Estimates of cannabis use for the People's Republic of China

A number of indirect indicators, including seizures, arrest data and treatment data, suggest that cannabis use in the People's Republic of China is significantly lower than in other East and South-East Asian countries. China has so far, however, not undertaken any national household survey of illicit drug use. No national estimate of cannabis use exists.

One World Health Organization (WHO) school survey, conducted in 2003 in four cities, assessed drug use. It found lifetime prevalence rates of drug use among 13-15 year old pupils ranging from 0.9% in Beijing to 2.5% in Hangzhou (eastern China). The unweighted average of the four cities was 1.75%.

In comparison, the lifetime prevalence of drug use among 13-15 year old pupils in Thailand in 2008 was 6.1%. A 2007 Thai household survey found an annual prevalence of cannabis use of 1.2% among the general population (aged 12-65). In the Philippines, data from a 2003 WHO school survey among 13-15 year old students (life-time prevalence of 6.7%) was similarly far higher than a recent household survey estimate (annual prevalence of around 0.8% in 2008).

In the regional estimate calculated for cannabis use, all countries with no national data available, including China, were assigned the range from other countries in the region. This means that there was a wide range applied from existing national prevalence estimates, namely from 0.23% to 1.34%

UNODC has not applied the school data estimate for China to make an estimate for 15-64 year olds across the country, because it was based on only four cities that do not necessarily reflect the national picture of cannabis use. This means that the regional and global range of estimated cannabis users is very large, because of the sheer size of China's population. However, using such an estimate would reduce the range of uncertainty in the estimates for Asia by 25%. This highlights the great importance that estimates of the level of drug use in the world's populous countries (and in this case, their absence) has upon our confidence in global figures.

Use stabilizing or declining in North America

Cannabis use declined in North America over the last decade. In 2007/08 it seems to have stabilized at the lower levels.

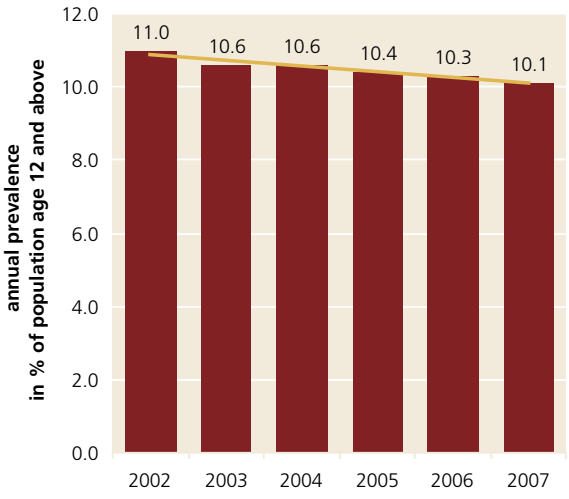
Drug tests, which are regularly conducted among the US workforce, found a decline in the proportion of positive cannabis tests among the general US workforce from 3.4% in 1997 to 2.3% in 2007, equivalent to a decline of 31% over the last decade. The figures suggest that the USA may be heading towards a stabilization of cannabis use at around 2%. In 2008 2.1% of the workforce tested positiv for cannabis.

The decrease can also be observed in the total population using household data. Over the 2002-2007 period the annual prevalence of cannabis use declined gradually, from 11% of the population aged 12 and above in 2002 to 10.1% in 2007.

The last national Canadian Addiction Survey (CAS), conducted in 2004, found a prevalence rate of 14.1% among the population aged 15 and above[1] - thus exceeding the prevalence of cannabis use in the USA. The highest levels of cannabis use were reported in the province of British Columbia, located at the Pacific coast (16.8%). Though data show that the differences across provinces in Canada or across states in the USA are not negligible, it should be pointed out that the

Fig. 60: USA: annual prevalence of cannabis use, 2002-2007

Source: SAMHSA, *Results from the 2007 National Survey on Drug Use and Health, National findings,* Rockville, Maryland, 2008.



1 Health Canada, *Canadian Addiction Survey (CAS), Detailed Report*, March 2005.

differences are far less pronounced than, for instance, across countries in Europe or South America.

A significant decline in cannabis use over the last few years was found among high school students in North America. Cannabis use among 8th-12th graders in the USA fell by 21% between 1998 and 2008. A decline in cannabis use over the last decade was also reported among high-school students in the province of Ontario, Canada.

Increases reported in Latin America

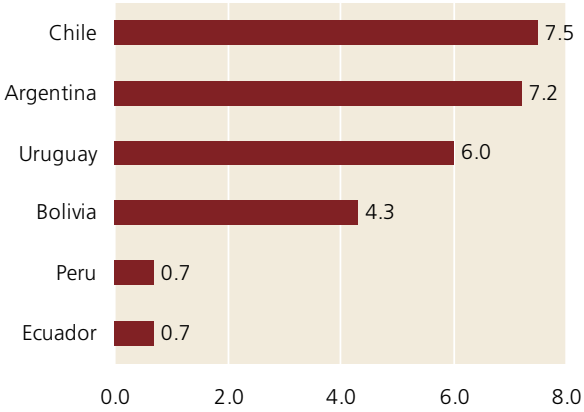
In contrast to the declining trend in North America, increases in cannabis use have been reported in countries in Latin America and the Caribbean in recent years, notably in 2007. Eleven countries reported rising levels of cannabis use in 2007, up from seven in 2005. Seven countries saw a stable trend, but not a single country reported a decline in 2007. The increase across the region was also identified by the Latin American Epidemiological Network (REDLA).[2]

Despite the increasing trend, cannabis use levels are still significantly lower in South America than in North America, as reflected in data collected in school surveys and household surveys.

Comparative household surveys among the general population were conducted in six South American states in 2006/07 by UNODC and the Inter-American Drug Abuse Control Commission (CICAD). These identified the highest levels of cannabis use in Chile, followed by Argentina and Uruguay. Far lower levels were reported in Peru and Ecuador.

Fig. 61: Cannabis use in selected South American countries in 2006/07*

Source: UNODC and CICAD, *Elementos orientadores par alas Políticas Públicas sobre Drogas en la Subregión,* Lima 2008.



*Sampled populations vary slightly. Figures not directly comparable.

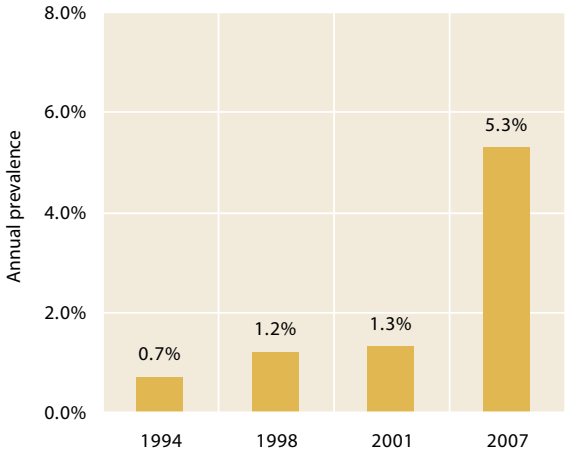
2 CICAD Observer, "REDLA Network Identified Worrisome Trends in Drug Use across Latin America", June 2008, http://www.cicad.oas.org/oid/NEW/Information/Observer/08_01/REDLA.asp

increase in the annual prevalence rate from 3.7% in 1999 to 6.9% in 2006, among the population aged 12-65. Moreover, studies among high school students in Argentina (aged 13-17) showed an increase in the annual prevalence rate of cannabis use from 3.5% in 2001 to 8.1% in 2007.

A clear upward trend is also reflected in data from neighbouring Uruguay. Following moderate use rates in the 1990s, the annual prevalence of cannabis use rose quadrupled, from 1.3% among the population aged 15-65 in 2001 to 5.3% in 2007.

Fig. 62: Uruguay: annual prevalence of cannabis use among the population aged 15-65, 1994-2007

Sources: Observatorio Uruguay de Drogas (OUD), *Encuesta Nacional en Hogares sobre Consumo de Drogas 2007* and Secretaria Nacional de Drogas y Junta Nacional de Drogas, *Encuesta Nacional de Prevalencia del Consumo de Drogas 2001.*



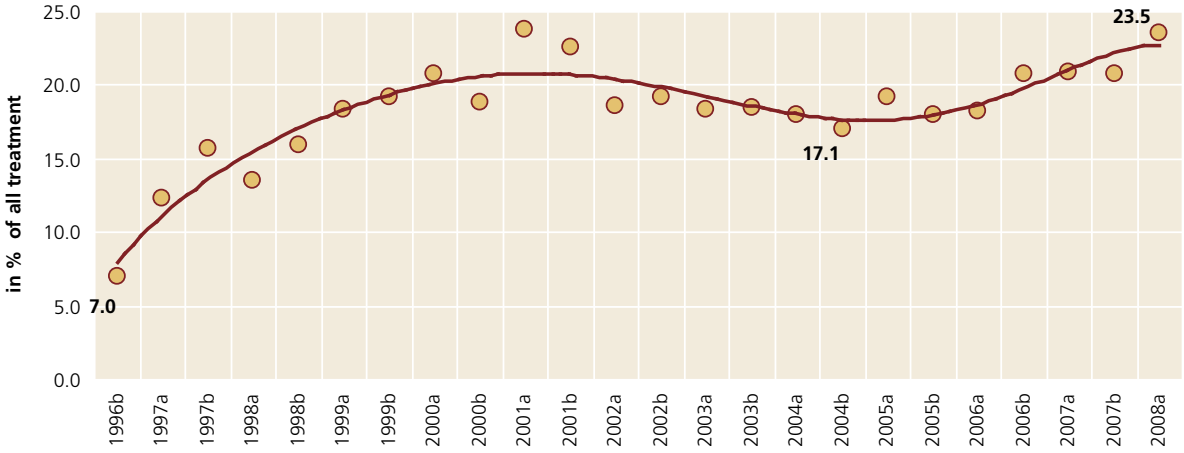
An increase in cannabis use was also reported in Brazil, the largest country in South America. The annual prevalence of cannabis use more than doubled, from 1% in 2001 to 2.6% in 2005[3] and – according to the Brazilian authorities it appears to have continued rising in subsequent years.

Strong increases in cannabis use were also reported in Chile. The annual prevalence of cannabis use rose from 3.7% in 1994 to 7.5% in 2006.

3 CEBRID, Il Levantamento Domiciliar sobre o Uso de Drogas Psicotrópicas no Basil: Estudo Envolvendo as 108 Maiores Cidades do Pais, 2005, Sao Paolo 2006 and CEBRID, Il Levantamento Domiciliar sobre o Use de Drogas Psicotrópicas no Basil: Estudo Envolvendo as 107 Maiores Cidades do País, Sao Paolo 2002.

Fig. 63: South Africa: cannabis as primary drug of abuse in treatment demand*, 1996-2008

* unweighted average of treatment (incl. alcohol) in 7 provinces.
Source: SACENDU, "Monitoring Alcohol & Drug Abuse Trends in South Africa, July 1996 – June 2008", *Research Brief*, Vol. 11 (2), 2008.



Cannabis use is increasing in Africa

From a total of 21 African countries reporting cannabis use trends for 2007, 7 countries saw use levels rising and 4 countries reported a decline. The rest were stable. These data suggest that overall cannabis use continued to rise in Africa in 2007. The increase, however, may be losing momentum. While 7 African countries saw an increase in cannabis use in 2007, the comparable numbers were 12 in 2006 and 18 in 2004.

The only systematic monitoring of drug use in Africa is taking place in South Africa, based on treatment demand. Data for South Africa suggest that treatment demand for cannabis use increased over the first two quarters of 2008. Including alcohol, cannabis accounted for 23.5% of substance abuse-related treatment demand in South Africa during this period.

In many European countries, use is stabilizing or declining

In contrast, cannabis use in Europe has stabilized or shown a downward trend in a number of countries. Increased prevention efforts and the spread of knowledge on the health risks, partly related to the emergence of high-potency cannabis, seems to have contributed to the stabilization or downward trend. Some of the stabilization/decline may be linked to decreases of cannabis resin production in Morocco, Europe's main source country of hashish, though such supply reductions seem to have been partly offset by rising levels of cannabis herb production within Europe.

In the UK, which used to be Europe's largest cannabis market, a clear downward trend has been observed in recent years. In England and Wales cannabis use fell from a prevalence rate of 10.9% among the population aged 16-59 in 2002/03 to 7.4% in 2007/08. The decline among youth started several years before the decline among the general population. In fact, annual prevalence of cannabis use among people aged 16-24 fell from 28.2% in 1998 to 17.9% in 2007/08, a decline of 37% over the last decade. The overall prevalence estimate for the United Kingdom as a whole would be around 8.1%, equivalent to some 3.2 million persons.

In Spain, an important cannabis market due to its strategic location close to the main cannabis resin production centers of Morocco, household survey data showed a moderate decline, from a peak of 11.3% of the population aged 15-64 in 2003 to 10.1% in 2007. Data suggest that the strong upward trend over the 1993-2003 period has thus started being reversed. The total number of cannabis users in Spain is now estimated at around 3 million persons.

Fig. 64: Spain: annual prevalence of cannabis use among the population aged 15-64

Source: Delegación del Gobierno para el Plan Nacional Sobre Drogas, "Informe de la Encuesta Domiciliaria sobre Alcohol y Drogas en España (Edades) 2007/08", October 2008.

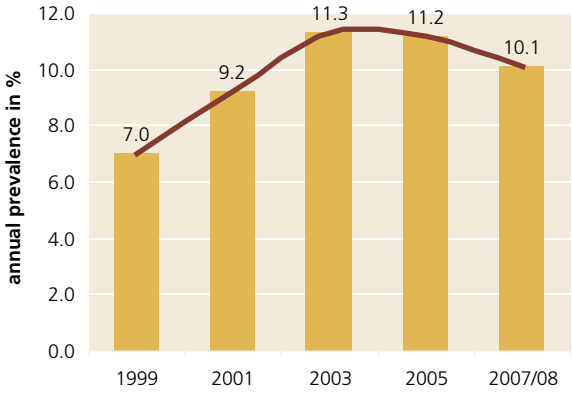
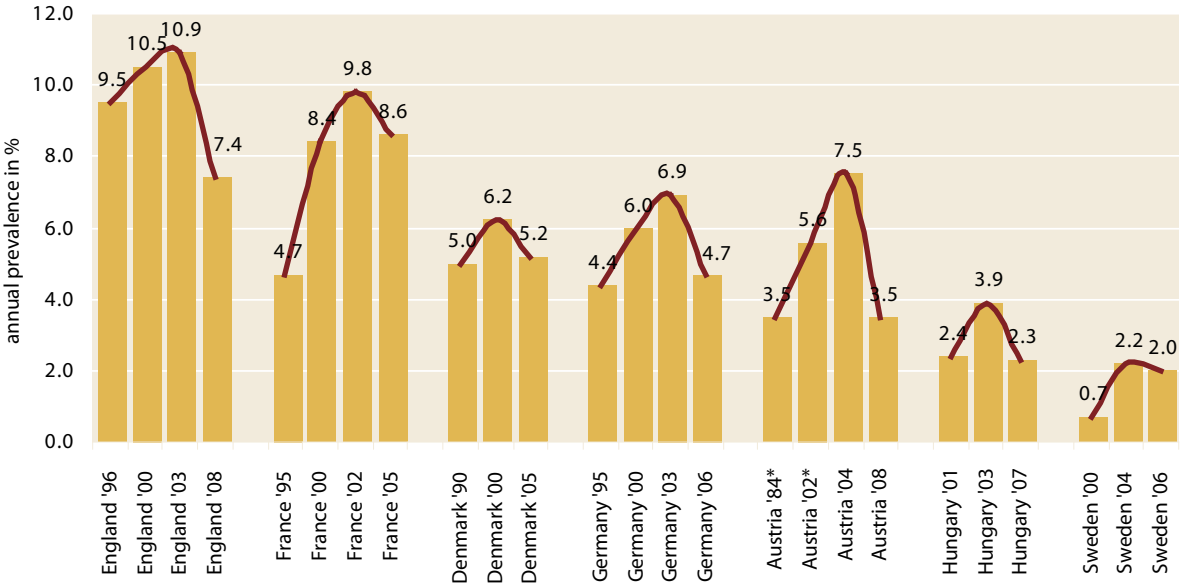


Fig. 65: England & Wales, France, Denmark, Germany, Austria, Hungary and Sweden: annual prevalence of cannabis use in % of the young and adult population[a]

[a] England and Wales in % of population aged 16-59; France: in % of population aged 15-64; Germany: in % of population aged 18-59, 1995-2003; in % of population aged 18-64 in 2006; Denmark: in % of population aged 16+ in 1990 and in % of population aged 16-64 in 2005; Austria: in % of population 15-65. * UNODC estimate for Austria for 1984 extrapolated from results of a national study in 1984 among 15-40 year olds; UNODC estimate for 2002 based on several local studies conducted around 2002, reported in UNODC's 2004 World Drug Report.

Sources: UNODC, Annual Reports Questionnaire data; EMCDDA, Statistical Bulletin; Ludwig Boltzmanninstitut, "Österreichweite Repräsentativerhebung zu Substanzgebrauch – Erhebung 2008" (Draft), Vienna 2009".



A similar trend of rising cannabis use in the 1990s followed by some decline in recent years can be also noticed in recent household surveys from a number of other European countries.

Cannabis use seems to have remained stable in the Netherlands, one of the key cannabis production and redistribution centres in Europe. Available household survey data, however, only reflect the situation over the first few years of the new millennium (5.5% in 2001 and 5.4% in 2005). Despite this stabilization, treatment demand related to cannabis abuse increased strongly between 2000 and 2005, possibly reflecting the emergence and spread of higher-potency cannabis on the market. The number of (outpatient) addiction care clients with primary cannabis problems rose by more than 75% between 2000 and 2005.[4] The average THC content of domestically grown Dutch marijuana almost doubled, from 8.6% in 2000 to 16% in 2007.

Following increases in the 1990s, cannabis use levels also remained quite stable in some of the new Central European EU member states, including Poland (2.8% in 2002; 2.7% in 2006), the Czech Republic (10.9% in 2002; 9.3% in 2004) and Slovakia (7.2% in 2000; 6.9% in 2006).

4 Trimbos Instituut, *The Netherlands National Drug Monitor, Annual Report 2007*, Utrecht 2008.

... although use is increasing in some European countries

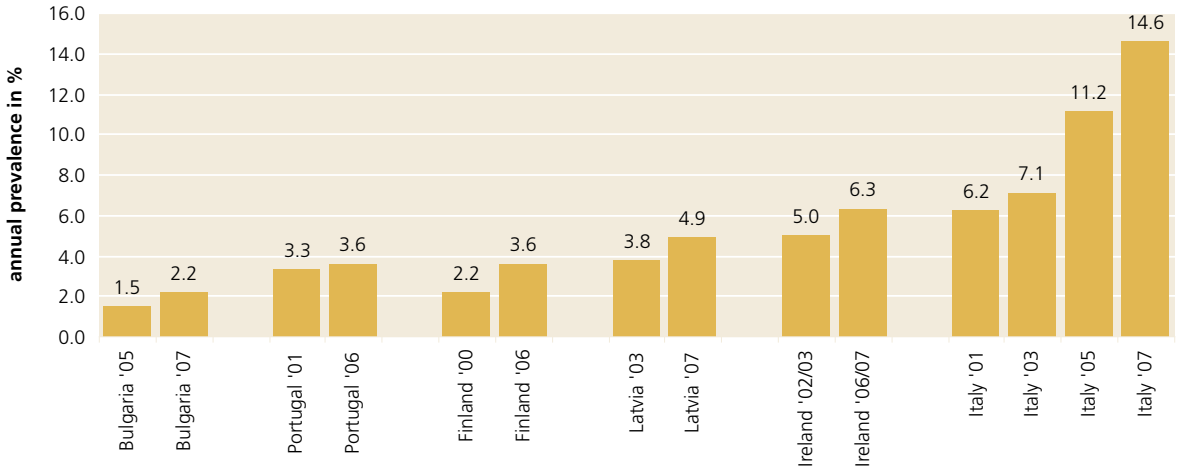
In contrast, cannabis use appears to have increased in some of the countries at the geographical fringes of Europe such as Ireland, Portugal, Bulgaria, Latvia and Finland. However, some of these increases were small and not statistically significant.

The situation is different for Italy, where the cannabis prevalence rates more than doubled in recent years (7.1% in 2003; 14.6% in 2007). Italy has evolved as Europe's single largest cannabis market, with some 5.7 million users in 2007, out of a total of about 30 million users in Europe. This reflected, inter alia, widespread availability of cannabis herb from Albania and the Netherlands, and rising domestic production in southern Italy. In contrast to many other European countries, the average cannabis potency has remained stable in Italy, fluctuating at around 6%, which is a low level by European standards. This may explain that the negative consequences of cannabis consumption, found in many other European countries, may have been less obvious in Italy.

Despite of the increases in cannabis use in Italy, overall cannabis use in Europe remained basically stable.

Fig. 66: Bulgaria, Portugal, Finland, Latvia, Ireland and Italy: annual prevalence of cannabis use in % of the young and adult population[a]

[a] in % of population aged 15-64 for Bulgaria, Portugal, Finland, Latvia, Ireland; data for Italy refer to the age group 15-44 in 2001; 15-54 in 2003 and 15-64 in 2005 and 2007.
Sources: UNODC, Annual Reports Questionnaire data, EMCDDA, Statistical Bulletin, Presidenza del Consiglio dei Ministri, *Relazione sullo Stato delle Tossicodipendenze in Italia, Anno 2007*, Rome 2008.



Cannabis use declined in the Oceania region

The downward trend of cannabis use in the Oceania region continued. The annual prevalence rate of cannabis use in Australia fell by almost one fifth to 9.1% of the population aged 14 and above between 2004 and 2007. The decline was strongest among the 14-19-year-olds, falling by 28%, indicating that prevention activities in schools may have played a key role in lowering cannabis use.

Household survey data for New Zealand also showed a decline of cannabis use in recent years, though this was less pronounced than in Australia. The annual prevalence of cannabis use fell from 20.4% among the population aged 15-45 in 2003 to 17.9% in 2007, a decline of 12%.

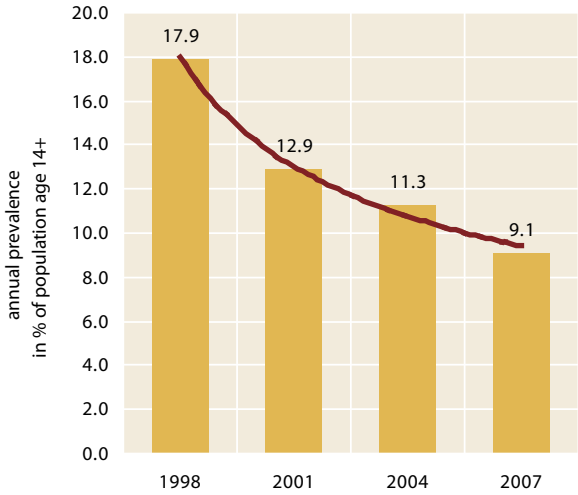
Cannabis use appears to be rising in Asia

According to expert opinion, expressed by the national drug authorities reporting to UNODC, cannabis use appears to be rising in Asia. However, most countries in this region do not have effective drug abuse monitoring systems which means that no recent cannabis prevalence data exist. Trends from Asia - largely based on expert perceptions - must thus be treated with caution.

The number of Asian countries reporting an increase in cannabis consumption rose from 9 in 2005 to 13 in 2007. Increases in 2007 were reported by Azerbaijan, the People's Republic of China, Indonesia, the Islamic Republic of Iran, Kazakhstan, Lebanon, Mongolia, Myanmar, Oman, the Philippines, Sri Lanka, Tajikistan and Uzbekistan. Six countries/territories reported a decline, whereas 11 reported stable levels of cannabis use in 2007.

Fig. 67: Australia: annual prevalence of cannabis use among the population aged 14 and above, 1998-2007

Source: Australian Institute of Health and Welfare, *2007 National Drug Strategy Household Survey*, April 2008.

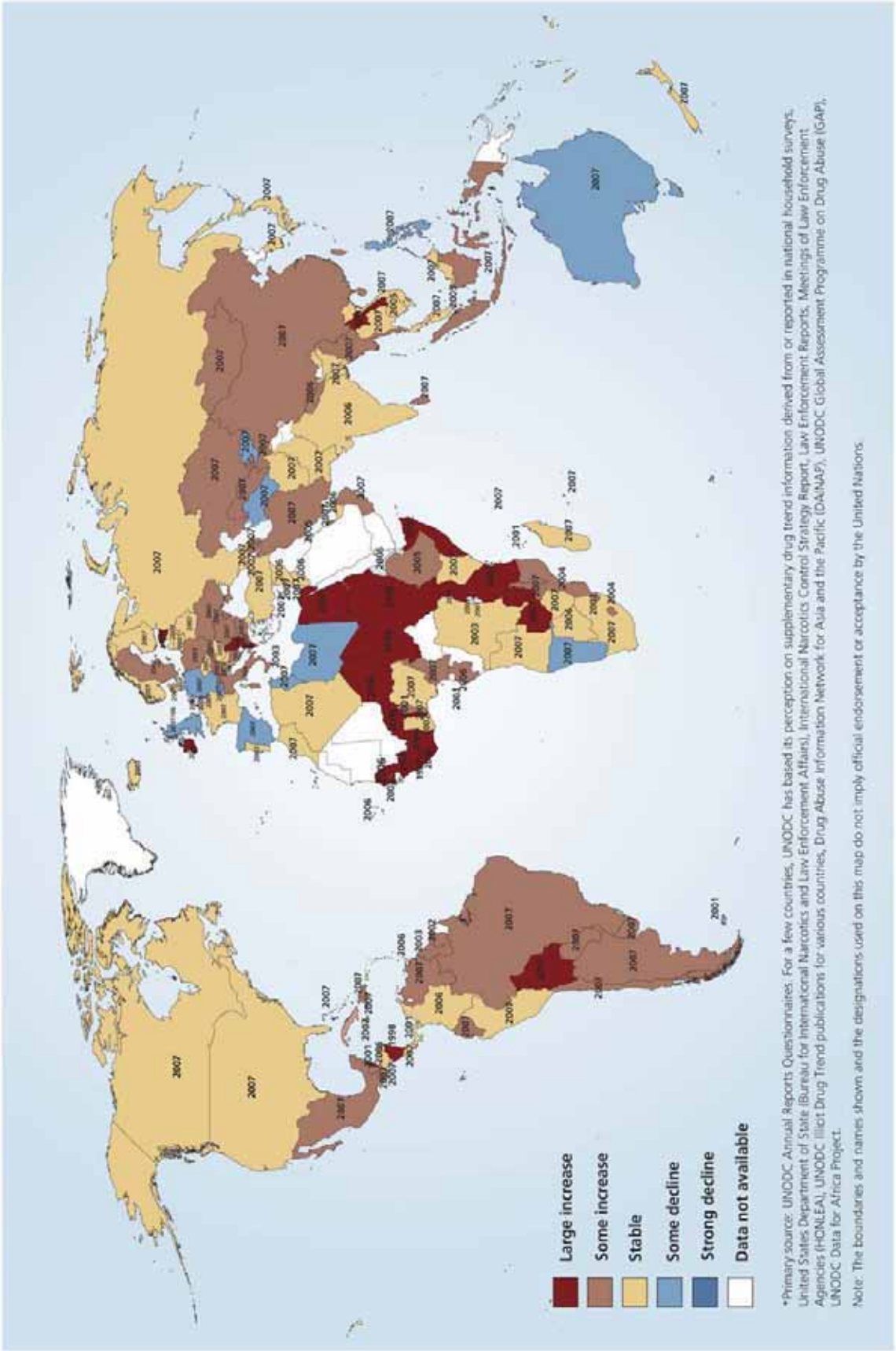


Map 16: Ranking of cannabis in order of prevalence in 2007 (or latest year available)

Source: UNODC Annual Reports Questionnaires data/DELTA; Government Reports, US Department of State; European Monitoring Centre for Drugs and Drug Addiction (EMCDDA); Drug Abuse Information Network for Asia and the Pacific (DAINAP); UNODC Global Assessment Programme on Drug Abuse (GAP); Inter-American Drug Abuse Control Commission (CICAD); UNODC Rapid Assessment Studies, Council of Europe, ESPAD.

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

Map 17: Changes in the use of cannabis, 2008 (or latest year available)



*Primary source: UNODC Annual Reports Questionnaires. For a few countries, UNODC has based its perception on supplementary drug trend information derived from or reported in national household surveys, United States Department of State (Bureau for International Narcotics and Law Enforcement Affairs), International Narcotics Control Strategy Report, Law Enforcement Reports, Meetings of Law Enforcement Agencies (HONLEA), UNODC Illicit Drug Trend publications for various countries, Drug Abuse Information Network for Asia and the Pacific (DAINAP), UNODC Global Assessment Programme on Drug Abuse (GAP), UNODC Data for Africa Project.

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

1.4 Amphetamine-type stimulants market

1.4.1 Summary trend overview

In 2007, UNODC estimates that between 230 and 640mt of *amphetamines-group*[1] stimulants were manufactured. *Ecstasy-group*[2] production was between 72 and 137 mt. As amphetamine-type stimulants (ATS) can be produced virtually anywhere at relatively low cost, the locations of production are changing rapidly. Moreover, organized criminal groups are increasing the size and sophistication of manufacturing operations.

A record level of nearly 52 mt of ATS was seized worldwide in 2007. The amphetamines-group dominates ATS seizures, but there was also a marked increase in ecstasy-group seizures in 2007. Trafficking in ATS substances is most commonly intraregional, but precursor chemicals from which ATS materials are made are trafficked throughout the world.

Clear regional distinctions can be seen in ATS use patterns. In East and South-East Asia, users primarily consume methamphetamine. In the Near and Middle East, tablets sold as Captagon often contain amphetamine, and are used throughout the region. In Europe, users primarily consume amphetamine. Worldwide, between 16 and 51 million people aged 15-64 used amphetamines-group substances at least once in 2007, whereas the number who used ecstasy-group drugs is estimated at between 12 and 24 million worldwide.

1 The amphetamines-group substances include predominately methamphetamine and amphetamine, but also non-specified amphetamines (for example, tablets sold as Captagon, methcathinone, fenetylline, methylphenidate and others).

2 The ecstasy-group substances include predominately MDMA, MDA and MDEA/MDE. However, limited forensic capacity often leads to confusion about the actual content of tablets believed to be "ecstasy" (MDMA).

1.4.2 Production

Global amphetamine-group manufacture estimated between 230 and 640 mt; ecstasy 72 and 137 mt

Clandestine ATS manufacture can, and does, occur nearly everywhere. The output, however, can only be indirectly estimated, using information on use of ATS around the world and/or information about seizures. In the 2009 *World Drug Report* the estimates are based on the number of users and their yearly average consumption.[3]

UNODC estimates that in 2007, amphetamines-group manufacture amounted to between 230 and 640 metric tons. Ecstasy-group manufacture was estimated at between 72 and 137 mt. Due to the revised methodology, estimates are not comparable with previous reports.

Based on these estimates and reported seizures, the global interception range is estimated to range between 7% to 19% for amphetamines-group and from 6% to 12% for ecstasy.[4] Interception rates for regions, subregions, and individual Member States vary considerably more than the global rates.

3 Previously, UNODC utilized a multiple component model to triangulate ATS manufacture based on three sub-components: (i) global seizures of ATS end-products (drug seizures), (ii) seizures of ATS-related chemical precursor seizures, and (iii) ATS consumption (prevalence rates). See *Ecstasy and Amphetamines - A Global Survey 2003*.

4 Similar orders of magnitude were identified in a study of interception rates in New Zealand (2%-7% for amphetamines-group substances and 5%-17% for ecstasy-group substances). See Wilkins, C., Reilly, J., Rose, E., Roy, D., Pledger, M., & Lee, A. (2004). *The Socio-Economic Impact of Amphetamine Type Stimulants in New Zealand*. Centre for Social and Health Outcomes Research and Evaluation (Auckland).

Table 20: UNODC range estimates of illicit ATS manufacture, by drug group (mt)

Source: UNODC estimate. * The average amphetamine-group substance user (i.e. from casual to problem user) was estimated to consume 12 grams of prue metha/amphetamine per year (range 1.6 - 34.4) and the average 'ecstasy' user was estimated to consume 5 grams of pure MDMA per year (0.8 - 13.6). These estimates were based on a limited number of reports from various developed countries and the results may differ in developing countries or in regions outside those from which data were available.

	Amphetamines-group (methamphetamine, amphetamine)		Ecstasy-group (MDMA, MDA, and MDE/MDEA)	
	Low Estimate	High Estimate	Low Estimate	High Estimate
Annual Consumers	15,820,000	50,570,000	11,580,000	23,510,000
Average Consumption (grams/ annually) *	11.8	11.8	5.45	5.45
Metric Tons Consumed	187	597	63	128
Metric Tons Reported Seized	43.2	43.2	8.5	8.5
Metric Tons Manufactured	**230**	**640**	**72**	**137**
Intercepted (%)	19%	7%	12%	6%

Map 18: Member States reporting ATS-related manufacture* since 1990

Source: UNODC, Annual Reports Questionnaire Data / DELTA; Government reports; UNODC, Global SMART Update 2009, Volume 1 (March); *Amphetamines and Ecstasy: 2008 Global ATS Assessment* (United Nations publication, Sales No. E.08.XI.12).

ATS-related manufacture occurs in every region; highest concentrations in East and South-East Asia, North America, Europe, Oceania and Southern Africa

Since 1990, ATS-related manufacture has been reported in over 60 countries worldwide, which shows the wide spread of manufacturing. Since the last *World Drug Report*, clandestine illicit ATS-related manufacture has come to light in more than 10 additional countries with little or no history of reported manufacture, including Argentina, Azerbaijan, Brazil, Peru, Guatemala, Honduras, Iceland, India, Lebanon, Portugal[5] and Sri Lanka. Half of these emerging operations were in Latin America. Laboratories, particularly for methamphetamine, are also increasing in size, sophistication, and production yields as organized crime groups increase their interest in manufacture.[6]

In 2007, 16% fewer ATS-related laboratories[7] were reported to UNODC (6,990). Most laboratory incidents (91%) were small methamphetamine operations– due in large part to its simplicity of manufacture and

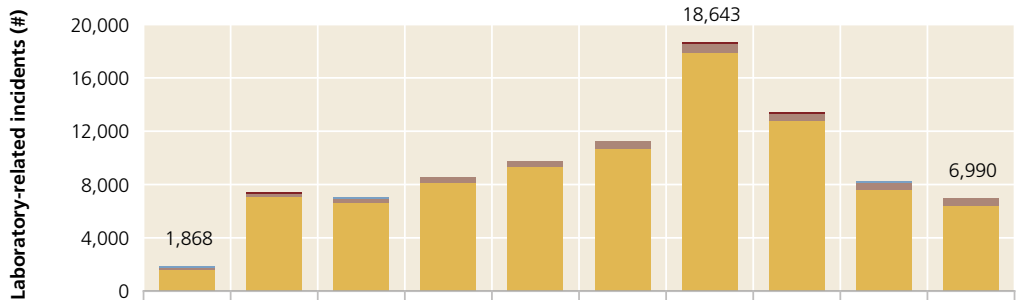
5 *Amphetamine-type stimulants in the European Union* 1998-2007: Europol contribution to the Expert Consultations for the UNGASS assessment. Europol (The Hague, July 2007).

6 *Amphetamines and Ecstasy: 2008 Global ATS Assessment* (United Nations publication, Sales No. E.08.XI.12); UNODC, Global SMART Update 2009, Volume 1 (March).

7 The term ATS-related is because there is no standardized definition of a clandestine laboratory. Thus figures reflect any stage of a seized laboratory operation reported to UNODC, such as a location containing laboratory equipment and chemicals in preparation for manufacturing, a location where synthesis or tableting are/were occurring, and toxic dumpsites where chemicals and equipment are illicitly discarded.

Fig. 68: ATS laboratories (all sizes) reported to UNODC, by type, 1998-2007

Source: UNODC, Annual Reports Questionnaire Data / DELTA.



	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Other synthetics	34	66	19	5	24	69	53	64	30	26
Ecstasy Group	34	62	64	70	58	50	87	62	56	72
Amphetamine (& combinations)	142	257	336	357	376	475	650	529	514	453
Methamphetamine	1,658	7,019	6,609	8,166	9,323	10,664	17,853	12,782	7,649	6,439
Total ATS laboratories	1,868	7,404	7,028	8,598	9,781	11,258	18,643	13,437	8,249	6,990

availability of inexpensive precursor chemicals. These were concentrated in North America (particularly the USA), and to a lesser extent Oceania, and Central and Eastern Europe. Methamphetamine laboratories are also increasingly found in large industrial-sized operations run by large criminal organizations, particularly in East and South-East Asia and North America, although significant operations recently emerged in South Asia.

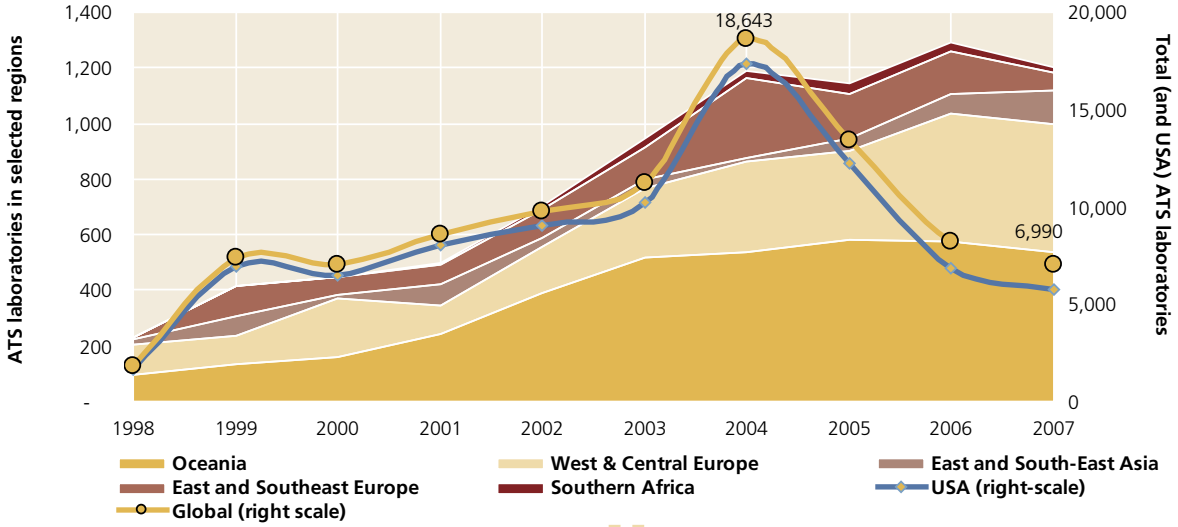
Amphetamine and ecstasy (MDMA) operations tend to be fewer in numbers, but have more sophisticated operations. They require more specialized equipment, precursor chemicals and more sophisticated skills. Amphetamine operations are reported from all of Europe, with the notable exception of the Czech Republic and neighbouring countries.[8] Ecstasy-group manufacture appears relatively stable, with a significant albeit declining proportion of the world's manufacture continuing to occur in Europe (West and Central subregions). Outside Europe, significant manufacture of ecstasy now occurs in North America, Oceania, and East and South-East Asia, as operations have shifted closer to those consumer markets.

USA laboratory count drops; driving global decline

The majority of global ATS laboratories are methamphetamine laboratories reported from North America.

Fig. 69: Number of reported ATS laboratory incidents (all sizes), by notable region, 1998-2007

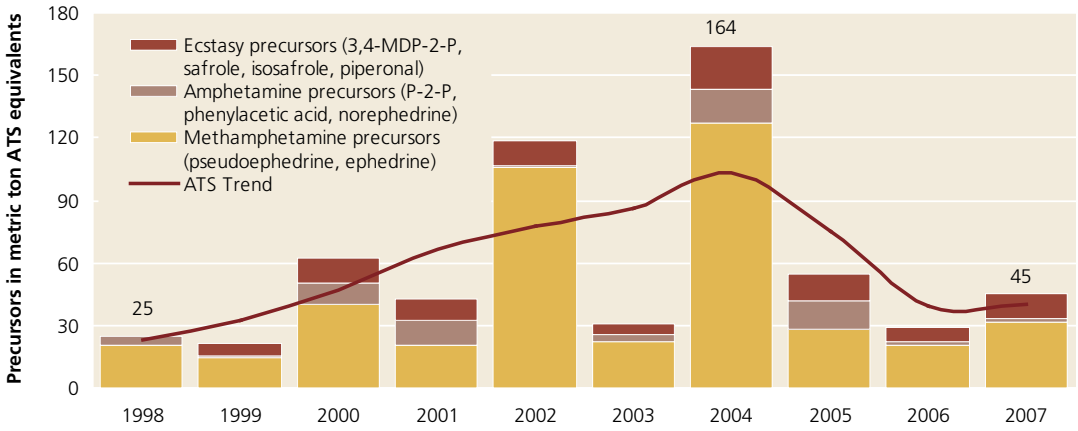
Source: UNODC, Annual Reports Questionnaire Data / DELTA.



