002-2008) and ONDCP, Arrestee Drug Abuse Monitoring Program - *ADAM II 2008 Annual Report,* Washington D.C, April 2009 and ONDCP, *Cocaine Consumption Estimates Methodology,* September 2008 (internal paper), Health Canada, *Canadian Alcohol and Drug Use Monitoring Survey 2008* and previous years, CINADIC, *Encuesta Nacional de Adicciones 2002*, Ciudad Mexico, Secretaria de Desarrollo, *Encuesta de Hogares, 2006,* CONADIC and Instituto Nacional de Salud Pública, *Encuesta Nacional de Adicciones, 2008.*

37 R. Anthony and A. Fries, "Empirical modelling of narcotics trafficking from farm gate to street", in UNODC, *Bulletin on Narcotics*, Vol. LVI. Nos. 1 and 2, 2004, Illicit Drug Markets, pp. 1-48.

38 UNODC, *2009 World Drug Report*, Vienna 2009.

Fig. 37: Value of the US cocaine market, 1988-2008, in constant 2008 US$

Sources: Multiple sources[39]

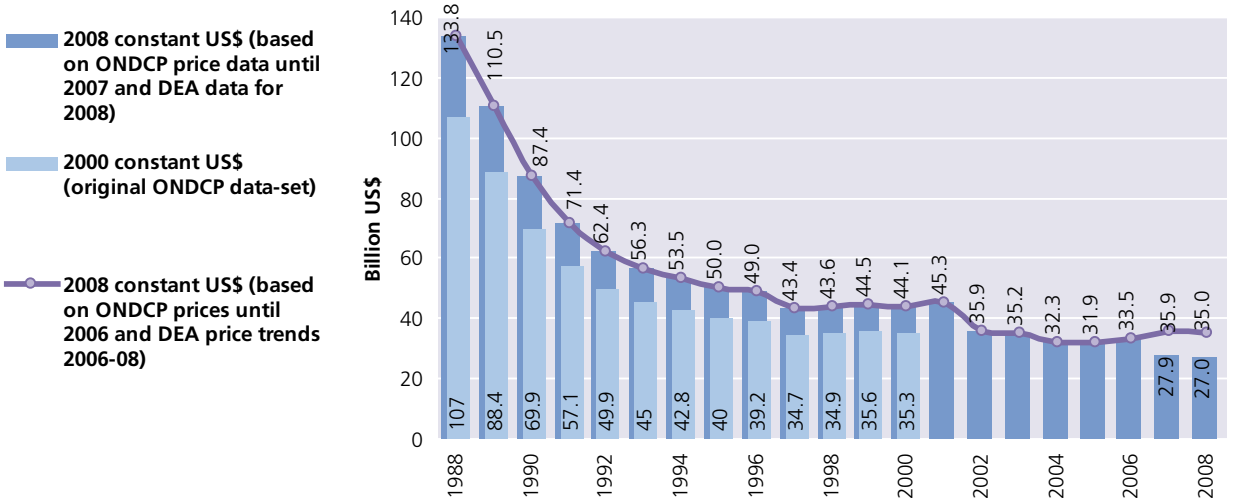
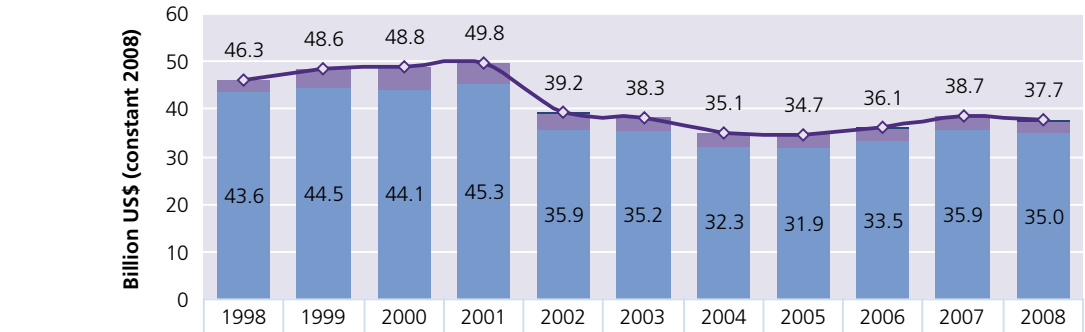


Fig. 38: Value of the North American cocaine market in constant 2008 US$, 1998-2008

Source: Multiple sources[40]



	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Mexico	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.3	0.3	0.3
Canada	2.5	4.0	4.6	4.4	3.2	2.9	2.7	2.5	2.3	2.4	2.4
USA	43.6	44.5	44.1	45.3	35.9	35.2	32.3	31.9	33.5	35.9	35.0
North America	46.3	48.6	48.8	49.8	39.2	38.3	35.1	34.7	36.1	38.7	37.7

farmer is only about 1.5%. The other 98.5% goes to those who transport and deal the drug.

The farmer's output is processed further and transported within the country to its point of embarkation. Those who take on these tasks earned around US$400 million from North American-bound shipments in 2008, or about 1% of the retail sales value.

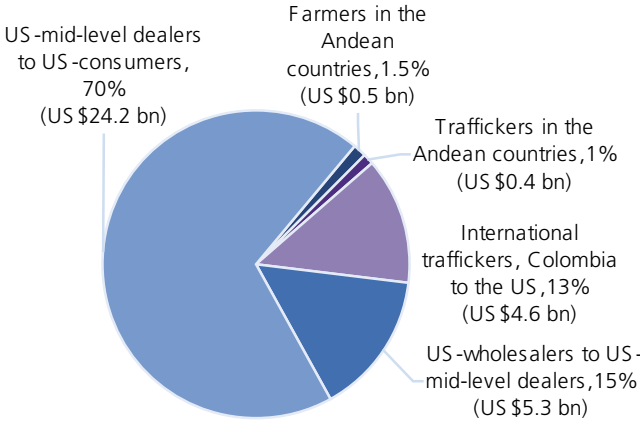
Out of 309 mt of cocaine that left the Andean region towards North America in 2008, some 208 mt arrived in the hands of the Mexican cartels. Most of the rest was seized. Trafficking from Colombia to Mexico was still largely in the hands of Colombian groups in 2008, though more recently Mexican groups have also started

39 For data 1988-2000: ONDCP, *What America's Users Spend on Illegal Drugs, December 2001;* for 2001 data: Drug Availability Steering Committee, *Availability Estimates in the United States*, December 2002; SAMHSA, *National Survey on Drug Use and Health*, Rockville MD 2009, and previous years; FBI, *Uniform Crime Reports* (2002-2008) and ONDCP, Arrestee Drug Abuse Monitoring Program - *ADAM II 2008 Annual Report*, Washington D.C, April 2009; ONDCP, *The Price and Purity of Illicit Drugs: 1981-2007*, Report prepared by the Institute for Defense Analyses for ONDCP, Washington, July 2008; US Drug Enforcement Agency, based on STRIDE data.

40 For data before 2000: ONDCP, What America's Users Spend on Illegal Drugs, December 2001; for 2001 data: Drug Availability Steering Committee, *Availability Estimates in the United States*, December 2002; SAMHSA, *National Survey on Drug Use and Health*, Rockville MD 2009, and previous years; FBI, Uniform Crime Reports (2002-2008) and ONDCP, Arrestee Drug Abuse Monitoring Program - *ADAM II 2008 Annual Report*, Washington D.C, April 2009; ONDCP, *The Price and Purity of Illicit Drugs: 1981-2007*, Report prepared by the Institute for Defense Analyses for ONDCP, Washington, July 2008; US Drug Enforcement Agency, based on STRIDE data, quoted in DEA Intelligence Division, "Cocaine Shortages in U.S. Markets, November 2009" and US Bureau of Labor Statistics, Consumer Price Index (CPI); UNODC ARQ.

Fig. 39: Distribution of gross profits (in %) of the US$ 35 billion US cocaine market, 2008

Source: Original calculations based on UNODC ARQ and Government reports



to enter this line of business. At a wholesale price of US$12,500 per kg (US$15,625 per kg if purity adjusted), the imported cocaine in Mexico was worth some US$3.3 billion in 2008. With a purchase price of just under 1 billion dollars in Colombia, the total gross profits[41] accruing to those exporting the cocaine to Mexico can be estimated at around US$2.4 billion.

Shipments from Mexico into the United States are primarily undertaken by Mexican drug cartels. Taking domestic consumption, seizures and purity into account, Mexican cartels moved some 191 mt of pure cocaine across the border to the United States in 2008, valued at US$3 billion in Mexico. If all of this had been sold to wholesalers in the United States, it would have been worth US$6.4 billion. Border seizures reduced this value to US$5.8 billion. Deducting purchase costs, a gross profit of US$2.9 billion was generated by moving the cocaine across the border into the United States. Most of these profits were reaped by the Mexican drug cartels.

The largest profits, however, are made within the United States. The difference between the wholesale purchase price and the retail value of cocaine in the US was US$29.5 billion in 2008. Out of these gross profits, the bulk is generated between the mid-level dealers and the consumers, generating more than US$24 billion in gross profits, equivalent to 70% of total US cocaine sales. Some Mexican groups - as well as Dominican and Cuban groups - are tapping into this highly lucrative market, but most appears to go to a large number of small domestic US groups.

These figures show that US dealers as a whole make the most out of the market, but there are a lot of US dealers, so individual earnings may remain relatively small. Estimates of the number of persons involved in cocaine trafficking in the 1990s suggested that there were some 200 cocaine wholesalers in the United States, but some 6,000 mid-level cocaine dealers.[42] Beneath them, there are countless street-level dealers, many of whom are users themselves. Comparable figures are not available for the number of international traffickers, but it seems likely that, as individuals, they make more money than the thousands of dealers in the United States.

How does the market operate?

Following the dismantling of the Medellin and Cali cartels in the early 1990s, the Colombian organized crime groups got smaller, and market competition increased, pushing prices down. After the Colombian Congress amended the Constitution in 1997 to allow the extradition of citizens,[43] Colombian groups were largely relegated to the front end of the market chain. Better controls, first for direct flights from Colombia to the United States (starting in the 1980s), and later improved control over shipping in the Caribbean (in the 1990s), reduced the ability of the Colombian organized crime groups to traffic cocaine directly to the United States. By 2008, Mexican organized crime groups were found in 230 US cities (up from 100 cities three years earlier) while Colombian groups controlled illicit cocaine and heroin distribution channels in only 40 cities, mostly in the north-east.