8 One notable exception to this is methamphetamine *(Pervitin)* manufacture located in the Czech Republic and Slovakia, and to a lesser degree in neighbouring countries.

Fig. 70: Reported seizures of ATS precursors, expressed in metric ton ATS equivalents, 1998-2007

Source: UNODC calculations based on INCB data and conversion factors. (INCB, *Precursors and chemicals frequently used in the illicit manufacture of narcotic drugs and psychotropic substances, 2008* (March 2009, and previous years) and UNODC, Annual Reports Questionnaire Data / DELTA).



Despite the declining incidents, US laboratories still amount to 82% of the total reported in 2007. The count of laboratories alone does not provide accurate information on the size of manufacturing given that the scale of operation may differ between laboratories.[9]

The most commonly used ATS chemical precursors fall under international control, and their seizures–reported to the International Narcotics Control Board (INCB) ααcan provide some limited indications about manufacturing trends. Seizures of ATS-related precursor chemicals under international control were 45 mt in 2007,[10] which is an increase from 2006, but still a low level in a 10-year perspective.[11] Global seizures of ATS precursors in 2007 included:

- Amphetamines-group
  - · Methamphetamine
    - 25.3 mt of pseudoephedrine and 22.1 mt of ephedrine, sufficient to manufacture some 31.7mt of methamphetamine.
  - · Amphetamine
    - 1.2 mt norephedrine, sufficient to manufacture 770 kg of amphetamine;
    - 834 litres (l) of P-2-P,[12] sufficient to manufacture 417 kg of amphetamine; and
    - small amounts (159 kg) of phenylacetic acid,[13] sufficient to manufac ture some 40 kg of amphetamine.
- Ecstasy-group
  - · MDMA (and its analogues)
    - 45,986 l of safrole, sufficient to manufacture 9.7 mt of MDMA;
    - 2,297 l of 3,4-MDP-2-P[14], sufficient to manufacture 1.8 mt of MDMA;
    - 2 mt of piperonal which could be converted into 760 kg of MDMA; and
    - 225 l of isosafrole used in the manufacture of MDMA.

ATS producers adapt to evade law enforcement

There are signs that criminal organizations are adapting their manufacturing operations to avoid control by: 1) utilizing precursor chemicals not under international control; 2) moving manufacturing operations to more vulnerable locations; and 3) shifting precursor chemicals and drug trafficking routes to new locations to avoid detection.[15]

Evidence points to increased frequency of manufacturing ATS using uncontrolled precursors, most notably tableted pharmaceutical preparations[16] containing

9 As yet, there are no internationally accepted forensic reporting standards for clandestine laboratory operations, their chemical precursors, synthesis routes, drugs produced, and manufacture capacity (such as frequency of cycle, amount of output, and purity levels), thus limiting the overall analytical value of simple counts of laboratory incidents.

10 Expressed in ATS drug weight equivalents.

11 International Narcotics Control Board (2009), *Precursors and chemicals frequently used in the illicit manufacture of narcotic drugs and psychotropic substances*, 2008. (United Nations publication Sales No. E.09.XI.4) and prior years.

12 P-2-P (1-phenyl-2-propanone) also known as benzyl methyl ketone (BMK), is typically used in the manufacture of amphetamine commonly in Europe but can be also used for the manufacture of methamphetamine, a process more commonly seen in North America and to a lesser degree in Oceania.

13 Phenylacetic acid is used in illicit manufacture to synthesize the amphetamines-group precursor P-2-P and is therefore a 'pre-precursor.'

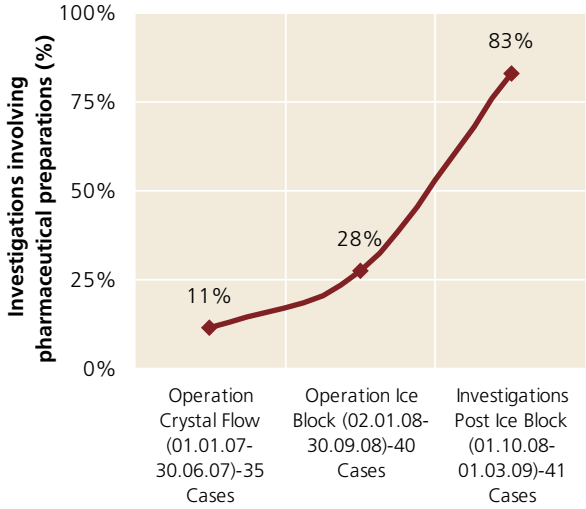
14 Also known as PMK (piperonyl methyl ketone).

15 *Amphetamines and Ecstasy: 2008 Global ATS Assessment* (United Nations publication, Sales No. E.08.XI.12).

16 Pharmaceutical preparations are drugs intended for human or veteri-

Fig. 71: Proportion of methamphetamine back-track investigations involving pharmaceutical preparations as the chemical precursors for methamphetamine

Source: International Narcotics Control Board, *Trafficking in Pharmaceutical Preparations for the Illicit Manufacture of ATS*, presented at the 52nd Commission on Narcotic Drugs (March 17, 2009, Vienna).



pseudo/ephedrine[17] and P-2-P based processes in the manufacture of methamphetamine.[18] Tableted pharmaceutical preparations containing pseudo/ephedrine do not fall under the same international controls as bulk chemicals containing the identical chemicals, and therefore are more easily accessible.[19]

Besides benzaldehyde, a growing number of other emerging substitute precursor chemicals have been recently identified related to methamphetamine[20] synthesis including: α-phenylacetoacetonitrile (converts easily into P-2-P), and methyl phenylacetate, ethyl phenylacetate, amyl phenylacetate and isobutyl phenylacetate (which can all be converted into phenylacetic acid).

nary use, presented in their finished dosage form (for example, pills and tablets). Over-the-counter cold medicines in pill form or bulk precursors tableted into pill form would be classified as pharmaceutical preparations and are increasingly used in clandestine manufacture.

17 The term pseudo/ephedrine refers to both or either ephedrine or pseudoephedrine.

18 International Narcotics Control Board, *Trafficking in Pharmaceutical Preparations for the Illicit Manufacture of ATS*, presented at the 52nd Commission on Narcotic Drugs (March 17, 2009, Vienna).

19 In January 2009, Mexican authorities reportedly seized more than 8 million pseudoephedrine tablets (equivalent to 3 mt) aboard a ship which embarked from South Korea. (Guadalajara Reporter, *Police seize eight million illegal pills in Manzanillo*, 31 January, 2009.)

20 Amphetamines-group substances synthesized via P-2-P can result in either amphetamine or methamphetamine, but outside of Europe they more commonly result in methamphetamine.

ATS manufacture is rapidly spreading to vulnerable locations

As awareness, restrictions and enforcement against ATS manufacture increase in known problem areas, manufacture has expanded into vulnerable nearby countries. For example, from the USA manufacture shifted south to Mexico. As Mexico responded with strong counter-methamphetamine initiatives manufacturing activities moved south to Latin America, including Argentina, Guatemala, Honduras, and Peru. Similar shifts may also be occurring in South Asia where India and Sri Lanka reported their first operational methamphetamine laboratories in 2008, and reported seized manufacturing equipment and chemicals in 2007.[21]

Trafficking routes are increasingly shifting into places that lack the stability, enforcement and forensics infrastructure to detect movement of both precursor chemicals and finished products. [22]

Methamphetamine manufacture shifts rapidly

North America, which accounts for most of the reported methamphetamine operations globally, saw a decline in 2007 (17%). The USA accounts for 82% of the total number of methamphetamine laboratories seized in 2007, a figure which has been in decline since nationwide pharmaceutical precursor controls were enacted in 2005.[23] However, preliminary reports for 2008[24] suggest that manufacture may be rebounding in the USA, as illustrated by increases in US clandestine laboratory incidents and increased "smurfing" activity.[25]

The number of laboratories reported by Mexico and Canada remains comparatively small, although the size of the laboratories may on average be larger.[26] There is

21 UNODC, Global SMART Update 2009, Volume 1 (March). Since 2003 India has reported several attempts at methamphetamine-related manufacture, none of which came to fruition.

22 *Amphetamines and Ecstasy: 2008 Global ATS Assessment* (United Nations publication, Sales No. E.08.XI.12).

23 Incidents are defined to include all counts of various types of labs (for example, extraction, manufacturing, cutting and packaging), chemical dumpsites, and drug processing chemical and glassware seizures.

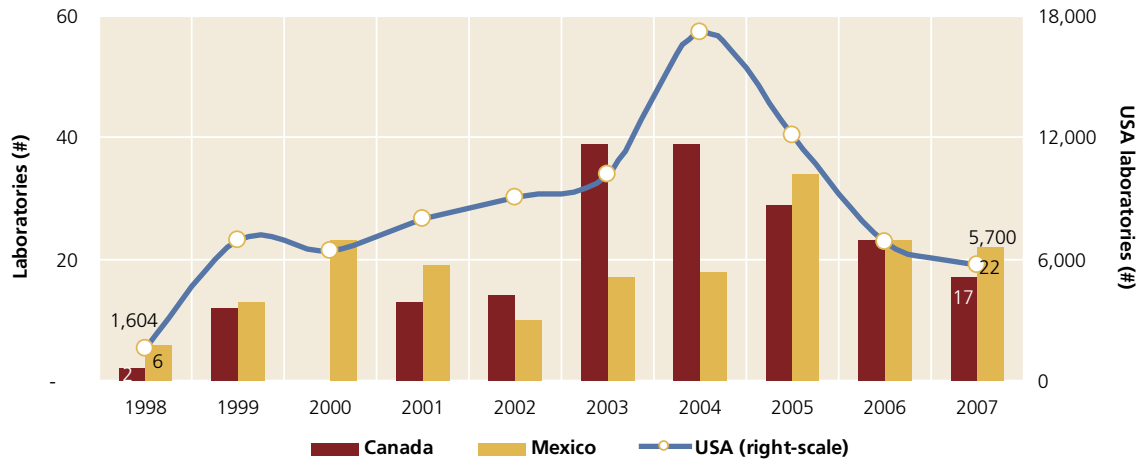
24 US Department of Justice (2008). *National Methamphetamine Threat Assessment 2009* (National Drug Intelligence Center, Product No. 2008-Q0317-006). Johnstown, PA.

25 Smurfing–unique to methamphetamine manufacture–is a term used to describe the emergence of groups who shop multiple pharmacies making many small purchases of pharmaceutical precursor chemicals, thereby avoiding sales restrictions and law enforcement attention. This phenomenon, also known as pill or pharmacy shopping, or pseudo-running, and has occurred in other places where over-the-counter pharmaceuticals used in the manufacture in methamphetamine have become restricted (for example, Australia and New Zealand).

26 The USA reported 11 large to industrial-sized laboratories in 2007, while Mexico and Canada reported 22 and 17 laboratories, respectively. (US Department of Justice (2008). *National Methamphetamine Threat Assessment 2009* (National Drug Intelligence Center, Product No. 2008-Q0317-006). Johnstown, PA., and previous years. None of these were identified as small scale laboratories in the ARQ.

Fig. 72: North America methamphetamine laboratories reported (all sizes), 1998-2007

Source: UNODC, Annual Reports Questionnaire Data / DELTA



evidence that Canada-based Asian organized crime groups and outlaw motorcycle gangs have significantly increased the amount of methamphetamine they manufacture and export, for the US market, but also for Oceania and East and South-East Asia.[27]

Many operations in Mexico were disrupted in 2007 and as a result, Mexican-based drug cartels have spread their risks by diversifying manufacturing methods[28] and moved to other countries in Latin America or back to the USA.[29]

Methamphetamine manufacture is increasing in other regions

Methamphetamine manufacture has also grown considerably outside of the Americas from 46 laboratories reported a decade ago to 700 in 2007,[30] with the largest increase in East and South-East Asia, Oceania, Europe, and Southern Africa. Laboratory operations in East and South-East Asia are often significant industrial-sized operations, which have grown in sophistication over the last few years.[31] While manufacture has been reported in many countries, operations in China, Myanmar and the Philippines account for most of the production.[32]

China accounts for the majority of reported methamphetamine laboratories seized in East and South-East Asia. Seventy-five predominately methamphetamine laboratories were reported in 2007, an annual increase of nearly 50% since 2005. The sophistication and size of these operations are significant, as seen when authorities in Guangdong seized one of the largest methamphetamine laboratories ever discovered, along with 1.7 mt of liquefied methamphetamine.[33] The increase in Ketamine[34] manufacture can be seen clearly in the number of clandestine laboratories reported (from 17 in 2006 to 44 in 2007) as demand for the drug increases throughout the region, particularly in Hong Kong, China.

The source for much of the tableted form of methamphetamine ('yaba') found in East and South-East Asia occurs within Myanmar[35], as precursors enter from porous borders from India, China and Thailand.

27 US Department of Justice. (2008). *National Methamphetamine Threat Assessment 2009* (National Drug Intelligence Center, Product No. 2008-Q0317-006). Johnstown, PA; Australian Crime Commission (2009). Illicit Drug Data Report 2006–07 (Revised March 2009); Recent Illicit Synthetic Drug Smuggling Situation in Japan. Presented by the Customs and Tariff Bureau, Ministry of Finance, Japan at the 18th Anti-Drug Liaison Officials' Meeting for International Cooperation (ADLOMICO), (September, 2008, Busan, Republic of Korea).

28 US Department of Justice. (2008). *Changes in Drug Production, Trafficking, and Abuse, Second Half-Year CY2007* (National Drug Intelligence Center). Johnstown, PA; US Department of Justice. (2008). *Emerging Threat Report, Alternative chemicals sought to produce methamphetamine precursors* (Drug Enforcement Administration, DEA 08035, October 2008).

29 US Department of Justice (2008). *National Methamphetamine Threat Assessment 2009* (National Drug Intelligence Center, Product No. 2008-Q0317-006). Johnstown, PA.

30 The Republic of Moldova, which reports on average 80 methamphetamine laboratories annually (2004-2006), failed to report any drug manufacturing to UNODC in 2007.

31 *Amphetamines and Ecstasy: 2008 Global ATS Assessment* (United Nations publication, Sales No. E.08.XI.12).

32 Information based on 92 mentions of the origin of seized methamphetamines. Mentions of Japan as a source country reflects the difficulty in identifying source countries and transiting countries. Japan has reported no clandestine manufacture to UNODC.

33 UNODC, Global SMART Update 2009, Volume 1 (March).

34 Ketamine is a licit pharmaceutical illicitly used as a hallucinogen. While it is not an ATS it is increasingly encountered in ATS markets, either in connection with the "club-drug" scene, or found knowingly or unknowingly as an active ingredient in what is sold on illicit markets as 'ecstasy'. Ketamine is not currently under international control.

35 There are indications that high potency crystalline methamphetamine is also being manufactured there.

Fig. 73: Sources of seized East and South East Asia methamphetamine as mentioned by Member States, 2002-2007

Source: UNODC, Annual Reports Questionnaire Data / DELTA.

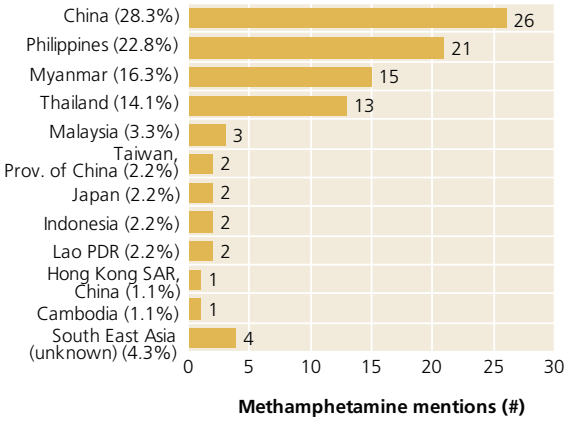
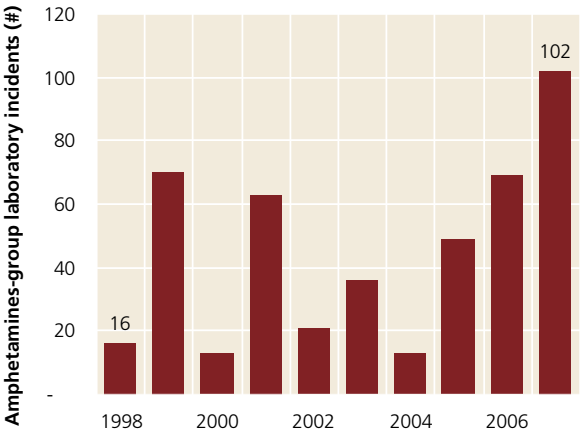


Fig. 74: Number of East and South East Asia amphetamines-group laboratories (all sizes), 1998-2007

Source: UNODC, Annual Reports Questionnaire Data.



Manufacture is allegedly controlled by the United Wa State Army (UWSA), the Shan State Army-South (SSA-S)[36] and groups in the Kokang Autonomous Region, and are increasingly trafficked throughout the Greater Mekong Subregion (GMS).[37] In 2007, only five tableting facilities were reported. However, reports from neighbouring countries suggest that the number of clandestine manufacturing operations is significantly higher[38] than seizures would suggest.

The Philippines remains a significant source of high potency crystalline methamphetamine *('shabu')* used both domestically and exported to locations in East and South East Asia and Oceania. Manufacture often occurs in industrial-sized laboratories operated by transnational organized crime with most chemists being foreign nationals.[39] In 2007, a notable increase in the seizure of methamphetamine-related manufacturing facilities was reported with nine significant laboratories (and an additional 13 chemical warehouses) seized, increasing in 2008 to 10 laboratories, marking the third consecutive year of increases.[40]

Transnational criminal organizations shift operations to vulnerable areas; size and sophistication increase

Subregional shifts in manufacture to new areas within the Greater Mekong Subregion and beyond are occurring as criminal syndicates increasingly exploit new vulnerable areas in which to synthesize methamphetamine undetected. For example, significant methamphetamine-related manufacture was first reported in Cambodia in 2007 and Viet Nam in 2005.[41]

Indonesia and Malaysia have reported increasing incidents, size and sophistication of ATS manufacture. Operations discovered there are some of the world's largest and most sophisticated industrial-sized operations to date, both requiring an unprecedented level of logistical support to fully operate.[42] In 2007/08 Indonesian authorities reported ketamine findings at several clandestine methamphetamine laboratories, raising the possibility that local manufacture of ketamine may also occur as its use increases.[43]

36 UNODC Regional Crime Centre for Asia and the Pacific. Patterns and Trends of amphetamine-type stimulants (ATS) and other drugs abused in East Asia and the Pacific 2005. (Bangkok, June 2006); UNODC. Amphetamines and Ecstasy: 2008 Global ATS Assessment (United Nations publication, Sales No. E.08.XI.12); US Department of State, Bureau for International Narcotics and Law Enforcement Affairs, International Narcotics Control Strategy Report (Washington D.C., 2009).

37 A region encompassing Cambodia, Lao PDR, Myanmar, Thailand, Viet Nam, and bordering provinces of south China.

38 Drug situation 1-15 December 2006, presented to UNODC, Thailand Office of the Narcotics Control Board (ONCB).

39 Philippine Country Report, Current Situation and Recent Trends in ATS Manufacture and Precursor Diversion. Joint Meeting of 4th Asian Collaborative Group on Local Precursor Control (ACoG) and 4th International Forum on Control of Precursors for ATS (IFCP) 12-15 February 2008 Tokyo, Japan.

40 Country report by the Philippines (UNODC/HONLAP/2009/32/CRP.6). Thirty-second Meeting of Heads of National Drug Law Enforcement Agencies, Asia and the Pacific (February 2009, Bangkok).

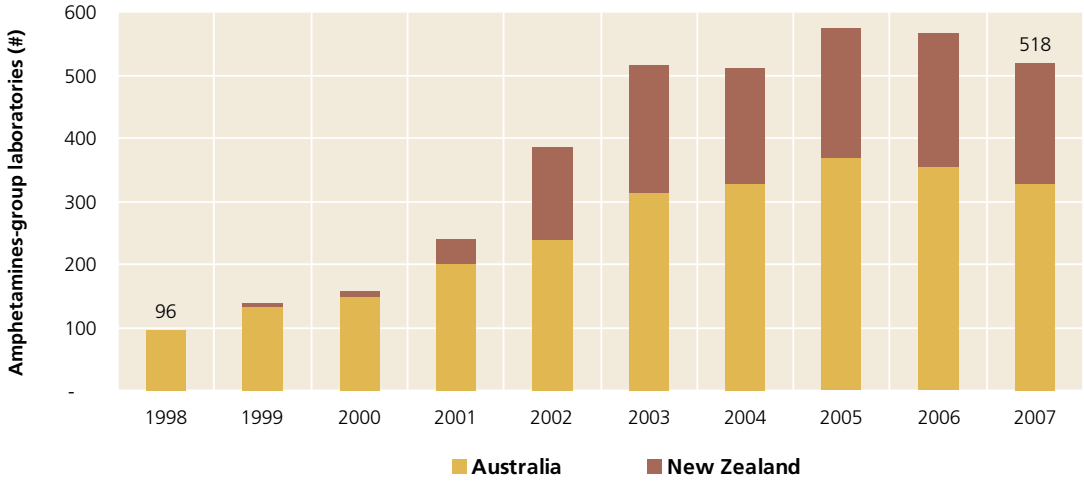
41 *Amphetamines and Ecstasy: 2008 Global ATS Assessment* (United Nations publication, Sales No. E.08.XI.12).

42 At the Kulim laboratory—an operation estimated to have a theoretical production cycle of 1.4 mt used P-2-P believed to have been manufactured from α-phenylacetoacetonitrile, a chemical not under international control, to manufacture methamphetamine. The National Project Workplan for National Narcotics Board Indonesia: *Improving ATS data and information systems*, presented at the Regional ATS forum (August 2007).

43 Country report by the Indonesia (UNODC/HONLAP/2009/32/CRP.8). Thirty-second Meeting of Heads of National Drug Law Enforcement Agencies, Asia and the Pacific (February 2009, Bangkok).

Fig. 75: Oceania amphetamines-group laboratories seized (all sizes), 1998-2007

Source: UNODC, Annual Reports Questionnaire Data / DELTA.



Oceania amphetamines-group laboratory seizures stable at high levels

Amphetamines-group laboratory seizures in Oceania[44] have remained at high levels for the past several years. However, in 2007, there were signs of a moderate decrease. Australia reported a total of 328 (an 8% decline from the previous year) amphetamines-group and combination ATS-type operations (excluding MDMA only operations) and New Zealand reported 190 amphetamines-group laboratories (10% decrease), each predominantly methamphetamine-related.[45]

Significant methamphetamine precursors continue to be intercepted by customs and law enforcement in both countries. In Australia, large quantities of pseudo/ephedrine continue to be imported via air cargo.[46] In July 2008, Australian authorities intercepted a single shipment of 850 kg of pseudoephedrine trafficked from Thailand.[47] Increases were also noted in P-2-P based precursors.

New Zealand estimates that as many as 10 million pharmaceutical precursors tablets containing pseudoephedrine are trafficked from China to New Zealand annually. The authorities estimate that it could be used to synthesize 630 kg of methamphetamine.[48] However, most clandestine operations detected appear to be using domestically diverted pharmaceutical precursors.

There is still a risk that manufacturing could become established in other countries in Oceania, as seven of the countries are not yet parties to the *1988 United Nations Convention Against Illicit Traffic in Narcotic Drugs and Psychotropic Substances*.[49]

Methamphetamine manufacture in Europe is limited to Central and Eastern Europe

In Europe, methamphetamine manufacture is largely limited to a number of countries in Central Europe and East Europe (405 cases in 2007). Compared to 2006, a 15% decline was noted in total laboratories reported to UNODC. However, inconsistencies in reporting makes it difficult to compare the figures.[50] The majority of operations are small scale and the main producing country is the Czech Republic (96%). In 2007, Poland and Portugal also reported methamphetamine manufacture.[51]

44 Only Australia and New Zealand provide regular reporting of their drug situations to UNODC.

45 Note these figures include extraction laboratories/operations for the manufacture of methamphetamine. Australian Crime Commission (2009). *Illicit Drug Data Report 2006–07* (Revised March 2009). The figures from Australia include 249 amphetamines-group only laboratories and 79 "other" clandestine laboratories, but exclude MDMA only laboratories. The "other" category has historically included cases/ laboratories containing equipment and chemicals associated with making unknown ATS, and were therefore included in the broader group. See, Australian Crime Commission (2007). *Illicit Drug Data Report 2004–05*, and previous years.

46 Australian Crime Commission (2009). *Illicit Drug Data Report 2006–07* (Revised March 2009).

47 UNODC, Global SMART Update 2009, Volume 1 (March).

48 National Drug Intelligence Bureau, *Illicit Drug Assessment 2008*. Wellington; *National Drug Intelligence Bureau, Precursors and Chemicals used for Methamphetamine Manufacture in New Zealand*. July 2008, Wellington.

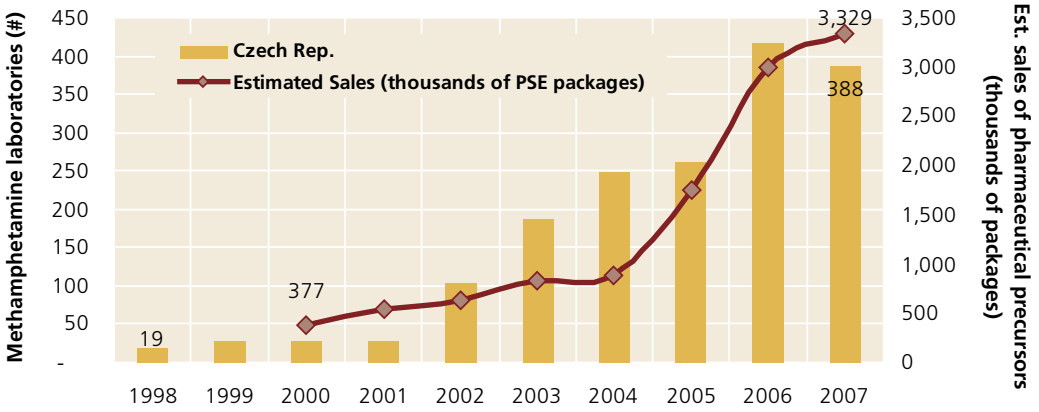
49 These include Kiribati, the Marshall Islands, Nauru, Palau, Papua New Guinea, Solomon Islands and Tuvalu.

50 For example, the Republic of Moldova averaged 80 laboratories per year between 2004-06, but did not provide an ARQ in 2007. The Russian Federation lists methamphetamine as an end product manufactured domestically, however only seizure of amphetamine laboratories were reported to UNODC. There are reports of widespread small scale manufacture in the Ukraine, but laboratories (7) were last officially reported in 1998.

51 *Amphetamine-type stimulants in the European Union 1998-2007*:

Fig. 76: Czech Republic: illicit methamphetamine laboratories and licit tableted pharmaceutical precursors sales, 1998-2007

Source: UNODC, Annual Reports Questionnaire Data / DELTA; Havlíček, S. (2008). *Pharmacies and Clandestine Production of Methamphetamine in the Czech Republic*, presented at the 2008 Global Conference on Methamphetamine: Science, Strategy, and Response (September 2008, Prague). Czech Chamber of Pharmacists.



The number of Czech Republic methamphetamine *(Pervitin)* laboratories reported in 2007 (388) suggests that a possible stabilization–at a high level–may be occurring. In this country, the majority of methamphetamine synthesis utilizes tableted pharmaceutical preparations. This shows in the estimated 82% of domestic pharmaceutical sales which were used for illicit manufacture.[52] New 2009 restrictions limiting the sale of pharmaceutical preparations containing pseudoephedrine may impact the methamphetamine production in the Czech Republic.

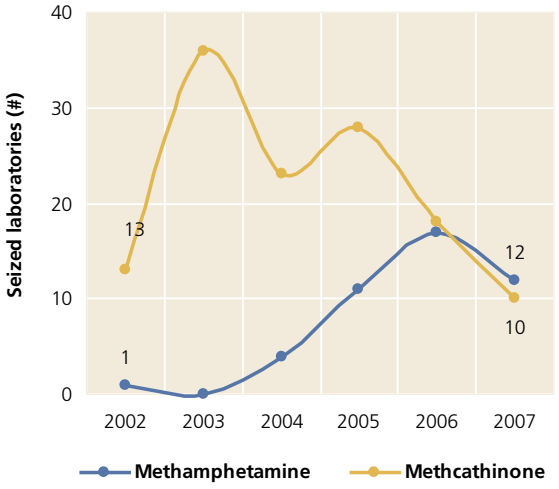
There are emerging reports of increased methamphetamine manufacture throughout the Baltic countries. Poland, known as a source of amphetamine, reported its first methamphetamine laboratory in 2007. There are also reports of manufacturing of considerable scale in Lithuania.

In South Africa, methamphetamine laboratories outpace methcathinone

South Africa dismantled 12 clandestine methamphetamine *('tik')* laboratories in 2007, a decline from 2006 (17). However, for the first time the number of methamphetamine laboratories seized outpaced those of methcathinone ('cat', 10 reported in 2007).[53] While declining, South Africa legally imports significant amounts of licit ephedrine and pseudoephedrine, however, little is seized in relation to illicit activities.[54] In an effort to stem domestic diversion into illicit drug manufacture, the Government in April 2008 amended its Medicines and Related Substances Act (1965) to include pharmaceutical preparations containing pseudo/ephedrine.

Fig. 77: South Africa: seized methamphetamine and methcathinone laboratories (all sizes), 2002-2007

Source: UNODC, Annual Reports Questionnaire Data / DELTA.



Europol contribution to the Expert Consultations for the UNGASS assessment. Europol (The Hague, July 2007).

52 Havlíček, S. (2008). *Pharmacies and Clandestine Production of Methamphetamine in the Czech Republic*, presented at the 2008 Global Conference on Methamphetamine: Science, Strategy, and Response (September 2008, Prague). Czech Chamber of Pharmacists.

53 Methcathinone manufacture represents a group of ATS grouped under 'other synthetic stimulants.' These 10 laboratories represent 39% of the total for that category (26) reported in 2007.

54 International Narcotics Control Board (2009). *Precursors and chemicals frequently used in the illicit manufacture of narcotic drugs and psychotropic substances*, 2008. (United Nations publication Sales No. E.09.XI.4); US Department of State, Bureau for International Narcotics and Law Enforcement Affairs, *International Narcotics Control Strategy Report Volume I Drug and Chemical Control* (Washington D.C., 2009)

Number of amphetamine laboratories decline; locations may be shifting

After methamphetamine, the largest group of ATS manufacture is for combined amphetamine substances.[55] This group of laboratories represents nearly a third of the total, with 453 reported in 2007. Operations that manufacture only amphetamine declined by 23% to 118 in 2007. Most of these operations are located in Europe (81%) followed by the Americas (17%).

Over the last decade (1998-2007) Europe has reported the dismantling of 971 clandestine amphetamine laboratories (72% of the global total). The largest numbers of dismantled operations were reported by the Russian Federation (61% of the European total), Poland (13%), the Netherlands (10%), Germany (4%), the UK (3%), Belgium and Bulgaria (2% each). For 2007, the largest number of European operations were in the Russian Federation (62),[56] followed by Poland (13), Belgium (7) and Germany and the Netherlands (5 each).

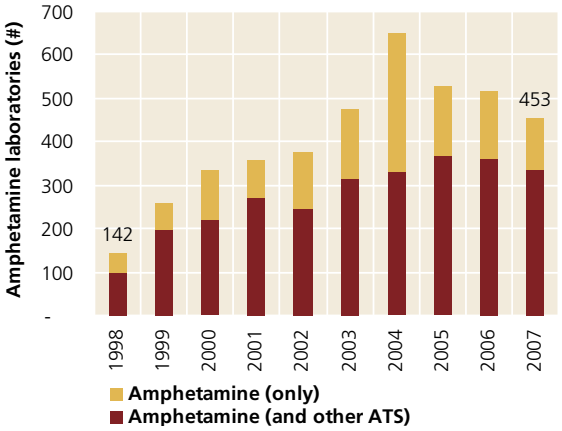
The low figures reported by Belgium, Netherlands and Poland may not be indicative of manufacture capacity. Member States in the ARQ often mention these countries as the source of seized amphetamine.[57]

P-2-P is the most common precursor chemical used in the illicit manufacture of amphetamine throughout Europe, where it accounted for 93% of the global seizures reported to the INCB in 2007.[58] However, total P-2-P seized in Europe in 2007 amounted to only 773 litres (l), the lowest levels in the new millennium. Only four countries, Germany (243 l), Poland (241 l), the Russian Federation (191 l) and Estonia (51 l), reported seizures. Small amounts of phenylacetic acid (used to make P-2-P) were seized in 2007 by Bulgaria (50 kg) and Lithuania (106 kg).

Organized crime operating in the Netherlands and to a lesser extent Belgium still dominate the major manufacture of synthetic drugs. Greater sophistication of operations has been noted by Europol, as increased laboratory sizes, higher capacity tableting machinery and segregation of the production cycle to safeguard operations become more commonplace.[59]

Fig. 78: Global amphetamine laboratories reported to UNODC (all sizes), 1998-2007

Source: UNODC, Annual Reports Questionnaire Data / DELTA.



Bulgaria and to a lesser degree Turkey are believed to be the sources for counterfeit pharmaceuticals sold as Captagon–believed to contain amphetamine–increasingly reported throughout the Near and Middle East. There are several indications that undetected amphetamine manufacture may already be occurring in the Near and Middle East.[60]

Significant ecstasy manufacture in Europe, North America, Oceania, and East and South-East Asia

Ecstasy-group laboratories totalled 72 in 2007, which is higher than 2006, but similar to levels seen in recent years. Manufacture in 2007 was reported in just eight countries: Australia (19), Indonesia (16), Canada (14), USA (12), Netherlands (8), France (1), Mexico (1) and Spain (1). Operationally, ecstasy manufacture (predominately MDMA) is more demanding than the manufacture of new ATS. It requires increased skills, specialized equipment, and precursor chemicals. Nearly all MDMA operations are large enough to be economically profitable, thus the low number of laboratories may not be a sign of low production.

The most significant development in ecstasy-group manufacture has been the shift of operations from West and Central Europe to locations closer to consumers around the world. 2002/03 marked the period when greater numbers of laboratories were seized in regions

55 Many countries do not have the forensic capabilities to differentiate between various types of ATS operations. These counts include amphetamine, non-specified amphetamine and those laboratories that manufactured multiple products, but exclude clearly identified laboratories of methamphetamine, ecstasy (MDMA), and other synthetic (fir example methcathinone) laboratories.

56 Note figures may also include methamphetamine operations.

57 Information based on 321 mentions on the origin of amphetamine seizures between 2002 and 2007.

58 International Narcotics Control Board (2009). *Precursors and chemicals frequently used in the illicit manufacture of narcotic drugs and psychotropic substances*, 2008. (United Nations publication Sales No. E.09.XI.4)

59 Europol, *Amphetamine-type Stimulants in the European Union 1998-2007*. Europol contribution to the Expert Consultations for the UNGASS assessment (The Hague, July 2007).

60 For example, Lebanese authorities in 2007 successfully intercepted laboratory equipment and precursor chemicals for *Captagon* manufacture smuggled into the country by Bulgarian nationals; in 2007, the INCB reported that 75% of licit global trade in the amphetamine precursor P-2-P was destined for two countries located in the Near and Middle East allowing for a localized source for diversion.

Fig. 79: Global ecstasy-group laboratories reported to UNODC (all sizes), 1998-2007

Source: UNODC, Annual Reports Questionnaire Data / DELTA.

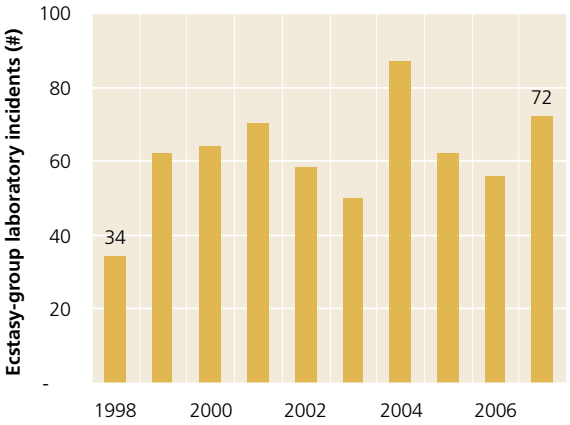
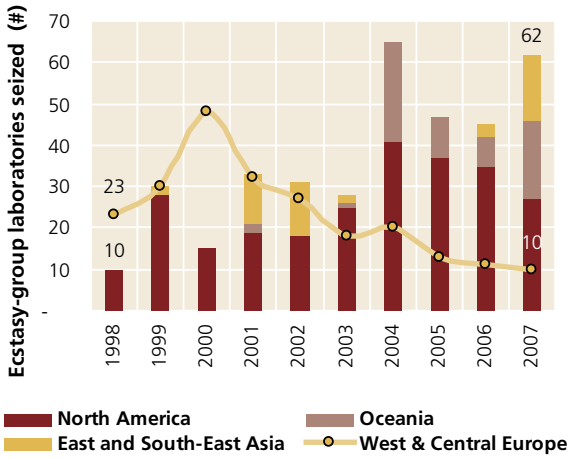


Fig. 80: Regional ecstasy-group laboratories reported to UNODC, 1998-2007

Source: UNODC, Annual Reports Questionnaire Data / DELTA.



outside Europe, most notably North America, Oceania, and East and South-East Asia. Several instances of European-based criminal expertise (for example, chemists) were also observed in these regions.[61]

The Netherlands was mentioned most frequently as the source country for seized ecstasy (178 mentions or 38.5%), followed by Belgium (9.5%), Germany (5.2%), and the UK (3.2%). Europe overall accounted for 86% of all mentions, in spite of significant shifts in manufacture to regions outside Europe.

Precursors for ecstasy-group substances include safrole (and safrole-rich oils), isosafrole, piperonal and 3,4-MDP-2-P, which are all under international control. In 2007, only one country, Thailand, reported significant safrole seizures. Australia (1,907 l), Canada (370 l), and the Netherlands (20 l) were the only countries reporting 3,4-MDP-2-P seizures in 2007. The total of 2,297 l is the lowest level in the new millennium. Mexico reported a single seizure of 2 mt of piperonal, accounting for nearly all seized in 2007.[62] While many of these seizures point to locations where MDMA manufacture is likely significant, their amounts clearly do not reflect the requisite chemicals needed to produce the amount of ecstasy consumed annually.

In Australia, there is continued evidence of notable domestic manufacture.[63] Canada has grown to be the most important producer of MDMA for North America, and since 2006, all ecstasy laboratories reported have been large capacity facilities operated principally by Asian organized crime groups.[64] The number of laboratories in the USA appears comparable to other producers, however, US operations tend to be smaller in nature, providing limited amounts for domestic consumption. On the other hand operations in West and Central Europe tend to be larger and more sophisticated, and produce higher quality products trafficked around the world. For example, the Netherlands seized two of the largest MDMA laboratories ever in 2007. In 2008, Brazil's Federal Police dismantled the country's first clandestine MDMA laboratory in the southern state of Paraná, again illustrating how ATS manufacture is able to shift closer to its consumers.[65]

61 Europol (2008). *OCTA 2008, EU Organized Crime Threat Assessment* (The Hague 2008).

62 Mexico reported an MDMA laboratory in 2007, the first such report since 2002.

63 Australian Crime Commission (2009). Illicit Drug Data Report 2006–07 (Revised March 2009).

64 US Department of Justice. (2008). National Drug Threat Assessment 2009 (National Drug Intelligence Center, Product No. 2008-Q0317-005). Johnstown, PA.

65 Brazil Federal Police, *Relatório annual de atividades – 2008*. Divisão de Controle de Produtos Químicos. Note, the majority of MDMA consumed in Brazil is believed to originate in Europe.

1.4.3 Trafficking

Global ATS seizures increase in 2007, surpassing previous records

Global seizures of amphetamine-type stimulants (ATS)[1] have continued to increase, totalling nearly 52 metric tons (mt) in 2007, surpassing their 2000 peak by nearly 3 mt.[2] The proportion of Member States that reported ATS seizures was 65%, the highest level recorded. The countries also reported an increase in average weight seized, from 492 kg in 2000 to 555 kg in 2007.[3]

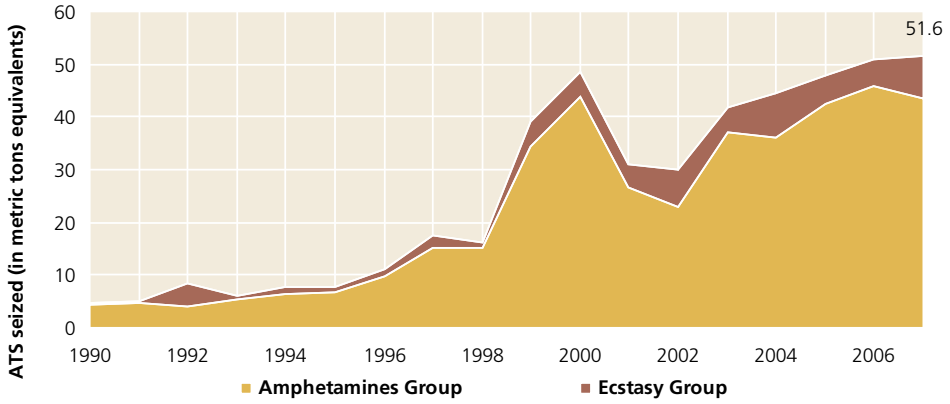
Trafficking in ATS substances is most commonly intra-regional – thus crossing fewer international borders – because manufacture typically occurs near the consumer market. This partially explains the relatively low levels of ATS seized compared to cocaine and heroin seizures. However, data suggests that interregional trafficking is increasing.[4] Moreover, the precursor chemicals from which ATS materials are manufactured continue to be trafficked throughout the world. They are often diverted from licit manufacture in South, East and South-East Asia.

Amphetamine continues to dominate global ATS seizures

The *amphetamines-group*[5] dominates ATS seizures, accounting for 85% of all seizures by volume. However, 2007 saw a dramatic jump in *ecstasy-group*[6] seizures (15% of all ATS seized), as significant increases were noted in several large markets. In 2006, amphetamine seizures were higher than methamphetamine. This trend continued in 2007, when amphetamine accounted for 46% of all ATS seized.

Fig. 81: Global seizures of amphetamine-type stimulants (ATS), 1990 - 2007

Source: UNODC, Annual Report Questionnaire Data/DELTA; UNODC Drug Information Network for Asia and the Pacific (DAINAP); Government reports; World Customs Organization (WCO), Customs and Drugs Report 2007 (Brussels, 2008) and previous years.



1 Amphetamine-type stimulants (ATS) are a group of substances comprised of synthetic stimulants including amphetamine, methamphetamine, methcathinone and ecstasy-group substances (MDMA and its analogues).

2 To standardize, seizures reported in kilograms, litres and dose/units/pills/tablets are transformed into kg equivalents: a dose of "ecstasy" was assumed to contain on average 100 mg of psychoactive ingredient (MDMA); a dose of amphetamine/methamphetamine was assumed to contain 30 mg of active ingredient; a litre was assumed to equal a kilogram. Until 1999 'other hallucinogens' were included in data for the ecstasy-group substances, but the proportion of ecstasy-group in the total exceeded 90% for most years.

3 It is important to note that drug and precursor seizure data are subject to change for a variety of reasons, such as new or late data being added or revisions in data already provided by Member States. All data reported in trafficking reflect the most up-to-date and accurate information available at the time of printing.

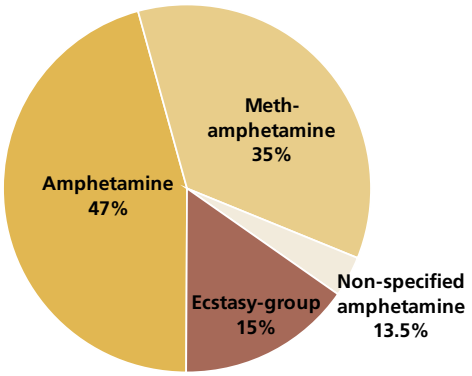
4 *Amphetamines and Ecstasy: 2008 Global ATS Assessment* (United Nations publication, Sales No. E.08.XI.12).

5 The *amphetamines-group* substances includes predominately methamphetamine and amphetamine, but also includes non-specified amphetamines-group (for example, tablets sold as Captagon, methcathinone, fenetylline, methylphenidate and others), however it excludes substances purportedly of the ecstasy-group of substances.

6 The *ecstasy-group* substances include predominately MDMA, with MDA and MDEA/MDE. However, limited forensic capacity by Member States often leads to confusion about the actual content of tablets believed to be "ecstasy" (MDMA).

Fig. 82: ATS seized, by substance type, 2007 (total: 51.6 mt)

Source: UNODC, Annual Report Questionnaire Data/DELTA; UNODC Drug Information Network for Asia and the Pacific (DAINAP); Government reports; World Customs Organization (WCO), *Customs and Drugs Report* 2007 (June 2008) and previous years.



While drug seizures vary dramatically from year to year, clear increases in the amount of amphetamine seized began around 2000, with large increases reported in 2005. These increases are due, in large part, to interceptions of a fake pharmaceutical marketed as Captagon (amphetamine) in the Near and Middle East.[7] Seizures of methamphetamine, until recently the main ATS seized in East and South-East Asia and North America, have declined somewhat since 2005, and remain at some 18 mt.

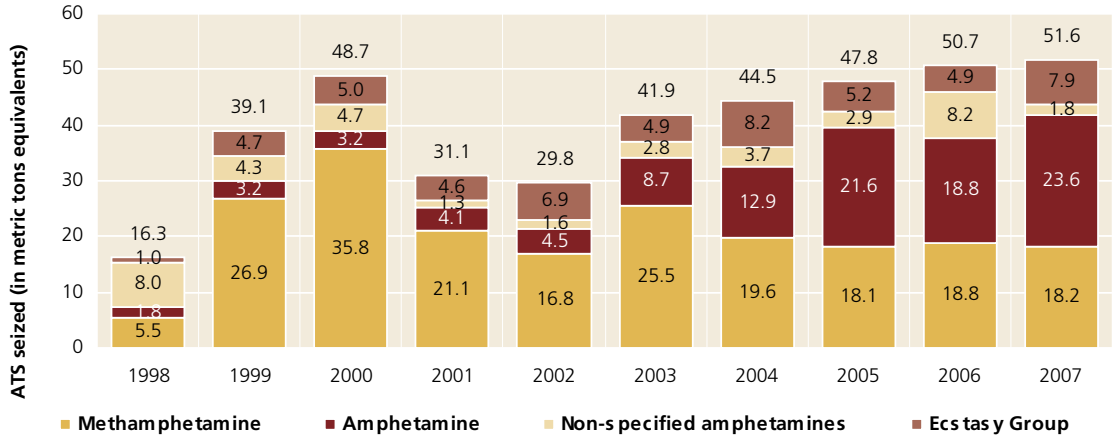
The majority of ATS seizures worldwide occur primarily in the four subregions with distinct patterns:

- Near and Middle East (29%)–primarily fake Captagon tablets likely containing amphetamine;
- East and South-East Asia (23%) –primarily methamphetamine;
- West and Central Europe (22%)–primarily amphetamine and ecstasy; and
- North America (18%)–primarily methamphetamine and ecstasy.

Each of these subregions is also a significant manufacturing area. The one exception is the Near and Middle East, where no clandestine manufacture has been reported. However, undetected amphetamine manufacture may be occurring in the subregion. This is because ATS are typically manufactured in the subregion in which they are consumed, and because of several indicators of manufacture in the subregion. For example, Lebanese authorities in 2007 intercepted laboratory equipment and precursor chemicals for Captagon manufacture; 75% of licit global trade in the Captagon precursor 1-phenyl-2-propanone (P-2-P)[8] in 2007 was destined for two countries in the Near and Middle East; and intelligence reports support the assertion that ongoing manufacturing has been occurring in the Syrian Arab Republic since at least 2006 (although no laboratories have been detected to date).[9]

Fig. 83: Global ATS seizures, by substance type, 1998-2007

Source: UNODC, Annual Report Questionnaire Data/DELTA; UNODC Drug Information Network for Asia and the Pacific (DAINAP); Government reports; World Customs Organization (WCO), *Customs and Drugs Report* 2007 (Brussels, 2008) and previous years



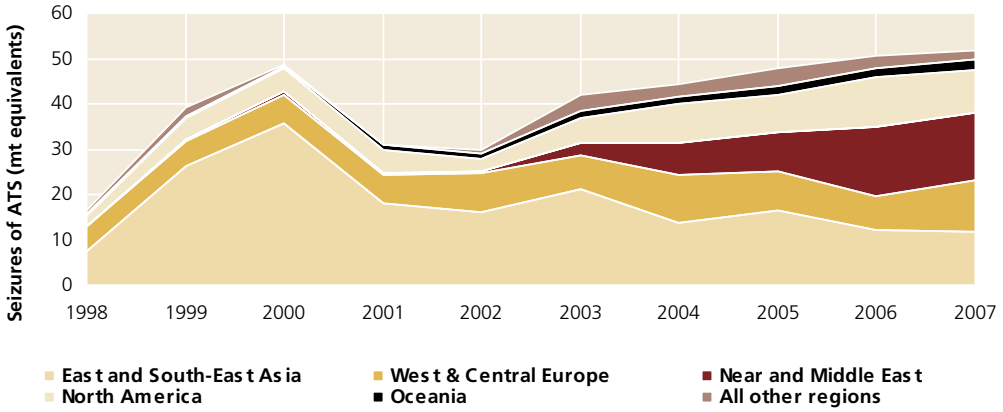
7 See special Captagon feature in this chapter.

8 Also know as benzyl methyl ketone (BMK).

9 Lebanon Drug Enforcement Central Bureau, presentation at the *Working Group Meeting on Captagon Smuggling to the Middle East Region*, (December 2008, Beirut); Turkish National Police, *Department Of Anti-Smuggling And Organized Crime* (KOM), Annual Report 2008. Ministry of the Interior (February 2009, Ankara) and previous years. International Narcotics Control Board (2009). *Precursors and chemicals frequently used in the illicit manufacture of narcotic drugs and psychotropic substances,* 2008. (United Nations publication Sales No. E.09.XI.4)

Fig. 84: Global ATS seizures, by subregion, 1998-2007

Source: UNODC, Annual Report Questionnaire Data/DELTA; UNODC Drug Information Network for Asia and the Pacific (DAINAP); Government reports; World Customs Organization (WCO), *Customs and Drugs Report 2007* (June 2008) and previous years.



Ten countries in five distinct subregional markets accounted for more than 80% of all ATS seized. The most significant ATS seizures are reported from Saudi Arabia (27% of all ATS), China and the USA (12% each), the Netherlands (10%), Canada, the United Kingdom,[10] Australia, Indonesia, Thailand and Myanmar, all with 5% or less.

Trafficking in amphetamines-group substances

Decline in seized amphetamines-group substances; the Near and Middle East leads in amphetamines-group seizures

Seizures of amphetamines-group substances (that is, amphetamine, methamphetamine and non-specified amphetamines) have increased considerably since the mid-1990s, and again beginning in 2002.

However 2007 saw a decline of about 2.5 mt over the prior year from decreases in the non-specified amphetamines group. The more recent increases have been driven primarily by amphetamine in the Near and Middle East, Europe and North America, while seizures reported from East and South-East Asia–while substantial–have been on the decline. In 2007, the Near and Middle East accounted for about a third of global seizures (43.2 mt total), followed by East/ South East Asia, West and Central Europe, and North America.

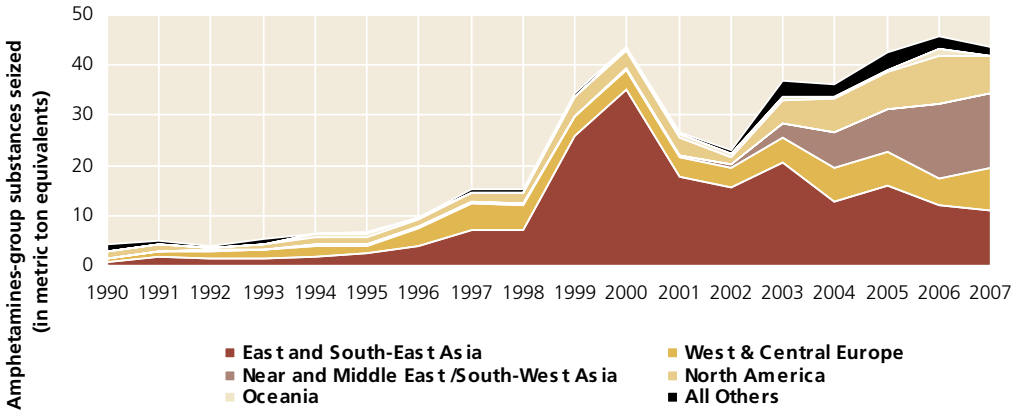
Trafficking in amphetamine

Trafficking in fake Captagon (amphetamine) in the Near and Middle East dominates global amphetamine seizures

The 23.6 metric tons of amphetamine seized in 2007

Fig. 85: Global seizures of the *amphetamines-group substances*, by region, 1990 - 2007

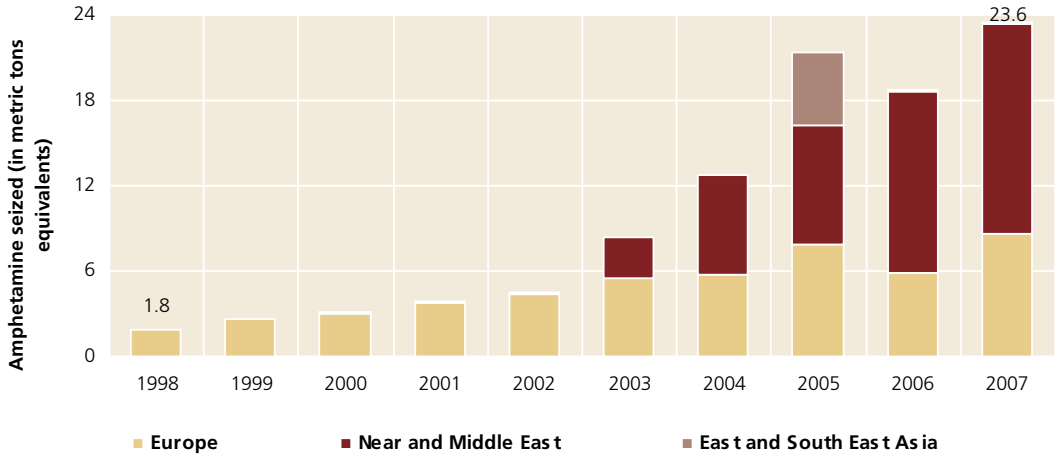
Source: UNODC, Annual Report Questionnaire Data/DELTA; UNODC Drug Information Network for Asia and the Pacific (DAINAP); Government reports; World Customs Organization (WCO), *Customs and Drugs Report* 2007 (Brussels, 2008) and previous years.



10 Figures for the UK include England, Wales, Scotland and Northern Ireland

Fig. 86: Global amphetamine seizures, by region, 1998-2007

Source: UNODC, Annual Report Questionnaire Data/DELTA; UNODC Drug Information Network for Asia and the Pacific (DAINAP); Government reports; World Customs Organization (WCO), *Customs and Drugs Report* 2007 (Brussels, 2008) and previous years.



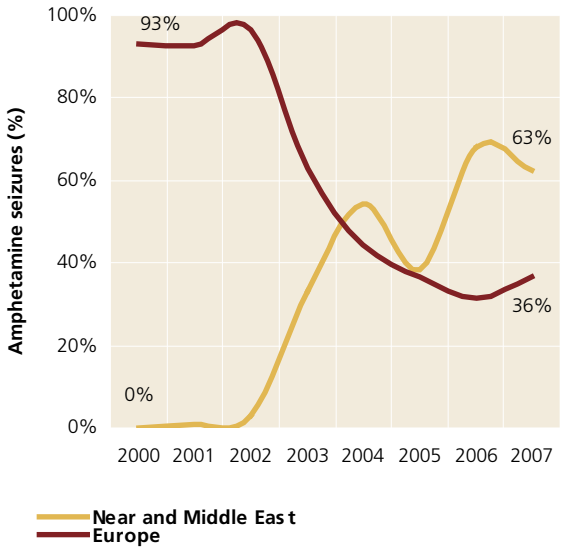
represents the highest level of seizures ever for this class of drug. The Near and Middle East accounted for nearly two thirds of all amphetamine seized, followed by Europe with just over a third. Saudi Arabia accounted for the vast majority. Notable seizures were also reported from the Syrian Arab Republic, Jordan and the United Arab Emirates (UAE). West and Central Europe accounted for 94% of all of Europe's seizures, led by the Netherlands, the United Kingdom and Germany.

Given the significant increases in the Near and Middle East, Europe's share of global seizures has declined, despite an increase in the absolute amounts seized in Europe between 2000 and 2007. European seizures accounted for 93% of all amphetamine seizures in 2000, compared to 36% in 2007.

The shifts in the Near and Middle East are concentrated in several key countries and are largely due to fake Captagon – an ATS product unique to the subregion. In 2007, Saudi Arabia seized a record 13.9 mt of fake Captagon, a weight near equivalent to all of the UK's amphetamines-group seizures since 2000.[11] It is likely that the reported weight of this significant seizure in Saudi Arabia represents bulk tablet weight, which includes adulterants and binders. Many of the seizures depart from the Syrian Arab Republic, travel by road via Jordan and arrive in Saudi Arabia. Several other countries in the subregion have reported dramatic increases in seizures of these tablets since 2004, including Jordan, Syria, UAE, and Yemen, typically via overland routes and often destined for Saudi Arabia's large domestic market. In addition to the increase in reported seizure weight, the number of individual Captagon (amphetamine) tablets seized in selected countries also showed significant increases during the period 1998 to 2007.

Fig. 87: Regional shifts in proportion of amphetamine seizures, 2000-2007

Source: UNODC, Annual Report Questionnaire Data/DELTA; UNODC Drug Information Network for Asia and the Pacific (DAINAP); Government reports; World Customs Organization (WCO), *Customs and Drugs Report* 2007 (June 2008) and previous years.



11 In March 2009, Saudi Arabia arrested 35 drug traffickers believed part of four different drug networks operating across the country, along with 3.4 million fake Captagon tablets. Security spokesman of Ministry of Interior; Riyadh, Saudi Press Agency 8 March 2009

The evolution of *Captagon*

Captagon® was originally the trade name for a pharmaceutical preparation containing fenetylline, a synthetic stimulant. Today, *Captagon* accounts for a significant amount of seized amphetamine-type stimulants in several countries, particularly in the Near and Middle East region. However, the drug has experienced a number of transitions since it was first developed for paediatric and geriatric use and given its trade name in the 1960s

The original *Captagon* product contained fenetylline, which is metabolized in the human body to amphetamine. Fenetylline essentially exerts the same effects as amphetamine and misuse of fenetylline started as early as the 1970s. Diversion from legitimate trade constituted the main source of fenetylline, and as a result of reports of increasing misuse, the substance was placed under international control in 1986. No licit manufacture has been reported since 1987.

Similar to what has happened with other ATS that have been placed under control, counterfeit or fake products started to appear. In the case of *Captagon*, pharmaceutical companies are reported to have been approached to produce counterfeit *Captagon* tablets. Subsequently, clandestine operators moved to the production of entirely fake products that did not contain any fenetylline but combinations of substances that mimic the effects of the original product. Such fake products are today predominant on illicit markets.

Throughout this transition, the original brand name *Captagon* and the original physical appearance of tablets has continued to be used in an attempt by illicit manufacturers to build on the reputation of the original product.

The primary market for *Captagon* has traditionally been countries in the Near and Middle East, where it is popular among the younger, affluent population and where it has also enjoyed a reputation as sexual stimulant since the beginning of the 1980s.

Today, despite increasing seizures of *Captagon*, there is still a lack of information on its chemical composition. What seems to be clear is that while until the early 1990s seized *Captagon* was found to contain fenetylline, there have not been any such reports since. The few forensic studies available from that time suggest that fake *Captagon* then consisted mainly of combinations of caffeine, ephedrine and quinine, usually mixed with sugars such as lactose. Amphetamine was also occasionally encountered.[1 2 3]

More recent studies of *Captagon* seized in Jordan[4], Turkey[5], Serbia[6] and Iraq[7] demonstrated the presence of amphetamine and caffeine in most *Captagon* tablets analyzed. Tablets that did not contain amphetamine, contained caffeine, ephedrine and/or a quinine. Fenetylline was not identified.

The most recent laboratory data (2008/09) come from an analysis of tablets from countries in the Near and Middle East mainly as part of a feasibility study initiated by Interpol aimed at assisting countries in that region in the identification of *Captagon* manufacturing and trafficking trends. The results from a very limited number of tablets from Jordan and Yemen confirm published data in that the main active ingredient is amphetamine. [8]

From the above it is clear that the *Captagon* market has experienced a number of transitions, characteristic for many transitions of a legitimate pharmaceutical to an entirely clandestine product. The limited forensic data available show that *Captagon* today does not contain any fenetylline, but mainly caffeine and a range of other controlled and non-controlled substances. Amphetamine is the ATS most typically associated with today's *Captagon*. The amount of amphetamine found in *Captagon*, however, is generally low (below the standard transformation ratio of 30mg per dose, used in most calculations to convert tablet seizures into units of weight).

The presence of many of the other ingredients cannot be explained easily based on their pharmacology and that of the original drug fenetylline, and remains open to speculation. Synergistic effects, reputation (for example as sexual stimulant), or contamination from the production process are all possible explanations.

Regardless of why *Captagon* tablets nowadays contain such a variety of ingredients, their systematic forensic examination and the collective results, that is, from analysis of the physical appearance (tablet design), the chemical composition (both active ingredients and tableting aids), and the impurity profile of the amphetamine, provide a wealth of valuable information for drug intelligence. So far, this tool remains heavily underutilized.

1 Dimova, D. and Dinkov, N. (1994), Psychotropic Substances of the Amphetamine-Type Used By Drug Addicts in Bulgaria, UNDCP SCITEC Publication Series, SCITEC/10.

2 Al-Gharably, N. and Al-Obaid, A-R. (1994), *Journal of the Forensic Science Society* (now: Science & Justice), 34 (3), 165-167.

3 Al-Hussaini, SR (1996), Counterfeit *Captagon*: an analytical study, *Science & Justice*, 36 (3), 139-142.

4 Alabdalla, M.A. (2005), Chemical characterization of counterfeit *Captagon* tablets seized in Jordan, *Forensic Science International*, 152, 185-188.

5 Turkish Drug Report, 2001

6 Nevešćanin, M., et al. (2008), Analysis of amphetamines illegally produced in Serbia, *Journal of the Serbian Chemical Society*, 73 (7), 691-701.

7 Intelligence alert, *Captagon* mimic tablets (containing *d,l*-amphetamine, caffeine, theophylline, and other components) in Al Anbar province, Iraq, *Micogram Bulletin*, 42 (3), March 2009; Note: Amphetamine calculated as sulfate; diphenhydramine and quinine calculated as hydrochlorides.

8 Rainer Dahlenburg, Forensic Expert, Bundeskriminalamt, Germany, personal communication.

Map 19: Notable Near and Middle East Trafficking Routes of Amphetamines-group Substances

Sources: Lebanon Drug Enforcement Central Bureau, presentation at the Working Group Meeting on Captagon Smuggling to the Middle East Region, Beirut, Lebanon (December 2008); Turkish National Police, Department Of Anti-Smuggling and Organized Crime (KOM), presentation at the Working Group Meeting on Captagon Smuggling to the Middle East Region, Beirut, Lebanon (December 2008); Policies Achievements Ongoing programs and Future Plans. Drug Control Headquarters Islamic Republic of Iran (Tehran, 2008); World Customs Organization (WCO), Customs and Drugs Report 2007 (June 2008).

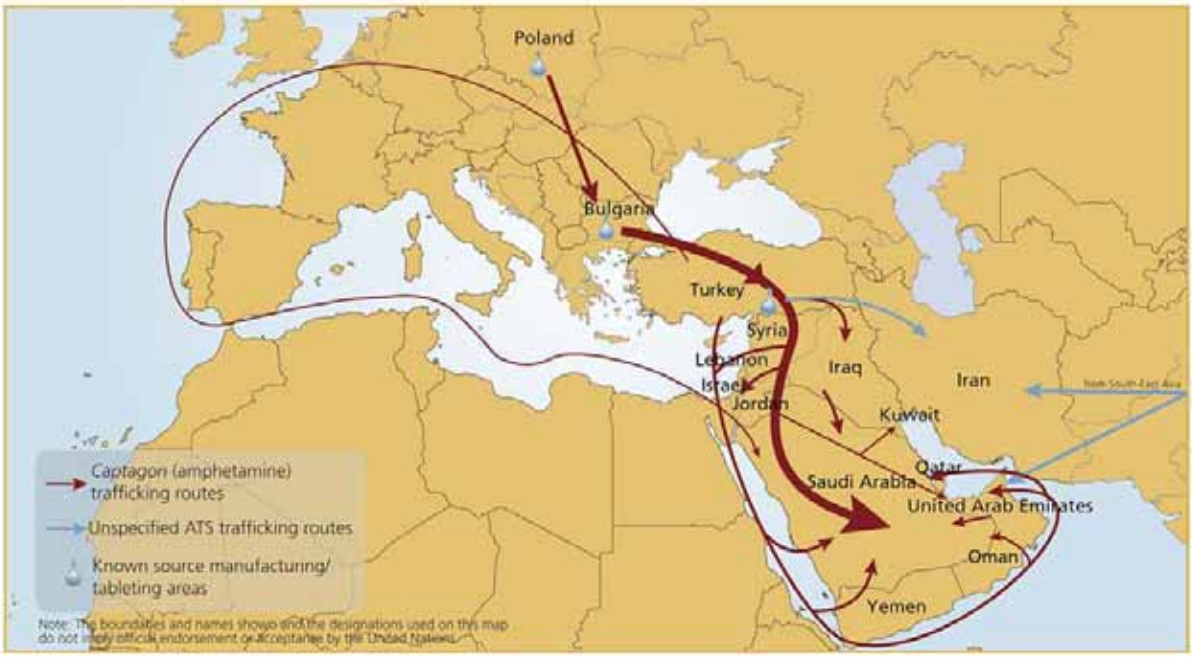
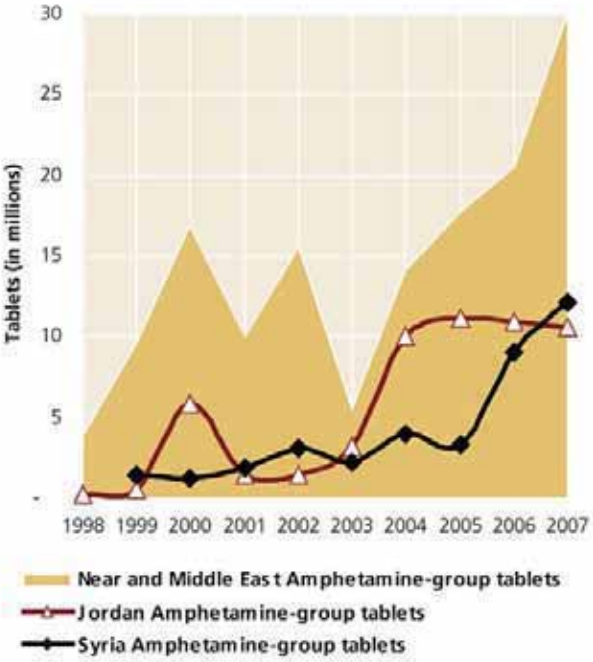


Fig. 88: Captagon (amphetamine) tablets reported in the Near and Middle East, with selected countries[12]: 1998-2007

Source: UNODC, Annual Report Questionnaire Data/DELTA; Government reports.



European amphetamine seizures continue to grow

Historically, global amphetamine manufacture and trafficking have been concentrated in Europe. Considering amphetamine and non-specified amphetamines together,[13] since 1990, there has been an increase in combined amphetamine and non-specified amphetamines seized in Europe, with a total of 8.9 mt for 2007.

Over the last decade, 10 European countries have accounted for more than 90% of seized amphetamine and non-specified amphetamines in Europe, and 38% of global seizures. The United Kingdom intercepts the most amphetamine in Europe. Since 1998, the UK has seized a total of 17.8 mt. The Netherlands in 2007 reported the largest single year seizure total (2.9 mt) of any European country in the last decade.

12 Although seized, not all countries provide seized tablet data in units, therefore this should be viewed as the minimum number of tablets seized. In some cases Member States report seized tablets already converted in kilograms, often using unknown transformation ratios (if any). When tablets/ pills/ doses are reported to UNODC, a standard transformation ratios of 30 mg per dose of psychoactive ingredient for amphetamine of methamphetamine is used.

13 Very little methamphetamine is reported in Europe, and it can be assumed that "non-specified amphetamines" are amphetamine. Tableted ATS with an imprinted logo without forensic confirmation is likely reported as "ecstasy" by law enforcement.

Fig. 89: Amphetamine (with non-specified amphetamines) seized in Europe, 1990-2007

Source: UNODC, Annual Reports Questionnaire Data.

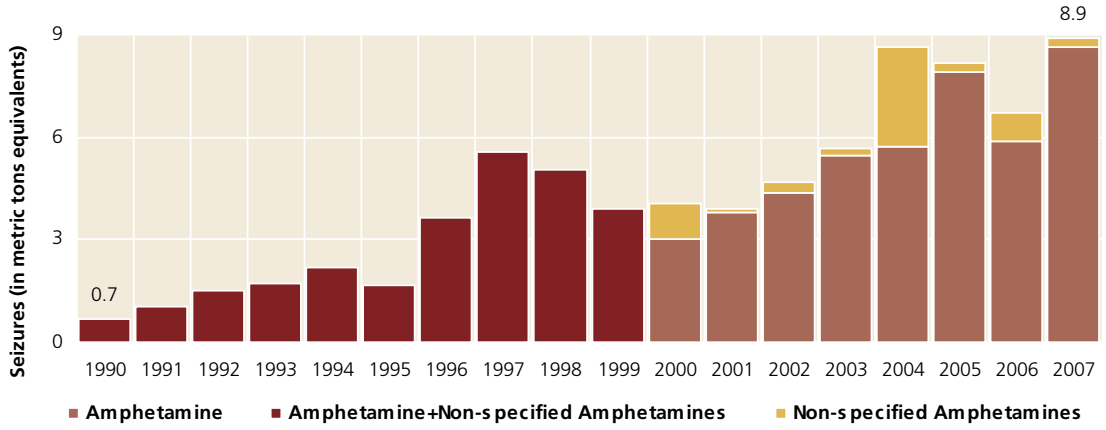


Table 21: Top European Countries (rank ordered) in combined amphetamine and non-specified amphetamine seizures (mt), 1998-2007

Source: UNODC, Annual Reports Questionnaire Data/DELTA

County (Top 10)	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	Total
United Kingdom*	1.81	1.30	2.03	1.85	1.55	1.78	1.49	2.23	1.64	2.07	17.75
Netherlands	1.46	0.85	0.29	0.58	0.48	0.88	0.59	2.03	0.63	2.85	10.64
Belgium	0.45	0.34	0.08	0.08	0.50	0.21	2.54	0.18	0.12	0.48	4.97
Germany	0.31	0.36	0.27	0.26	0.36	0.48	0.56	0.67	0.71	0.81	4.80
Bulgaria	0.00	0.09	0.21	0.06	0.18	0.59	1.46	1.12	0.88	0.12	4.71
Sweden	0.13	0.12	0.10	0.25	0.33	0.33	0.44	0.42	0.42	0.29	2.83
Turkey	0.01	0.04	0.01	0.03	0.26	0.16	0.35	0.27	0.73	0.46	2.32
Poland	0.05	0.05	0.14	0.19	0.16	0.19	0.24	0.46	0.33	0.42	2.25
France	0.20	0.23	0.52	0.06	0.15	0.27	0.08	0.11	0.08	0.31	2.00
Norway	0.21	0.05	0.09	0.09	0.21	0.22	0.23	0.12	0.32	0.39	1.93
Subtotal	4.64	3.43	3.75	3.46	4.18	5.11	7.96	7.60	5.86	8.21	54.20

* England, Wales, Scotland and Northern Ireland.

Trafficking in methamphetamine

Methamphetamine markets are concentrated in East and South-East Asia and North America, but more countries are reporting seizures

Although the total amount of methamphetamine seized in 2007 has decreased in comparison with previous years, the increasing number of countries reporting seizures suggest that the market is expanding geographically. The amount of methamphetamine seized in 2007 (18.2 mt) represents about half of the amount seized at its peak in 2000. In 2007, several countries reported methamphetamine seizures to UNODC for the first time, including Azerbaijan, Belarus, Bosnia and Herzegovina and Kyrgyzstan.[14] While the amounts reported were relatively small, they illustrate the geographical spread of methamphetamine.

14 Kyrgyzstan's seizure was reported in 2008. See UNODC, *Global SMART Update 2009*, Volume 1 (March).

Fig. 90: Methamphetamine seizures, by subregion, 2007 (18.2 mt)

Source: UNODC, Annual Report Questionnaire Data/DELTA; UNODC Drug Information Network for Asia and the Pacific (DAINAP); Government reports; World Customs Organization (WCO), *Customs and Drugs Report* 2007 (June 2008) and previous years.

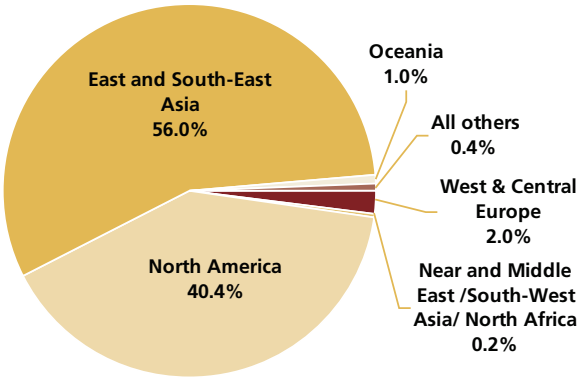


Table 22: Top countries (rank ordered) in methamphetamine seizures (mt), 1998-2007

Source: UNODC, Annual Reports Questionnaire Data/DELTA

Top Member State/Territory	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	Total
China	1.61	16.06	20.90	4.84	3.19	5.83	2.75	6.76	6.07	6.09	74.10
Thailand	3.01	4.52	10.08	8.34	8.63	6.51	2.12	0.79	0.51	1.29	45.78
USA	0.00	2.64	0.00	2.86	1.11	3.86	5.74	6.24	7.61	4.89	34.94
Taiwan, Prov. of China	0.89	1.22	0.84	1.16	1.30	3.98	3.17	1.73	0.20	0.12	14.59
Philippines	0.00	0.94	1.02	1.71	0.91	3.12	3.73	0.10	0.77	0.37	12.68
Mexico	0.00	0.36	0.64	0.40	0.46	0.73	0.95	0.90	0.75	0.92	6.11
Myanmar	0.00	0.89	0.81	0.99	0.42	0.10	0.00	0.39	0.58	0.52	4.70
Japan	0.00	0.00	1.03	0.42	0.44	0.49	0.51	0.13	0.15	0.36	3.53
Indonesia	0.01	0.22	0.01	0.00	0.05	0.02	0.03	0.26	1.24	1.23	3.07
Canada	0.00	0.00	0.02	0.05	0.03	0.02	0.05	0.06	0.06	1.54	1.82
Subtotal	**5.52**	**26.84**	**35.35**	**20.76**	**16.53**	**24.67**	**19.04**	**17.35**	**17.93**	**17.34**	**201.31**
Percent of global seizures	100.0%	99.7%	98.8%	98.5%	98.5%	96.7%	96.9%	95.9%	95.3%	95.2%	

The subregions of East and South-East Asia (56%) and North America (40%) continue to account for most of the world's seized methamphetamine, with relatively low seizures reported elsewhere. Over the last decade, 10 Member States (or their territories) accounted for more than 95% of all reported seizures.

Over the last decade, several changes have occurred. In 1998, 10 Member States (or territories) accounted for all global seizures of methamphetamine. In 2007, the same 10 Member States accounted for 95%, suggesting that other countries have emerged in the market. Canada increased its prominence in 2007, linked to increased manufacture and export by organized crime groups. The USA saw significant declines in methamphetamine seized in 2007.

Methamphetamine trafficking shifts quickly, with devastating effects

The Greater Mekong Subregion (GMS),[15] where some of the largest single methamphetamine seizures in the world have occurred, is central to methamphetamine manufacture, trafficking and use. Thailand, the largest market in the GMS, significantly increased law enforcement efforts in 2003/04 in response to widespread methamphetamine use. As a result, illicit trafficking in the GMS has relocated from the Golden Triangle[16] into neighbouring countries, including Cambodia, Lao People's Democratic Republic and Viet Nam.

Emerging trends can be more clearly seen when measuring the number of tablets seized, instead of the total weight. In 2004, tableted methamphetamine *(yaba)* seizures began increasing in Cambodia, Lao PDR, and Viet Nam, suggesting that trafficking routes shifted to the Mekong River. These shifts have accompanied increased use in the general population

Trafficking outside the subregion has also increased. Historically, trafficking of methamphetamine was intra-regional, with laboratories manufacturing for the nearby domestic market. However, over the last few years, organized crime groups have increased their involvement, bringing improved logistics, sophistication and production capacity, a more varied product line, and the ability to quickly move manufacture to geographic areas with weak control regimes.[17] Interregional trafficking routes have been identified from Myanmar to Bangladesh and India; from Hong Kong, China, to Australia, Indonesia, Japan and New Zealand; from the Philippines to Australia, Canada, New Zealand, and the USA; and from East and South-East Asia into the Islamic Republic of Iran, Saudi Arabia and the UAE.

Methamphetamine trafficked from Mexico drops in 2007, but may be temporary

Most methamphetamine trafficking in North America supplies demand in the USA. Methamphetamine manufacture in Mexico, and increasingly Canada, represent the bulk of methamphetamine trafficked into the USA. Following consistent increases for several years, 2007 marked the first decline in methamphetamine seized by the US authorities along the border with Mexico. This trend was reversed however in 2008, with a return to an increase in border seizures,[18] probably due to increasing

15 A region encompassing Cambodia, Lao People's Democratic Republic, Myanmar, Thailand, Viet Nam, and bordering provinces of south China.

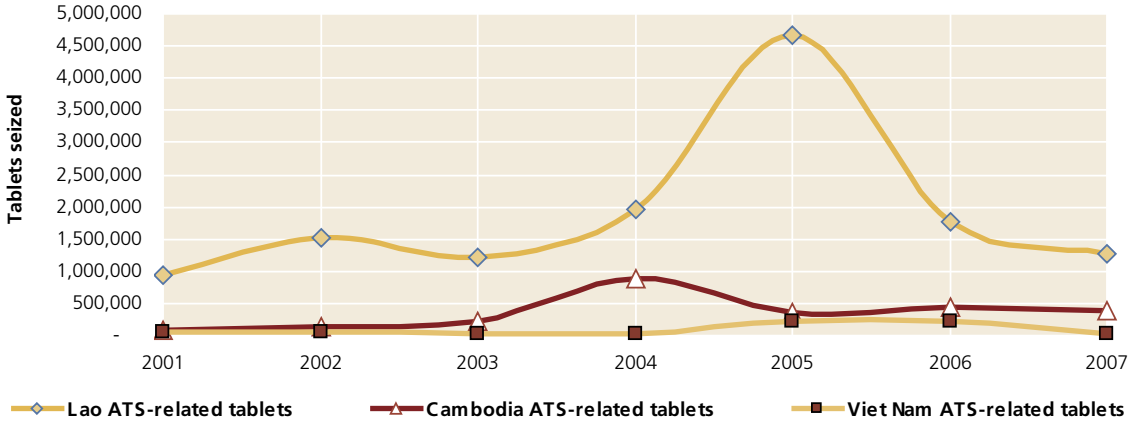
16 The Golden Triangle is an area overlapping the borders of Lao PDR, Myanmar and Thailand.

17 Amphetamines and Ecstasy: 2008 Global ATS Assessment (United Nations publication, Sales No. E.08.XI.12).

18 USA National Drug Intelligence Center, *National Methamphetamine*

Fig. 91: Seized methamphetamine-related tablets, by select country, 2001–2007

Source: UNODC, Annual Report Questionnaire Data/DELTA; UNODC Drug Information Network for Asia and the Pacific (DAINAP); Viet Nam Country Report from the Joint Meeting of the Fourth Asian Collaborative Group on Local Precursor Control and Fourth International Forum on Control of Precursors for ATS Meetings (Tokyo, February 2008).

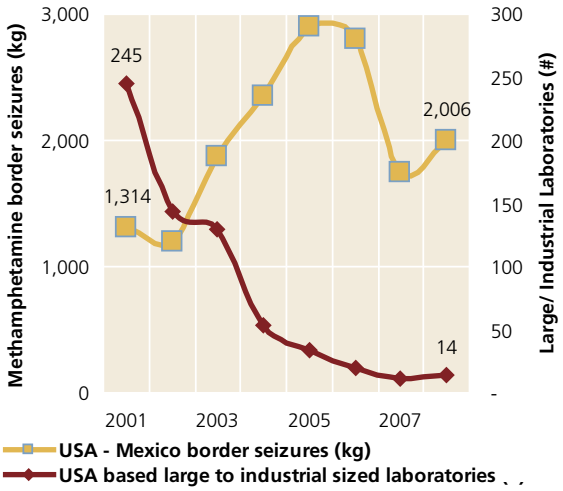


methamphetamine manufacturing capacity and sophistication in Mexico. Another reason for increases in the USA is related to growing 'smurfing' activity, where criminal groups obtain precursor chemicals used in manufacture through small purchases from multiple pharmacies, avoiding sales restrictions and law enforcement attention.[19] In Mexico, drug cartels also utilize non-pseudo/ephedrine based precursor processes and have the capacity to shift operations further south to other Latin American countries in order to acquire traditional chemical precursors.