In addition, criminal groups from Caribbean countries are also involved in cocaine trafficking, notably groups with links to the Dominican Republic. Dominican groups have been identified in at least 54 US cities. They operate mainly in locations along the east coast, including Florida. In addition, US-based Cuban organized crime groups pose a threat, because of their affiliations to drug traffickers in Peru, the Bolivarian Republic of Venezuela and Colombia. They are said to operate distribution networks in at least 25 US cities.[44]

Only a quarter of those arrested for cocaine trafficking in the US are foreign, however. US citizens appear to have secured the most lucrative portion of the trafficking chain for themselves. Perhaps this is why, despite the importance of the US as a destination market, US citizens are rarely arrested for cocaine trafficking in the transit or production countries. Based on data from 31

41 Gross profits are defined here as the difference between the sales price of the drugs and the original purchase price.

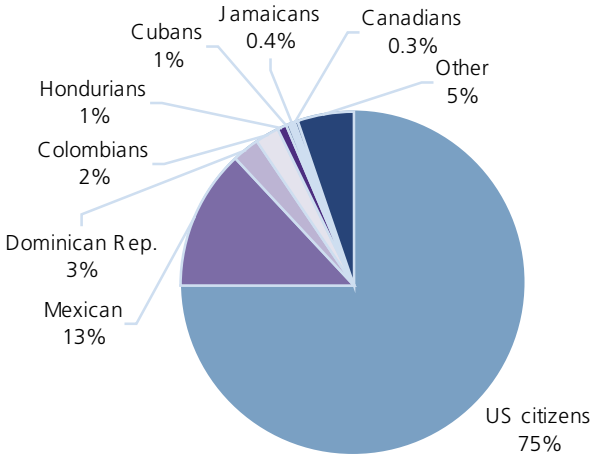
42 Institute for Defense Analyses, *History of the US Cocaine Market (Supply and Consumption)*, presentation given to the UNODC expert group meeting: "The evidence base for drug control in Colombia: lessons learned", Bogota, 9-10 November 2009.

43 Article 35, amended in the Colombian Constitution, A.L. No. 01, 1997.

44 National Drug Intelligence Center, *National Drug Threat Assessment 2009*, December 2008.

Fig. 40: Citizenship of federal cocaine arrestees in the USA in 2008

Source: UNODC ARQ



countries in the Americas, US citizens comprised only 0.2% of all cocaine trafficking arrestees over the 2001-2008 period. In 2008, the share was only 0.1%.

Impact of this flow

Large-scale cocaine imports into North America constitute, first of all, a serious health problem. This is reflected in high levels of dependence and strong treatment demand for cocaine across the Americas as well as in high levels of drug-related deaths linked to the abuse of cocaine. In most countries of the Americas, cocaine is the main problem drug, and thus the main drug for which treatment is required.

In the United States alone, almost 1 million people were dependent on cocaine in 2008 (see Box for the definition of 'dependence'). Of these, 660,000 people had to be treated for cocaine problems, according to US household survey data. This was twice as many people as for heroin or stimulants (around 340,000 each). One out of three people treated for drug problems in the United States in 2008 was treated for cocaine problems,[45] at a direct cost of around US$6 billion.[46]

45 SAMHSA, *Results from the 2008 National Survey on Drug Use and Health: National Findings,* 2009.

46 Treatment expenditure at the federal level amounted to US$3.3 bn or 24.5% of the federal US drug control budget in 2008. (ONDCP, *National Drug Control Strategy: FY 2010 Budget Summary*, Washington, May 2009). A previous ONDCP study put the overall health care costs (federal and state) at US15.7 bn in 2002 (ONDCP, *The Economic Costs of Drug Abuse in the United States*, December 2004), equivalent to US$18.9 bn expressed in 2008 US dollars. As the total number of persons treated remained largely unchanged between 2002 and 2008 (2.0 million persons treated in 2002, rising to 2.5 million in 2006 before falling to less than 2.1 million in 2008; SAMHSA, *Results from the 2008 National Survey on Drug Use and Health: National Findings,* Sept. 2009), total health care costs may have still been close to US$ 19 bn in 2008. As cocaine accounted for close to a third of all persons treated in 2008, cocaine-related treatment costs can be estimated to amount to some US$6 bn.

The DSM-IV definition of 'dependence'

The definition of 'dependence' in the US household survey is based on the definition found in the 4th edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV). DSM-IV defines dependence as: a maladaptive pattern of substance use, leading to clinically significant impairment or distress, as manifested by three (or more) of the following, occurring at any time in the same 12-month period:

- Tolerance, as defined by either of the following:

  - a need for markedly increased amounts of the substance to achieve intoxication or desired effect;

  - markedly diminished effect with continued use of the same amount of substance.

- Withdrawal, as manifested by either of the following:

  - the characteristic withdrawal syndrome for the substance;

  - the same (or a closely related) substance is taken to relieve or avoid withdrawal symptoms.

- Use of larger amounts or over a longer period than was intended.

- There is a persistent desire or unsuccessful efforts to cut down or control substance use.

- A great deal of time is spent in activities to obtain the substance, use the substance, or recover from its effects.

- Important social, occupational or recreational activities are given up or reduced because of substance use.

- The substance use is continued despite knowledge of having a persistent or recurrent physical or psychological problem that is likely to have been caused or exacerbated by the substance (for example, continued drinking despite recognition that an ulcer was made worse by alcohol consumption).

Source: DSM-IV, Diagnostic and Statistical Manual of Mental Disorders, ed. 4. Washington DC: American Psychiatric Association (AMA), 1994.

Fig. 41: Drug related deaths – by drug category – across 40 US metropolitan areas, 2007

Source: SAMHSA, *Drug Abuse Warning Network, 2007: Area Profiles of Drug Related Mortality*, 2009

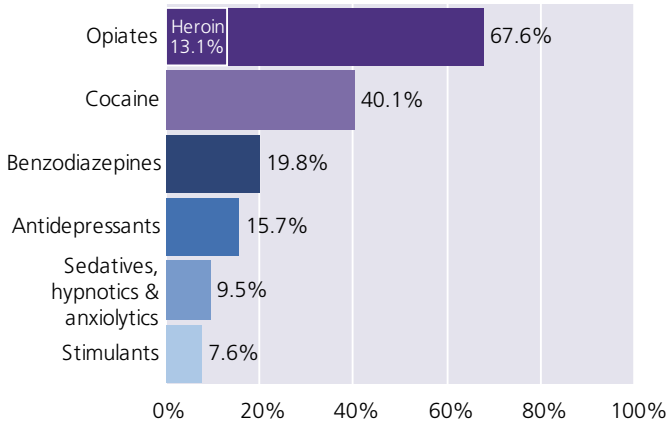
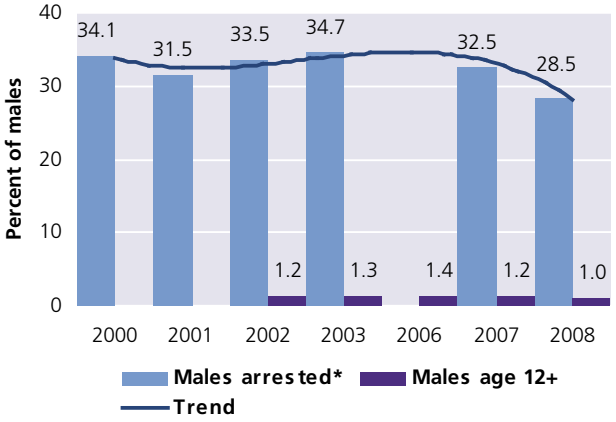


Fig. 42: Cocaine use among male arrestees in 10 US cities* and past month prevalence of cocaine use among males in the general US population, 2000-2008

* Unweighted average of results obtained from Atlanta, Charlotte, Chicago, Denver, Indianapolis, Minneapolis, New York, Portland, Sacramento and Washington DC.
Source: Office of National Drug Control Policy 2009



Cocaine also plays a significant role in drug-related deaths. Some 31,800 people died from drug-related causes in the United States in 2007, or about 10 per 100,000 citizens.[47] This is about twice the country's murder rate. The 7,475 fatal poisonings due to cocaine in 2006 are equivalent to 2.5 deaths per 100,000 inhabitants, or 20% of all drug-related deaths in the USA. Other studies suggest that the total proportion of 'cocaine-related' deaths (that is, deaths where cocaine was involved though not necessarily the only cause) is higher, at 40% of the total, equivalent to some 12,700 people in total in 2007.[48] The costs of these premature cocaine deaths can be estimated at some US$13 billion, expressed in 2008 US$.[49]

Cocaine use is more common among arrestees than the general population. The national drug use survey indicated that about 1% of US men used cocaine in the previous month in 2008, but urine tests of arrestees in 10 US cities found that 28.5% of the men in custody had recently used the drug. In Chicago, the figure was 44%. The corresponding rates in the 10 US cities for opiates (7.7%) and methamphetamine (5.9%) were much lower than for cocaine.[50] In line with the trends among the general population, however, cocaine use among arrestees has shown a clear decline in recent years.

Of course, the fact that suspected criminals use cocaine does not mean that cocaine causes their criminality. Both drug use and the likelihood of being arrested may be related to a third factor, such as social marginalization. But the same would be true for heroin or methamphetamine, where the connection with crime is much weaker. Studies have also shown a stronger correlation between levels of cocaine use in a city and violent crime than for other drugs. Cocaine users, especially crack users, can consume an almost unlimited amount of their chosen drug, unlike heroin or methamphetamine users. Crack highs are short-lived, prompting users to find money for more by any means possible, including prostitution and violent acquisitive crime. High sales volumes have also made crack an attractive funding source for street gangs, whose wars over sales turf have been a major source of murders in the United States in the past.

This is one reason that the general decline in murders in the United States over the last two decades or so has been attributed, at least in part, to declines in cocaine use. Other crime rates have also fallen in the same period. According to national surveys, the share of people who used cocaine in the previous month fell by 56% between 1988 and 2008. Between 1990 and 2008, the murder rate fell by 43%. During the same period, the US property crime rate fell by 29% and the violent crime rate by 34%.[51] There are also clear links between cocaine and violence in the production and transit countries.

47 *National Vital Statistics Reports, Deaths: Preliminary Data for 2007*, Vol. 58, No. 1, August 2009.