Canada-based organized crime groups' participation in the methamphetamine trade has grown significantly since 2003. By 2006, law enforcement intelligence noted that Asian organized crime and traditional outlaw motorcycle gangs operating in Canada had increased the amount of methamphetamine they manufactured and exported, primarily into the USA, but also to Oceania and East and South-East Asia.[20] For example, Australia identified that methamphetamine from Canada accounted for 83% of total seized imports by weight, for Japan the figure was 62%.[21] Although only 5% of domestically manufactured methamphetamine was exported in 2006, by 2007 that figure was 20%.

Fig. 92: USA seizures of methamphetamine near the Mexico border versus seizures of large to industrial scale USA clandestine methamphetamine manufacture, 2001-2008*

Source: USA National Drug Intelligence Center, *National Methamphetamine Threat Assessment 2009 (and previous years);* USA Drug Enforcement Administration, Office of Diversion Control. *Data as of November, 2008



The geographic spread of methamphetamine increases

The increased reports of methamphetamine use outside East and South-East Asia and North America are also reflected in the growing number of countries and territories reporting seizures. In 2007, only 10% of reporting countries outside East and South-East Asia reported seizures of methamphetamine. This figure increased to 25% in 2007. Countries are also reporting larger average seizures than in the past. As trafficking routes shift into

Threat Assessment 2009.

19 This phenomenon, also known as 'pill or pharmacy shopping' or 'pseudo-running', is also observed in other countries where over-the-counter pharmaceuticals used in the manufacture of methamphetamine are restricted (for example, Australia and New Zealand).

20 USA National Drug Intelligence Center, *National Methamphetamine Threat Assessment 2009.*

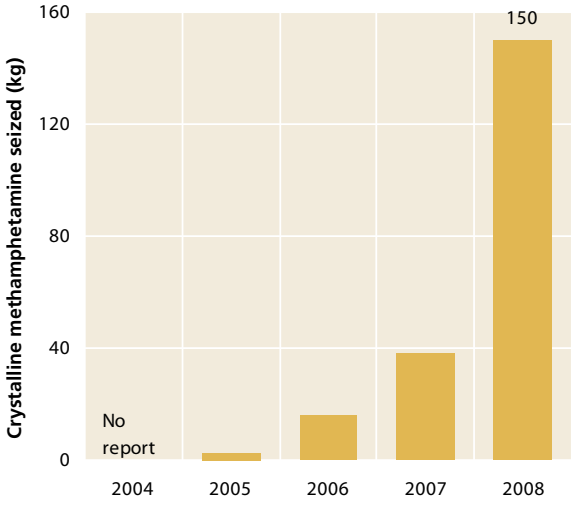
21 Australian Crime Commission (2009). *Illicit Drug Data Report 2006-07* (Revised March 2009); *Recent Illicit Synthetic Drug Smuggling Situation in Japan.* Presented by the Customs and Tariff Bureau, Ministry of Finance, Japan at the 18th Anti-Drug Liaison Officials' Meeting for International Cooperation (ADLOMICO), (Pusan, Republic of Korea, 2008).

new countries, spillover drug use in the general population and subsequent uptake can quickly occur.

Although the Near and Middle East subregion has a well-established amphetamine market (fake Captagon), there is increasing evidence that methamphetamine (including the crystalline form) is also trafficked there. In 2008, the Islamic Republic of Iran reported its largest seizure of crystalline methamphetamine (150 kg), whereas in 2004, there were no reports of methamphetamine. This is consistent with reports of increased use.[22] Significant seizures have also been reported in Saudi Arabia,[23] including a 23 kg methamphetamine shipment originating in the Syrian Arab Republic.[24]

Fig. 93: Islamic Republic of Iran: seizure of crystalline methamphetamine, 2004-2008

Source: Policies Achievements Ongoing Programs and Future Plans, Islamic Republic of Iran, Drug Control Headquarters (Tehran, 2007); Drug Control in 2008: Annual report and rapid situation assessment. Islamic Republic of Iran, Drug Control Headquarters (Tehran, 2009); UNODC, Field Office Report (2005).

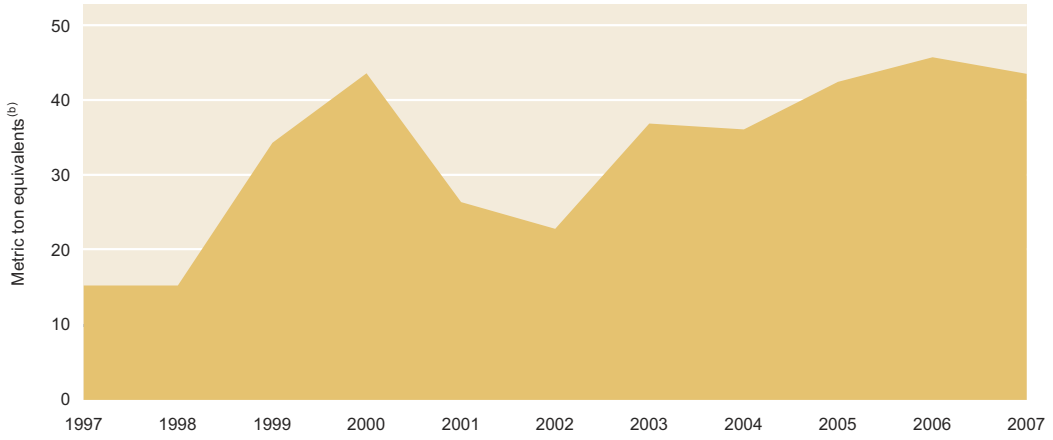


22 *Drug Control in 2008: Annual report and rapid situation assessment.* Islamic Republic of Iran, Drug Control Headquarters (Tehran, 2009).

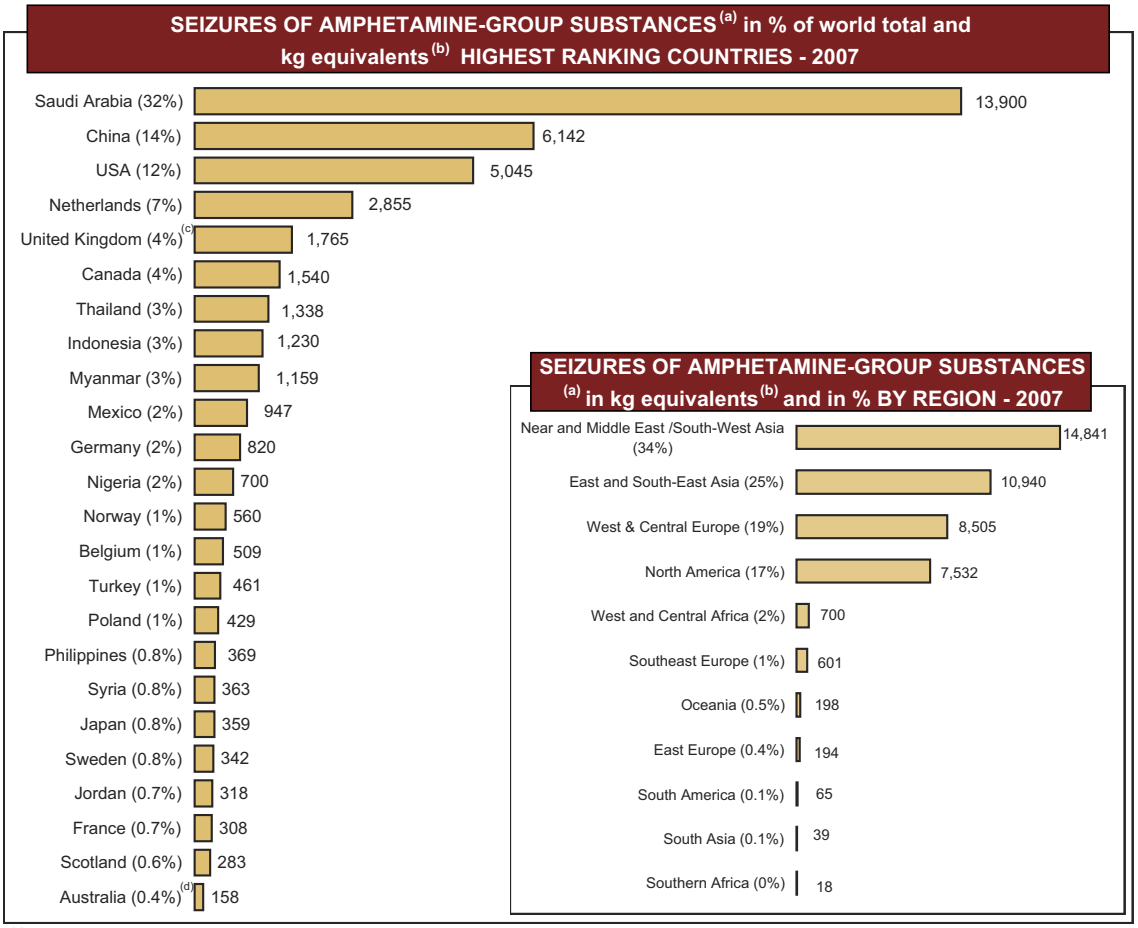
23 *Amphetamines and Ecstasy: 2008 Global ATS Assessment* (United Nations publication, Sales No. E.08.XI.12).

24 World Customs Organization (WCO), *Annual Customs and Drugs Report 2007* (Brussels, 2008).

Fig. 94: Global seizures of amphetamines[a], 1997-2007

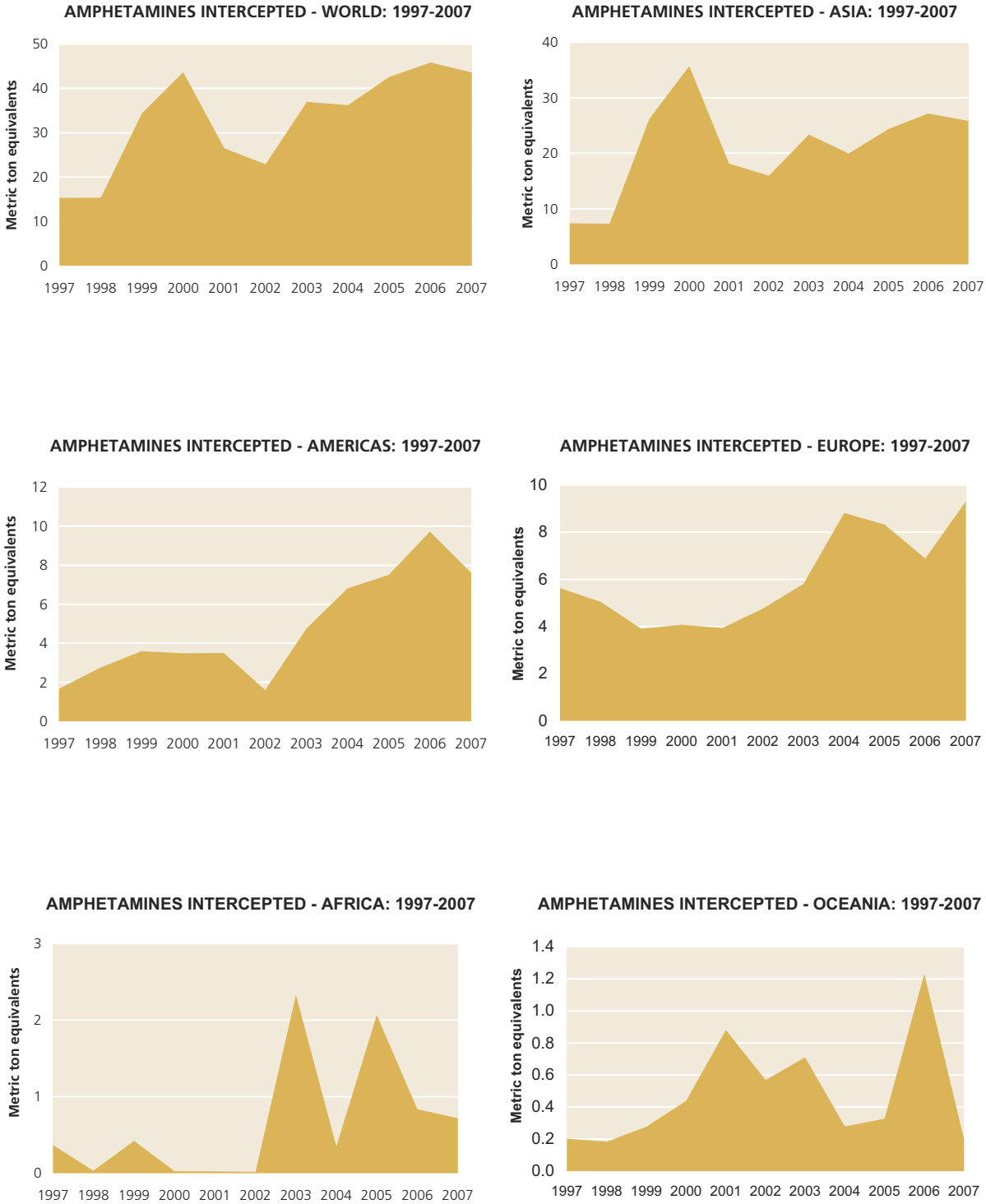


Year	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Metric ton equivalents[b]	15	15	34	44	26	23	37	36	43	46	44

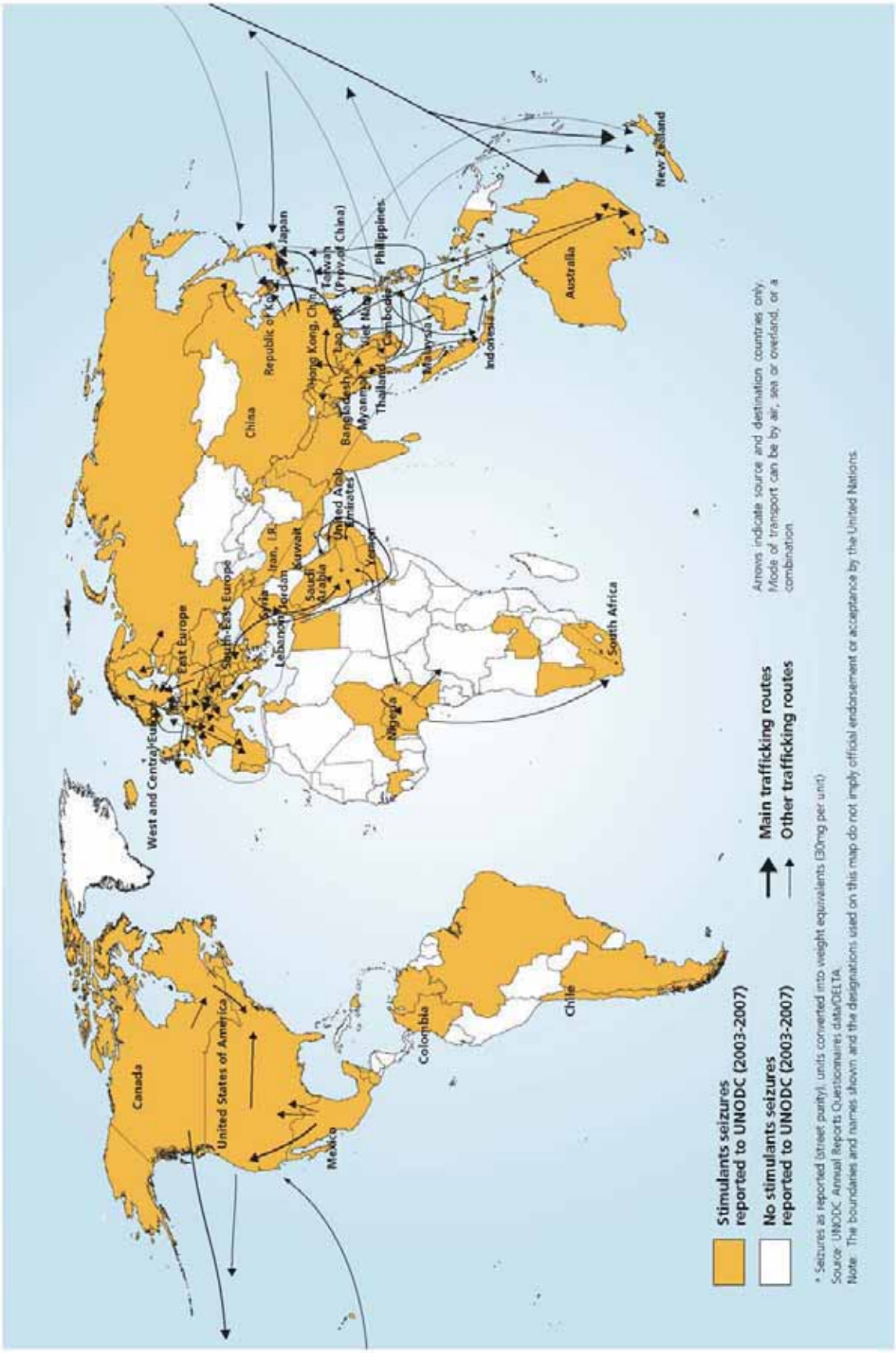


[a] Amphetamine-group substances are amphetamine, methamphetamine and related non-specified amphetamines (excludes *ecstasy-group* substances).
[b] 1 dosage unit is assumed to be equal to 30 mg; 1 litre is assumed to be equal to 1 kg.
[c] Data refer to England and Wales only.
[d] Total seizures reported by national as well as state and territory law enforcement agencies which may result in double counting.

Fig. 95: Interception of amphetamines-group substances, 1997-2007

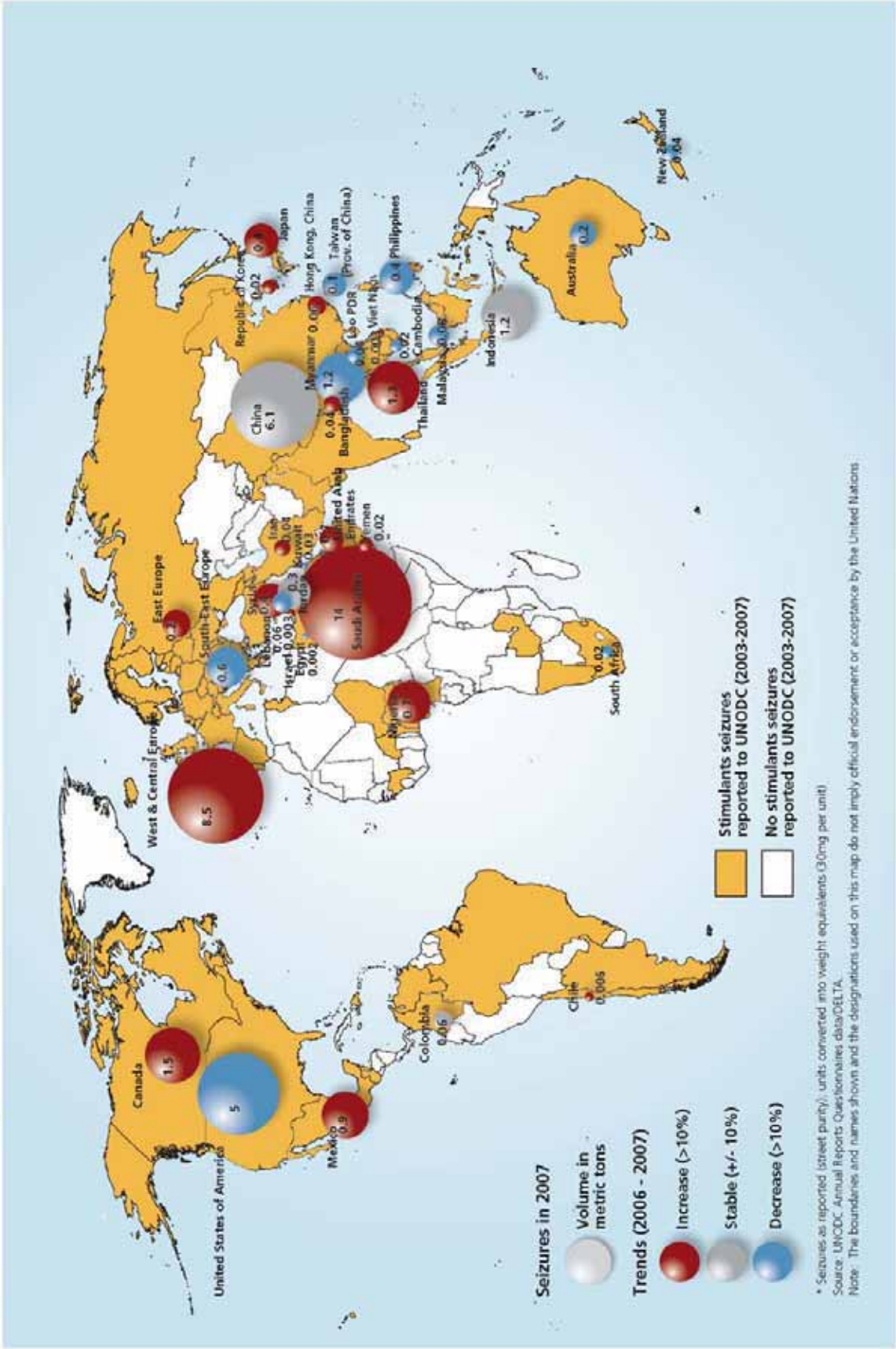


Map 20: Amphetamines trafficking routes, 2007



* Seizures as reported (street purity), units converted into weight equivalents (30mg per unit)
Source: UNODC Annual Reports Questionnaires data/DELTA.
Note: The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.

Map 21: Seizures of amphetamines, 2007 (countries reporting seizures* of more than 1 kg)



* Seizures as reported (street purity); units converted into weight equivalents (30mg per unit)
Source: UNODC Annual Reports Questionnaire data/DELTA.
Note: The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.

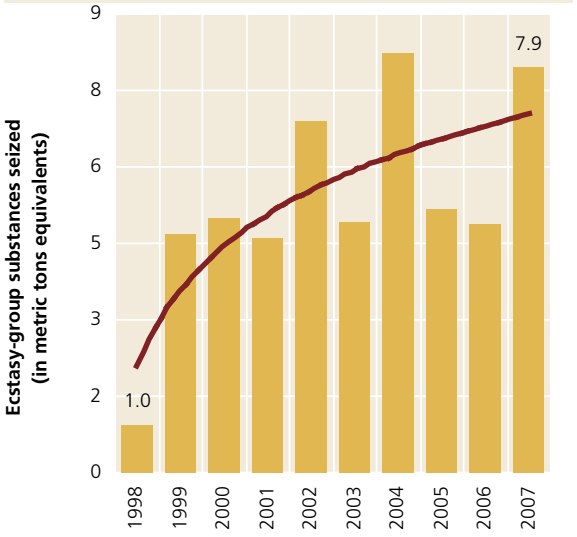
Trafficking in ecstasy-group substances

Ecstasy seizures increase in most regions

Ecstasy-group seizures increased by 62% in 2007 to a total of 7.9 mt. Notable increases were reported in subregions with significant trafficking activity: West and Central Europe, Oceania, East and South-East Asia, and North America. Six countries accounted for more than 80% of reported seizures, with the largest amounts reported by the Netherlands (25% of total), followed by Australia, USA, Canada, the UK[25] and China.

Fig. 96: Global ecstasy-group substance seizures, 1998-2007

Source: UNODC, Annual Reports Questionnaire Data / DELTA.



Seizures reported from Europe account for the majority (39%) of global seizures, as significant manufacturing continues in the West and Central subregion, most notably in the Netherlands and Belgium. However, around 2002/03 subregions outside of Europe began reporting increased domestic manufacture.

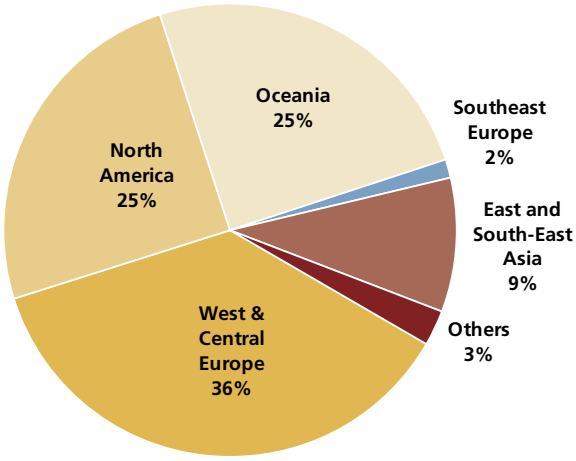
In 2007, 52% of Member States reported seizures of ecstasy-group substances in 2007, almost double that of 1998 (27%). The average amount reported seized per country increased five-fold, from about 21 kg in 1998 to 115 kg in 2007.

West and Central Europe remains a dominant source for ecstasy

Although more ecstasy-group manufacture is taking place outside of Europe, it remains the main illicit manufacturing region. Customs interceptions in 2007 were most commonly reported in the Netherlands (88 cases) and Belgium (22 cases).[27] Increased European seizures in 2007 are likely related to increases in MDMA availability as seen in forensic profiling. Large numbers of tablets containing very high levels of MDMA were also reported. Following temporary shortages of MDMA after the dismantling of one of the largest MDMA laboratories ever discovered in the Netherlands in 2005,[28] markets appeared to rebound by 2007, with MDMA content of 'ecstasy' tablets returning to previous, or higher, levels. Additionally, there were reports of high content (100-125 mg) MDMA mixed with alcohol called "Original 69" and "Dance Love Sex" appearing on the market.[29]

Fig. 97: Proportion of ecstasy-group substance seizures, by subregion, 2007

Source: UNODC, Annual Reports Questionnaire data



Although notable domestic manufacture of MDMA occurs in countries in other regions, such as Australia, it is clear that exports from West and Central Europe and East and South-East Asia continue to play a significant role in domestic market supply. West and Central Europe, for example, was the source of a record interception of ecstasy in Australia in June 2007.[30]

25 Data for the UK (England and Wales) reported in the 2007 ARQ are placeholders from 2006, as reporting is delayed. UK data include Scotland and Northern Ireland figures from 2007.

26 A reported tablet of "ecstasy" was assumed to contain on average 100 mg of MDMA.

27 World Customs Organization (WCO), *Annual Customs and Drugs Report 2007* (Brussels, 2008).

28 In May 2007, police in Veldhoven, Netherlands, seized a warehouse with one of the largest drug caches ever discovered, reportedly containing 780 kg of MDMA and 3.5 million ecstasy tablets.

29 *The Netherlands Drug Situation 2008: Report to the EMCDDA by the Reitox National Focal Point*, Trimbos Institute, Utrecht, Netherlands, 2009.

30 Australian authorities completed a year-long controlled delivery of nearly 15 million tablets, with a total weight of 4.42 mt, which departed from Italy. Australian Crime Commission (2009). *Illicit Drug Data Report 2006–07*, Revised March 2009.

Fig. 98: Ecstasy-group tablets seized in Japan and Indonesia, 1998-2007

Source: UNODC, Annual Reports Questionnaire data

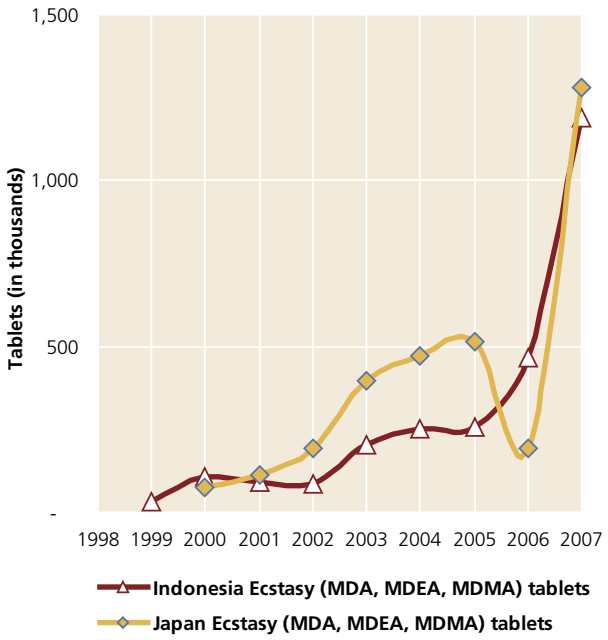
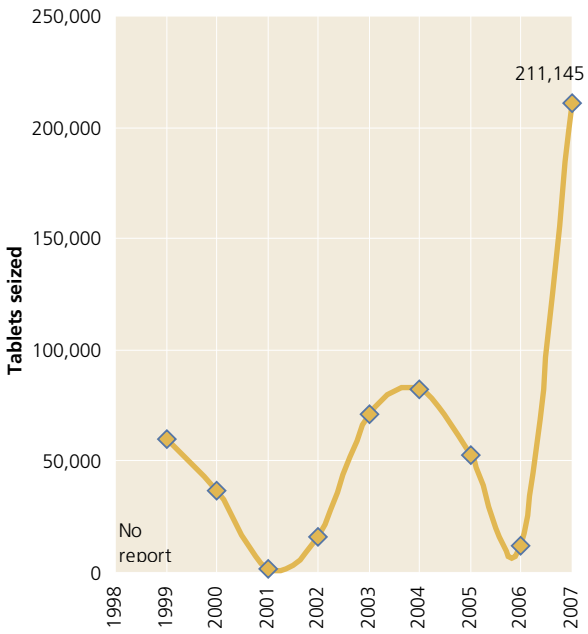


Fig. 99: Ecstasy-group tablets seized in Brazil: 1998-2007

Source: UNODC, Annual Reports Questionnaire data



Since 2003/04 Canada has emerged as the primary source of ecstasy-group substances for North American markets, and increasingly for other regions. As of 2007, identified ecstasy laboratories were large-capacity facilities primarily controlled by Asian organized crime groups, utilizing precursor chemicals trafficked from China in sea containers. In 2007, it was estimated that 50% of domestically produced ecstasy was trafficked outside of Canada. Most of this was thought to be destined for the USA, Australia and Japan.

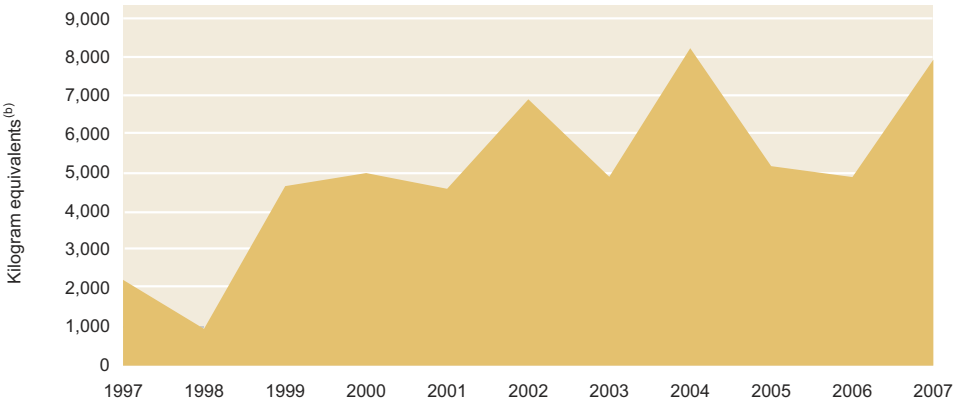
Japan, Indonesia and other countries in East and South-East Asia have reported significant trafficking of ecstasy. Unlike Indonesia, Japan has no domestic ATS manufacture, so increases in ecstasy are all from imports, often via organized crime groups. In 2007, Japan identified Canada as the single biggest source for seized ecstasy tablets, followed by the Netherlands, Germany, and Belgium.[31]

In Latin America, there remains concern that ecstasy-groups drugs, sourced from West and Central Europe are increasingly being used, particularly among young, affluent urban dwellers. There are few ATS-related trafficking data available in the region, partly due to the fact that law enforcement focusses on coca-based substances. However, data from Brazil clearly indicate that increasing numbers of tablets are being intercepted, with more than 210,000 seized in 2007.[32] The increase may also be related to domestic manufacture of ecstasy as the first clandestine laboratory was discovered in 2008.

31 *Recent illicit Synthetic Drug Smuggling Situation in Japan*. Presented by the Customs and Tariff Bureau, Ministry of Finance, Japan at the 18th Anti-Drug Liaison Officials' Meeting for International Cooperation (ADLOMICO), (Pusan, Republic of Korea, 2008).

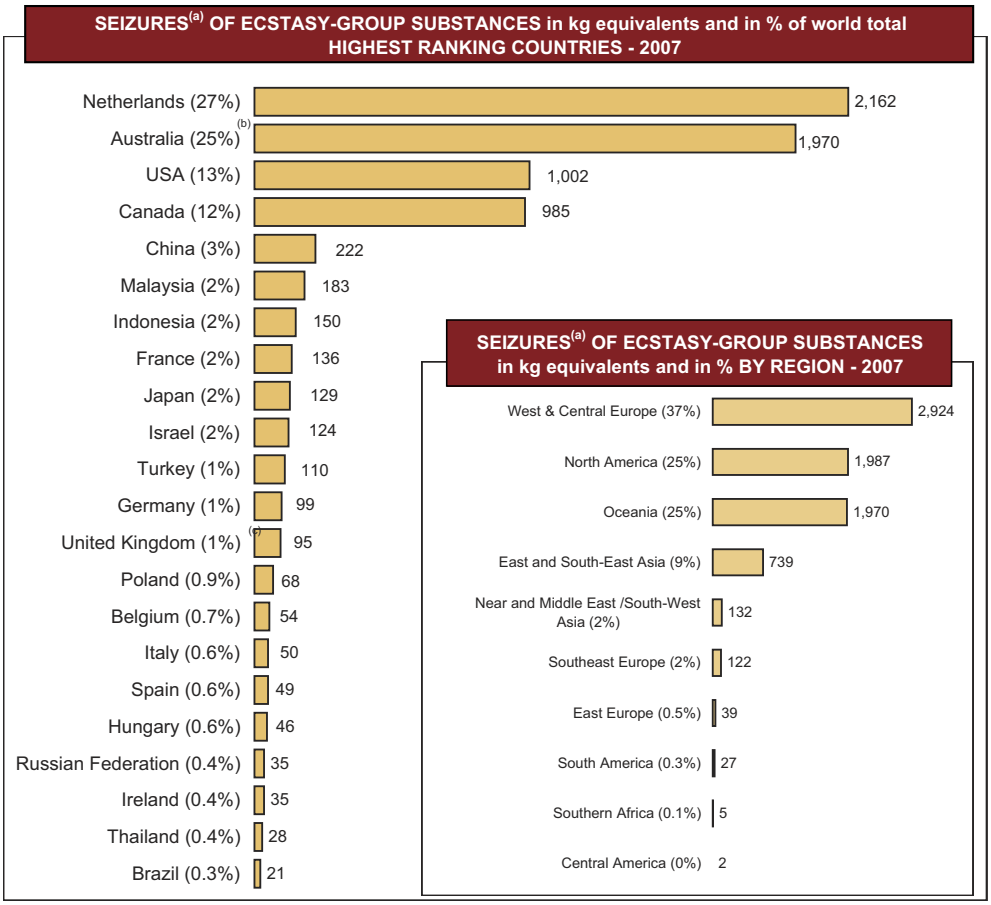
32 In February 2009, Brazil Federal Police arrested 55 people nationwide that were part of an international drug trafficking ring. The members–mostly young and middle-class–would traffic cocaine from South America to Europe in return for ecstasy to sell in Brazil. "Ecstasy Ensnares Upper-Class Teenagers in Brazil," New York Times, 15 February 2009, www.nytimes.com/2009/02/15/world/americas/15ecstasy.html.

Fig. 100: Global seizures of ecstasy-group[a] substances, 1997-2007



[a] Includes substances believed to be ecstasy (eg, MDMA, MDA, MDE) and may not have been confirmed by forensic testing. Separate reporting of 'Ecstasy' seizures only started with the new ARQ. Before, Ecstasy seizures were included under the category of 'hallucinogens'. Trend data shown above refer to the broader category for 1997-1999 and for Ecstasy for 2000-2007. Over the 2000-2007 period, Ecstasy accounted for 93% of the broader category.
[b] 1 unit is assumed to be equivalent to 100mg of MDMA.

Year	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Kilogram equivalents	2,227	958	4,661	5,003	4,597	6,916	4,903	8,245	5,180	4,897	7,948

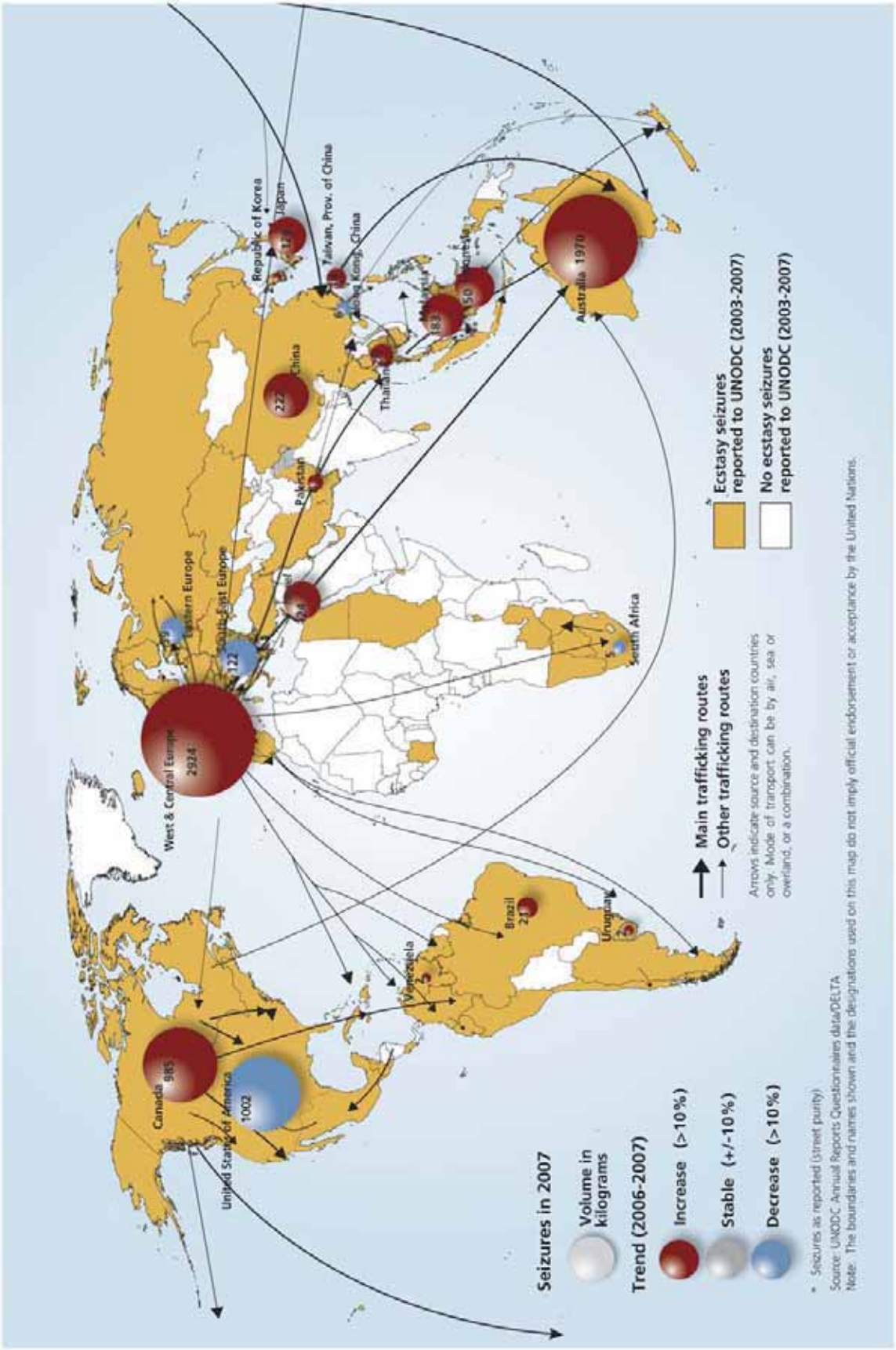


[a] Seizures as reported (street purity); units converted into weight equivalents (100mg / unit)

[b] Total seizures reported by national as well as state and territory law enforcement agencies which may result in double counting.

[c] Data refer to England and Wales only.

Map 22: Ecstasy trafficking routes, 2007



* Seizures as reported (street purity)

Source: UNODC Annual Reports Questionnaires data/DELTA

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

1.4.4 Consumption

Amphetamine-type stimulant consumption

The number of ATS consumers is very uncertain

In 2007, there were between 16 and 51 million people aged 15-64 who consumed amphetamines-group substances (annual prevalence 0.4%-1.2%). Ecstasy-group users numbered between 12 and 24 million worldwide (annual prevalence 0.3%-0.5%). The width of these ranges is far greater than for cocaine and heroin.