48 Ibid.

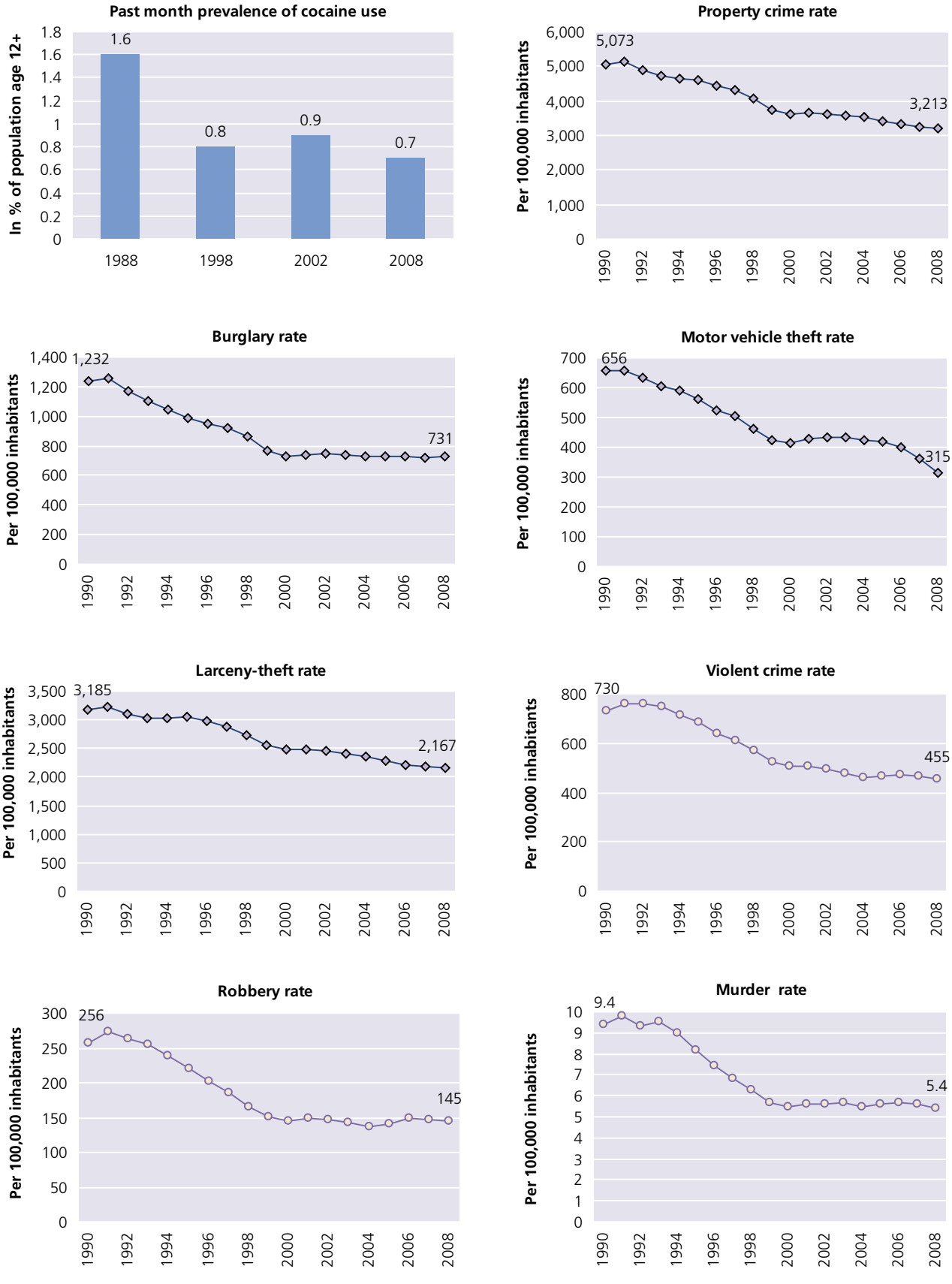
49 The overall costs related to premature deaths due to drug abuse for US society were estimated by ONDCP at US$ 24.6 bn for the year 2002 (ONDCP, *The Economic Costs of Drug Abuse in the United States, 1992-2002*, Washington, November 2004), equivalent to US$ 27 bn in 2008 US dollars. As the number of drug-related premature deaths actually increased by 22% between 2002 and 2007, this figure would come close to US$33 bn, expressed in 2008 US dollars. Applying a ratio of 40% to this value (share of cocaine in all deaths in 2007), results in an estimate for cocaine-related premature death of around US$13 bn.

50 ONDCP, *Arrestee Drug Abuse Monitoring Program - ADAM II, 2008 Annual Report*, April 2009.

51 US Department of Justice, Federal Bureau of Investigation (FBI), Crime in the United States, Preliminary Semiannual Uniform Crime Report, January to June, December 2009.

Fig. 43: Long-term trends: Cocaine use and changes in the crime rates in the United States

Sources: SAMHSA, *2008 Household Survey on Drug Use and Health*; SAMHSA, *1998 National Household Survey on Drug Abuse*; FBI, *Uniform Crime Reports*

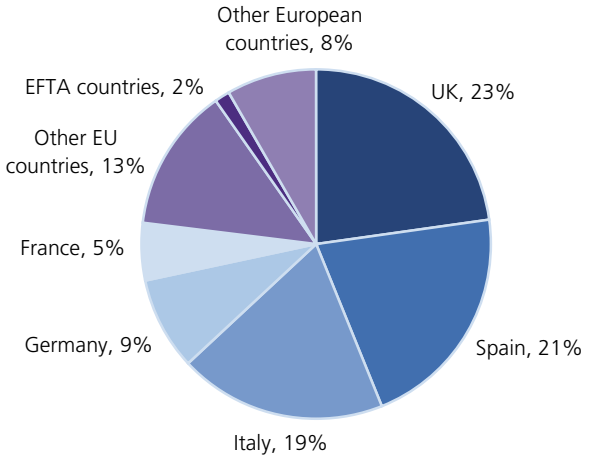


1.3.3 Cocaine from the Andean Region to Europe

The world's second largest flow of cocaine is directed towards Europe. The 27 countries of the European Union (EU) and the four countries of the European Free Trade Association (EFTA) host some 90% of Europe's 4.5 million cocaine users. The single largest cocaine market within Europe is the United Kingdom, followed by Spain, Italy, Germany and France.

Fig. 44: National shares of the cocaine user population in Europe in 2007/08

UNODC ARQ; Government reports; UNODC, *World Drug Report 2009*; EMCDDA, *Statistical Bulletin 2009*



In contrast to the shrinking cocaine market in North America, the number of cocaine users in the EU/EFTA countries has doubled over the last decade, from 2 million in 1998 to 4.1 million in 2007/2008. Recent data suggest, however, that the rapid growth of the European cocaine market is beginning to level off. The annual cocaine prevalence rate in the EU/EFTA region (1.2% of the population aged 15-64) is still far lower than in North America (2.1%), though individual countries, notably Spain (3.1% in 2007/2008) and the United Kingdom (3.7% in Scotland; 3.0% in England and Wales in 2008/2009), already have higher annual prevalence rates than the United States (2.6% in 2008).

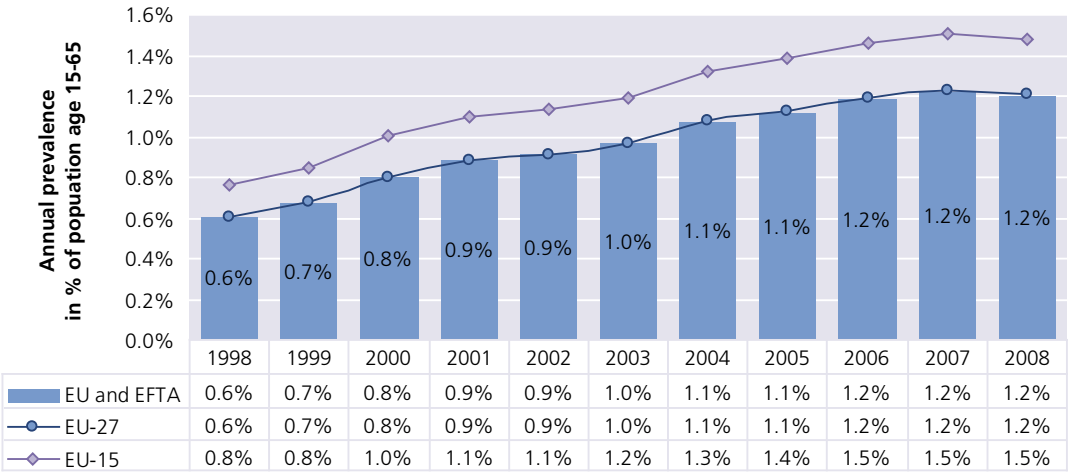
Routes and volumes

Trafficking of cocaine to Europe is mainly by sea (often in container shipments), although deliveries by air and by postal services also occur. The World Customs Organization reported that 69% of the total volume of cocaine seized by customs authorities en route to West Europe was detected on board boats or vessels, concealed in freight or in the vessels' structure.[52] Though recent years have seen a proliferation of entry points, including some in the Balkan region, most of the cocaine entering Europe does so through one of two hubs: Spain and Portugal in the south, or Netherlands and Belgium in the north. The Iberian peninsula is close to Latin America both geographically and culturally, and the Low Countries host the largest ports in Europe. Between them, Spain, Portugal, the Netherlands and Belgium accounted for close to 70% of all cocaine seized in Europe in 2008, though just a quarter of the 'European cocaine' was consumed in these countries.[53]

Despite the growth of Peruvian and Bolivian production capacity, the main source of the cocaine found in Europe

Fig. 45: Annual prevalence of cocaine use in the EU and EFTA countries, 1998-2008

Sources: UNODC ARQ; Government reports; UNODC, *World Drug Report 2009*; EMCDDA, *Statistical Bulletin 2009*



	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
EU and EFTA	0.6%	0.7%	0.8%	0.9%	0.9%	1.0%	1.1%	1.1%	1.2%	1.2%	1.2%
EU-27	0.6%	0.7%	0.8%	0.9%	0.9%	1.0%	1.1%	1.1%	1.2%	1.2%	1.2%
EU-15	0.8%	0.8%	1.0%	1.1%	1.1%	1.2%	1.3%	1.4%	1.5%	1.5%	1.5%

52 World Customs Organization, *Customs and Drugs Report 2008*, Brussels, June 2009.

53 EMCDDA/Europol, *Cocaine: A European Union perspective in the global context*, April 2010.

in still Colombia. Individual drug seizures reported by Spain suggest, for instance, that 81% of the cocaine originated in Colombia and its neighbouring countries (the Bolivarian Republic of Venezuela, Ecuador and Panama) in 2008. Nonetheless, shipments from Peru and the Plurinational State of Bolivia are more common for Europe than for the United States, and the relative importance of Colombia is declining. For 2002, the UK authorities reported that 90% of the cocaine seized there originated in Colombia; by 2008, the figure fell to 65%. For some of the smaller European markets, Peru and the Plurinational State of Bolivia seem to be the primary sources of cocaine already.There have also been changes in the routes. Shipments to Europe, particularly large maritime shipments, have been increasingly transiting the Bolivarian Republic of Venezuela in recent years.[54] In fact, for cocaine seized since 2004 where the origin could be determined, 41% have been traced back to the Bolivarian Republic of Venezuela.[55] According to the new Maritime Analysis Operation Centre (MAOC-N), more than half (51%) of all intercepted shipments in the Atlantic over the 2006-2008 period started their journey in the Bolivarian Republic of Venezuela. Direct shipments from Colombia accounted for just 5% of the total.[56]

Sailing vessels, mostly travelling from the Caribbean to Europe, emerged in recent years as the most common source for seizures (43% of all seizure cases according to MAOC-N data), followed by freight vessels (39%) and other motor vessels (12%).[57] Semi-submersibles, in contrast, do not play any significant role for trafficking cocaine from South America to Europe. Only one has been sighted so far, in Galicia, northern Spain in 2006.[58]

There are also ongoing cocaine shipments by air from various South American countries (Brazil, Argentina, Uruguay et cetera), Caribbean countries (Netherlands Antilles, Dominican Republic, Jamaica et cetera) and Central American countries (including Costa Rica) to destinations in Europe.

In addition, shipments to Africa, mostly West Africa, gained in importance between 2004 and 2007, resulting in the emergence of two key trans-shipment hubs: one centered on Guinea-Bissau and Guinea, stretching to Cape Verde, Gambia and Senegal, and one centered in the Bight of Benin, which spans from Ghana to Nigeria. Colombian traffickers often transport the cocaine by 'mother ships' towards the West African coast before

54 Ibid.

55 UNODC, Individual Drug Seizures database.

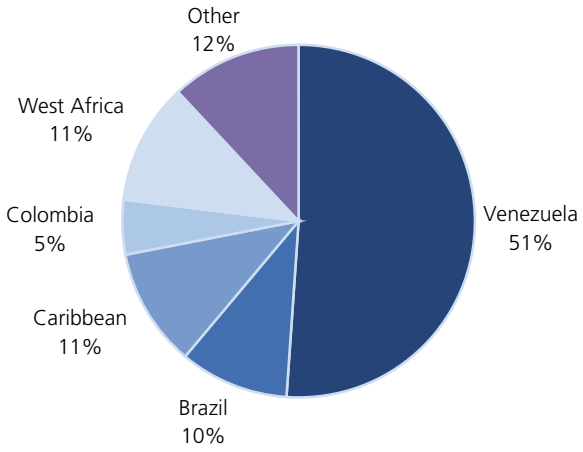
56 Maritime Analysis Operation Centre (MAOC(N), *Statistical Analysis Report,* Lisbon 2009.

57 Ibid.

58 MAOC-N, *Semi-Submersible Briefing Paper*, Lisbon 2008.

Fig. 46: Departure locations of identified drug trafficking shipments by sea from South America to Europe, 2006-2008

Source: Maritime Analysis Operation Centre



offloading it to smaller vessels. Some of it proceeds onward by sea to Spain and Portugal while some is left as payment to West Africans for their assistance – as much as 30% of the shipment.[59] The West Africans then traffic this on their own behalf, often by commercial air couriers. Shipments are also sent in modified small aircraft from the Bolivarian Republic of Venezuela or Brazil to various West African destinations.[60] Increased awareness, interdiction and political turmoil in the northern hub seem to have reduced the traffic through this region in 2008 and 2009, although it could quickly re-emerge. The decline in trafficking, affecting in particular Lusophone Africa, may also be a reason why Portugal experienced a sharp fall in cocaine seizures between 2006 and 2008, following a massive upward trend over the 2003-2006 period.

European cocaine seizures as a whole increased strongly over the 1998-2006 period, from 32 to 121 mt, before declining again over the 2006-2008 period to some 63 mt. Nonetheless, overall cocaine seizures in 2008 were almost twice as high as in 1998.

The largest interceptions were reported by Spain, accounting for 45% of all European cocaine seizures in 2008 as well as over the 1998-2008 period. The Spanish figures reflect both the strong increase and the recent decline in cocaine seizures in Europe. The trends are also confirmed in survey data on perceived cocaine availability in Spain.[61]

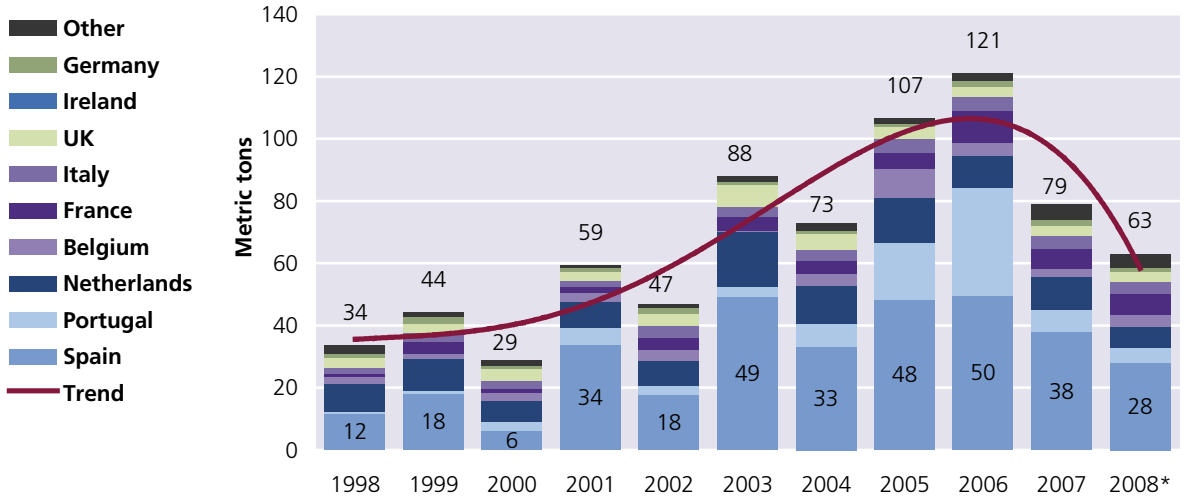
59 Serious Organized Crime Agency (SOCA), *The United Kingdom Threat Assessment of Organised Crime, 2009/10*, London, 2009.

60 UK Home Affairs Committee, The Cocaine Trade (see: http://www.publications.parliament.uk/pa/cm200910/cmselect/cmhaff/74/7410.htm); SOCA, *UK Threat Assessment of Organised Crime 2009/10.*

61 Ministerio de Sanidad y Consumo, *2008 National Report to the EMCDDA by the Reitox National Focal Point, 'Spain' New Development, Trends and in-depth information on selected issues*, Madrid,

Fig. 47: European cocaine seizures (mt; not adjusted for purity), 1998-2008

*No data for 2008 received for Poland, Scotland, Ukraine and Belarus – assumed unchanged levels of seizures.
Source: UNODC ARQ/DELTA



Spanish cocaine seizures primarily take place in international waters (two thirds of the total in 2007) and about one tenth are made from containers. A much smaller share is seized close to the country's beaches (2%), while airports account for just 6%.[62]

Portuguese seizures basically mirror the patterns seen in Spain, showing increases until 2006 and declines thereafter (from 34 mt in 2006 to 5 mt in 2008). The changes have been even more pronounced in Portugal, reflecting the strong links with trafficking via West Africa (via Guinea-Bissau and Cape Verde).

Dutch cocaine seizures have also sharply fallen in recent years. This is a result of the '100% control' policy in the Antilles and at Schiphol airport (Amsterdam), which reduced the number of drug couriers from the Caribbean and various South American countries,[63] improved container controls as well as growing efforts to stop shipments before they arrive in the Netherlands. For example, in 2008, the National Crime Squad arrested several men planning to ship 2.6 mt of cocaine from a warehouse in Sao Paulo, Brazil, to the Netherlands. Large amounts of cocaine continue to be seized by the coastguards of the Dutch Antilles and Aruba. Out of 6.8 mt seized in 2008, 4.2 mt were taken by the Dutch navy from a cargo vessel sailing under a Panamanian flag from the Bolivarian Republic of Venezuela to Europe. An additional factor may be diversions to the port of Antwerp (Belgium).

In 2008, for the first time, France seized more cocaine than any other European country besides Spain. Most of this cocaine (6 out of 8.2 mt) was seized at sea, mainly close to the French overseas territories in the Caribbean or close to the West African coast. Cocaine seizures that could be traced back to the West African countries themselves, however, amounted to just 0.3 mt in 2008. Most of the French-seized cocaine in 2008, came from Brazil (40% of the total) or the Bolivarian Republic of Venezuela (21% of total). Cocaine trafficked from Brazil most likely originated in Peru or the Plurinational State of Bolivia, reflecting the growing importance of these producers to Europe.[64]

As in the US market, estimating the volume of cocaine consumed in Europe is complicated. There are good survey data on the share of the population that uses cocaine, but less information on how much they use. The subsequent analysis is based on four different estimation methods,[65] resulting in average consumption

2008.

62 Ministerio del Interior, Secretaria de Estado de Seguaridad, Centro de Inteligencia contra el Crimen Organizado, *Hashish and Cocaine in Europe*, presentation given to UNODC, Vienna, July 2008.

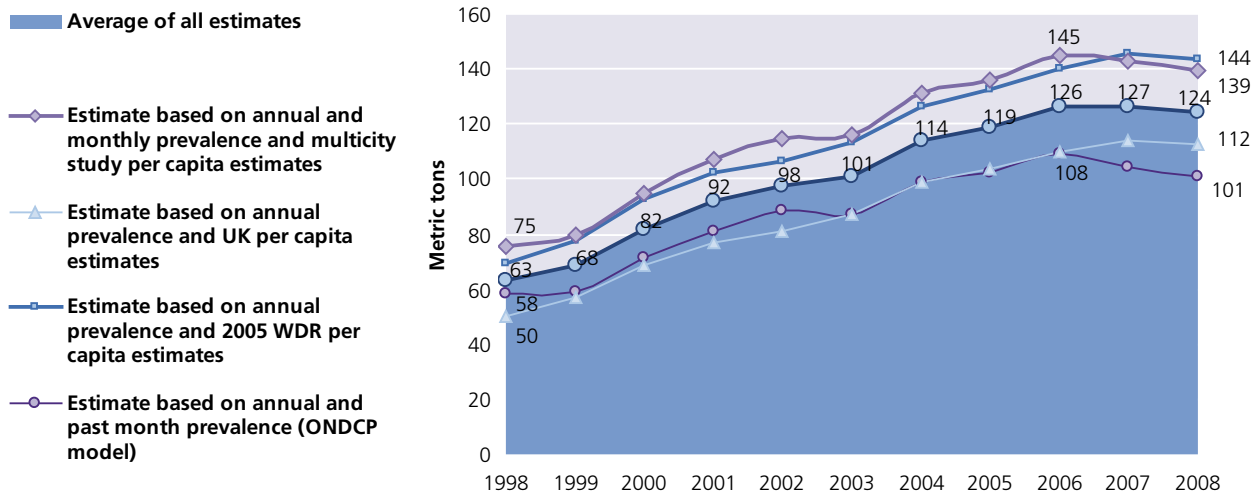
63 US Department of State, *International Narcotics Control Strategy Report*, March 2009.