Illicit drug use is difficult to assess accurately, but ATS use even more so, for a variety of reasons. These include the speed with which ATS markets can appear and expand, the fact that ATS can be manufactured anywhere in the world, the general confusion about what users actually consume, and the high reliance upon limited or non-existent country reporting[1]. This year, significant revisions were made to the approach taken in making global and regional estimates of the number of people who use drugs. The new estimates reflect the uncertainties surrounding these data (which exist due to data gaps and quality) and are presented in ranges rather than absolute numbers. Because of this revision, previous point estimates are not comparable to the current ones.

Amphetamines-group drug consumption

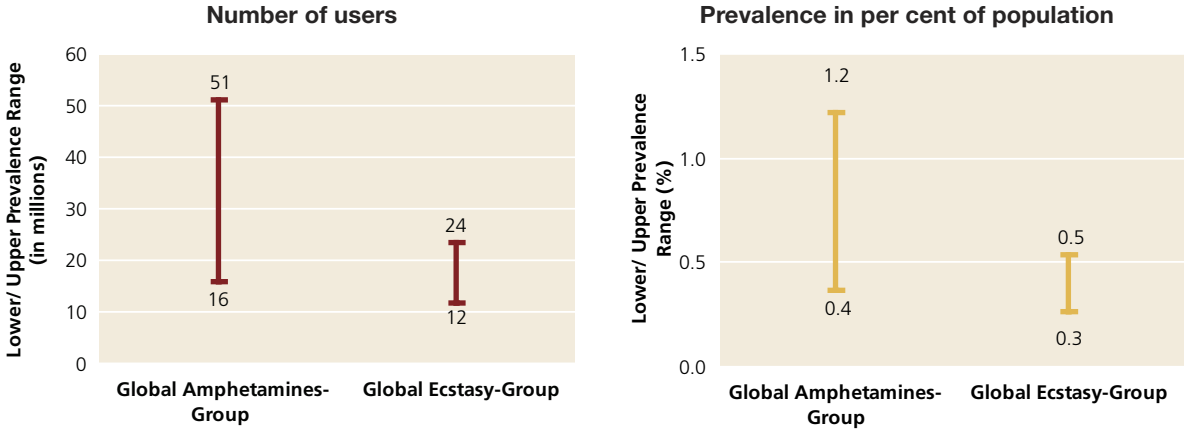
Many countries do not differentiate the type of ATS consumed (methamphetamine, amphetamine or other synthetic stimulants) so only broad estimates of use of specific types can be made, based upon reports and seizure data reported by Member States.

UNODC estimates that methamphetamine users account for 54%-59% of global amphetamines-group substances consumers; amphetamine users account for 32%-35%; and an additional 8%-11% use other non-specified illegal synthetic stimulants (such as methcathinone, pharmaceutical stimulants, et cetera).

Amphetamines-group users in East and South-East Asia consume primarily methamphetamine. Tablets sold as Captagon often contain amphetamine and are used throughout the Near and Middle East. In Europe, users

Fig. 101: Annual prevalence of amphetamine-type stimulant use, by drug group (in numbers and prevalence of population)

Source: UNODC estimate.



Note: 2007 estimates cannot be compared to previous UNODC estimates.

1 *Amphetamines and Ecstasy: 2008 Global ATS Assessment* (United Nations publication, Sales No. E.08.XI.12).

primarily consume amphetamine, with a few exceptions, notably the Czech Republic and some neighbouring countries where methamphetamine use is predominant.

About half of stimulant users in North America use methamphetamine. In Latin America, amphetamines-group use was historically thought to be diverted pharmaceuticals, but increasing incidents of ATS manufacture suggest that this is changing. Use of amphetamines-group substances in South Africa[2] is believed to be predominately methamphetamine; while in Western, Central and Eastern Africa and some parts of Southern Africa the amphetamines-group markets are thought to consist of various pharmaceuticals. Finally, users in Oceania are thought to primarily use methamphetamine.

Uncertain number of ATS users in Asia; South-East Asia probably has the most users in the region

At least half of the world's amphetamines-group users – between 5.8-37.0 million – live in Asia. Most of these are methamphetamine users in East and South-East Asia, which account for between 52-79% of estimated users in the region.[3]

The substantial uncertainty in this region is related to the unknown number of users in China and India. Due to a lack of country-level prevalence estimates, subregional estimates cannot be calculated for South Asia, Central Asia, or the Near and Middle East.[5]

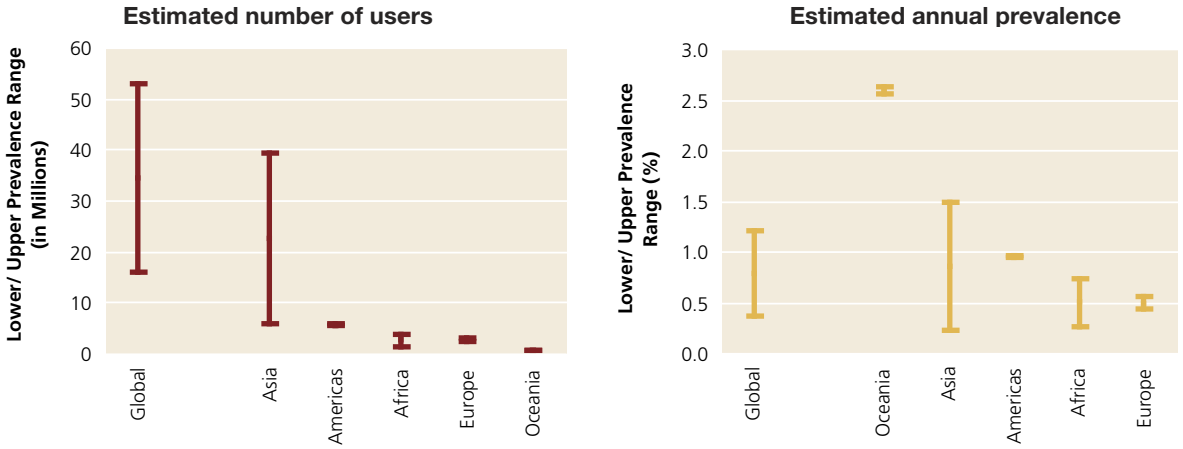
There is more certainty in estimates for the Americas, Europe and Oceania. Oceania had the highest estimated annual prevalence in the general population aged 15-64 (2.6%). The total number of amphetamines-group users in North America is estimated at around 3.8 million people, or some 1.3% of the population aged 15-64. Latin America (including Central America, the Caribbean and South America subregions) had an estimated two million users. In Europe, the number of users is estimated between 2.4 and 3.1 million (0.4-0.6% of the population).

Africa is estimated to have between 1.4 and 4.1 million users. However, subregional estimates could only be calculated for two of the four subregions (North and Southern Africa). For much of Africa, little information related to ATS consumption is available, which explains the greater levels of uncertainty reflected in the prevalence estimates for the region.

The highest annual prevalence ranges in the Oceania region are reported by Australia; in North America, by the USA; and in Europe, by Scotland (UK) and Estonia. In Asia, the highest prevalence ranges are found in the Philippines; in the Caribbean, in the Dominican Republic; in Central America, in El Salvador;[4] in South America, in Brazil; and in Africa, in Nigeria and South Africa.

Fig. 102: Estimated *amphetamines-group* users in the past year by region, 2007

Sources: UNODC, Annual Reports Questionnaire; Government reports; reports of regional bodies; and UNODC estimates.



2 Methcathinone–another ATS–is also commonly used in South Africa.

3 The criteria to calculate subregional estimates include recent (since 1998) representative prevalence estimates from at least two countries in a subregion that, combined, account for at least 20% of the subregion's total population aged 15–64 years.

4 The prevalence estimates for El Salvador may also include non-ATS stimulants (for example, diet/slimming pills or caffeine pills) used without a prescription.

Table 23: Estimated number of people who used amphetamines at least once in the past year and proporton of population aged 15-64, by region, 2007

Sources: UNODC, Annual Reports Questionnaire; Government reports; reports of regional bodies; and UNODC estimates.

Region/subregion (Amphetamines-group)	Estimated number of users annually (lower)	Estimated number of users annually (upper)	Percent of population aged 15-64 (lower)	Percent of population aged 15-64 (upper)
Africa	1,390,000	4,090,000	0.3	0.8
North Africa	240,000	510,000	0.2	0.4
West and Central Africa	Subregional estimate cannot be calculated			
Eastern Africa	Subregional estimate cannot be calculated			
Southern Africa	210,000	650,000	0.2	0.6
Americas	5,650,000	5,780,000	0.9	1.0
North America	3,760,000	3,760,000	1.3	1.3
Central America	310,000	310,000	1.3	1.3
The Caribbean	120,000	250,000	0.5	1.0
South America	1,450,000	1,460,000	0.6	0.6
Asia	5,780,000	37,040,000	0.2	1.4
East/South East Asia	4,600,000	20,560,000	0.3	1.4
South Asia	Subregional estimate cannot be calculated			
Central Asia	Subregional estimate cannot be calculated			
Near and Middle East	Subregional estimate cannot be calculated			
Europe	2,430,000	3,070,000	0.4	0.6
Western/Central Europe	1,590,000	1,690,000	0.6	0.6
East/South East Europe	840,000	1,380,000	0.3	0.5
Oceania	570,000	590,000	2.6	2.6
Global	**15,820,000**	**50,570,000**	**0.4**	**1.2**

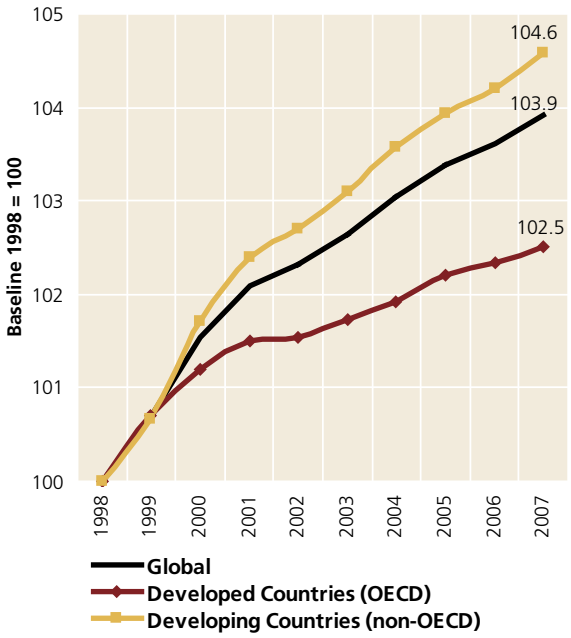
Expert perceptions: ATS growth in developing countries outpacing developed countries

A review of changes in expert perception data[5] in the individual regions between 1998 and 2007 finds continued increases in ATS use. Beginning around 2000, the rate of increases perceived by experts between developed and developing countries diverged, as developing countries, particularly those in Asia and the Americas, more often perceived significant increases in ATS use.[6]

Nearly half of experts from 86 countries perceived that the ATS situation had worsened in their country over the past year, whereas 14% identified some improvement.[7] The proportion of countries reporting a perceived

Fig. 103: ATS use trends as perceived by experts of developed (OECD) and developing (non-OECD) countries, 1998-2007 (baseline: 1998 = 100)

Sources: UNODC, Annual Reports Questionnaire Data, UNODC Field Offices, UNODC's Drug Use Information Network for Asia and the Pacific (DAINAP).



5 Expert perception data is derived from the ARQ, and is unweighted. The following points are allocated if experts perceive: 'strong increase' 2; 'some increase': 1; stable: 0; 'some decline' -1; 'strong decline' -2. If all countries had reported 'some increase', the global trend line would have increased by one point each year and would have reached 109 by 2007.

6 OECD Member countries include: Australia, Austria, Belgium, Canada, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Japan, Luxembourg, Mexico, Netherlands, New Zealand, Norway, Poland, Portugal, Republic of Korea, Slovakia, Spain, Sweden, Switzerland, Turkey, the United Kingdom and the USA.

7 Increases and decreases were coded from some to strong increase/decrease, and represent the unweighted number of Member States and territories responding.

Table 24: Expert perception of changing amphetamine-type stimulant use, by region, 2007

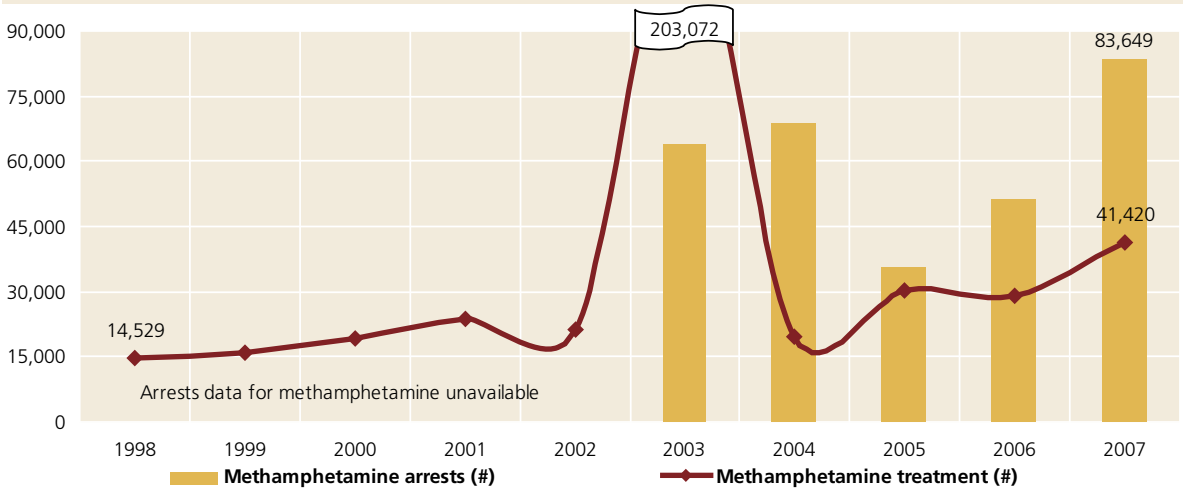
Sources: UNODC, Annual Reports Questionnaire data.

Region	Member States responding	Use problem increased*	Percent use problem increased	Use problem stable	Percent use problem stable	Use problem decreased*	Percent use problem decreased
Europe	34	14	41%	16	47%	4	12%
Americas	16	7	44%	8	50%	1	6%
Asia	25	14	56%	6	24%	5	20%
Oceania	0	0		0		0	
Africa	11	5	45%	4	36%	2	18%
Global	**86**	**40**	**47%**	**34**	**40%**	**12**	**14%**

* Identifies increases/ decreases ranging from either some to strong, unweighted by population.

Fig. 104: Thailand, number of methamphetamine treatment admissions and arrests, 1998-2007

Sources: Office of the Narcotics Control Board, *Thailand Narcotics Annual Report 2003*; UNODC, Improving ATS Data and Information Systems Project; UNODC, Drug Use Information Network for Asia and the Pacific (DAINAP).



increase in ATS use–predominately methamphetamine–was highest in Asia (56%). Subregionally, experts perceived a worsening ATS problem in three distinct areas: central Asia (for example Azerbaijan and Georgia); countries and territories on the east coastal area of Asia (for example, China, Republic of Korea and Viet Nam); and the Near and Middle East and its close neighbours (for example, Cyprus, Jordan, Lebanon, Oman, Pakistan and Qatar).

Methamphetamine was identified as the "most used" illicit drug in Cambodia, Japan, Lao People's Democratic Republic, the Philippines, the Republic of Korea and Thailand.[8] Thailand has the largest market for methamphetamine in South-East Asia's Greater Mekong Subregion.[9] After some apparent reductions in methamphetamine use in 2003/04, recent trends indicate a resurgence of use.[10] The 2007 general population estimates suggest that lifetime methamphetamine prevalence is 1,7%, and annual prevalence 1.4%. This is reflected in treatment and enforcement data. Between 2004 and 2007, the number of people seeking treatment has more than doubled, while arrests for methamphetamine-related offenses increased to their highest level ever in 2007.

Methamphetamine use is spreading throughout the South and South-East Asia

The routes supplying Thailand with methamphetamine changed markedly after 2003/04, with increased use of the Mekong River. This led to drugs transiting through

8 The most recent data reported for Cambodia and Lao PDR is for 2006 (UNODC, *Patterns and Trends of Amphetamine-Type Stimulants and Other Drugs of Abuse in East Asia and the Pacific 2006* (June 2007)). The data for the Republic of Korea do not include cannabis.

9 Cambodia, Lao PDR, Myanmar, Thailand, Viet Nam and bordering provinces of south China.

10 Among other things, the 'Thai war on drugs' had the effect of reducing self-reporting of illicit drug use in surveys; results between 2003 and 2006 indicate low lifetime prevalence rates . Under-reporting of methamphetamine use in Thailand probably continues. See *World Drug Report 2008* (United Nations publication, Sales No. E.08. XI.1).

and into Cambodia, Lao PDR and Viet Nam.[11] Rapid increases in methamphetamine tablets and high purity crystalline methamphetamine uptake soon occurred across Cambodia. In 2007, there were 1,719 drug users admitted to government-operated centres for drug users, a 58% increase over 2006.[12] The majority of users were admitted for methamphetamine. A recent study of 12 provinces also showed that the use of methamphetamine has spread to many rural provinces of the country,[15] possibly related to domestic manufacture of methamphetamine, first reported in 2006 and more significantly again in 2007. Similar changes have been reported to varying degrees in neighbouring countries.

Asia: ATS use appears to be increasing, but by how much?

There are no national prevalence estimates of ATS consumption in China and India. These gaps are major given the size of these countries' populations (0.95 billion persons aged 15-64 years in China, and 0.73 billion persons aged 15-64 years in India). Such gaps have an enormous impact upon the level of certainty of both regional and global ATS use estimates.

Furthermore, with increases in both population and disposable income, their position next to several significant manufacturing countries, and expanding domestic manufacture, both countries face substantial risks related to growing ATS use.

India: India last performed a household survey in 2000/01, but questions specific to various types of ATS consumed were not included. Due to a lack of data for India, estimates cannot be calculated for the South Asia subregion. However, given India's population, its contribution to annual prevalence estimates for Asia (using other regional estimates) may be 29%, which represents millions of potential users.

The last assessment of India's treatment facilities was conducted in 2001. It found that 0.2% of treatment was for ATS. The South Asia subregion is highly vulnerable to an increase in problems related to ATS, however, and it is likely that the extent of use and problems related to use of ATS have increased since that time. First, key ATS precursor chemicals are readily available and significant ATS manufacture is already taking place. Second, the region is home to a large youth population of potential consumers with increasing disposable income. Third, the region's prevention and treatment regimes are largely focused on other drug types. Finally, the geographic location between the significant ATS markets in the Near and Middle East and East and South-East Asia, make the countries particularly vulnerable.

In India and Bangladesh, methamphetamine trafficking via the border with Myanmar, the source of much of Asia's methamphetamine, is increasing. The threat to South Asia was highlighted in May 2008 when a large sophisticated methamphetamine laboratory was seized in Kosgama, Sri Lanka , and in November 2008 when the first operational methamphetamine laboratory was seized in Vadodara, India, along with significant amounts of methamphetamine. In December 2008, an industrial-scale pseudoephedrine extraction operation with nearly 5 metric tons of methamphetamine precursor chemicals was reportedly discovered in Mumbai.

China: China's experts report strong increases in the use of methamphetamine, which coincide with increased domestic manufacture and trafficking, and a year-on-year declines in heroin seizures. In just three years (2004–07), the proportion of registered drug users for ATS increased more than fivefold, from less than 2% to 11% of registered drug users by 2007.[13] In 2008, China reported that 19.1% of its registered drug users nationwide used "new types" of drugs–predominately ATS-related[14]–higher than in previous years. However, no general population estimates of the extent of use of ATS have ever been reported.

In China, methamphetamine in both crystal and tablet forms is trafficked from Myanmar directly or by transiting Lao PDR or Viet Nam. Significant methamphetamine manufacture takes place within China using precursor chemicals diverted from industry or by extracting precursor chemicals from pharmaceutical products. The risk to China was highlighted by very recent large- scale methamphetamine manufacture found using sophisticated methods that do not require controlled precursors. Of note are increasing seizures of ketamine, which although not an ATS is marketed as an ATS-type drug, either by itself, or mixed with other drugs like methamphetamine and sold as ecstasy.

11 *Amphetamines and Ecstasy: 2008 Global ATS Assessment* (United Nations publication, Sales No. E.08.XI.12).

12 Cambodian National Authority for Combating Drugs (2008). *Report on illicit drug data and routine surveillance systems in Cambodia 2007*.

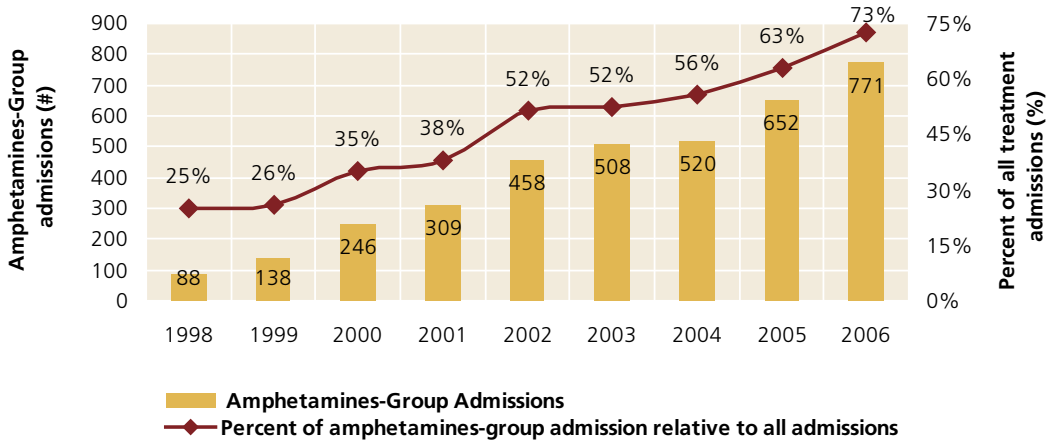
13 UNODC, Development of Community-Based Drug Use Counselling, Treatment and Rehabilitation Services in Cambodia: Commune-based Baseline Behaviour Survey in 60 Communes in 12 Provinces in Cambodia (May 2008).

14 International Cooperation Division, Narcotics Control Bureau, Ministry of Public Security, presentation entitled *'Drug data collection in China'*, 4th International Forum on the Control of Precursors for ATS (Tokyo, 2008).

15 Methamphetamine, ecstasy, ketamine, phencyclidine, and benzodiazepine derivatives. Office of China National Narcotics Control Commission, A*nnual report on drug control in China 2009* (and previous years) (Beijing, 2009).

Fig. 105: Saudi Arabia (Dammam) amphetamines-group treatment admissions, 1998-2006

Source: Abu Madini M. S., Rahima S. I. A., Al-Zahrani M. A. & Al-Johi A. O. (2008). *Two decades of treatment seeking for substance use disorders in Saudi Arabia: Trends and patterns in a rehabilitation facility in Dammam.* Drug and Alcohol Dependence, 97(3), pp 231-236.



Data from East Asia suggest some reductions in use

The Japanese population has experienced several cycles of stimulant use since the end of the Second World War. However, accurately and reliably assessing use in the country's general population presents particular challenges, since typical household-type surveys tend to have extremely low response rates and there may be sensitivity around disclosure of use. Trends in administrative data since 1998/99 suggest that problematic methamphetamine use may be declining: the number of stimulant abuse/dependence cases reported by psychiatric facilities declined 11% from 1999 to 2005, but still account for over half of reported cases.[16] Methamphetamine-related arrests continue to decline, yet account for more than three-quarters of all drug-related arrests.[17]

The Philippines' recent (2007) household survey concluded that annual prevalence of methamphetamine use in the general population declined from 6% (in 2004) to between 1.9-2.4%. Treatment admissions for methamphetamine have also declined from 6,195 in 2003 to 2,562 in 2007, but still account for 60% of new admissions.[18] Significant manufacturing and trafficking of ATS continue to be problematic for the country.

Some Near and Middle East countries emerge as significant amphetamine consumers

The Near and Middle East has been reporting dramatic increases in ATS–predominately fake pharmaceuticals sold as *Captagon* – over the last few years. Saudi Arabia, the largest market, has seen increases in problem use that coincide with significant increases in region-wide seizures. One specialized drug treatment hospital found that between 1998-2006, treatment admissions for amphetamines-group use increased nine-fold, and the proportion of amphetamines-group treatment relative to all admissions tripled (from 25% to 73%).[19]

The Islamic Republic of Iran's recent rapid situation assessment of drug users in treatment centres, prisons, and of homeless persons found that approximately 3.6% of these groups of these groups primarily used crystalline methamphetamine, whereas no use was reported in 2004/5.[20] Iran has reported yearly increases in methamphetamine seizures, suggesting that availability is increasing.

In Europe, amphetamine use stable or decreasing; methamphetamine pockets persist

European amphetamines-group use appears stable, with West and Central European countries reporting stability or some decline. Perceived increases were subregional, with some increase in central Europe (Switzerland, Austria, Slovakia, Ukraine and the Republic of Moldova) and northern areas (Estonia, Latvia, Norway and Sweden).

Annual prevalence continues to decline in the United Kingdom, historically Europe's most significant amphetamine market. The annual prevalence rate of 1.0% in

16 Ministry of Health and Social Welfare, General situation of administrative measures against drug abuse (2007).

17 *Amphetamines and Ecstasy: 2008 Global ATS Assessment* (United Nations publication, Sales No. E.08.XI.12).

18 Treatment data are those provided by the public health system and do not include treatment provided by non-government and faith-based treatment providers.

19 Abu Madini M. S., Rahima S. I. A., Al-Zahrani M. A. & Al-Johi A. O. (2008). *Two decades of treatment seeking for substance use disorders in Saudi Arabia: Trends and patterns in a rehabilitation facility in Dammam.* Drug and Alcohol Dependence, 97(3), pp 231-236.

20 *Drug Control in 2008: Annual report and rapid situation assessment.* Islamic Republic of Iran, Drug Control Headquarters (Tehran, 2009).

Fig. 106: England and Wales: Annual prevalence of amphetamine use among the general population (aged 16-59), 1998-2008

Source: Kershaw, C., Nicholas, S., & Walker, A. (2008). *Crime in England and Wales 2007/08: Findings from the British Crime Survey and police recorded crime*. Home Office Statistical Bulletin (ISBN 978-1-84726-753-5)(London, 2008).

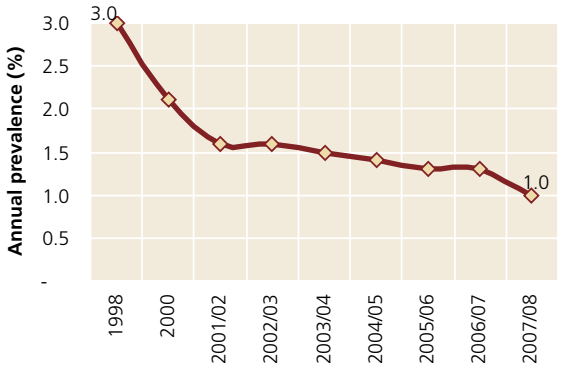
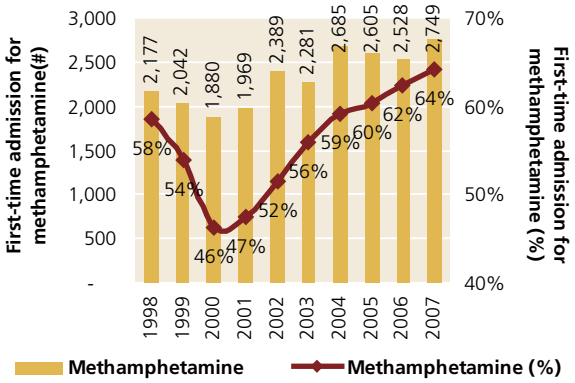


Fig. 107: Czech Republic first-time treatment demand for methamphetamine use, 1998-2007

Source: *The Czech Republic - 2007 Drug Situation (2008)*. Czech National Monitoring Centre for Drugs and Drug Addiction (Prague, 2008).



2007/08 in England and Wales is one third of the level one decade ago. However, the same reduction did not take place in Scotland, as rates of annual amphetamine use increased from 0.5% in 2000 to 2.2% in 2006.[21]

However, some countries in Eastern Europe have witnessed increases in amphetamines-group drug use. The Czech Republic is central to Europe's methamphetamine use, with most of the methamphetamine sourced from domestic clandestine laboratories. Although younger metropolitan users account for the majority, increased use is occurring in small towns and rural areas.[22] First-time treatment demand for methamphetamine continues to grow, accounting for nearly two thirds of all drug treatment. Many of the country's "problem drug users" inject methamphetamine.

Similarly, experts in the Ukraine are reporting increased injecting drug use, particularly ATS: crude home-made synthetic stimulants such as methamphetamine, methcathinone and cathinone are often shared by groups of young injecting drug users.[23]

South African ATS use shows signs of stabilization, but little is known about the rest of the continent

Most subregions of Africa lack basic data on ATS use, making it difficult to assess its extent or provide subregional estimates of use. However, ATS consumption has been reported in several African countries, including Burkina Faso, Côte d'Ivoire, Egypt, Ghana, Nigeria, Senegal, Sierra Leone and South Africa.

South Africa is one of the most significant methamphetamine markets in Africa and is one example of the rapid increase that can occur in ATS use. In Cape Town and the surrounding area, where most of the country's methamphetamine use currently occurs, demand for methamphetamine treatment was non-existent before 2002. By 2008, it accounted for 36% of treatment, although recent data suggest that use among youth may be on the decline.[24]

Egypt has some history of problematic synthetic stimulant use (Maxiton Forte[25]), however, recent seizure data show that little is currently seized. Recent research on ATS use suggests that 2.2% of state university students across the country had ever used stimulants, of whom approximately one third admitted current use.[26] In a 2005/06 national survey assessing drug use in eight

21 Brown, M. & Bolling, K. (2007). *Drugs misuse in Scotland: Findings from the 2006 Scottish crime and victimization survey.* BMRB Social Research, Edinburgh; National Advisory Committee on Drugs and Public Health Information and Research Branch (2008). Similar patterns were also noted for ecstasy-group substance use for Scotland and Northern Ireland.

22 *The Czech Republic - 2007 Drug Situation (2008).* Czech National Monitoring Centre for Drugs and Drug Addiction (Prague, 2008).

23 Pavlenko, V. (2008). *Peculiarities of stimulators using in Ukraine by the example of Donetsk region*, presented at the Global Methamphetamine Conference, Prague (September, 2008). International Charitable Foundation/ International HIV/AIDS Alliance in Ukraine; Zeziulin, O., Dumchev, K., & Schumacher, J. (2008). *Injection stimulant use and HIV risk in Ukraine*, presented at the Global Methamphetamine Conference, Prague (September, 2008).

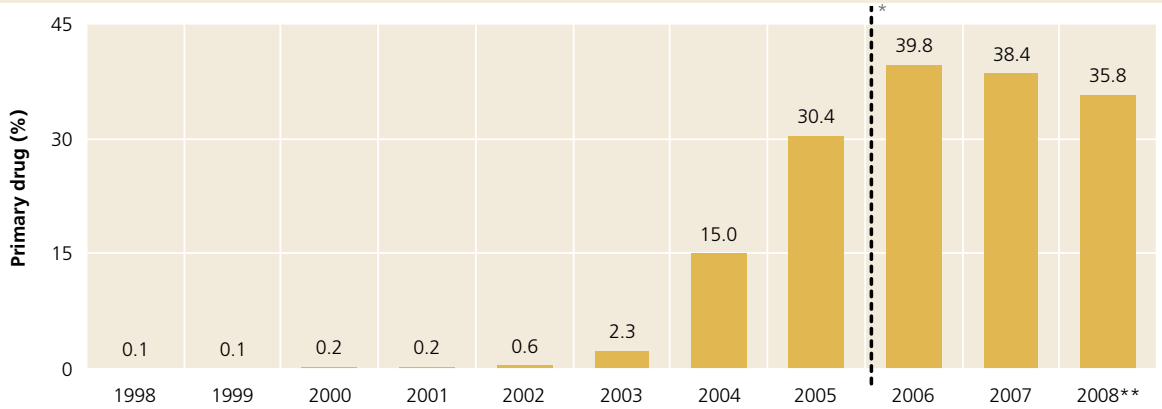
24 Plüddemann, A., Parry, C., Bhana, A., & Fourie, D. (2008). South African Community Epidemiology Network on Drug Use (SACENDU) Update (18 November 2008).

25 *Maxiton Forte*, was the trade name for a pharmaceutical preparation containing dexamphetamine, but is no longer manufactured. There have been indications that methamphetamine is being sold in Egypt's illicit markets under this brand name, however, to date there is still insufficient information about the actual content of this product and its source of manufacture.

26 Yousuf J. Egypt, *Use of Neuroactive Substances among university students: Preliminary Indicators*, National Council for the Control of Treatment and Addiction (Cairo, 2007).

Fig. 108: South Africa (Cape Town area): proportion of methamphetamine as primary substance for treatment, 1998-2008**

Source: South African Community Epidemiology Network on Drug Use (SACENDU). *Monitoring Alcohol & Drug Use Trends in South Africa (July 1996 – June 2008)*. Research brief, 11(2) (December 2008).



*Beginning mid-2006 totals included treatment in Cape Town, Atlantis and Worcester. **Figures represent data from the first half of 2008.

regions, 10% of the population aged 15 and older had ever used drugs, with 0.5% admitting to having ever used stimulants.[27]

The existence of unregulated (parallel) pharmaceutical markets[28] throughout Africa is believed to be a significant source of ATS.[29] These markets exist in large part due to limited access to health-care facilities, the high cost of drugs, a need for privacy, a general lack of public awareness, overly strict drug control regimes, and to meet consumer demand for drugs.[30] According to WHO, between 25-50% of medicines consumed in developing countries are counterfeit, and include ATS.[31] Burkina Faso has significant seizures of (non-specified) ATS pharmaceuticals termed 'médicaments de rue'. Although representative data on ATS use in Burkina Faso is non-existent, authorities in 2005 indicated that the most significant (and increasing) drugs of use were ATS. The same year, a report on psychiatric hospital treatment data in the capital Ouagadougou found that 28% of treatment episodes were primarily for amphetamines-group substances, the highest of any drug group apart from cannabis.[32]

In Nigeria, Africa's most populous country, methamphetamine use was previously reported in the northern parts of the country. More recent research however has identified significant use by young people (age 10-19; 6.7% lifetime prevalence) and university students (2.1% lifetime prevalence) in the south-western city of Ilorin and its surrounding catchment area.[33]

Methamphetamine use may be declining in parts of North America

North America continues to lead the western hemisphere in ATS use. Recent data, however, suggest declines, particularly in methamphetamine use in Canada and the USA. Since 1999, Canadian (Ontario)[34] and US students have reported declining methamphetamine use, but actual use is probably underreported as young people are increasingly using 'ecstasy' sourced from Canada which often contains methamphetamine as the primary psychoactive ingredient.[35]

Data from the USA household survey of the general population (12 and older) show that in 2007, the first notable decline in illicit amphetamines-group use took place, driven by declines in methamphetamine use.[36]

27 Ghaz I.H., *National Study of Addiction Prevalence of the Use of Drugs and Alcohols in Egypt (2005 – 2006)*, Studies of the National Centre for Social and Criminal Research Fund for the Control and Treatment of Addiction and Abuse (Cairo, 2007).

28 Unlicensed individuals and/or business entities that trade in drugs that they are not authorized or entitled to deal with or in contravention of the applicable laws, regulations and norms. These may include real or often counterfeit pharmaceuticals.

29 These may also include non-ATS stimulants (for example, slimming/diet pills and ephedrine).

30 International Narcotics Control Board (2007). *Report of the International Narcotics Control Board for 2006*. (United Nations publication Sales No. E.07.XI.11)

31 World Health Organization, "Counterfeit medicines", Fact Sheet No. 275, February 2006.

32 Ouedraogo, A. (2007). *Demandes de traitement pour abus de drogues au Burkina Faso*. Université de Ouagadougou.

33 Makanjuola A.B., Daramola T.O. & Obembe A.O. (2007). Psychoactive substance use among medical students in a Nigerian university. *World Psychiatry*, 6(2): 112–114; Abdulkarim A.A., Mokuolu O.A. & Adeniyi A. (2005). Drug use among adolescents in Ilorin, Nigeria. *Tropical Doctor*, 35(4), pp 225-228.

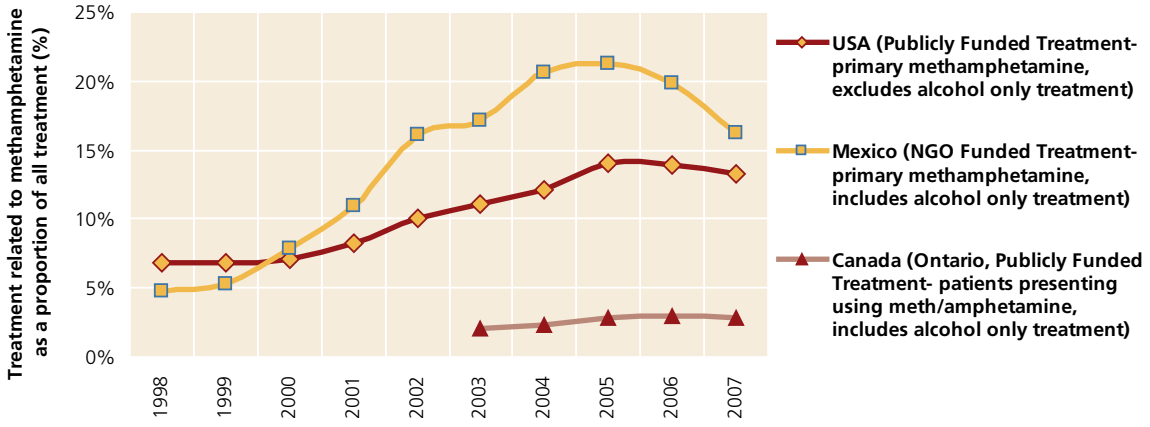
34 These data reflect Ontario students, which have drug use characteristics that are notably different from other provinces and territories. See Centre for Addiction and Mental Health. *Drug Use Among Ontario Students,* 1977-2007: Detailed OSDUHS findings (Toronto, 2007).

35 *Amphetamines and Ecstasy: 2008 Global ATS Assessment* (United Nations publication, Sales No. E.08.XI.12).

36 Office of National Drug Control Policy. *Making the drug problem smaller 2001-2008.* Executive Office of the President (Washington,

Fig. 109: Percent methamphetamine treatment in Canada, USA and Mexico (NGO): 1998 – 2007

Source: Substance Abuse and Mental Health Services Administration, Office of Applied Studies. Treatment Episode Data Set (TEDS) 2007; National Center of Epidemiology Surveillance and Disease Control, El Sistema de Vigilancia Epidemiológica de las Adicciones (SISVEA), report presented at NIDA's CEWG June 2008; Centre for Addiction and Mental Health (CAMH). Drug and Alcohol Treatment Information System (DATIS) Ontario, Canada (August 2008).

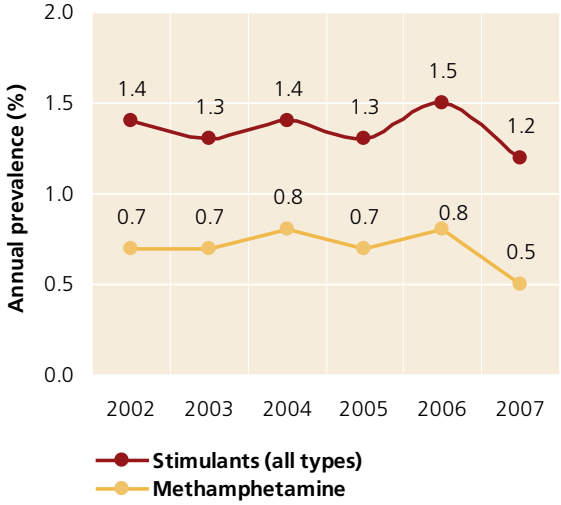


Treatment admissions data from Canada (Ontario)[37], the USA and Mexico suggest that there has been stabilization–at high levels–or perhaps varying degrees of decline in the proportions of patients with problematic methamphetamine use.[38]

Similar declines in methamphetamine use were reported in non-representative workplace drug testing, which recorded its lowest levels (0.1%) since 2002.[39] However, stimulant substitution may be occurring in the USA, as amphetamines-group stimulants overall continued to climb among the general workforce and are at significantly higher levels than a decade ago. This is consistent with increases in the use of psychostimulants such as methylphenidate[40] in the USA, which have increased dramatically since the 1990s.[41]

Fig. 110: USA: Annual prevalence of stimulants and methamphetamine use among the population (12 and older), 2002-2007

Source: Substance Abuse and Mental Health Services Administration. *Results from the 2007 National Survey on Drug Use and Health: National Findings*. Office of Applied Studies, NSDUH Series H-34, DHHS Publication No. SMA 08-4343 (Rockville, Maryland, 2008).