64 Direction Générale de la Police Nationale, Direction Générale de la Police Judiciare, Office Central pour la Répression du Trafic Illicite des Stupéfiants (O.C.R.T.I.S.), *Usage et Trafic des Produits Stupéfiants en France en 2008*, Paris, 2009.

65 These techniques are detailed in the following documents: United States Office of National Drug Control Policy, *Cocaine Consumption Estimates Methodology*, September 2008 (internal paper); Home Office, *Sizing the UK market for illicit drugs*, London 2001; Home Office, *Measuring different aspects of problem drug use: methodological developments, Home Office Online Report 16/06*, London 2006; UNODC, *2005 World Drug Report, Volume 1: Analysis*, Vienna 2005; European Centre for Social Welfare Policy, *Two Worlds of Drug Consumption in Late Modern Societies*, Vienna 2009. While the first model, developed by ONDCP, seems reasonable, it is based on assumptions, not on actual empirical data from European countries. The second model is based on empirical data, but they refer to the situation in one country (UK) which is not necessarily representative for the rest of Europe. The third model refers to cocaine use in West and Central Europe, but it is again derived from a number of underlying assumptions (such as effectiveness of law enforcement interven-

Fig. 48: Amounts of (pure) cocaine consumed in the EU/EFTA countries, 1998-2008

Sources: Multiple sources[66]



rates of between 25 to 35 grams of pure cocaine per user. Multiplied by the number of users, this suggests consumption of some 101 to 144 mt for the EU and EFTA countries in 2008. The average is 124 mt, about double the figure a decade before.[67]

In line with the increases in the volumes of cocaine trafficked into Europe since the early 1990s, prices declined. Expressed in constant 2008 euros,[68] cocaine retail prices, at street purity, fell from an average of €143 in 1990 to €70 per gram in 2008, essentially halving in two decades. To understand the relative attractiveness of this market, however, it helps to look at these figures in constant 2008 US dollars.[69] Here, too, cocaine prices declined over the 1990-2000 period, but they increased over the 2000-2008 period, from US$88 to US$102, as the US dollar depreciated against the euro. The increase was most acute over the 2006-2008 period.

These euro price declines took place in the context of declining purity, however.[70] Taking purity into account, retail cocaine prices expressed in constant 2008 euros remained basically stable between 1998 and 2008: €183 per pure gram in 1998 and €189 per pure gram in 2008. The same was true of wholesale prices. Expressed in constant US dollars, the purity-adjusted price actually increased significantly. The euro, particularly the high-value 500 euro note, has become an important secondary currency for drug traffickers.

If the amounts of cocaine consumed are multiplied by

tions and importance of regional proximity). The fourth model is based on empirical data from six cities in Europe, but applying the use rate found among marginalized users to all past month users is likely to result in an over-estimate. At the same time, a basic problem of household surveys, based on self-reports, is that they are – most likely – showing a substantial under-estimate of the extent of drug use. It remains difficult to judge to what extent these errors offset each other in the final calculation of the amounts consumed.

66 UNODC ARQ; UNODC, *2009 World Drug Report*, Vienna 2009; EMCDDA, *Statistical Bulletin 2009*, Lisbon 2009; United Nations, Department of Economic and Social Affairs, Population Division, *World Population Prospects: The 2008 Revision*, 2009; European Centre for Social Welfare Policy, *Two Worlds of Drug Consumption in Late Modern Societies*, Vienna 2009; ONDCP, *Cocaine Consumption Estimates Methodology*, September 2008 (internal paper); Home Office, *Sizing the UK market for illicit drugs,* London 2001; Home Office, *Measuring different aspects of problem drug use: methodological developments*, Home Office Online Report 16/06, London 2006; UNODC, *2005 World Drug Report*, *Volume 1: Analysis*, Vienna 2005.

67 Available data suggest that the European cocaine market doubled in volume terms over the 1998-2006 period, before stabilizing over the 2006-08 period. The calculation is based on the assumption of largely stable per capita use levels. Given the lack of reliable quantitative or qualitative information, the calculations do not allow for the possibility that per capita use levels increased over the 1998-2006 period due to the progression from casual to problematic use, and that they may have fallen in terms of pure cocaine equivalents after 2006 as purity declined while use may have remained stable in terms of the amounts of street level cocaine consumed.

68 Current euro values were transformed into constant euros by applying the consumer price index for the euro zone.

69 Current US dollar values were transformed into constant US dollar values by applying the US consumer price index.

70 The unweighted averages of reported purities for countries in West and Central Europe show a decline at the retail level from 59% in 1998 (range: 25% - 75%) to 47% in 2005 and 36% in 2008 (range: 16% - 52%). At the wholesale level the decline was from 78% (range: 55% -90%) in 1998 to 55% in 2008 (range: 26% - 80%).

As some of the decline could have been simply the result of specific countries reporting in one year, and not in another, a modified calculation model was introduced. This model assumes that the results of non-reporting countries remained basically unchanged from the previous year (or a later year) for which data are available. This was done to avoid changes in the overall average due to the reporting or non-reporting of countries in specific years. Using this approach for missing data, changes in the overall average only reflect actual changes in country-specific purity data. Based on this model, the average cocaine purities at the retail level in West and Central Europe declined from 55% in 1998 to 43% in 2005 and 37% in 2008. The wholesale purities declined according to this model from 72% in 1998 to 60% in 2005 and 56% in 2008.

Fig. 49: Cocaine prices (not adjusted for purity) in West Europe* in constant currency units per gram, 1990-2008

* Average price of 18 West European countries (accounting for the bulk of cocaine consumption in Europe), weighted by population size.
Sources: UNODC, *World Drug Report 2009* (and previous years) and ARQ

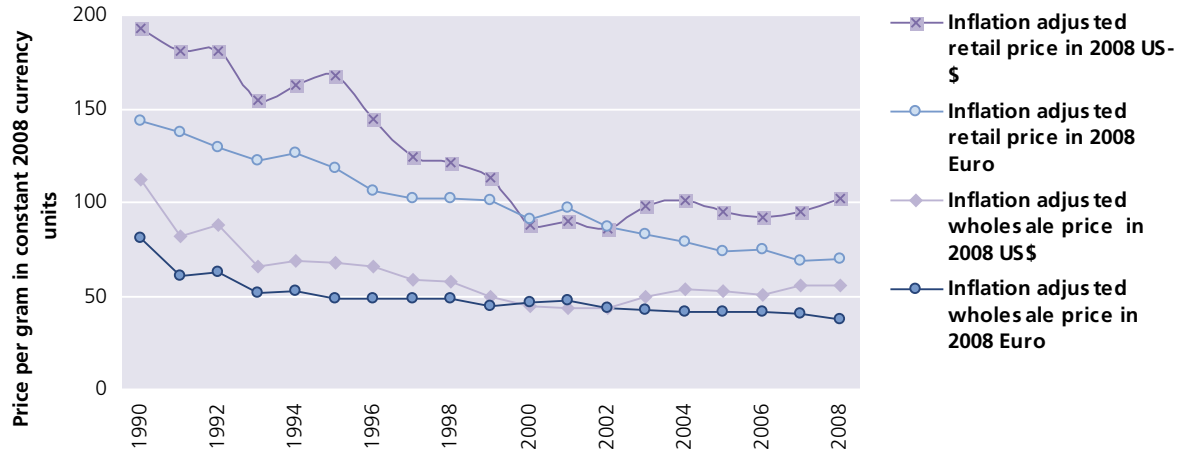
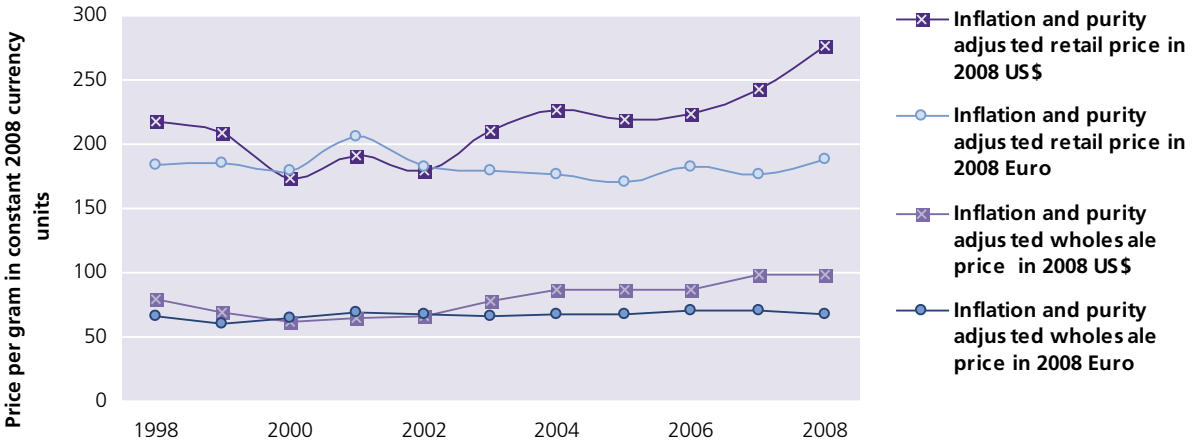


Fig. 50: Purity-adjusted cocaine prices in West Europe, in constant currency units, per gram, 1998-2008

Sources: UNODC, *World Drug Report 2009* (and previous years) and ARQ



the purity-adjusted retail prices, it appears that the value of the European cocaine market has more than doubled in the last decade (from US$14 billion in 1998 to US$34 billion in 2008). In 2008, it was worth almost as much as the US market (US$35 billion), even though it was still significantly smaller in terms of volume.

How much cocaine must be shipped to satisfy this growing demand? Taking seizures into account,[71] some 212 mt would have to have left South America to the European market in 2008.[72] The growth of the European market has meant that a growing share of the total cocaine production needs to be funneled toward the EU/EFTA countries, increasing from 13% in 1998 to 25% of total production in 2008.