Risks are increasing in Latin America

Experts in Mexico and the countries on Mexico's southern border (for example, Guatemala and El Salvador) continue to indicate worsening ATS use problems, possibly related to shifts in manufacture.[42] Further south, experts from Argentina, Brazil, Ecuador and Paraguay

DC, 2009).

37 The data for Canada (Ontario) represent clients that may report up to five presenting problem substances at admission (of which methamphetamine may not necessarily be the *primary* problem drug of use). Data include clients presenting for both amphetamine or methamphetamine (the methamphetamine category was added in June 2006). Data are reported on a fiscal year, from April – March.

38 Caution should be exercised as these system are funded differently and data are captured differently. Additionally, while decreases were noted in methamphetamine as the primary drug for the USA and Mexico, methamphetamine is commonly associated with poly-drug users, thus secondary or tertiary methamphetamine use may br masked.

39 Quest Diagnostics, *Drug Testing Index* (May 2009); US Department of Justice. (2008) National Methamphetamine Threat Assessment 2009 (National Drug Intelligence Center, Product No. 2008-Q0317-006, December 2008); Office of National Drug Control Policy, *Making the drug problem smaller 2001-2008*. Executive Office of the President (Washington, DC, 2009).

40 Methylphenidate is an amphetamine-type stimulant typically prescribed for Attention Deficit Disorder (ADD) in youth. Substance Abuse and Mental Health Services Administration, Office of Applied Studies. *The DAWN Report–Emergency Department Visits Involving ADHD Stimulant Medications Issue 29, 2006* (Rockville, Maryland, 2006).

41 International Narcotics Control Board (2009). *2008 Psychotropic Substances: Statistics for 2007* (United Nations publication Sales No. E/F/S.09.XI.3)

42 Annual Reports Questionnaire.

also perceive increasing ATS use.[43] Historically, stimulants originated primarily from licit channels, often through over-prescription or unregulated parallel markets. In 2007, Argentina and Brazil had the second and third highest calculated rates of consumption of Schedule IV stimulants in the world.

Between 2001 and 2005, Brazil reported that lifetime use of amphetamines-group ssubstances in the general population in urban areas more than doubled from 1.5% to 3.2%, driven in part by comparatively high secondary student use (3.4%).[44] ATS consumption rates tend to be significantly higher for youth than for the general population. For example, the annual prevalence rates for the amphetamines-group substances for Colombian secondary school students was 3.5% in 2004/05, a rate seven times that of the estimate for the general population in 2005. (see special features section for further information)

Oceania: Use high, though reductions may be occurring; island nations under threat

Amphetamines-group use in Oceania may be declining overall. However, the trend reflects only the populations of Australia and New Zealand.[45] Australian household surveys (aged 14 and above) appear to show a steady decline of methamphetamine use from an annual prevalence rate of 3.7% in 1998 to 2.3% in 2007.[46] New Zealand household surveys (aged 15 to 45) showed a similar decrease since the peak of 2001.

Both countries also collect methamphetamine use data on recent detainees (arrestees) through various drug monitoring programs.[47] In Australia, there has been a decline of detainees testing positive for methamphetamine to 24% in 2007, with little change in New Zealand levels (which are half of those among Australian detainees).[48]

43 Only experts from the Dominican Republic noted a perceived decline in ATS use.

44 *II Levantamento Domiciliar Sobre o Uso de Drogas Psicotrópicas no Brasil: Estudo Envolvendo as 108 Maiores Cidades do País 2005*. CEBRID - Centro Brasileiro de Informação sobre Drogas Psicotrópicas: UNIFESP - Universidade Federal de São Paulo. (São Paulo, Brazil, 2006).

45 There have been only sporadic ARQ reports from a small number Pacific Island Member States over the last decade.

46 It must be noted that the underlying methodology for the surveys changed substantially between 1998 and the 2001, thus a direct comparison of the household survey data in Australia could be potentially misleading.

47 Drug Use Monitoring in Australia (DUMA) and the New Zealand Arrestee Drug Use Monitoring (NZ-ADAM) program assess drug use via urine analysis of recent arrestees in select sites.

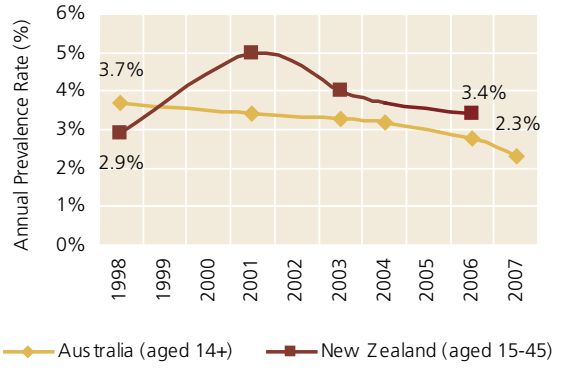
48 Includes the first two quarters of 2007 only. There were however, significant increases in positive tests for amphetamine reported (unweighted multi-site average, 2.7% in 2005 to 13.5% in 2007), possibly reflecting some shift in ATS use.

While the overall numbers suggest a possible decline over the last several years, use by problematic drug users and the associated impacts on public health may be increasing. For example, in Australia, data from detainees suggest increasing use of high potency crystalline methamphetamine and an increase in injecting methamphetamine.[49] New Zealand's frequent methamphetamine users were more likely to have used an ambulance and/or hospital emergency room services, or have contacted a drug counsellor or general practitioner in relation to their problematic methamphetamine use in 2007, over prior years.[50]

Although UNODC receives no systematic data from the other Oceania countries, there have been sporadic reports of amphetamines-group substances being used throughout the many island nations. For example, crystalline methamphetamine use has been reported in several cities of Papua New Guinea. Moreover, a large number of traffickers were recently sentenced for moving significant amounts of methamphetamine into French Polynesia.[51] Of the 12 countries worldwide which are not yet parties to the *1988 Convention Against Illicit Traffic in Narcotic Drugs and Psychotropic Substances*, seven are in the Oceania region, leaving the region vulnerable to manufacturing, trafficking, and use.

Fig. 111: Australia/New Zealand annual prevalence of amphetamines-group use, 1998-2007

Source: Australian Institute of Health and Welfare 2008. 2007 National Drug Strategy Household Survey: Drug statistics, 22. Canberra: AIHW. Wilkins C. & Sweetsur P. (2008) Trends in population drug use in New Zealand: Findings from national household surveying of drug use in 1998, 2001, 2003 and 2006. New Zealand Medical Journal, 121, 61-71.

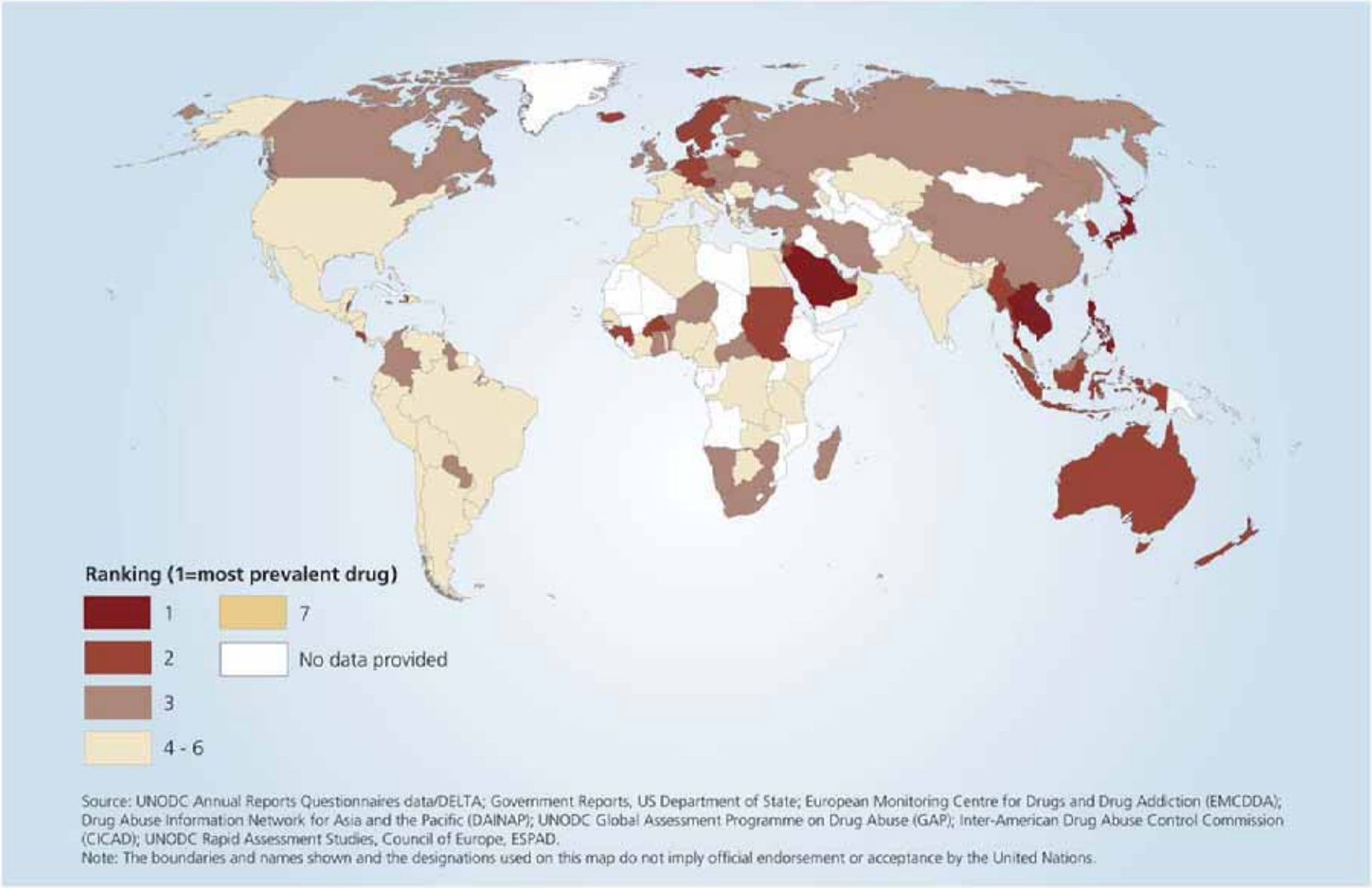


49 National Alcohol and Drugs Research Centre, University of New South Wales - presentation to UNODC, *'Australian Drug Monitoring Systems: Overview of IDRS and EDRS'* (Sydney, Australia, 2007).

50 Wilkins, C., Girling, M. & Sweetsur, P. *Recent Trends in Illegal Drug use in New Zealand, 2005-2007: Findings from the 2005, 2006 and 2007 Illicit Drug Monitoring System (IDMS).* Centre for Social and Health Outcomes Research and Evaluation, Massey University (Auckland, New Zealand, 2008).

51 UNODC *Global SMART Update 2009, Volume 1* (March).

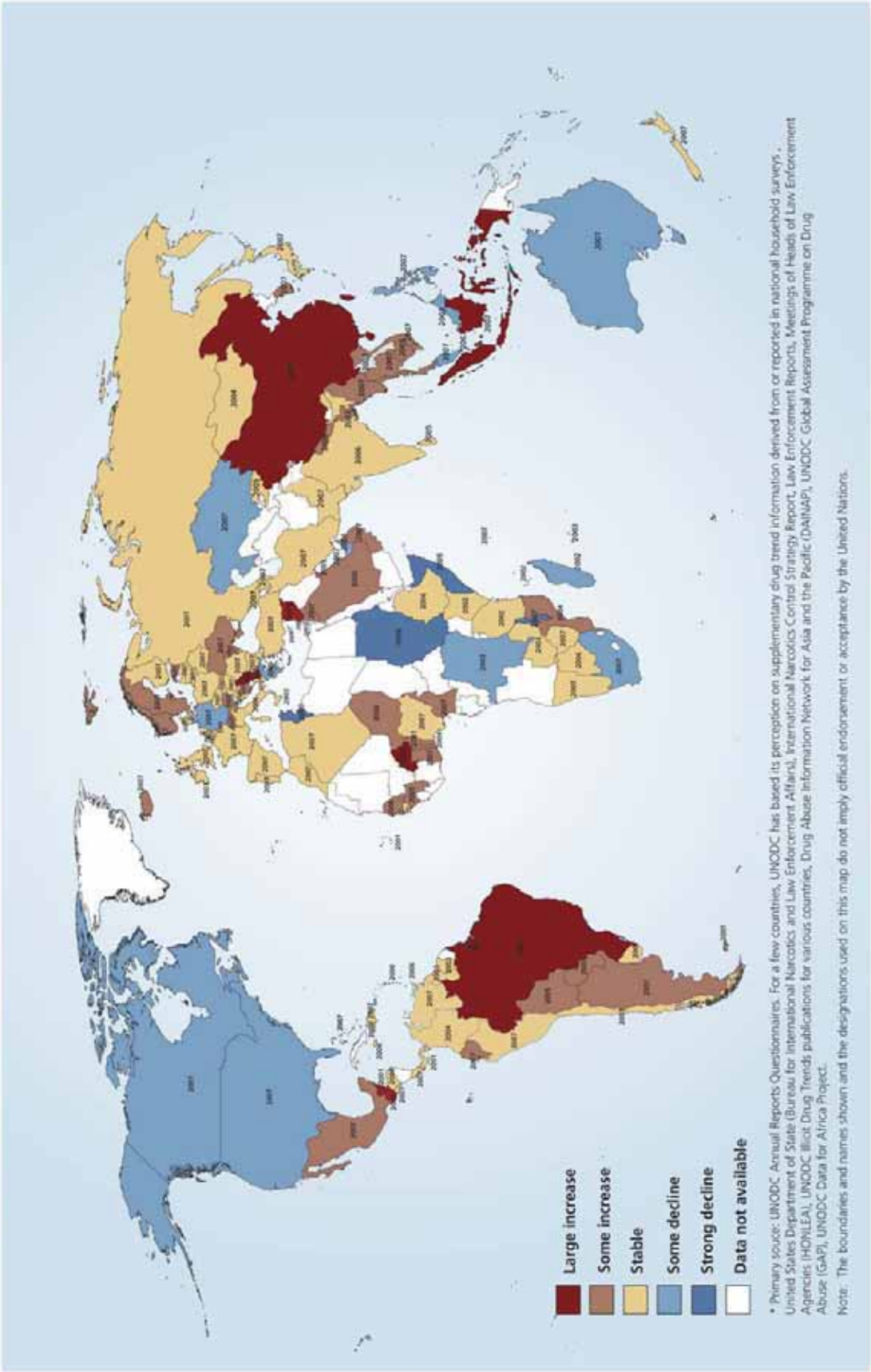
Map 23: Ranking of amphetamine-type stimulants in order of prevalence in 2007 (or latest year available)



Source: UNODC Annual Reports Questionnaires data/DELTA; Government Reports, US Department of State; European Monitoring Centre for Drugs and Drug Addiction (EMCDDA); Drug Abuse Information Network for Asia and the Pacific (DAINAP); UNODC Global Assessment Programme on Drug Abuse (GAP); Inter-American Drug Abuse Control Commission (CICAD); UNODC Rapid Assessment Studies, Council of Europe, ESPAD.

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

Map 24: Changes in the use of "amphetamines" (methamphetamines, amphetamines and related substances), 2008 (or latest year available)

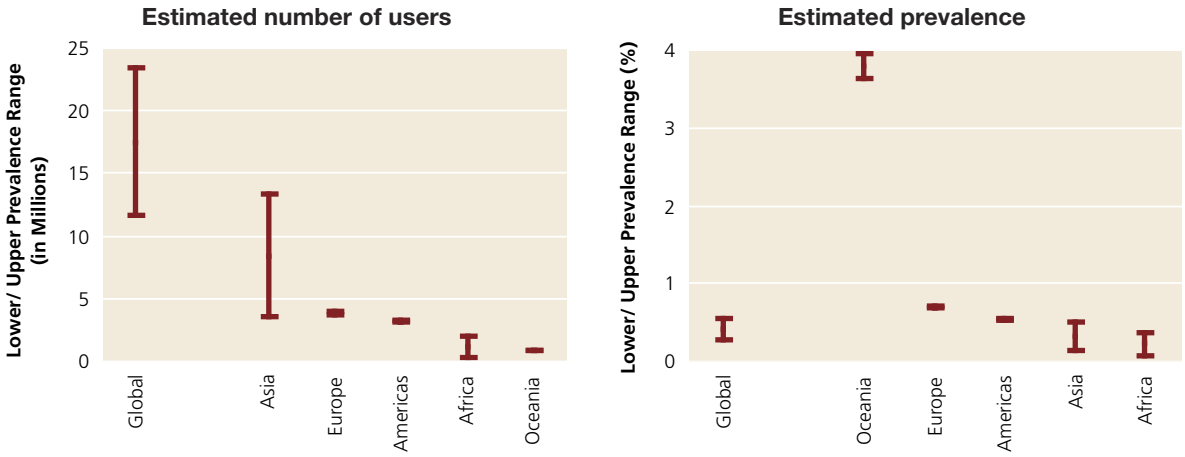


* Primary source: UNODC Annual Reports Questionnaires. For a few countries, UNODC has based its perception on supplementary drug trend information derived from or reported in national household surveys, United States Department of State (Bureau for International Narcotics and Law Enforcement Affairs), International Narcotics Control Strategy Report, Law Enforcement Reports, Meetings of Heads of Law Enforcement Agencies (HOPLEA), UNODC Illicit Drug Trends publications for various countries, Drug Abuse Information Network for Asia and the Pacific (DAINAP), UNODC Global Assessment Programme on Drug Abuse (GAP), UNODC Data for Africa Project.

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

Fig. 112: Estimated *ecstasy-group* users, by region (in numbers and annual prevalence)

Sources: UNODC, Annual Reports Questionnaire; Government reports; reports of regional bodies; and UNODC estimates.



Ecstasy-group drug consumption

Globally, ecstasy-group[52] substances (primarily MDMA) are consumed by between 11.6-23.5 million people aged 15-64, or 0.3-0.5% of the population. As a proportion of the population, Oceania accounts for the highest annual prevalence of any region (3.6-4.0% of the general population), but has the fewest users in absolute numbers. The region with the highest number of users is Asia, with an estimated range between 3.6-13.6 million annual users, aged 15-64. Most are living in the East and South-East Asia subregion. Due to a lack of country-level prevalence estimates, subregional estimates cannot be calculated for South Asia, Central Asia, or the Near and Middle East.

Ecstasy-group use concentrated in Western Europe and North America

UNODC estimates that there are about 2.6 million ecstasy-group users in North America, with the majority living in the USA. North America's annual prevalence for the general population is about 0.9%, similar to that of West and Central Europe. There are between 3.8 and 4.0 million ecstasy-group users in Europe. Drug use in West and Central Europe appears largely stable but continues to increase in several East and South-East European countries, particularly among young people.

Expert perceptions: Growth in ecstasy-group drug use in developing countries outpacing that of developed countries

The unweighted expert perception trends between 1998 and 2007 reflect continued increases in ecstasy-group use.[53] Country experts in developed countries have perceived a stable or slightly declining trend since 2004, about the time when developing countries (particularly in Eastern Europe and Latin America) perceived more frequent and more significant increases in their use.[54] In 2007, experts from 63 Member States responded, with 32 identifying a stable ecstasy-group trend over 2006, and 9 identifying a decrease.[55] Decreases in developed countries were driven in part by North America and West and Central Europe.

The most recent student surveys in the USA (2008) and Canada (Ontario, 2007) show that little change in annual prevalence of ecstasy-group use has occurred since 2003. However, in the USA and Canada 'ecstasy' is sourced primarily from Canadian-based operations, which increasingly cut it with other psychoactive ingredients. (see special features section for further information)

52 Reports show that unbeknown to many ecstasy users, what is sold to them as ecstasy (MDMA) is often a combination of many psychoactive substances, such as methamphetamine and ketamine. *Amphetamines and Ecstasy: 2008 Global ATS Assessment* (United Nations publication, Sales No. E.08.XI.12).

53 Expert perception data is derived from the ARQ, and is unweighted. The following points are allocated if experts perceive: 'strong increase' 2; 'some increase': 1; stable: 0; 'some decline' -1; 'strong decline' -2. If all countries had reported 'some increase', the global trend line would have increased by one point each year and would have reached 109 by 2007.

54 The criteria to calculate subregional estimates include recent representative prevalence estimates (since 1998) from at least two Member States that combined account for at least 20% of the subregion's population aged 15-64.

55 Increases and decreases were coded from strong increase/decrease or some increase/decrease, and represent the unweighted number of Member States responding.

Table 25: Estimated number of people who used ecstasy at least once in the past year and proporton of population aged 15-64, by region, 2007

Sources: Annual Reports Questionnaire data, various Government reports, reports of regional Bodies, UNODC estimates

Region/Subregion (Ecstasy-group)	Estimated number of users annually (lower)	Estimated number of users annually (upper)	Percent of population age 15-64 (lower)	Percent of population age 15-64 (upper)
Africa	340,000	1,870,000	0.1	0.4
North Africa		Subregional estimate cannot be calculated		
West and Central Africa		Subregional estimate cannot be calculated		
Eastern Africa		Subregional estimate cannot be calculated		
Southern Africa	210,000	400,000	0.2	0.4
Americas	3,130,000	3,220,000	0.5	0.5
North America	2,560,000	2,560,000	0.9	0.9
Central America	20,000	30,000	0.1	0.1
The Caribbean	30,000	130,000	0.1	0.5
South America	510,000	510,000	0.2	0.2
Asia	3,550,000	13,580,000	0.1	0.5
East/South East Asia	2,250,000	5,950,000	0.2	0.4
South Asia		Subregional estimate cannot be calculated		
Central Asia		Subregional estimate cannot be calculated		
Near and Middle East		Subregional estimate cannot be calculated		
Europe	3,750,000	3,960,000	0.7	0.7
Western/Central Europe	2,110,000	2,120,000	0.8	0.8
East/South East Europe	1,640,000	1,830,000	0.6	0.6
Oceania	810,000	880,000	3.6	4.0
Global	**11,580,000**	**23,510,000**	**0.3**	**0.5**

Fig. 113: Ecstasy-group use trends as perceived by experts, by OECD and non-OECD countries, 1998-2007 (baseline: 1998 = 100)[56]

Note: Ecstasy-group trends were systematically collected only as of 2000, and thus pre-2000 data represent ATS data used as a proxy. Sources: UNODC, Annual Reports Questionnaire Data, UNODC Field Offices, UNODC's Drug Use Information Network for Asia and the Pacific (DAINAP).

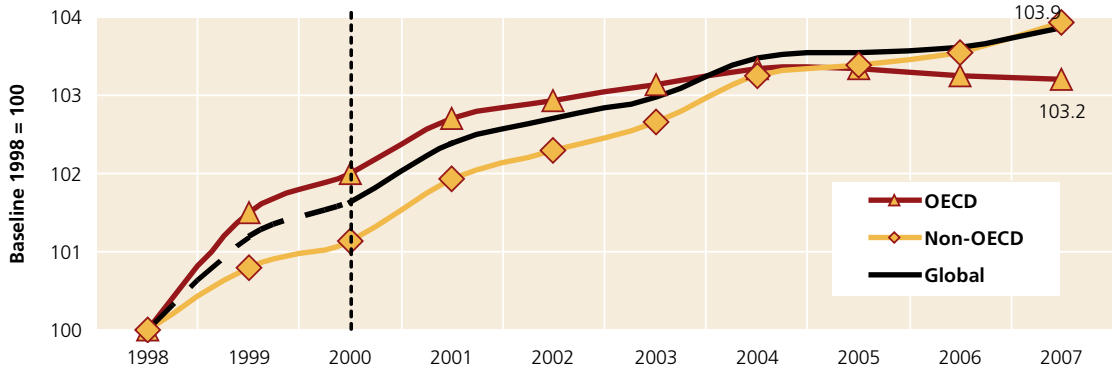


Table 26: Expert perception of changing ecstasy-group use, by region: 2007

Sources: UNODC, Annual Reports Questionnaire Data

Region	Member States responding	Use problem increased*	Percent use problem increased	Use problem stable	Percent use problem stable	Use problem decreased*	Percent use problem decreased
Europe	30	11	37%	15	50%	4	13%
Americas	13	3	23%	10	77%	0	0%
Asia	15	6	40%	5	33%	4	27%
Oceania	0	0		0		0	
Africa	5	2	40%	2	40%	1	20%
Global	**63**	**22**	**35%**	**32**	**51%**	**9**	**14%**

* Identifies increases/decreases ranging from either some to strong, unweighted by population.

Increases still reported in South American countries

In Latin America, only Colombia has annual prevalence rates of ecstasy-group use similar to North America. The rate among urban secondary students in Colombia was 3.0% in 2004/05.[57] This is nearly double the rate (1.6%) from surveys of secondary school students conducted just three years earlier.[58] Prior to 2001, there were no indications of measurable ecstasy-group drug use among students.

Stabilization in large parts of Europe, with possible shifts detected

Data continue to suggest stabilization in Europe, due in large part to stable use in West and Central Europe. Most notable are the trends from the UK, for many years Europe's largest ecstasy market, and Spain. Beginning around 2001, annual prevalence trends showed decreases in the general population in England and Wales (aged 16-59) and Spain (aged 15-64).

Between 1999 and 2007, European students (aged 15-16) reported increased lifetime use of ecstasy-group substances. However, there were diverging trends by subregion. Students in West and Central Europe[59] have reported relatively stable unweighted lifetime use since 2003. In contrast, students from Eastern Europe[60] reported nearly 1.5% higher lifetime prevalence rates than their West and Central European counterparts. (see Special Features section for further information)

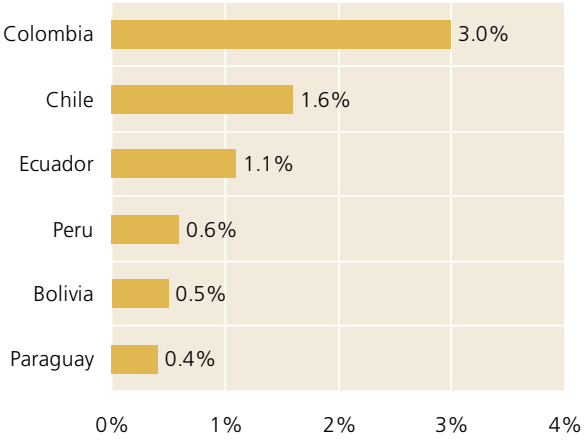
Consistent with these data, expert perception in 2007 showed 11 experts reporting increasing ecstasy-group use, of which nearly two thirds were from East and South-East European countries.

Worsening ecstasy situation in parts of Asia may reflect other drugs

For 2007, 40% of experts perceived a growing ecstasy-group use problem in Asia. Of these, most were situated in East and South-East Asia, including China, Indonesia, Thailand and Viet Nam. However, like other regions, a lack of forensic capacity means that it is not known whether ecstasy-group substances actually contain MDMA or other psychoactive ingredients. "Club drugs" are increasingly being replaced by other substances, such as ketamine.[61] For example, in Hong Kong, China, the market has changed rapidly and dramatically since 2000, as ketamine–nearly unheard of in 1998–has supplanted ecstasy use. The number of reported drug registry cases for ketamine doubled between 2005 and 2007, and now accounts for 29% of all newly reported cases in Hong Kong, China. Ketamine use has been noted in neighbouring areas and follows reports of significant illicit manufacturing operations and seizures throughout the subregion.

Fig. 114: Annual prevalence of ecstasy-group use among secondary students in select South American countries (rank ordered), 2004/05

Source: Oficina de las Naciones Unidas contra la Droga y el Delito (ONUDD) y la Comisión Interamericana para el Control del Abuso de Drogas (CICAD/OEA) (2006). *Jóvenes y drogas en países sudamericanos: Un desafío para las políticas públicas:* Primer estudio comparativo sobre uso de drogas en población escolar secundaria de Argentina, Bolivia, Brasil, Colombia, Chile, Ecuador, Paraguay, Perú y Uruguay. (Lima, 2006).



56 Ecstasy-group trends were systematically collected only as of 2000. There are indications from several countries that late 1990s ATS and ecstasy-group trends followed similar patterns, and thus pre-2000 data represent ATS data used as a proxy.

57 Oficina de las Naciones Unidas contra la Droga y el Delito (ONUDD) y la Comisión Interamericana para el Control del Abuso de Drogas (CICAD/OEA) (2006). *Jóvenes y drogas en países sudamericanos: Un desafío para las políticas públicas:* Primer estudio comparativo sobre uso de drogas en población escolar secundaria de Argentina, Bolivia, Brasil, Colombia, Chile, Ecuador, Paraguay, Perú y Uruguay (Lima, September 2006).

58 The Inter-American Drug Abuse Control Commission. *Multilateral Evaluation Mechanism (MEM): Colombia country report 2001-2002*. (Organization of American States (OAS), 2008).

59 Students of West and Central Europe include: Austria, Belgium (Flanders), Cyprus, Denmark, Faroe Islands, Finland, France, Germany (6 states), Greece, Greenland, Iceland, Ireland, Isle of Man, Italy, Malta, Netherlands, Norway, Portugal, Sweden, Switzerland and the United Kingdom.

60 Students of Eastern Europe include: Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Russian Federation, (Moscow), Slovakia, Slovenia, and the Ukraine.

61 Ketamine is a licit pharmaceutical illicitly used as a hallucinogen most often found in powder or liquid form that is increasingly encountered on ATS markets, either in connection with the "club-drug" scene, or found as an active ingredient in what is sold on illicit markets as 'ecstasy'. Ketamine is not currently under international control.

Fig. 115: England and Wales (UK) and Spain: Annual prevalence of ecstasy-group use among the general population, 1998-2007/08

Source: Kershaw, C., Nicholas, S., & Walker, A. (2008). *Crime in England and Wales 2007/08: Findings from the British Crime Survey and police recorded crime*. Home Office Statistical Bulletin (ISBN 978-1-84726-753-5) (London, 2008); Informe de la encuesta domiciliaria sobre alcohol y dogas en España (EDADES) 2007/08. Delegación del gobierno para el plan nacional sobre drogas. (Madrid, 2008).

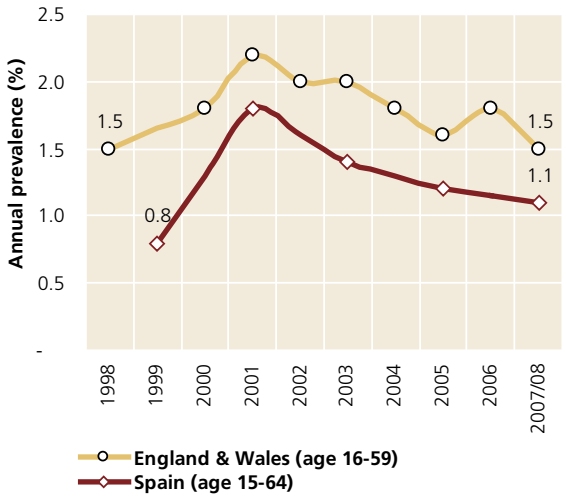
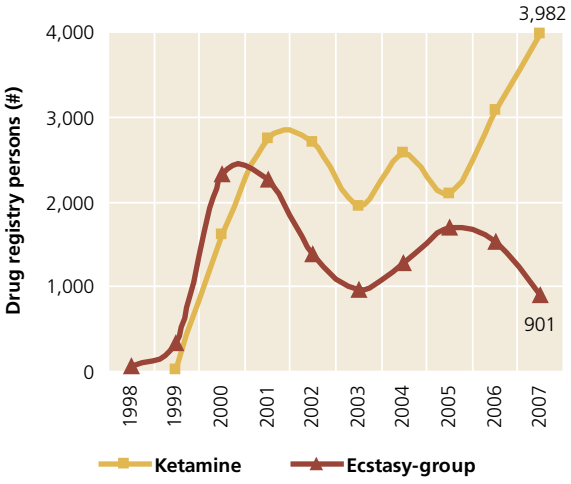


Fig. 116: Hong Kong, China ecstasy-group and ketamine drug registry cases, 1998-2007

Source: Central Registry of Drug Abuse. Narcotics Division (ND), Security Bureau, the Hong Kong Special Administrative Region, China.



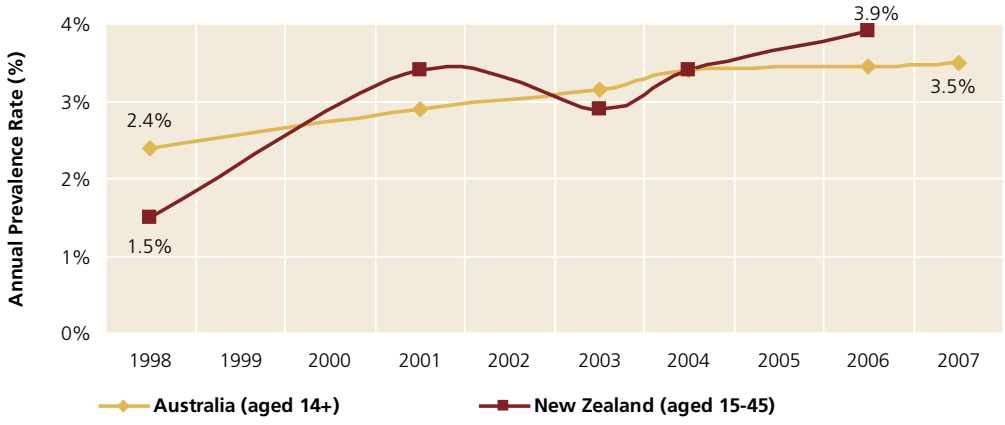
High use levels in Oceania, but the ecstasy used may vary

Given that the Australian population comprises the majority of population in Oceania, what occurs in Australia de facto "drives" trends in Oceania. Both Australia and New Zealand have reported increased annual prevalence of ecstasy-group among the general population since 1998, and the most recent studies find that their rates reflect some of the highest reported annual prevalence of use. Annual use in Australia remained stable since 2004, contrary to increases in New Zealand.

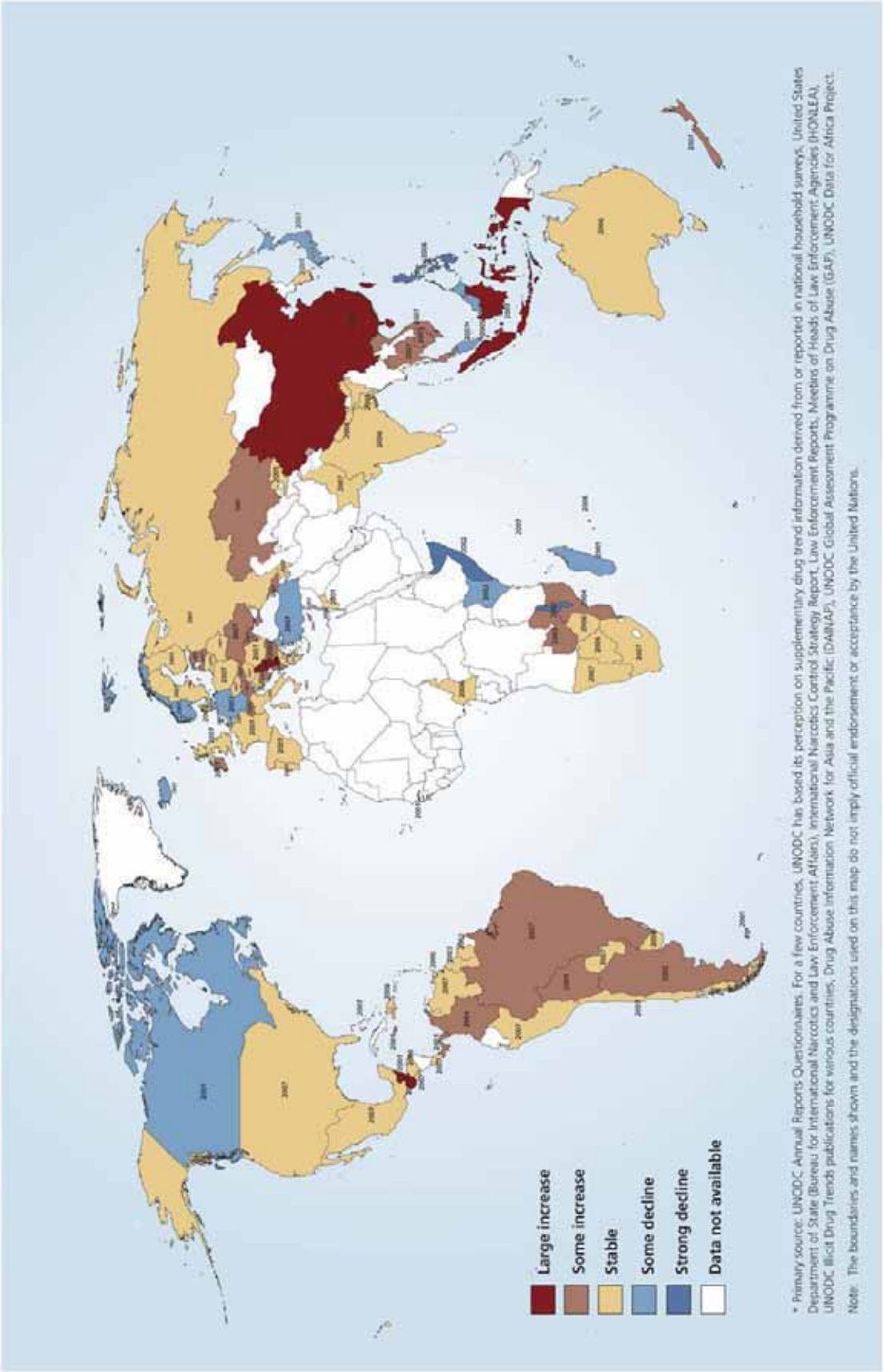
However, due to some of New Zealand's apparent increase may not be of MDMA-containing pills. Until 2008, New Zealand had a substantial legal "party-pills" market which sold, inter alia, benzylpiperazine (BZP), a drug with effects similar to MDMA (ecstasy). A 2006 household survey found that 15.3% of New Zealanders (aged 13-45) had used "party-pills" in the past year. In some cases these "party-pills" were sold as "ecstasy".

Fig. 117: Australia and New Zealand: Annual prevalence of ecstasy use, 1998-2007

Source: Australian Institute of Health and Welfare 2008. *2007 National Drug Strategy Household Survey: detailed findings*. Drug statistics series no. 22. Cat. no. PHE 107. Canberra: AIHW. Wilkins C. & Sweetsur P. (2008) *Trends in population drug use in New Zealand: Findings from national household surveying of drug use in 1998, 2001, 2003 and 2006*. New Zealand Medical Journal, 121, 61-71. A216



Map 25: Changes in the use of ecstasy (MDA, MDMA), 2007 (or latest year available)



* Primary source: UNODC Annual Reports Questionnaires. For a few countries, UNODC has based its perception on supplementary drug trend information derived from or reported in national household surveys, United States Department of State (Bureau for International Narcotics and Law Enforcement Affairs), International Narcotics Control Strategy Report, Law Enforcement Reports, Meetings of Heads of Law Enforcement Agencies (HONLEA), UNODC Illicit Drug Trends publications for various countries, Drug Abuse Information Network for Asia and the Pacific (DAINAP), UNODC Global Assessment Programme on Drug Abuse (GAP), UNODC Data for Africa Project.

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

2. Confronting unintended consequences: DRUG CONTROL AND THE CRIMINAL BLACK MARKET

2.0 Confronting unintended consequences: Drug control and the criminal black market

Last year's *World Drug Report* reviewed 100 years of drug control efforts, documenting the development of one of the first international cooperative ventures designed to deal with a global challenge. This pioneering work brought together nations with very different political and cultural perspectives to agree on a topic of considerable sensitivity: the issue of substance abuse and addiction. Despite wars, economic crises, and other cataclysmic events of state, the global drug control movement has chugged steadily forward, culminating in a framework of agreements and joint interventions with few precedents or peers in international law.

Today, a number of substances are prohibited in the domestic legislation of almost every country. As discussed below, this unanimity has created a bulwark shielding millions from the effects of drug abuse and addiction. In the past, many of these substances were legally produced and, in some cases, aggressively marketed, to devastating effect. The collective nations of the world have agreed that this state of affairs was unacceptable, and have created an international control system that allows crops such as opium poppy to be produced for medical use, with very little diversion to the illicit market.

Despite this achievement, drug control efforts have rarely proceeded according to plan. There have been reversals and set-backs, surprising developments and unintended consequences. Traffickers have proven to be resilient and innovative opponents and cultivators difficult to deter. The number, nature, and sources of controlled substances have changed dramatically over the years. None of this could have been predicted at the outset.

But then, very little has been simple or smooth about developments in international affairs over the last century. Other international problems – including poverty, war, weapons proliferation and infectious disease – have defied early projections of a swift resolution. Some efforts have been more successful than others, but, in all cases, the learning process could be described as "challenging". Today, the enterprise of global coordination and cooperation remains a work in progress. Tremendous gains have been made, however, and the need for collaborative solutions to the problems facing us all is greater than ever before.