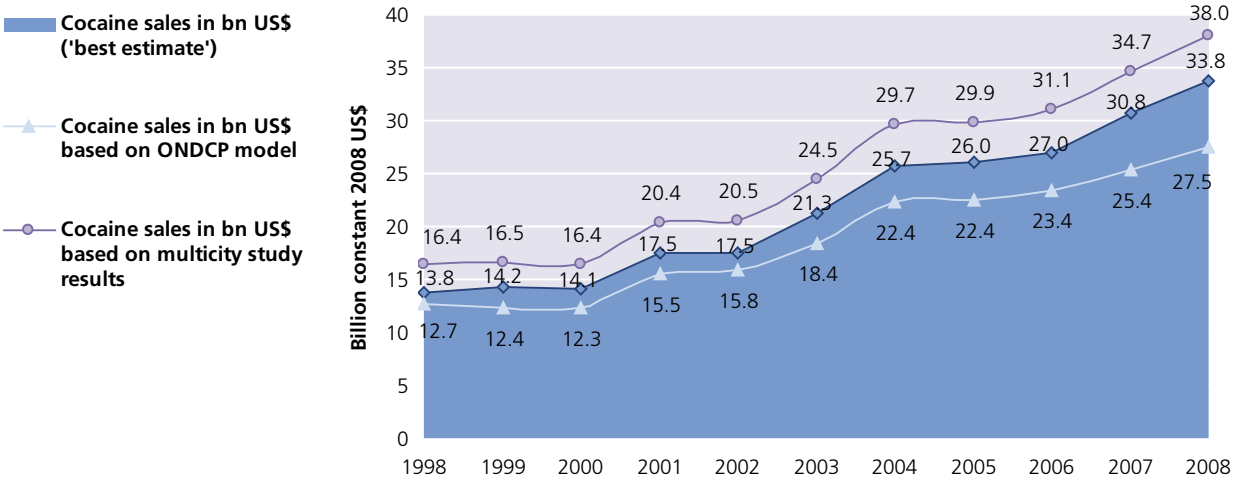
Where does the money go? Out of European cocaine sales, less than 1% goes to the Andean coca farmers. Another 1% goes to the processors and traffickers within the Andean region. About 25% of the final sales value accrues to the international traffickers who ship the cocaine from the Andean region to the main entry points. Shipping the cocaine from the entry points to the wholesalers in the final destination countries across

71 Based on the Annual Reports Questionnaire Data, about 55% of the seizures made in the Caribbean and 61% of the seizures made in South America excluding the Andean countries were linked to shipments towards Europe in 2008, up from 47% and 46% respectively in 2002. For seizures made in Africa it was assumed that the bulk of them was linked to shipments towards Europe.

72 Range: 189–232 tons.

Fig. 51: Size of the EU/EFTA cocaine market in billions of constant 2008 US$

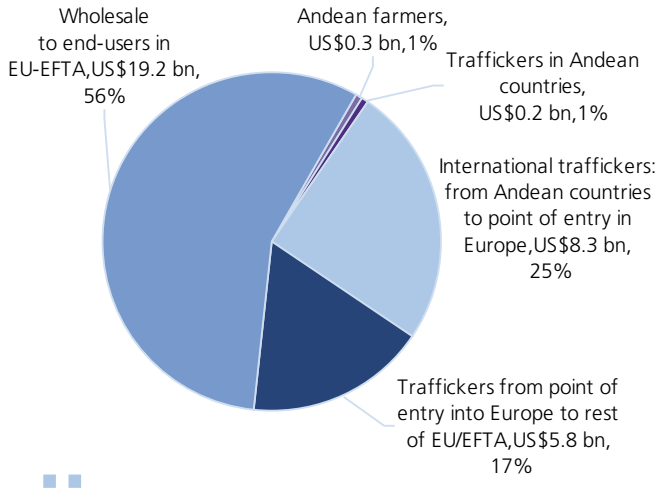
Sources: UNODC ARQ; Government reports; UNODC, *World Drug Report 2009*; EMCDDA, *Statistical Bulletin 2009*; European Centre for Social Welfare Policy, *Two Worlds of Drug Consumption in Late Modern Societies*



Europe generates a further 17% of the retail value. More than half (56%) of the value is, however, made within the destination countries, between the wholesalers and the consumers. As there are far more dealers at the national level, the per capita income of the dealers at the national level is (like in North America) likely lower than among the smaller group of international cocaine traffickers.

Fig. 52: 'Value-added' of cocaine sales among the EU/EFTA countries in 2008, billion US$

Sources: Multiple sources[73]



73 UNODC, Annual Reports Questionnaire Data; Government reports; UNODC, *2009 World Drug Report*, Vienna 2009; EMCDDA, *Statistical Bulletin 2009*, Lisbon 2009; United Nations, Department of Economic and Social Affairs, Population Division. *World Population Prospects: The 2008 Revision*, 2009; Home Office, *Sizing the UK market for illicit drugs*, London 2001, Home Office, *Measuring different aspects of problem drug use: methodological developments*, Home Office Online Report 16/06, London 2006; European Centre for Social Welfare Policy, *Two Worlds of Drug Consumption in Late Modern Societies*, Vienna 2009; UNODC, *2005 World Drug Report, Volume 1: Analysis*, Vienna 2005.

How does the market operate?

Trafficking of cocaine to Europe is, to a significant extent, organized by Colombian organized crime groups that forge alliances with various criminal groups operating in Europe, notably with groups in Spain, Italy and the Netherlands. In most European countries, the majority of those arrested for drug trafficking are local citizens, but the Colombian groups act as importers and, to a lesser extent, as wholesalers. Their involvement in retail markets is limited to Spain. Between 21% and 26% of all foreigners arrested for cocaine trafficking in Spain over the 2004-2007 period were Colombian nationals. The proportion rose to 29%, or nearly 1,000 individuals, in 2008.

In addition, groups from the Caribbean region play a role, including Dominicans in Spain, Jamaicans in the United Kingdom and Antilleans in the Netherlands. Other South Americans are also prominent, especially on the Iberian peninsula. In a number of countries in continental Europe, West Africans are active as retailers (as well as small-scale importers), including in France, Switzerland, Austria, Italy, Germany and Portugal.

The largest proportion of non-Portuguese cocaine traffickers arrested in Portugal in 2008 were from Cape Verde (27%) and Guinea-Bissau (19%).

North Africans are prominent in several countries with a Mediterranean coastline or a large North African diaspora, including Spain, Italy, France and the Netherlands. A few groups from the Balkan region have also emerged as players in the international cocaine trade in recent years. In contrast, there is little concrete evidence so far to suggest that the Mexican drug cartels are playing a major role in Europe.

Fig. 53: Nationality of persons arrested in Spain for trafficking cocaine into or within the country, 2008

Source: UNODC ARQ

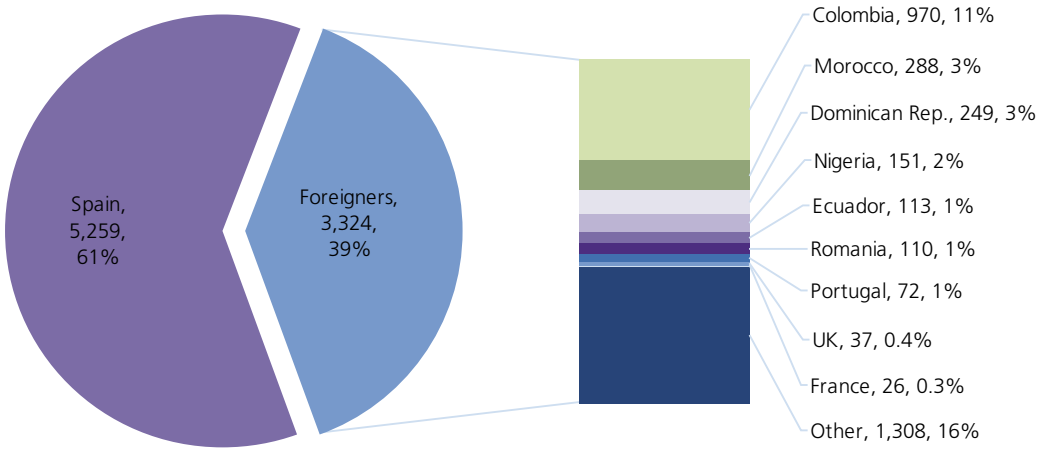
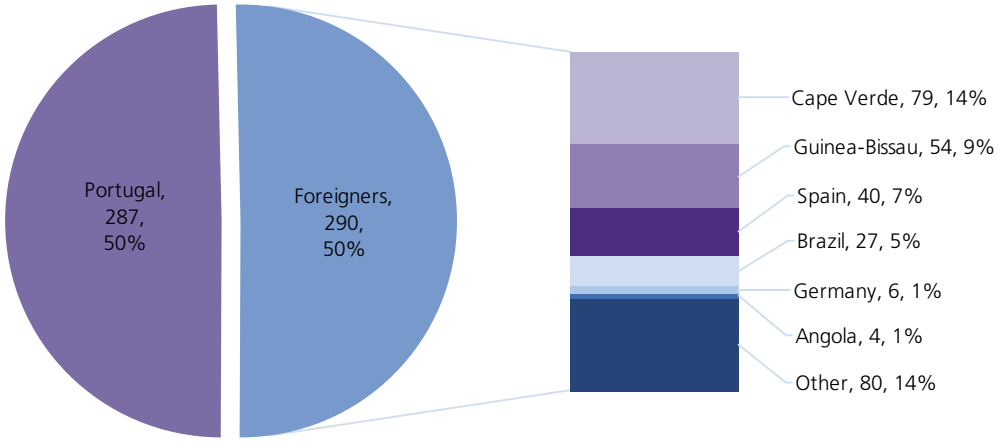


Fig. 54: Nationality of persons arrested in Portugal for trafficking cocaine into or within the country, 2008

Source: UNODC ARQ



In the Netherlands, criminal groups from the 'Dutch Caribbean' (Aruba, Netherlands Antilles and Suriname) have long been active alongside Colombians.[74] In recent years, Nigerian groups expanded in Amsterdam, working inter alia through air couriers flying to the Netherlands from the Netherlands Antilles and Suriname. As controls improved on direct flights, they also started to use other transit countries such as the Dominican Republic, Peru and Mexico.[75] Some of the traffic has also been displaced to Antwerp (Belgium), following improved controls in the port of Rotterdam (Netherlands). This traffic is still largely controlled by Colombian groups,[76] though Albanian groups, working at the port facilities, also seem to play a role in Antwerp.

Most of the cocaine needed to supply the United Kingdom, Europe's largest cocaine market, transits another European country, rather than being shipped directly. Bulk maritime shipments on merchant vessels or yachts from ports in Colombia or the Bolivarian Republic of Venezuela cross the Atlantic to the Iberian Peninsula. There, the cocaine is sold to local British criminals, who then smuggle it to the United Kingdom. To a lesser extent, cocaine is also imported by British criminals from the Netherlands. Thus, some 75% of the cocaine destined for the UK market is estimated to have been carried across the Channel, concealed in trucks, private cars or by human couriers ('mules').

74 Damian Zaitch, *Trafficking Cocaine – Colombian Drug Entrepreneurs in the Netherlands (Studies of Organized Crime)*, The Hague 2002.

75 US Department of State, *International Narcotics Control Strategy Report*, March 2009.

76 Ibid.

Fig. 55: Nationality of traffickers arrested in Italy for trafficking cocaine into or within the country, 2008

Source: UNODC ARQ

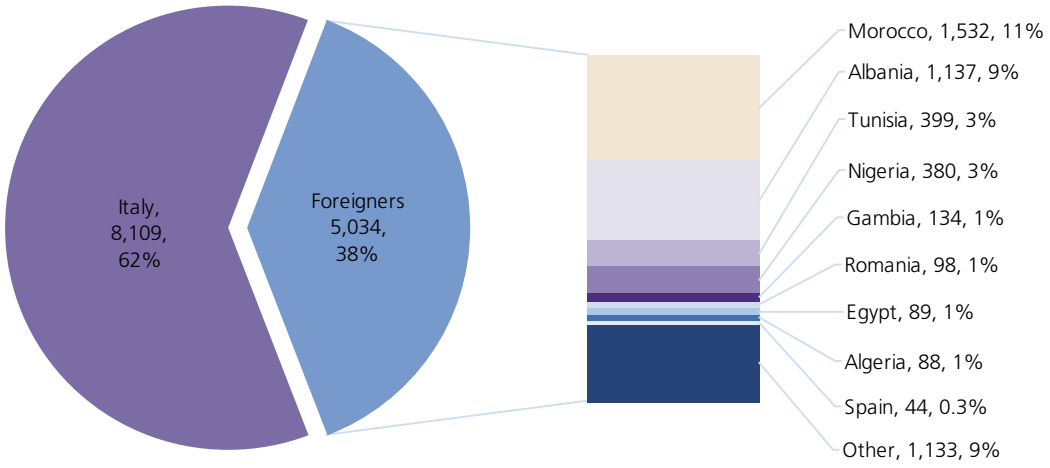
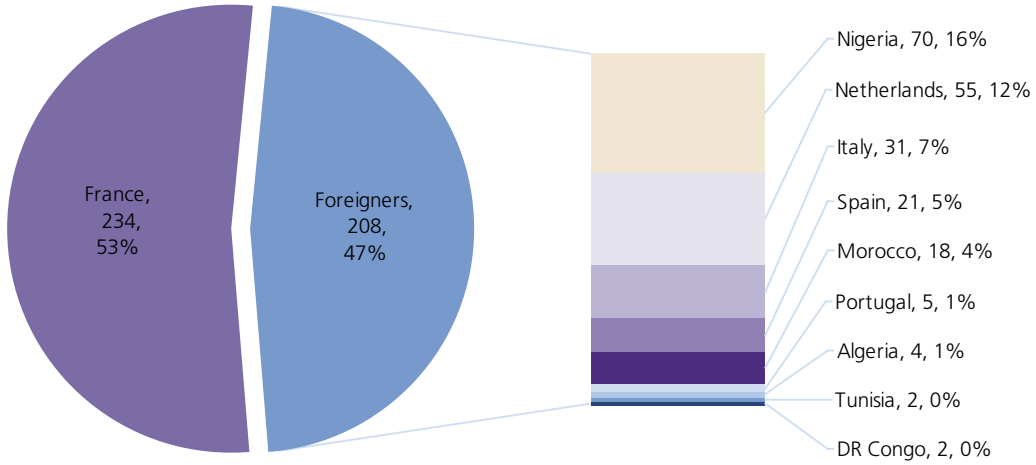


Fig. 56: Nationality of traffickers arrested in France for trafficking cocaine into or within the country, 2006[77]

Source: UNODC ARQ



In Italy, Colombian, Dominican and other Latin American organizations are working with Italian organized crime groups (notably the 'Ndrangheta) to import cocaine in commercial cargo or containerized shipments.[78] Italy is also one of the few European countries where close links between organized Mexican groups (the Gulf Cartel) and local organized crime groups have been confirmed.[79] As of 2007, the Camorra, located in Naples, was reported to have begun trafficking cocaine to Italy from Spain, as well as directly from South America. More recently, the Sicilian mafia has also become involved, getting support from the 'Ndrangheta and the Camorra to bring cocaine into the areas it controls.[80] West African and North African groups are active in retailing and small-scale import, as well as groups from the Balkans, in particular Albanians and Serbians. Several West African and Albanian groups import the cocaine from the Netherlands to northern Italy.[81]

The French cocaine market used to be rather small,

77 Sample of arrested cocaine traffickers (n = 442) for which nationality was identified; number of all arrested cocaine traffickers in France in 2006: N = 2,561.

78 Presidenza del Consiglio dei Ministri, Dipartimento Politiche Antidroga, *Relazione Annuale Al Parlamento Sullo Stato Delle Tossicodipendenze in Italia 2008,* Rome 2009.

79 US Department of State, op cit.

80 Presidenza del Consiglio dei Ministri, op cit..

81 US Department of State, op cit.

Fig. 57: Nationality of those arrested for sale of cocaine in Germany, 2008

Sources: UNODC ARQ and Bundeskriminalamt, *Polizeiliche Kriminalstatistik 2008*, Wiesbaden 2009

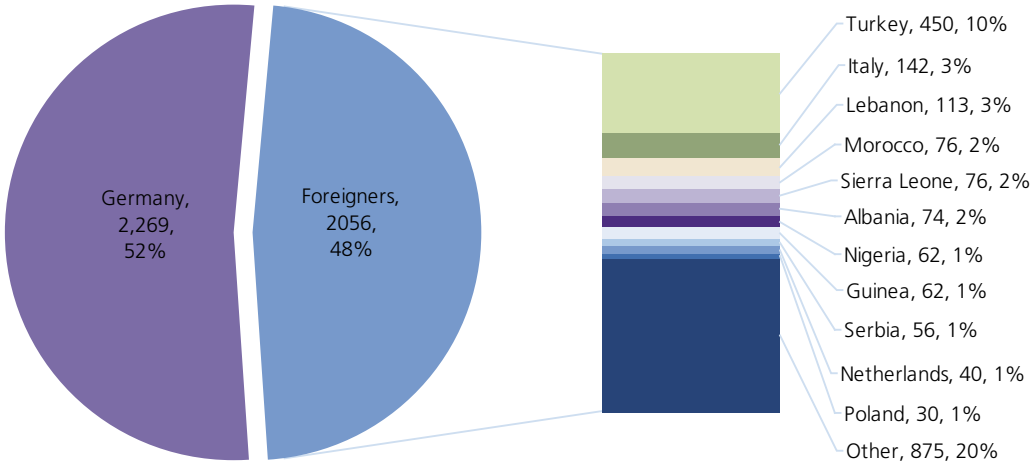
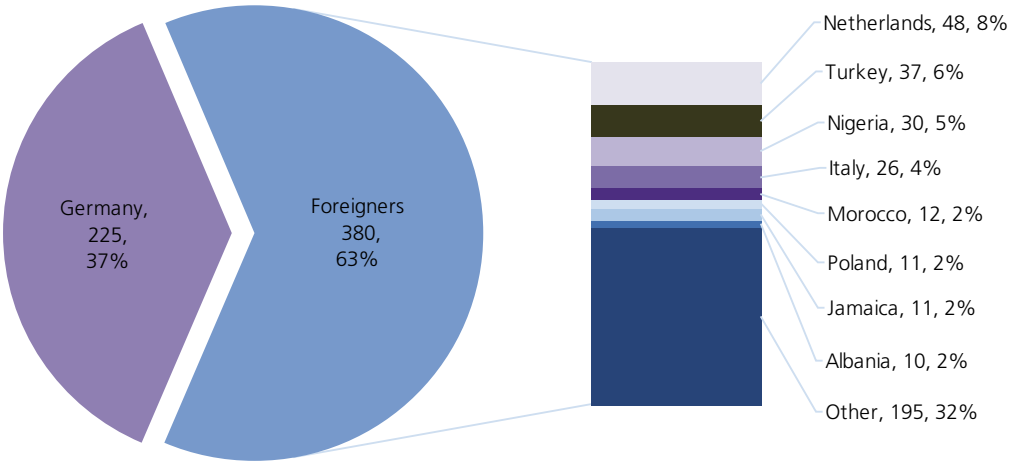


Fig. 58: Nationality of 'cocaine importers' arrested in Germany, 2008

Sources: UNODC ARQ and Bundeskriminalamt, *Polizeiliche Kriminalstatistik 2008*, Wiesbaden 2009



though this has started to change in recent years, partly due to the growing importance of Africa as a transit location. When West Africa became a more prominent transit area after 2004, West African traffickers also became more prominent. In 2008, cocaine traffickers from Togo, Benin, Ghana, Nigeria, Senegal and the Democratic Republic of the Congo were arrested. North African and European traffickers have also been arrested.[82]

The bulk of cocaine traffickers in Germany were not born in Germany.[83] The largest group of foreign traffickers in Germany were Turkish (22% of all foreign cocaine traffickers in 2008). This is a recent development: Turkish traffickers have traditionally been associated with heroin. The second largest foreign group detected are traffickers from Italy (7%), often associated with the 'Ndrangheta and other Italian mafia groups. Various groups from the Middle East (Lebanon and Morocco: 5%) and from West Africa (Sierra Leone, Nigeria and Guinea: 4%) were also prominent.[84] Those arrested for 'cocaine imports' comprise a smaller and more varied group, with the top foreign nationalities being Dutch (13%) and Turkish (10%, typically acquir-

82 UNODC ARQ, 2002-2008.

83 Bundeskriminalamt, *Polizeiliche Kriminalstatistik 2008*, Wiesbaden 2009; Bundeskriminalamt, *Organisierte Kriminalität, Bundeslagebild 2008*, Wiesbaden 2009.

84 Bundeskriminalamt, *Organisierte Kriminalität, Bundeslagebild 2008*, Wiesbaden 2009.

ing the cocaine from the Netherlands). Nigerian (5%) and Italian individuals (4%) also feature prominently.[85]

Impact of this specific flow

The social and economic impact of the flow of cocaine to Europe has been – so far at least – less severe than for North America. Though the proportion of people in need of treatment in Europe for cocaine abuse has more than tripled over the last decade (from 3% of total drug treatment demand in 1997/1998 to 10% in 2007/2008), it is still far lower than in North America (31% in 2007/2008).