2.1 Why illicit drugs must remain illicit

Oddly, of all areas of international cooperation, drug control is uniquely subject to calls that the struggle should be abandoned. Despite equally mixed results in international interventions,[1] no one advocates accepting poverty or war as inevitable. Not so with drugs, where a range of unintended consequences have led some to conclude that the only solution is to legalise and tax substances like cannabis, cocaine, ecstasy, methamphetamine, and heroin.

The strongest case against the current system of drug control is not the financial costs of the system, or even its effectiveness in reducing the availability of drugs.[2] The strongest case against drug control is the violence and corruption associated with the black market. The main problem is not that drug control efforts have failed to eliminate drug use, an aspirational goal akin to the elimination of war and poverty. It is that in attempting to do so, they have indirectly enriched dangerous criminals, who kill and bribe their way from the countries where drugs are produced to the countries where drugs are consumed.

Of course, the member states of the United Nations created the drug conventions, and they can modify or annul them at will. But the Conventions would have to be undone the way they were done: by global consensus. And to date, they are very few international issues on which there has been so much positive consensus as drug control. Drug control was the subject of broad-based international agreements in 1912, 1925, 1931, 1936, 1946, 1948, and 1953, before the creation of the standing United Nations Conventions in 1961, 1971, and 1988. Nearly every nation in the world has signed on to these Conventions.[3]

Nonetheless, there remains a serious and concerned group of academics and civil society organisations who feel the present system causes more harm than good. Plans for drug "legalisation" are diverse, and often fuzzy on the details, but one of the most popular alternative models involves taxation and control in a manner similar to tobacco and alcohol.[4] This approach has appeal of ideological consistency, since all these addictive substances are treated in the same way.

The practice of banning certain addictive substances

Fig. 1: Global deaths related to substance use in 2002

Source: World Health Organisation[7]

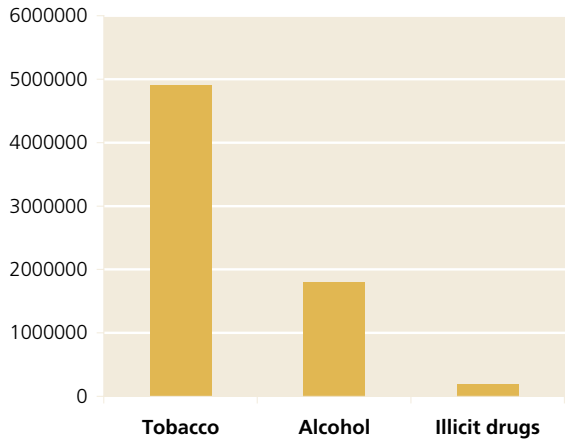
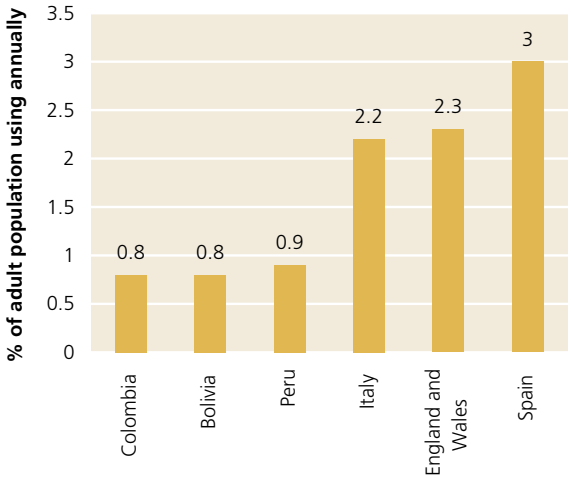


Fig. 2: Annual cocaine prevalence

Source: 2009 *World Drug Report*



while permitting and taxing others is indeed difficult to defend based on the relative harmfulness of the substances themselves. Legal addictive substances kill far more people every year than illegal ones – an estimated 500 million people alive today will die due to tobacco.[5] But this greater death toll is not a result of the licit substances being pharmacologically more hazardous than the illicit ones.[6] This greater death toll is a direct result of their being legal, and consequently more available. Use rates of illicit drugs are a fraction as high as for legal addictive drugs, including among those who access the legal drugs illegally (i.e. young people). If currently illegal substances were made legal, their popularity would surely increase, perhaps reaching the levels of licit addictive substances, increasing the related morbidity and mortality.

Is the choice simply one of drug-related deaths or drug-market-related deaths? Some palliative measures would be available under a system of legalisation that are not available today. If drugs were taxed, these revenues could be used to fund public health programmes aimed at reducing the impact of the increase in use. Addicts might also be more accessible if their behaviour were decriminalised. With bans on advertising and increasingly restrictive regulation, it is possible that drug use could be incrementally reduced, as tobacco use is currently declining in most of the developed world.

Unfortunately, most of this thinking has indeed been restricted to the developed world, where both treatment and capacity to collect taxes are relatively plentiful. It ignores the role that global drug control plays in protecting developing countries from addictive drugs. Without consistent global policy banning these substances, developing countries would likely be afflicted by street drugs the way they are currently afflicted by growing tobacco and alcohol problems.

In most developing countries, street drugs are too scarce and expensive for most consumers. They are scarce and expensive because they are illegal. Today, traffickers concentrate on getting almost all of the cocaine and heroin produced to high-value destinations, placing the burden of addiction on those well suited to shoulder it, at least financially. If these pressures were removed, lower value markets would also be cultivated with market-specific pricing, as they presently are for most consumer goods.

For example, cocaine use in the countries where cocaine is actually produced is less than half as high as in many European countries or the United States. This could easily change. Bolivia is a poor country where 42% of the population lives on less than US$2 per day[8] and which produces about 10% of the global cocaine supply. According to reported figures, cocaine in Bolivia was US$9 per gram in 2005, about 10% of the price in the United States. But GDP per capita was 42 times higher in the US than in Bolivia, so the price was effectively four times higher in Bolivia.[9]

In contrast, 27% of the adult population of Bolivia smokes cigarettes daily.[10] A pack of cigarettes was priced at just US$0.62 at official exchange rates in 2006, so even the poor find an imported addictive substance more affordable than the locally-produced one.[11] Bolivia is not unique in this respect: in many poor countries, more than 10% of household expenditure is for tobacco.[12]

Indeed, the spread of tobacco to the developing world gives a hint of what could happen if other addictive substances were made legal. Many transition countries have much higher tobacco use prevalence than the richer ones, and Africa's tobacco market is presently growing by 3.5% per year, the fastest rate in the world.[13] By 2030, more than 80% of the world's tobacco deaths will

Fig. 3: Price of a gram of cocaine as a share of daily GDP per capita in 2005

Source: 2008 *WDR, Human Development Report 2007/2008*

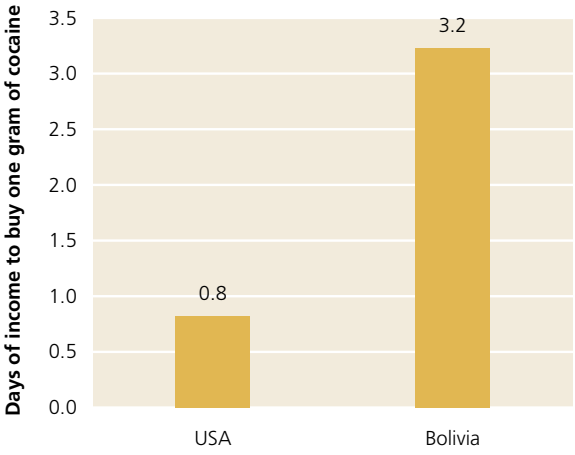
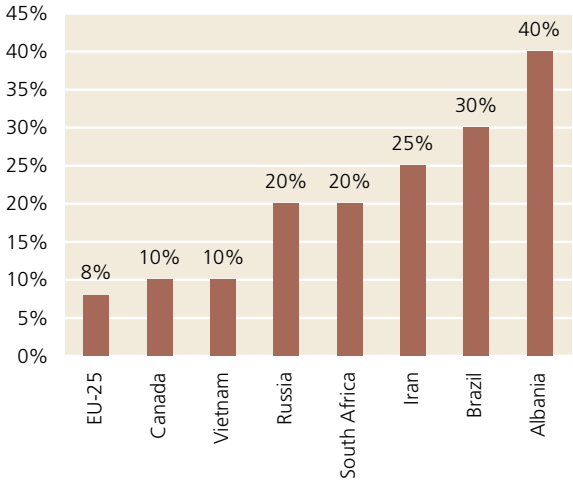


Fig. 5: Share of national tobacco markets that are illicit (recent low end estimates)

Source: Framework Convention Alliance, 2007[17]

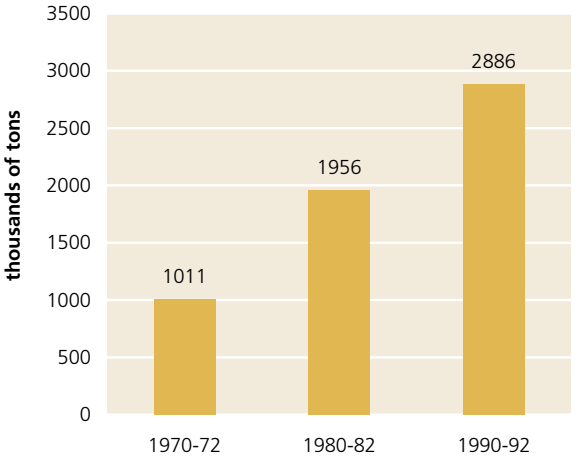


occur in developing countries.[14] These countries can ill-afford this burden of disease. They are even less capable of giving up a share of their productive work force to more immediately debilitating forms of addiction.

"Vice taxes" are also used to control the spread of legal addictive drugs, making them more expensive and thus reducing demand. But again, capacity to enforce these taxes is less in developing countries, and high taxes generate large shadow markets, as illustrated by tobacco markets today. Recent estimates suggest 10% or more of global tobacco consumption is untaxed, and that the illicit share of the market is particularly pronounced in Africa (15%) and Latin America (20%). An estimated 600 billion cigarettes are smuggled each year.[15] If these were priced at just a dollar a pack, this would represent a global market worth US$30 billion, comparable to the US$65 billion market for illicit opiates and US$71 billion market for cocaine.[18] As with illicit drugs, illicit tobacco has been used to fund violence in places as diverse as the Balkans[19] and West Africa.[20]

Fig. 4: Cigarette consumption in developing countries, 1970-1992

Source: UN FAO[16]



The universal ban on illicit drugs thus provides a great deal of protection to developing countries, and must be maintained. At the same time, the violence and corruption associated with drug markets is very real, and must be addressed. Fortunately, there is no reason why both drug control and crime prevention cannot be accomplished with existing resources, if the matter is approached in a strategic and coordinated manner.

Control drugs while preventing crime

Drug addiction represents a large social cost, a cost we seek to contain through the system of international drug control. But this system itself has its costs, and these are not limited to the expenditure of public funds. International drug control has produced several unintended consequences, the most formidable of which is the creation of a lucrative black market for controlled substances, and the violence and corruption it generates.

Drug control generates scarcity, boosting prices out of proportion to production costs. Combined with the barriers of illegality and prevention efforts, scarcity and high prices have helped contain the spread of illicit drugs. This has kept drugs out of the hands of an untold number of potential addicts. At the same time, however, high prices allow transnational traffickers to generate obscene profits, simply for being willing to shoulder the risk of defying the law.

Given the money involved, competition for the opportunity to sell is often fierce, resulting in small wars on the streets of marginalised areas in the developed and the

developing world alike. Profits are ploughed back into increasing the capacity for violence and into corrupting public officials. Together, violence and corruption can drive away investment and undermine governance to the point that the rule of law itself becomes questionable.

As a result, some have argued that the costs of controlling illicit drugs outweigh the benefits – in effect, that the side effects are so severe that the treatment is worse than the disease. But this is a false dilemma. It is incumbent on the international community to achieve both objectives: to control illicit drugs and to limit the costs associated with this control. More creative thinking is needed on ways of reducing the violence and corruption associated with containing the drug trade. Progress must be made toward simultaneously achieving the twin goals of drug control and crime prevention.

To do this, there are several ways present efforts could be improved and expanded. First, it is possible for law enforcement to do what it does much better:

- High volume arrests are the norm in many parts of the world, but their efficacy is questionable – to conserve resources, prison space should be reserved primarily for traffickers, particularly violent ones.
- Drug addicts provide the bulk of drug demand; treating this problem is one of the best ways of shrinking the market.
- The links between drug users and drug dealers also need to be severed, closing open drug markets and disrupting information networks using the techniques of problem-oriented policing and situational crime prevention.

Second, both local and international efforts need to be strategically coordinated to address the particularities of specific drug problems:

- The right "balance" between supply-side and demand-side interventions depends very much on the particularities of the situation, and may require resources and expertise beyond those found in agencies traditionally involved in prevention, treatment, and law enforcement.
- At all points in the market (production, trafficking, consumption), strategies should be based on the specific characteristics of the drug involved and the context in which it has become problematic.
- Focus should be placed on shrinking the markets, not just disabling specific individuals or groups.
- Where drug flows cannot be stopped, they should be guided by enforcement and other interventions so that they produce the least possible damage.

Finally, the international community must rally together to assist more vulnerable members in resisting the incursion of drugs:

- Post-conflict reconstruction and development aid should be integrated with crime prevention efforts.
- Better use should be made of the Conventions, particularly toward international action on precursor control, money laundering, asset forfeiture, organised crime, and corruption.
- Information systems need to be improved so that problems can be tracked and interventions evaluated.

2.2 Move beyond reactive law enforcement

Drug possession and sale are illegal in most countries of the world, and, as a result, the drug problem was long seen as primarily a criminal justice issue. Those who take the "drug war" metaphor literally may feel this effort is best advanced by people in uniform with guns. Law enforcement must continue to play a key role, of course, keeping drugs illegal and scarce, but much can be done to make the criminal justice response more effective and efficient.

In the end, the criminal justice system is a very blunt instrument for dealing with drug markets. As necessary as the deterrent threat remains, the arrest, prosecution, and incarceration of individuals is an extremely slow, expensive, and labour intensive process. The key to disrupting drug markets and the associated violence and corruption must lie in making the business of drug dealing more complicated, making it more difficult for buyers and sellers to connect. To do this, the techniques of situational crime prevention and problem-oriented policing should be employed.

Stop jailing petty offenders

Current street enforcement actions could be divided into two categories:

- Opportunistic enforcement, usually against those found in possession of drugs when stopped for an unrelated reason.
- Pro-active enforcement, including buy-and-bust actions against dealers at open markets; searches of suspect premises or persons; and more sophisticated long-term investigations.

All of these actions are justified under the law, but all absorb scarce criminal justice resources. The decision to perform any given form of enforcement has opportunity costs for other approaches. It is important, then, to weigh the impact of any given action both in terms of its efficacy in reducing the size of the black market and any potential side-effects it might have.

"Selective enforcement" evokes a whole range of justified concerns, but the fact remains that, in all areas of law enforcement, the application of the sanctions of arrest and prosecution is a matter of discretion. The number of cases that go to trial is everywhere a small fraction of those brought to the attention of the police. Cases unlikely to produce the desired outcome (generally, a conviction) are abandoned at various stages of the process in favour of those more likely to be successful. These cases should be weighed not just according to their viability, but also with regard to their strategic and social impact.

Unfortunately, the quantitative performance management systems used in civil service worldwide do not encourage this sort of thinking. If the primary performance indicator of the police is volumes of arrests and seizures, little thought will be given to the impact of these arrests and seizures. Not surprisingly, these arrests and seizures are unlikely to have much positive impact. Research indicates that more enforcement is not necessarily better.[21] Conservation of resources requires that police commanders carefully gauge the amount of enforcement required to produce the desired effect.

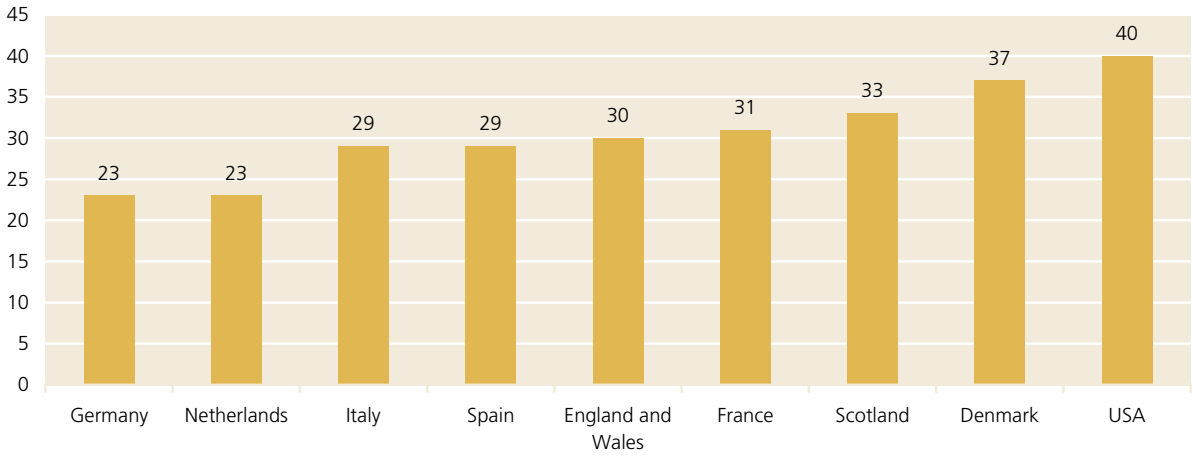
As is discussed further below, there is much to be gained by targeting high profile, high volume, and violent criminals, be they users or dealers. Resources that could have been focused on these individuals are often wasted on the opportunistic arrest and incarceration of large volumes of petty offenders. In the case of casual users, the sanction of imprisonment is excessive; since many are more mainstream than marginal, considerably less expensive options exist for deterring casual use behaviour, such as the measures currently taken when underage drinking and smoking are encountered. Evidence-based treatment is the appropriate response to addiction.

For low-level dealers and other drug market functionaries, these offenders often come from population groups that are too large to incapacitate and nearly impossible to intimidate. Incapacitation of individuals is fruitless when social conditions generate whole classes of people with strong incentives to offend. When these incentives are strong enough and alternatives scarce, all deterrence fails. Those willing to risk death by ingesting a kilogram of condom-wrapped cocaine bullets are unlikely to be put off by the possibility of a jail sentence. Drug addicts and sex workers are equally hard to scare into good behaviour. While the threat of arrest must remain in place to dissuade those who value their future, those who have given up hope are not so easily frightened. Arrest drives focusing on rounding up large numbers of these "undeterrables" result in a net loss in enforcement effectiveness.

To avoid these losses, police need alternative avenues of response, particularly when confronted with non-priority cases of drug possession. In the opinion of the International Narcotics Control Board, the 1988 Convention requires that illicit possession of controlled substances must be prohibited, but it does not require criminal prosecution for small quantities.[23] At times, drug possession can serve as a pretext to detain an otherwise dangerous or suspect individual, but otherwise, the law must allow for non-custodial alternatives when a police officer stumbles upon small amounts of drugs. It is important that the incident be documented and the opportunity availed to direct the user to treatment if required, but it is rarely beneficial to expend limited prison space on such offenders. According to surveys, between a quarter and a half of the population of many countries in Europe and North America has been in possession of illicit drugs at one time or another in their lives. Most remained productive citizens. In only a small share of these cases would arrest, and the lifelong stigma it brings, have been appropriate.

Fig. 6: Percentage of adult population reporting lifetime cannabis use, 2005 or 2006

Source: EMCDDA; NSDUH[22]



Portugal is an example of a country that recently decided not to put drug users in jail. According to the International Narcotics Control Board, Portugal's "decriminalisation" of drug usage in 2001 falls within the Convention parameters: drug possession is still prohibited, but the sanctions fall under the administrative law, not the criminal law.[24] Those in possession of a small amount of drugs for personal use are issued with a summons rather than arrested. The drugs are confiscated and the suspect must appear before a commission. The suspect's drug consumption patterns are reviewed, and users may be fined, diverted to treatment, or subjected to probation. Cases of drug trafficking continue to be prosecuted, and the number of drug trafficking offences detected in Portugal is close to the European average.

These conditions keep drugs out of the hands of those who would avoid them under a system of full prohibition, while encouraging treatment, rather than incarceration, for users. Among those who would not welcome a summons from a police officer are tourists, and, as a result, Portugal's policy has reportedly not led to an increase in drug tourism.[25] It also appears that a number of drug-related problems have decreased.[26]

The approach is not uncontroversial. Portugal did experience an increase in drug use after this policy was implemented, but so did many European countries during this period. Cannabis use increased only moderately, but cocaine and amphetamine use rates apparently doubled off a low base. More alarmingly, cocaine seizures increased seven-fold between 2001 and 2006. While cocaine seizures in a number of European countries increased sharply during that period, in 2006, Portugal suddenly had the sixth-highest cocaine seizure total in the world. The number of murders increased 40% during this same period of time,[27] a fact that might be related to the trafficking activity. Although the rate remains low and Lisbon is one of Europe's safest cities, Portugal was the only European country to show a significant increase in murder during this period.

This rapid increase in trafficking was probably related to the use of Guinea-Bissau and Cape Verde, former colonies, as transit countries. Most of the traffickers arrested in Portugal in 2007 were of West African origin. As international awareness of the problem increased, cocaine seizures fell in a number of European countries, but France and Portugal, two countries with former colonies in the region, showed the most pronounced decreases.

Creative approaches of this sort seem to have been reserved for the parties on the extreme ends of the trafficking chain: the farmers and the users. Because these two groups have been seen, in effect, as victims, a variety of social solutions have been explored as alternatives to harsh law enforcement, including alternative develop-

Fig. 7: Annual prevalence for adult (15-64) drug use in Portugal, 2001 and 2007

Source: EMCDDA[28]

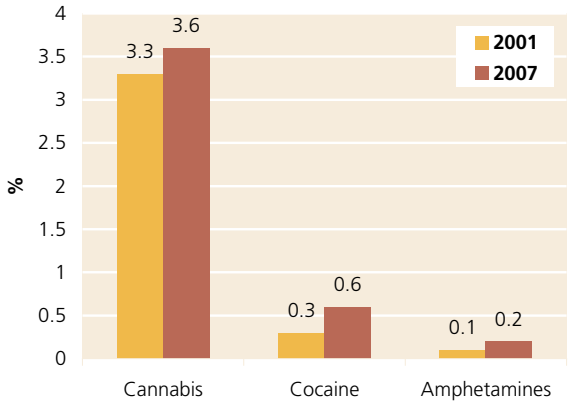


Fig. 8: Kilograms of cocaine seized in Portugal, 2001-2007

Source: UNODC ARQ

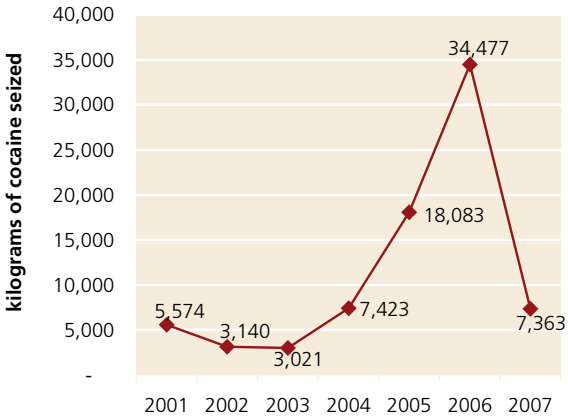


Fig. 9: Citizenship of those arrested in Portugal for cocaine trafficking in 2007 (top eight foreign drug trafficking national groups)

Source: UNODC, *Drug trafficking as a security threat in West Africa*[29]

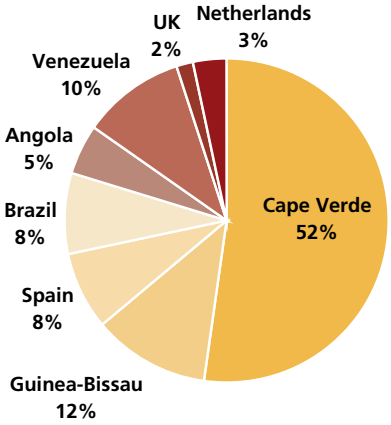
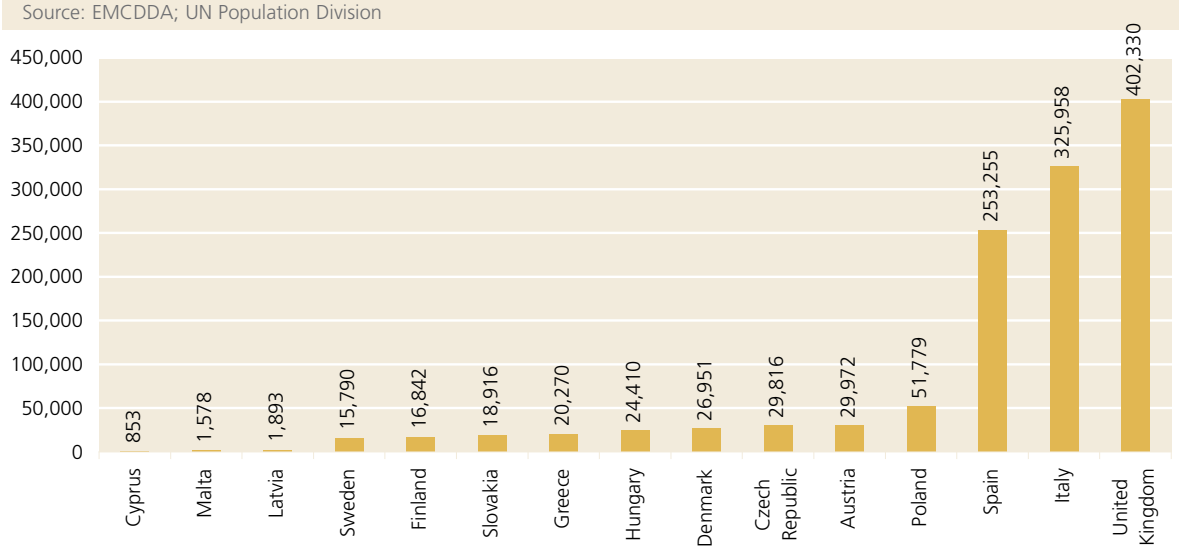


Fig. 10: Estimated number of "problem drug users" in some European countries various years 2002-2006

Source: EMCDDA; UN Population Division



ment and a range of prevention and rehabilitation schemes. Drug traffickers do not elicit similar amounts of sympathy. Seen as actors driven by raw profit, they are held responsible for most of the violence and corruption associated with the drug trade, and the response has been to hit them hard, arresting as many offenders and seizing as many drugs as possible. In some parts of the world, drug enforcement has been used as a pretext to wage war on marginalised communities, resulting in serious human rights violations.[30] Some countries even impose the death penalty for drug offences, contrary to Article 3 of the Universal Declaration of Human Rights.

But even when it comes to notorious and dangerous dealers, there may be alternatives to incarceration. One technique has been piloted in a number of locations in the United States. Investigators compiled detailed dossiers on all known dealers in their jurisdiction, with enough evidence to ensure a likely conviction. These dossiers were simultaneously presented to all the suspects with a warning: desist or face prosecution. Support services and networks were mobilised to make the option of desisting feasible. The idea is to get a large share of the participants to withdraw at the same time, causing the market to collapse. When confronted in this way, it appears that many opt out of drug markets.[31] The threat of drug arrest has also been used to deter violent offenders.[32] While these interventions are labour intensive, they are less costly than processing a similar number of offenders through the criminal justice system.

While incarceration will continue to be the main response to detected traffickers, it should only be applied in exceptional cases to users. All this is not to say that drug use should be ignored; it must be addressed. Drug flows, and their devastating consequences for producer and transit countries, would not exist if it were not for demand in the wealthier nations. While "demand reduction" is not generally associated with law enforcement, there are ways the criminal justice system can contribute. Demand-side interventions have the advantage of taking business away from traffickers without violent confrontation, unlike police operations aimed at taking the traffickers away from the business.

Mainstream the half-a-percent

One of the most efficient ways to deter traffickers would be to undermine their user base. Annual prevalence statistics make it sound like drug users comprise a significant share of the global adult population, but, in fact, a small part of this group consumes the vast bulk of the imported drugs: the addicts. While around 5% of the adult population used some illicit drug in the last year (140-250 million users), only about 18-38 million could be classified as "problem drug users".[33] While definitions of "problem drug use" vary, the European Monitoring Centre for Drugs and Drug Addiction provides estimates for the rates of problem drug use in the adult populations of a number of European countries. The size of these populations range from less than a thousand in Cyprus to some 400,000 in the United Kingdom. Taking the extreme example, it is estimated that about one quarter of the UK's problem drug users reside in London, about 74,000 users, just under 1% of the city's population.[34]

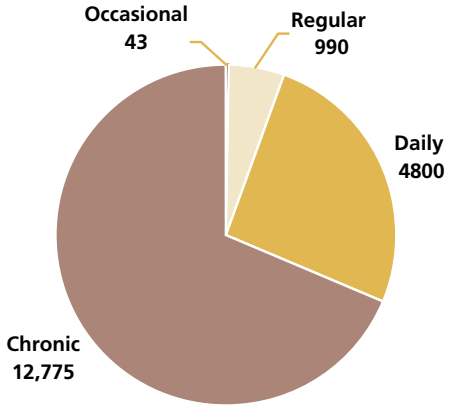
Those who are continuously intoxicated or regularly binge are the real source of demand on which traffickers rely. Removing a significant portion of this source of demand, even temporarily, would rip the heart out of

any drug market. Cannabis provides a good example of this phenomenon. Cannabis is generally consumed communally – surveys across countries show most users consume with other people most of the time. Often this involves passing around a common joint or pipe. With fairly good quality cannabis, only a few deep inhalations are needed to produce the desired effect among those who don't use frequently enough to have developed a tolerance. The volume of cannabis consumed by any given user in such a session is trivial, a fraction of a gram, and many casual users only experience one or a few such sessions each year.

In contrast, about 9% of those who consume cannabis will, at some point in their lives, go through a period of heavy daily use and develop a tolerance.[35] For those whose situations allow, they may be continuously intoxicated. Estimates of the amounts consumed by heavy users vary, but are on the order of several grams per day. In this way, daily or continuous users smoke the vast bulk of the cannabis consumed. The same is generally true in most other drug markets – a small share of the user population appears to consume the bulk of the drug supply.[36]

Fig. 11: Tons of cannabis consumed globally by frequency of use in 2006

Source: *2006 World Drug Report*



There are a number of ways this share could be removed from a drug market, but, due to the nature of addiction, they are unlikely to go willingly. Drug use arrestees should not be incarcerated, but rather diverted to evidence-based treatment or conditional release. Remaining drug-free as a condition for release has been found to be successful where random but regular drug testing results in quick (but not necessarily lengthy) jail time for those who fail to pass.[37] In a city like London, removing the addicts would be a mammoth task, but, as of 2005, Her Majesty's Prison Service already had some 12,000 drug offenders in custody in England and Wales alone.[38] In less problematic and less populated areas, a far smaller body of addicts would need be removed to substantially reduce the profitability of the market.

Unlike cannabis, those who are addicted to less ubiquitous drugs tend to congregate around open drug markets. This gives them continuous access, the company of those similarly situated, a competitive market for their business, and access to criminal employment activities. The ecology of an open drug market is premised on particular conditions, however, the most prominent of which is the neglect of the state. Disrupting this ecology is a matter of bringing some kind of order to these under-regulated zones.

Close open drug markets

Arresting individuals and seizing their drugs is a technique akin to manually pulling weeds. But there are ways of making the environment less receptive to drug markets, effectively making the ground less fertile. These interventions are rooted in the thinking of situational crime prevention, going beyond arrests and seizures to address the social conditions on which drug markets are reliant.

In crime prevention theory, a false dichotomy is often presented between solutions involving law enforcement, which are viewed as short-term correctives, and so-called "social crime prevention", which is usually portrayed as a long term project. In the world of short political time horizons, the latter often gets neglected in favour of the former. But there is a third way: interventions aimed at changing social conditions quickly, to impact the conditions under which drug markets thrive.[39] This sort of thinking is found in the practices of situational crime prevention.

While law enforcement personnel are not typically adept at manipulating social circumstances, they can also play a key role. With training, they can work with addicts in a way that helps them move beyond their destructive behaviour without necessarily using the sanction of arrest. The techniques of problem oriented policing can also help them to recognise and disable the mechanics of drug markets.

For example, drug dealers pay a price for remaining underground. They cannot advertise without exposing themselves to law enforcement. Users generally find vendors in one of two ways. One is an open drug market, a specific geographic area or location where anyone can show up and buy drugs. The second is through a network of social or information connections. Both are vulnerable to disruption.

Many open drug retail markets are found in neglected urban spaces, which also harbour fugitives, sex workers, runaways, and illegal immigrants, and anyone else who wants to avoid the law. These areas are growing in a rapidly urbanising world, especially in developing countries.

Unable to accommodate the rapid inflow of people, these cities are at risk of acquiring slums and informal settlements beyond the capacity of the state to control, where the norms and informal social controls of the countryside are lost, where anonymity and transience allow drug markets to germinate. In some parts of the world, there are whole regions where drugs and other contraband are available for those in the know, including some free-trade areas, breakaway states, and conflict zones.

What these areas have in common is the absence of the rule of law. This does not mean these areas are completely unregulated; a closer look generally reveals the presence of a different kind of authority, an authority with an interest in the appearance of chaos. If these authorities could be called to account, these areas could be reclaimed, with serious consequences for the drug markets.

For example, traditional law enforcement has a hard time operating in slum areas. Drug addicts, like the poor farmers on the other end of the market chain, can be extremely difficult to deter. Street dealers also represent a formidably hard target. Often they are gang members, whose whole ethos revolves around conflict with the police. Prison is an expected part of their life cycle, and death a price they are willing to pay for posthumous respect. Many deal drugs for very low wages, so non-financial motives are foremost among the reasons for their continued participation in the market. In this world, arrests and seizures don't seem to have lasting impact.

But street drug markets do not exist in a vacuum. The drama is played out on a very particular kind of a stage, and it is the stage manager, not the actors, that must be addressed. The property in these areas is owned by someone, someone whose neglect of their property allows illicit activity to continue. Unlike the street addicts and gang members, this someone has something of value to lose – their property. Surprisingly, run-down urban properties are often highly prized among slum lords for the incomes they generate, since marginal people will pay a premium to avoid excessive attention, or because they simply have no choice.[40]

Legislation that requires that owners take responsibility for what goes on in their establishments could go a long way toward restoring order. Those who fail to comply would face an escalating series of fines, ultimately resulting in forfeiture of the property. As actions under the civil law, a lower standard of proof would be required than under the criminal law, and procedures could be streamlined to reduce delays due to litigation. Either through voluntary compliance or by literally taking ownership of the situation, the state could once again reassert control over these neglected areas. Ownership could be transferred to law-abiding citizens within and from outside the marginal area, and these residents would have a personal stake in assuring their property remains crime-free.[41]

Not every drug market is so tightly associated with a particular piece of property, of course, but the general principle behind this sort of intervention still applies: it makes little sense to try to deter those with nothing to lose. Many are drug users themselves, and may not be rationally planning their actions in accordance with their own best interests. They are generally not the ones making the important market decisions in any case. If these people are moved toward the mainstream, drawn in instead of pushed down, the market loses its most important foot soldiers.

Instead, punitive measure should be taken against those who are making real profit from the state of affairs. Some of these players are simply negligent, others are complicit. In either case, they are participating in drug markets because they make money doing so. Threats to that money can be expected to produce results.

These types of interventions need not have great resource implications. Some forms of regulation are essentially self-enforcing. For example, laws limiting tobacco smoking in public places would be a failure if they relied on the state for enforcement – there are simply too many smokers to control. Instead, anti-smoking laws rely on two non-state sources for compliance. One is the owners of the public establishments themselves, who comply because, as property owners, they are motivated to remain in compliance with the law.

The second is non-smokers, who, by virtue of the law, are given a chop moral basis to object to public smoking. The paradigm shift in the anti-tobacco campaign came when the issue ceased to be framed as a matter of personal choice and began to be seen as an issue of public health. Drug markets are no less hazardous for those involuntarily exposed to their "second hand smoke". Similar vehicles must be designed to empower the majority of people who want no part of drug markets in their communities. Partnerships between local community-based or faith-based organisations and state agencies charged with addressing the drug issue could provide both information and networks for uprooting open drug markets.

Of course, closing an open retail drug market does not mean the problem has been solved. Addicts need their drugs, and will continue to source them through information networks. But closing open drug markets can have several benefits:

- Open drug markets have a devastating effect on the marginal neighbourhoods that host them; removing them can allow these communities to heal and become reintegrated.

- The under-regulated zones that host many open markets also host marginalised populations prone to substance abuse, including runaways, people with mental health problems, and sex workers; closing the market would break this important spatial connection.
- Open drug markets allow virtually anyone to show up and buy; closing them should slow the expansion of the user base beyond the affected area.
- Closing open markets removes the territorial element on which so much drug related violence is based.
- Removal of the territorial element may take drug markets out of the hands of street gangs.

In terms of violence, one of the worst things that can happen in a drug market is for it to fall into the hands of street gangs. Street gangs appear to have evolved independently in many parts of the world, while missing in other areas entirely. They hold in common an ethos of opposition to the law, however, so interventions designed to deter most people may, perversely, encourage illegal activity in gang members. While there is considerable heterogeneity, most gangs are defined by their association with a particular territory ("turf") and their capacity for violence, whether or not they deal drugs.

Drugs may increase the incentives and occasions for violence, but much of the violence of drug-dealing gangs is related to issues of "respect", and is often committed contrary to their market interests.[42] There is evidence that street gang members are among the lowest-paid actors in the entire distribution chain.[43] They sell drugs because that is what street gang members do, because it is a job that can be done while standing on a street corner, and because it is perceived as affording greater dignity that fast-food work, not because it pays well. But given limited alternative forms of employment for uneducated young men with criminal records, it may be the only job on offer. And the prospect of possible future riches may be enough to justify continued participation despite relentless evidence that their efforts are fruitless.

Removing drugs as an income stream may decrease the attractions of gang membership and result in long-term violence reduction. And the surest way of taking drugs out of the hands of gangs is to close spatially-linked drug markets.

Disrupt information networks

In addition to open markets, drugs are dealt through personal networks. These markets rely on trust – new participants are only introduced through the endorsement of existing members. This slows their growth and leaves them fragile. An inherent weakness of black markets is that most of the participants are untrustworthy. Removal of key links, the use of informants, and sting operations (or the rumour of sting operations) can cause extended networks to collapse, and reconstitution may be difficult.[44]

Similar principles apply further up the trafficking chain, at the wholesale level. People who broker drug deals have only their connections to sell, and therefore take great pains to ensure their suppliers never meet their customers.[45] If the brokers are removed, they are not always easily replaced. This weakness was recently exploited to disrupt the heroin markets in Australia, with very positive consequences.

The causes of the "heroin drought" have been debated,[46] and it is highly likely that a number of factors played a role, but the balance of the evidence suggests that law enforcement action was important. Australian authorities had determined that heroin trafficking was proceeding in very large shipment through a limited number of nodal points ("brokers") who had connections to both Southeast Asian suppliers and a vast network of street retailers. Evidence suggests that coordinated, international-level law enforcement operations over a number of years may have progressively removed some of these key brokers, disrupting large-scale shipment to the country, reducing the quantity and quality of heroin available to street-level dealers. In the interim, many addicts went into withdrawal, and some appear not to have resumed heroin use; the market remains smaller to this day. By the time connections were resurrected, the market was not nearly as large. The smaller market attracted fewer new users. Violence, drug-related crime, overdoses, and overall use declined dramatically.[47]

2.3 Create flow-specific drug strategies

In addition to refining local enforcement techniques, there is a broader need to approach the drug problem strategically. Drug strategies are usually devised at a national level, but this is not always the most useful frame of analysis. The most important manifestations of the problem are highly local, and not every area is equally affected. Coming to terms with "the world drug problem" can be overwhelming when the issues are not described with sufficient specificity. When broken down into specific flows affecting specific areas in different ways, the problem becomes more manageable.