The number of cocaine-related deaths is also far lower in Europe than in North America. According to the latest national data, less than 700 people in the EU/EFTA countries died due to cocaine use, which is less than 0.2 deaths per 100,000 inhabitants, and only 8% of all drug-related deaths. As in North America, deaths from poly-drug use are common in Europe. German data show, for example, that in only 14% of all 'cocaine-related' death cases was cocaine the only substance involved.[86]

Cocaine use in Europe is also less associated with violence than in North America. This is most likely because powder cocaine is still dominant in Europe, and it is crack that is most associated with violent crime. There does appear to be a link with acquisitive property crime, however.

England and Wales conduct arrestee drug testing. These studies found that 13% of the arrestees in 2005/2006

Table 10: Reported cocaine related deaths in EU/EFTA countries in 2008 or latest year available*

* EU/EFTA countries which provide a breakdown of drug-related mortality by drug type.
Sources: UNODC ARQ; EMCDDA, *Statistical Bulletin 2009*; EMCDDA, National Reports

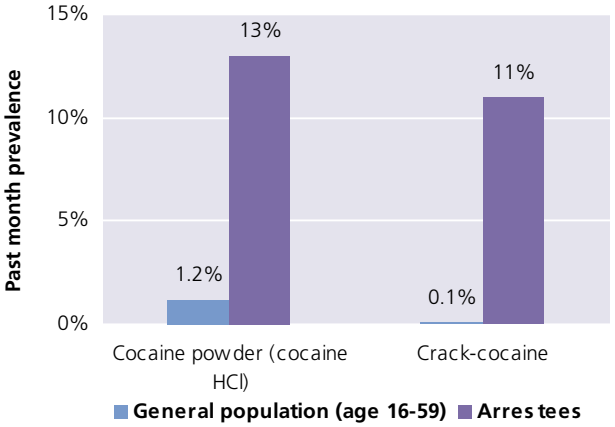
Country	Year	Cocaine-related deaths	Drug deaths	Cocaine in % of drug deaths	Cocaine deaths per 100,000 inhabitants	Source	Comments
Spain	2006	257	428	60.0%	0.58	EMCDDA	overdose
United Kingdom	2007	246	3,359	7.3%	0.40	ARQ	all deaths
Germany	2008	126	1,449	8.7%	0.15	Govt	all deaths
Portugal	2007	103	314	32.8%	0.96	EMCDDA	all deaths
France	2008	51	233	21.9%	0.08	ARQ	all deaths
Italy	2008	37	502	7.4%	0.06	ARQ	overdose
Ireland	2005	34	159	21.4%	0.77	ARQ	overdose
Netherlands	2008	22	129	17.1%	0.13	ARQ	overdose
Denmark	2007	5	205	2.4%	0.09	ARQ	all deaths
Malta	2008	3	8	37.5%	0.74	ARQ	all deaths
Finland	2007	3	229	1.3%	0.06	ARQ	all deaths
Poland	2006	2	241	0.8%	0.01	ARQ	all deaths
Slovenia	2005	1	85	1.2%	0.05	ARQ	all deaths
Luxembourg	2002	1	35	2.9%	0.21	ARQ	all deaths
Czech Republic	2006	1	212	0.5%	0.01	ARQ	overdose
Sweden	2006	0	125	0.0%	-	ARQ	all deaths
Romania	2007	0	23	0.0%	-	EMCDDA	all deaths
Liechtenstein	2008	0	1	0.0%	-	ARQ	all deaths
Hungary	2008	0	194	0.0%	-	ARQ	all deaths
Bulgaria	2006	0	48	0.0%	-	EMCDDA	All deaths
Iceland	2007	0	38	0.0%	-	ARQ	all deaths
Cyprus	2007	0	22	0.0%	-	ARQ	overdose
Total		**635**	**7,611**	**8.3%**	**0.14**		

85 Ibid.

86 Bundeskriminalamt, *Rauschgift, Jahreskurzlage 2008, Tabellenanhang*, Wiesbaden 2009.

Fig. 59: Past month prevalence of cocaine use among the general population versus cocaine use among arrestees in England and Wales, 2005/2006

Sources: Home Office, *The Arrestee Survey 2003-2006*, 2nd edition, London, November 2007; Home Office, "Drug Misuse Declared: Findings from the 2005/06 British Crime Survey, England and Wales," *Home Office Statistical Bulletin*, October 2006



had used cocaine powder and 11% crack-cocaine in the previous month.[87] This is less than in the United States but much more than in the general population: household surveys during the same period indicate that only 1.2% of the population had used cocaine powder and 0.1% had used crack-cocaine in the previous month.[88] A previous arrestee survey for England and Wales (2003/2004) found that 68% of those arrested for shoplifting, 63% of those arrested for burglary, 41% of those arrested for 'other theft' and 23% of those arrested for assault had consumed either crack-cocaine, cocaine powder or heroin within the previous 12 months.[89]

The consequences of trafficking and cocaine consumption in Europe are dwarfed by the serious repercussions for the cocaine-producing countries (in terms of cocaine-generated violence and insurgencies) and for many of the transit countries in South America, Central America, the Caribbean and Africa, notably West Africa where some of the smaller countries are easy targets for cocaine trafficking organizations that operate internationally.

1.3.4 Implications for response

Prevention and treatment can work. The significant decline in cocaine use in the United States over the last three decades can be linked, inter alia, to increased spending on prevention and treatment. However, not all prevention efforts are effective. Simplistic interventions can generate an interest in drugs and can lead to even higher use levels. Treatment of problem drug users, who consume the bulk of the drugs, can reduce the demand for drugs. But this requires time as relapse rates are usually high. Some users may never achieve abstinence. It also seems that treating cocaine dependence is even more difficult than treating other drug addictions and some new approaches ('cocaine vaccinations') are being explored.

Many studies have shown that treatment is an effective investment to reduce drug demand, including demand for cocaine,[90] despite its shortcomings. The fight against the drug cartels is a legitimate and necessary undertaking, but this may not automatically reduce the cocaine market. History has shown that break-ups of big cocaine cartels may lead to the emergence of a larger number of smaller groups. Increased competition can produce lower prices, which could even encourage higher use levels.

87 Home Office, *The Arrestee Survey 2003-2006*, 2nd edition, London, November 2007.

88 Home Office, "Drug Misuse Declared: Findings from the 2005/06 British Crime Survey, England and Wales", *Home Office Statistical Bulletin*, October 2006.

89 Home Office, "The Arrestee Survey Annual Report: Oct. 2003-Sept. 2004", *Home Office Statistical Bulletin*, November 2006.

90 William S. Cartwright, Cost–Benefit Analysis of Drug Treatment Services: Review of the Literature, *The Journal of Mental Health Policy and Economics,J. Mental Health Policy Econ. 3*, 11–26 (2000); Treatment Research Institute at the University of Pennsylvania, *Economic Benefits of Drug Treatment: A critical Review of the Evidence for Policy Makers,* February 2005; Wim van den Brink, Amsterdam Institute for Addiction Research, Academic Medical Center University of Amsterdam, "Effectiveness and Cost-Effectiveness of Drug Dependence Treatment", presentation given at the Donor Conference in Support of the UNODC-WHO Joint Program on Drug Dependence Treatment and Care, The Hague, 10 February 2010. Results from eleven meta studies in the USA suggested that the main economic benefits from drug treatment (all drugs; totaling, on average, some US$49,500 per patient) were in the form of avoided criminal activity: US$42,200 per patient or 85% of total economic benefits. (Kathyrin. E. Mc. Collister and Michael T. French, *The relative contribution of outcome domains in the total economic benefit of addiction interventions: a review of first findings*, 2003). One previous US study, based on more than 500 cocaine dependent patients in the Drug Abuse Treatment Outcome Study suggested that the treatment costs for outpatient cocaine treatment were, on average US$1,422 while the benefits from avoided crime among this group amounted to US$1,891 per patient, equivalent to a benefit to cost ratio (BCR) of 1.3. The same study found that long-term residential cocaine treatment resulted in costs of, on average, US$11,016 while average avoided crime costs amounted to US$18,461, or a BCR of 1.7. Including other economic benefits, the BCR for cocaine was found to amount to 1.6 and 1.9, respectively, for outpatient and long-term residential cocaine treatment, suggesting that for US$1 invested into cocaine treatment about US$2 can be expected to be generated in economic benefits. (Flynn, P.M., Kristiansen J.V., Porto R.L., "Costs and benefits of treatment for cocaine addiction", *Drug and Alcohol Dependence, 57* (1999), pp. 167-174). A general review of economic benefit to cost ratios in drug treatment (all drugs), reported in the literature for residential and outpatient drug treatment, found BCRs ranging from 1.3 to 6.5 (Treatment Research Institute at the University of Pennsylvania, 2005) with an average of 3.4, suggesting that for each dollar invested into drug treatment one should expect economic benefits of more than US$3 (and thus more than for treating cocaine dependent persons). According to a West Coast Cost-Benefit Analysis, every dollar invested by the authorities in drug treatment in this region was reported to have even saved, on average, US$7 in other costs (health care and emergency room visits, criminal justice proceedings, imprisonment, food stamps, unemployment, workers' compensation, child welfare and other related services; *Oregon Research Brief on Addiction Treatment Effectiveness*, 2003).

The concept of shared responsibility has long been adopted by UN Member States. They have also recognized the need for a balanced approach between supply and demand reduction efforts. Nonetheless, these general concepts still need to be better translated into operational terms. Uncoordinated efforts, leading to isolated sectoral and geographical successes, have often only displaced the problem, leaving the global cocaine market intact. In the mid-1990s, for example, law enforcement efforts put an end to large-scale air trafficking of coca paste or cocaine base between Peru and Colombia. Coca leaf prices fell in Peru and farmers turned to other crops. The problem was, however, not really solved as this decline was offset by increases in coca cultivation in Colombia. Later, cocaine laboratories emerged in Peru, generating new demand for coca and resulting in higher coca leaf prices, thus leading to a resurgence of coca cultivation in that country in the twenty-first century. Similarly, declines in cocaine use in the United States prompted drug traffickers to seek alternative markets. Thus, reductions in North America were offset by increases in the use of cocaine in Europe and South America over the last two decades.

All of this indicates that coordination of national and sectoral efforts in the context of an internationally integrated strategy has been missing. Unless a more integrated international strategy is developed, sustainable success may remain an elusive goal. Member States recognized this in their Political Declaration[91] of March 2009, stressing that:

"*… the world drug problem remains a common and shared responsibility that requires effective and increased international cooperation and demands an integrated, multidisciplinary, mutually reinforcing and balanced approach to supply and demand reduction strategies*."

91 "Political Declaration and Plan of Action on International Cooperation towards an Integrated and Balanced Strategy to Counter the World Drug Problem", in United Nations Commission on Narcotic Drugs, *Report on the fifty-second session* (14 March 2008 and 11-20 March 2009), E/2009/28; E/n.7/2009/12, pp. 37-77.