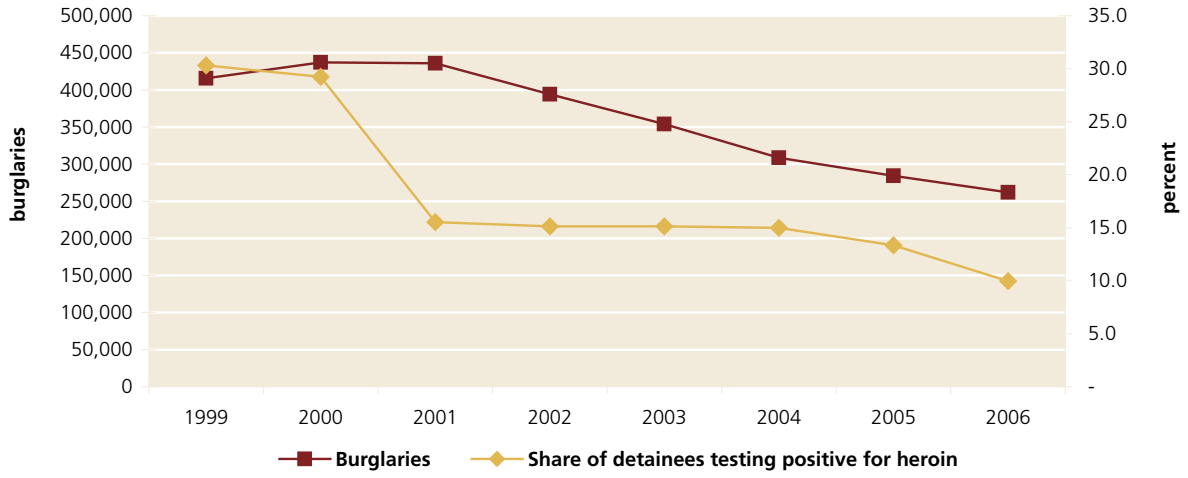
At the same time, local issues are deeply connected to what is going on internationally. As is discussed below, the particularities of each situation are tremendously important in designing interventions, but these interventions can only be effective if they are coordinated across borders. Failure to coordinate local initiatives reduces the impact and results in displacement, an effect that has become a recurrent theme in global drug control.

Develop a truly "balanced approach"

The incompatibility of the problem and the primary tools used to engage it has long been recognised, and a "balanced approach" between supply-side (enforcement)

Fig. 12: Number of burglaries and the share of inmates testing positive to heroin in Australia

Source: Australian Institute of Criminology, *Drug Use Monitoring in Australia* and *Australian Crime Facts & Figures*.



and demand-side (prevention and treatment) interventions has become a commonplace of best international practice. The Conventions, however, are rooted in supply reduction: transnational trafficking is an international issue, whereas efforts to address demand are largely domestic. Coordinated action on supply has a 70 or 80-year head start on demand-side work. As was observed in this Report some 12 years ago, countries are frequently criticised for failing to hold up their end in cooperative supply control efforts, but rarely is a nation taken to task for doing too little in prevention and treatment. Partly as a result, in most countries, far more resources have been assigned to supply reduction than to demand reduction.

The situation is even more pronounced in developing countries. International assistance in fighting drug supply has been eagerly accepted, since it often takes the form of military hardware, technology, and training. These tools can be used to shore up shaky administrations and combat political opponents. Law enforcement assistance can also further the foreign policy interests of the donor. In comparison, the promotion of treatment centres or prevention campaigns is relatively unattractive.

Aside from resource distribution, the concept of a "balanced approach" suggests that someone is weighing the alternatives, assessing drug problems and designing coordinated interventions as part of an integrated strategy. It suggests that actors working on both sides of the drug problem are in communication with one another about current developments.

Unfortunately, in these respects, a truly balanced approach is rarely realised. Institutional barriers discourage cooperation between government sectors. More often, departments of law enforcement, education, and public health fight each other for resources in what is seen as a zero-sum game. Even when oversight or strategic offices are established, they seldom have the authority to overcome this insular bureaucratic tendency.

Different markets call for different interventions at different times. Resource allocations need to be similarly dynamic and problem-specific. Further, these resources and the programmes they fund should not be limited to those departments who have traditionally dominated anti-drug efforts. Criminal justice agencies lack the tools to take on all aspects of the drug trade, and many do not make full use of the tools they have. Police and prosecutors must continue their work, keeping drugs illegal, but more dramatic change requires a mandate and a skills set not generally found among criminal justice actors. It may be that drug markets are deeply tied to issues in housing, or foreign affairs, or land use, or transportation, or immigration, or urban development. Until the full range of governmental powers is available to the drug control effort, it is likely that the same agencies will continue to do the same work in very much the same way.

Moving beyond the capacities of any particular government, international action should also include those involved in development work and peace building. This point is discussed further below.

Target specific drug problems

There is also a common tendency to treat the galaxy of illicit substances as an undifferentiated mass. Different drugs come from different places, attract different consumers, and are associated with different problems, but they are rarely the subject of distinct strategies. Drug policy is too often "one size fits all", when what is needed are interventions tailored to deal with each substance and the unique issues it raises in each location it touches.

Fig. 13: Drug yield in dose units per square meter of illicit crops

Source: UNODC yield studies

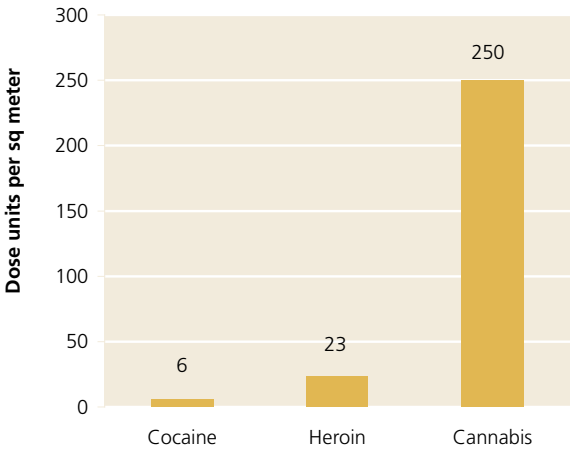
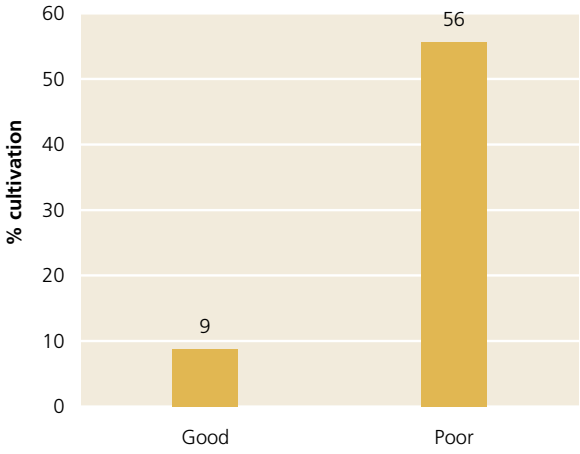


Fig. 14: Share of villages cultivating poppy with good and poor security

Source: *Opium Winter Rapid Assessment 2009*[51]



Cultivation

Different drugs pose different issues from the point of cultivation onward. For example, cannabis is grown in at least 176 countries around the world. It can be grown indoors or outdoors, and is often cultivated in small plots by the users themselves. Because cannabis produces high yields and requires no chemical processing before use, it is the only common illicit drug (except maybe opium) where users can comfortably generate their own supply.[48] Since it requires relatively little maintenance, it is often grown on vacant land in developing countries, by small scale farmers also cultivating other crops. As little is invested, eradication does not provide much disincentive to trying again. Law enforcement can discourage large-scale plantations, which are clearly maintained by well-resourced farmers with a great deal to lose, but the point of diminishing returns is quickly reached in ferreting out smaller grows. The eradication of feral cannabis ("ditchweed") can actually aid illicit cultivators, as it reduces pollination by lower potency strains and, if carried out vigorously enough, allows outdoor cultivation of sinsemilla.[49]

Synthetic drugs pose similar challenges as cannabis, in that they can be manufactured anywhere the necessary chemicals are available. Unlike cannabis, however, for most synthetic drugs the skills needed to access and process the needed chemicals are not widely spread,[50] and, consequently, the market tends to favour more organised groups. Global precursors control is clearly key in disabling this market.

In contrast, most of the cultivation of drug crops like coca and opium poppy is confined to small areas within two or three countries. Most of the world's heroin supply is produced on a land area about the size of Greater London (170,000 ha). This area is by no means the only part of the world where opium poppy could grow; its range is actually quite wide. The world's heroin supply comes from this region because it is controlled by insurgents. Most of the world's most dangerous substances come from areas with serious governance problems, because large-scale cultivation requires swathes of territory which are effectively outside the control of the national government. Since insurgent groups typically tax cultivation in the areas under their control, the two issues become inextricably intertwined. Reducing cultivation in these areas is contingent upon establishing political stability and the rule of law. This can be seen in Afghanistan, one of the areas where insurgency and drug production are most clearly symbiotic. The 2009 Winter Opium Poppy Assessment found a strong relationship between poppy cultivation villages and poor security.

Trafficking

Differences on the production end also affect the way the different drugs are trafficked. Since cannabis can be produced virtually anywhere by anyone, it need not be trafficked internationally. Surveys in a number of countries indicate that most users get their cannabis for free at least part of the time, and low-end cannabis is relatively cheap in most markets. This reduces the attraction of the drug for organised crime groups in many parts of the world, particularly where drug law enforcement is low, including much of the developing world. There are obvious exceptions (over 1000 tons of low-grade herbal cannabis is confiscated annually on the southwest border of the United States), and transnational organised crime is most prevalent today in two markets: hashish and the "new" cannabis (buds of sinsemilla, bred for high potency, usually produced indoors, often hydroponically).

In contrast, ecstasy production is a more complicated matter than growing cannabis, so transnational traffick-

ing is more commonly involved. Ecstasy distribution is also generally more structured and hierarchical. Although social network distribution is common, consumption of ecstasy is often tied to particular events or dance clubs, and control of these venues means control of the drug market. This control is exercised by club or event security, who have the power to authorise particular dealers or products, often in complicity with the club owners or event organisers.

Consumption

Cocaine is often consumed in "binges", whereas heroin addicts need a predictable supply to avoid withdrawal. These differences shape the market and its consequences. Heroin addicts have the time and disposition to plan and execute property crime, such as burglaries. Users in the midst of a crack binge operate on a much shorter time schedule, and are more likely to take property by force in a robbery.[52] Heroin addicts do trade sex for drugs but crack is much better suited for sex work, since it boosts energy, alertness, and confidence – all assets when negotiating delicate transactions on the streets.

These differences are real and have implications for control strategies, but they should not be mistaken for inherent properties of the drug. The same drug can have very different sorts of impacts in different social contexts.[53] The classic example is alcohol, which is associated with violence and sexual aggression in some societies, but not in others. Cannabis is also associated with violence in some societies, a fact that Western consumers may find difficult to believe.[54] Cocaine use among the affluent has very different implications than cocaine use among the dispossessed. Any drug-specific strategy should take local context into account.

Drug problems, and the appropriate response to them, also vary over time. The ratio between all drug users and the number of addicts depends on where the given market is in the epidemiological cycle of the drug. In the early days of an epidemic, strong law enforcement is often successful; later, when a large body of addicts have become entrenched, treatment tends to provide the best return on investment.[55]

Focus on markets, not individuals

It is often difficult for law enforcement agencies to participate in strategic approaches to crime problems because the case-specific nature of their work. In the past several decades, international law enforcement has struggled to come to grips with the phenomenon of transnational criminality generally. Penal law is matter of national legislation and custom, and, historically, has dealt with matters of primarily local interest. The global rise in prominence of "organised crime" prompted the creation of a United Nations convention: the 2000 *United Nations Convention against Transnational Organized Crime*.

But this agreement itself highlights the difficulties of coming to consensus on the nature of the problem. Remarkably, the convention nowhere defines "organised crime".[56] Instead, the Convention settles for a rather broad description of "organized criminal group", comprising the following elements:

- a group of three or more persons that was not randomly formed;
- existing for a period of time;
- acting in concert with the aim of committing at least one crime punishable by at least four years incarceration;
- in order to obtain, directly or indirectly, a financial or other material benefit.

Since most "groups" of any sort usually involve three or more people working in concert for a period of time, the defining characteristic of organised crime under the Convention is its seriousness and profit-driven nature. The Convention does not require that the groups operate transnationally, and so the definition encompasses strictly local forms of crime-for-profit.[57] Beyond the fact that money must be made, the range of relevant criminal activities is theoretically unbounded. In practice, however, the backbone of global organised crime has long been transnational trafficking, in particular the illicit trade in drugs.

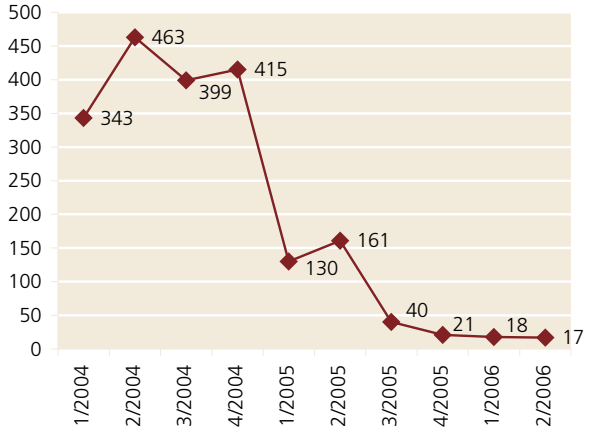
The focus in the Convention on the group, rather than the activities of that group, is not unique to the Convention. It is a manifestation of a recurring perceptual problem in law enforcement. Police officers, investigators, and prosecutors are employed to make cases against individuals and groups of individuals. They lack the authority and the tools to take on an entire trafficking flow. As a result, they tend to conceptualise organised crime as the activities of a collection of particular people, rather than a market with a dynamism of its own.

Today, organised crime is less a matter of a group of individuals who are involved in a range of illicit activities, and more a matter of a group of illicit activities in which some individuals are presently involved. If these individuals are arrested and incarcerated, the activities continue, because the market, and the incentives it generates, remain.

Sometimes, taking action against the market may mean forgoing action against individuals. It is important that the deterrent message reaches those who actually making the key decisions, rather than the undeterrable masses who often make up the face of drug trafficking. The decision makers are generally rational and profit-oriented, as opposed to their front-line employees, whose behaviour may have more to do with issues of livelihood, identity and emotion. Sending negative economic

Fig. 15: Couriers Detected Arriving at Schiphol from Curacao, by Quarter

Source: World Bank and UNODC, *Crime, violence, and development*[58]



feedback can be more effective than endless low-level enforcement.

For example, since 2000, the authorities at Schipol Airport in the Netherlands were faced with a tide of cocaine coming in on commercial flights from the Netherlands Antilles. Over 6000 couriers were arrested in less than three years. The couriers were largely body packers, each carrying about a kilogram of cocaine in their intestines. For the traffickers behind these couriers, the difference in the price of a kilogram of cocaine in Curacao and a kilogram of cocaine in Amsterdam was sufficient to cover the cost of the flight, the fee for the courier, and quite a few losses. The couriers themselves were disposable, cheap, and inexhaustible, like cardboard boxes. Losing a few was of no consequence if enough drugs got through to turn a healthy profit.

Dutch airport security was constrained by the same issues that constrain law enforcement agents everywhere. Processing a subject through the criminal justice system takes a tremendous amount of time. In addition to intake, the arresting officer may be called upon to testify at trial, and may be compelled to appear multiple times before actually taking the stand. As a result, there are limits on the number of suspects who can be arrested on any given flight. Traffickers know this, and "shotgun" multiple couriers on a single flight. In the case of the Antilles, this could be 30 couriers on a flight or more, overwhelming the system.

Under these circumstances, arresting individual couriers was futile. It sent no message back to those who were making the decisions, since not enough couriers could be arrested to impact on the bottom line. Rather than focusing on the couriers, the emphasis shifted to the drugs. A system called "100% control" was implemented, with scanners and profiling on both ends of the flight. Europol described the mechanics of the policy in this way:

> *Crews, passengers, their luggage, the cargo and the planes are systematically searched. Couriers with amounts of less than 3 kg of cocaine are not detained, unless they are arrested for the second time or another criminal offense is involved. Instead, the drugs are confiscated and the smugglers are sent back. Couriers who have been identified are registered on a blacklist, which is provided to KLM, Dutch Caribbean Airlines and Suriname Airways.*[59]

While it would be extremely difficult to process 30 suspects per flight through the criminal justice system, it was a relatively simple matter to hold them all and wait for the drugs to pass. When the level of seizures reached a point that trafficking through the airport was no longer profitable, the flow of couriers stopped. The responsible parties had finally received the message.

Of course, despite the undeniable success of the 100% control strategy, cocaine continued to flow into Europe. The drug supply had not been stopped, but it had been guided. The ability of government to shape drug markets is not without value, however, and can be used to limit the unintended consequences of enforcement.

Guide the market

Law enforcement has not succeeded in stopping the flow of drugs from their origins to their destinations, but this does not mean it has had no impact on drug markets. As mentioned above, the production costs of drugs comprise only a tiny fraction of their retail cost, and this fact is entirely attributable to their illegality. In addition to affecting the amount of drugs getting though, there are other ways that interdiction work affects the drug markets. The impact of law enforcement should be used to guide the market in ways that maximise positive side effects and minimise negative ones.

For example, the phenomenon of "displacement" is often used to criticise drug control efforts. Crackdowns in one country or region cause cultivators and traffickers to move operations to another. This ability of enforcement to displace production and trafficking from one area of the world to another is a valuable tool if wielded with some foresight. In particular, it is important not to displace trafficking into areas where the social impact is likely to be particularly devastating.

Drug flows do not impact all that they touch in the same way. For example, over decades tons of heroin have transited the Balkans on their way from Afghanistan to Western Europe. The present estimate is that about 80 tons of heroin transits this region each year. It apparently does so with surprisingly little impact on the countries through which it passes. The available data suggest rates of drug use, murder, and other forms of crime in

Fig. 16: Total recorded robbery and assault victimisation rates per 100,000 adjusted for under-reporting

Source: UNODC, *Crime and its impact on the Balkans*[60]

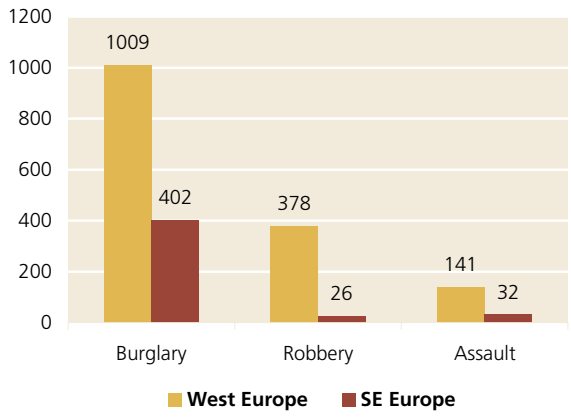
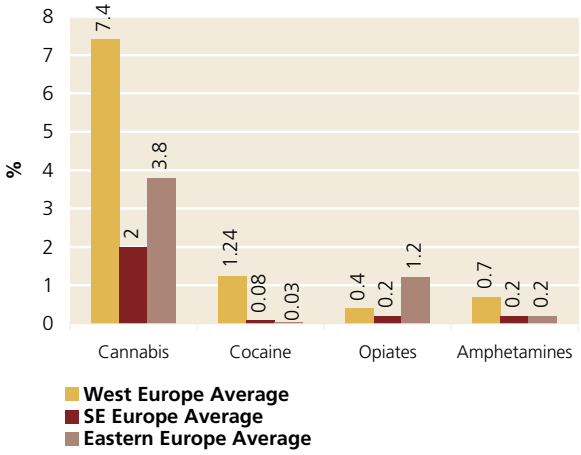


Fig. 18: Average annual drug use prevalence, 2005 estimate

Source: UNODC, *Crime and its impact on the Balkans*[63]



the Balkans are lower than in West Europe. This may be because the flow through these countries is highly organised, reliant on high-level corruption, and close to the destination markets.[61]

In contrast, the flow of cocaine through Central America and the Caribbean appears to be directly related to the violence afflicting those regions. For example, in 2004 the murder rate in the rural and largely indigenous Guatemalan province of Petén, close to the Mexico border, was higher than that in Guatemala City. The most remarkable thing about this otherwise pacific province is its notorious role in drug trafficking. Petén has less than half a million people and saw its first paved road in 1982, but has long been the site of clandestine landing strips for traffickers who proceed by land across the Mexican border.[64]

Fig. 17: Guatemalan murder rates per 100,000 by province in 2004

Source: UNODC, *Crime and Development in Central America*[62]

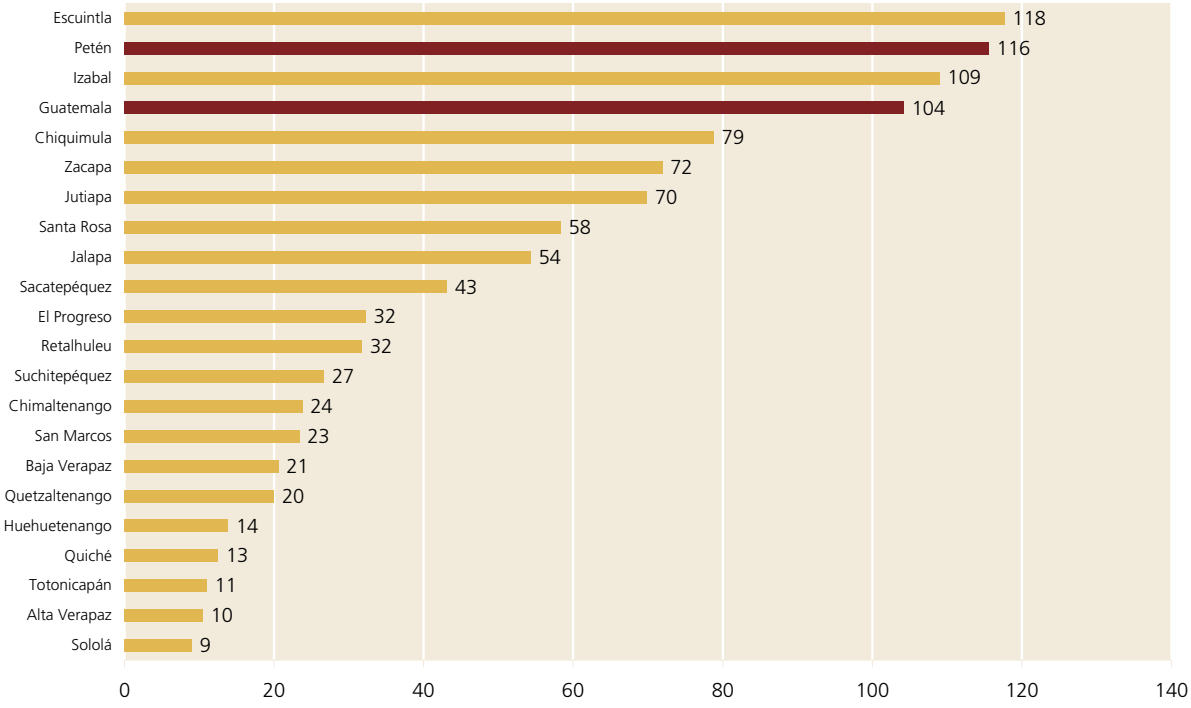
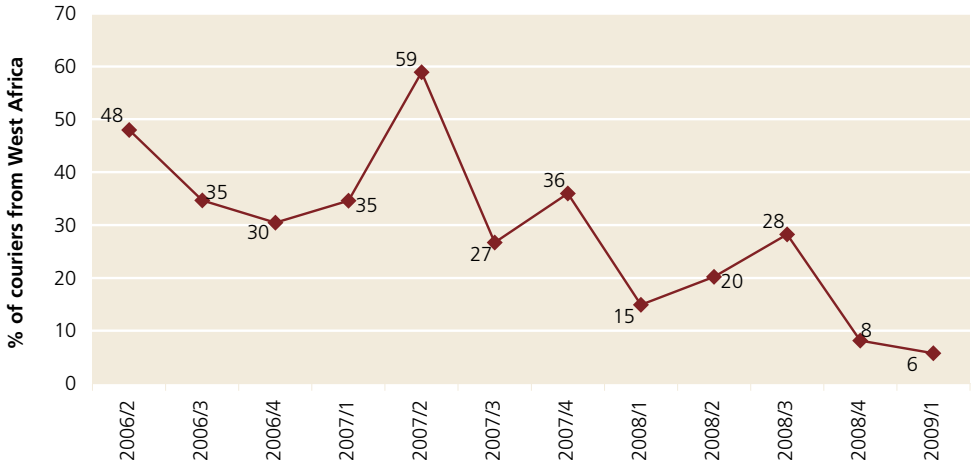


Fig. 19: Share of detected cocaine couriers whose flight originated in West Africa

Source: UNODC, *Transnational trafficking in West Africa: A threat assessment*[65]



Recently, another highly vulnerable area became part of a major cocaine trafficking flow for the first time: West Africa, one of the poorest and least stable areas of the world. From sometime around 2004, Colombian traffickers increasingly made use of West African countries as a transit area for their cocaine shipments to Europe. Between 2004 and 2008, at least 46 tons of cocaine were seized in the region and approximately 3.4 tons of cocaine were seized in Europe from some 1400 couriers on commercial air flights from West Africa.

The impact on the region was immediate and devastating. Drug traffickers used their financial leverage to corrupt top political, military, and law enforcement officials in several countries in the region. There were many incidents in which drug seizures disappeared or traffickers escaped inexplicably. In Guinea-Bissau, there was a standoff between the police and the military over the search of a plane later determined to have contained cocaine. In Sierra Leone, the minister of transport stepped down after his brother was implicated in a large air shipment. Reports began to circulate, including in the affidavits of trafficking suspects, that trafficking through Guinea was controlled by the son of the president who had ruled that country since 1984, Lansana Conté. After Conté's death at the end of 2008, his son was arrested and confessed to his participation on national TV, alongside the former president's brother-in-law, head of intelligence, and head of the national drug squad.

Around 2006, cocaine trafficking through West Africa began to attract international attention, including that of the United Nations Security Council. A wide range of players began to offer emergency assistance, including resources for law enforcement, intelligence, and direct interdiction. Air flights from the region began to receive special scrutiny. In short, the region was put under a spotlight, presenting less than optimal conditions for drug traffickers.

By 2008, seizure volumes were in sharp decline, and as of May 2009, there have been no multi-ton seizures reported. The number of air couriers detected in European airports has plummeted. According to the database of one network of European airports, of all cocaine couriers detected, the share coming from West Africa dropped from 59% in the second quarter of 2007 to 6% in the first quarter of 2009.

While many of the vulnerabilities that made West Africa attractive to cocaine traffickers remain in place, the increase in international attention appears to have been sufficient to persuade them to find paths of less resistance. It is possible, if not likely, that they would return should international attention falter. But for now, West Africa has been spared the corrupting influence of a cocaine flow valued at more than the GDPs of some countries in the region.

Cocaine continues to find its way to Europe, of course, and there are no indications that the loss of this route significantly curtailed supply. There are few regions of the world as vulnerable as West Africa, however, and international attention has apparently given this poor region a reprieve. The threat was addressed early enough that the impact need not be long-lasting. On the whole, this was a very positive result.

This example shows that while international cooperative efforts have not plugged every hole, they can present significant disincentives, guiding markets. Aside from guiding flows, there are many other ways enforcement could be used strategically to reduce violence, corruption, and other unintended consequences. For example, the decision to target violent drug traffickers has the

effect of advantaging non-violent offenders. The size of the drug market may remain the same, but the state has provided an economic incentive to avoid violence.[66] With some practice, these sorts of interventions could also be used as part of a broader plan to significantly undermine specific trafficking organisations or even whole markets.

2.4 Strengthen international resistance to drug markets

In addition to creating viable international and local strategies for dealing with drug problems, it is important that the actors themselves be strengthened. The weak link in drug control has long been those parts of the world where the rule of law is absent. Building institutional strength and capacity in these countries is key to the mission of supporting democracy, economic growth, and human rights.

It is also important that the bedrock of international cooperation be strengthened, through enhanced use of the United Nations Conventions. In addition to the drugs Conventions, those on Transnational Organised Crime and Corruption present great opportunities for reducing the size of drug markets and associated problems.

Spread the rule of law

As mentioned above, large-scale illicit crop cultivation seems to require political instability because accountable governments can be compelled to take action against drug production in areas under their control. It is no coincidence that most of the world's cocaine and heroin supplies come from countries with insurgency problems. Almost all of the world's cocaine supply comes from three countries and almost all the world's heroin supply comes from two. This is not because coca and opium poppy could not be cultivated in other areas – in the past, most of the world's supply of these drugs came from countries not presently leading illicit production. All of these countries have problems with the rule of law in the cultivation areas.

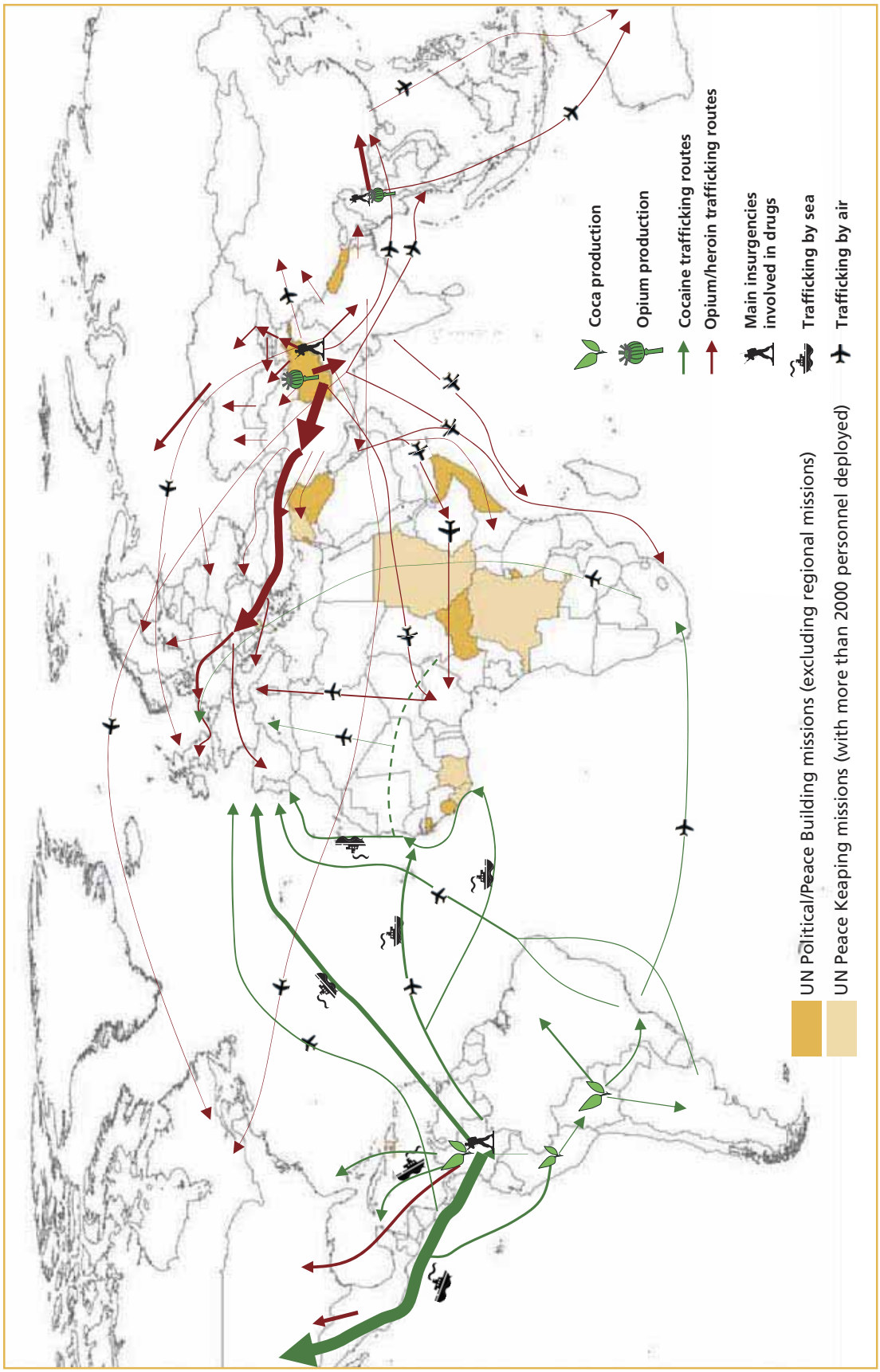
But while cultivators may enjoy zones of chaos, some traffickers may prefer authoritarian regimes. Areas too fraught by conflict lack the infrastructure and the predictability to be good commercial nodes, whether the trade is licit or illicit. In contrast, areas under control of an absolute, and absolutely corrupt, leadership allow what would normally be clandestine activities to be conducted openly, greatly increasing efficiency. Rather than risk the unpredictable cost of interdiction, traffickers may opt for the more predictable costs of corruption.

In the end, the two phenomena go hand in hand. Absolutist governments are often formed (and tolerated) in response to the threat of instability. This threat typically exists because some portion of the population is poor and marginalised, and the state is either unwilling or unable to meet its needs. As a result, dealing with drug cultivation countries and transit countries often boils down to the same thing. The rule of law must be strengthened in all its aspects, including promoting democracy, increasing the capacity for law enforcement, and ensuring the protection of human rights, as well as promoting economic development.

Economic development is also key in promoting political stability. Civil war has been linked to both low income and low growth.[67] Unfortunately, political stability is also key to economic growth. As one authority points out "Civil war is development in reverse."[68] To break out of this cycle, measures taken to establish civil order can establish the foundation for investment and growth. In this way, all aspects of international cooperation are related. Development assistance, post-conflict planning, and crime prevention must be coordinated, for any weakness in the chain can lead to the collapse of the whole.

Map 1: Cocaine/heroin trafficking routes and instability

Source: UNODC



Make better use of the international tools and interventions

The 1988 Convention established the means to move beyond arrests and seizures in dealing with international drug problems. The anti-trafficking measures, including those aimed at chemical precursors, money laundering, and asset forfeiture, greatly expanded the tools available to law enforcement. Two decades later, much more could be done to apply these tools to transnational trafficking flows. Cooperative work on money laundering and asset forfeiture in particular could greatly be expanded.

Those involved in work on transnational drug issues are very familiar with the three drug Conventions, but may be less familiar with those on Transnational Organised Crime and Corruption. This is a pity because these two under-utilised instruments could be used to great effect in combating drug markets and related violence and corruption.

The United Nations Convention on Transnational Organised Crime is key in establishing the legislative framework needed to address the drug business, and in building the mechanisms for international cooperation. But there is a large gap in the rate of ratification and the implementation of its provisions. Many countries have passed legislation that is rarely used, but has tremendous potential if applied strategically. For example, the Convention allows for the criminalisation of membership in an organised crime group without the need to prove any particular individual was associated with any particular offence. This can be used to confront organised crime groups with the certainty of arrest if drug market activity or violence does not stop, as discussed above.

Another underutilised opportunity for cooperation lies in the area of money laundering and asset forfeiture. Perhaps because law enforcement officials lack financial expertise, police departments across the globe find the process of tracing and seizing money far more difficult than tracking contraband. Even more unusual is international cooperation in the recovery of illicit assets. But much of the costs of enforcement could be redeemed if asset forfeiture were taken seriously. If legal challenges and administrative difficulties have proven insurmountable, a renewed effort must be made to streamline the process so that money made in crime can be used to prevent it in the future.

The same is true in the area of corruption. By providing criminals with virtual immunity from prosecution, corruption can nullify the deterrence effect normally expected from the enforcement of the drug control system. In adopting the United Convention against Corruption, the Member States have equipped themselves with a powerful instrument to remove an essential lubricant of criminal black markets. But despite the fact that the convention entered into force four years ago and has already been signed by 140 countries, this effort has also fallen short of its potential when it comes to its concrete application.

When dealing with corruption, the basic principle of focusing on those who can be deterred applies once again. A dealer risks very little in offering a bribe, an but official risks quite a lot in receiving it. In a word, they can be deterred. Those who might be expected to encounter traffickers in their daily business should expect to be especially scrutinised, if not audited. Transparency should be the price of the job.

Corruption and drug markets are locked in a mutually re-enforcing cycle. Drug money is a powerful corrupting force, but many drug markets would be impossible without corruption. Anti-corruption work has the potential to simultaneously improve governance while undermining the ability of criminals to operate with impunity. Once the cycle is reversed, growing confidence in government will improve citizen cooperation, further undermining corrupt officials and the criminals that rely on them.

In parallel to these efforts to strengthen international resistance to drug markets broadly, there is a need to act on an emergency basis in those parts of the world where the rule of law has collapsed, and ensure that crime prevention is at the head of the agenda when reconstruction begins. Tottering states everywhere both generate and attract organised crime. Crime predictably comes with periods of transition and upheaval, and planning should proceed with this fact in mind.

Peacekeeping and crime prevention must go hand in hand. Their object is the same: the provision of safety and security. Their opponents are also often the same: the agents of instability that profit off human misery. Even after the open hostilities have ceased, however, these same agents continue to operate in states struggling to get back on their feet. As has become evident in Afghanistan, those who earn their money from instability will go to great lengths to ensure this instability persists. Peacekeeping and reconstruction missions are not complete until these countries are able to cope with the security challenges confronting them, be they armed insurgencies or organised crime. Reconstruction and development cannot proceed without the rule of law in place.

Improve information systems

As the first part of this World Drug Report demonstrates, there remains a great deal of uncertainty around the extent and nature of drug production, trafficking and consumption. This is not because these data involve clandestine markets and are therefore unattainable. The methods and techniques for extracting reliable informa-

tion about drug activities have been honed over decades. In many cases, all that is needed is the small amount of effort required to gather and submit administrative data, data that are gathered in the normal course of business for government in any case.

A renewed effort must be made to bolster our collective knowledge base around global drug issues. This information is in the strategic security interests of all parties concerned. Information-sharing obligations embedded in the Conventions are not consistently fulfilled by a number of key parties. Without this information, it become very difficult to describe the present situation or the direction things are going. It also becomes impossible to gauge the impact of specific and collective interventions.

2.5 Take the crime out of drug markets

The discussion above has outlined some of the ways that global drug control efforts could be improved to reduce the size of the drug markets and the associated violence and corruption. First, it suggests several ways current enforcement practices could be refined:

- Drugs must remain prohibited because the fact of illegality alone reduces the number of potential addicts, particularly in developing countries.
- Drug control must be conducted in ways designed to limit associated violence and corruption.
- Drug enforcement should focus less on high volumes of arrests and more on reducing the size of drug markets through targeted enforcement and situational crime prevention.
- The incarceration of drug users should be exceptional; rather, users should be tracked and addicts brought into treatment.
- The addict population should be a priority, as they provide the bulk of the demand.
- Open drug markets must be closed, using the techniques of situational crime prevention and problem-oriented policing.

The discussion then endorses the creation of multidisciplinary strategies tailored to meet the problems posed by particular drugs in particular places:

- Planning for drug control must not be centred on law enforcement agencies, and should involve coordinated actions from actors in a range of disciplines and government agencies.
- Enforcement agencies can participate, but need to move beyond a focus on punitively incarcerating individuals to look at ways of disabling the market, even when this means forgoing arrests.
- Although entrenched markets may be difficult to disable, they can be guided by enforcement action so that they do the least possible damage.

Finally, this chapter looks at ways the international community can build resistance to drug markets:

- Both cultivation and transit countries suffer from weakness in the rule of law; supporting the growth of institutional strength and integrity in these countries will make them more resistant to the trafficking of drugs and other forms of contraband.
- There remains great potential in the Conventions on Transnational Organised Crime and Corruption to collectively address the problem of global drug markets.
- There is a strong need to improve and develop international information sharing systems, so that progress can be measured and interventions evaluated.

A common thread throughout these proposals is the need to integrate the marginalised individuals, areas, and nations that cultivate, consume, and distribute drugs. These people need to be brought in, not pushed down. They will find it impossible to develop without getting beyond crime, but it is very difficult to get beyond crime without some prospect of development. It is incumbent on all in the international community to ensure that no one is faced with impossible choices, and that behaviour that benefits all of us is in the interest of each of us.

1 While the share of the global population living in poverty declined by half between 1981 and 2005, much of this is due to the growth of the Chinese economy. During the same period, the number of poor people in sub-Saharan Africa doubled, and little progress has been seen in reducing the number of poor in South Asia, Central Asia, Eastern Europe, Latin America, and the Middle East/North Africa. See: http://go.worldbank.org/VL7N3V6F20. The structural adjustment conditionalities of international lenders have been widely criticised as actually aggravating poverty, including by the World Health Organisation. See: http://www.who.int/trade/glossary/story084/en/index.html. It has even been asserted that, by providing an influx of unearned wealth, international aid can produce an effect similar to the "resource curse" and can have a negative impact of democracy. See Djankov, S., J. Montalvo and M. Reynal-Querol "The curse of aid". http://www.econ.upf.edu/docs/papers/downloads/870.pdf. Also Moyo, D. *Dead aid: Why aid is not working and how there is another way for Africa*. London: Allen Lane, 2009. International peacekeeping has been similarly criticised. The international community has been taken to task for both its actions and its failure to act, including in instances of genocide. Some have even argued that international efforts to build peace have the unintended consequence of prolonging civil wars, since the lack of a clear victor keeps grievances at a simmer. See Luttwak, E. 'Give war a chance'. *Foreign Affairs*, July/August 1999. There have been scandals in which peacekeepers have been found to be involved in criminal rackets, including human trafficking. Despite these issues, there is very little serious discussion of abandoning cooperative efforts to address poverty or conflict, only debate as to how best to improve current efforts.

2 There are, of course, other costs associated with drug criminalisation, including the mass incarceration of non-violent offenders and negative impact on the ability of people to access treatment.

3 "Ninety six percent of all countries (186 countries) are State Parties to the Single Convention on Narcotic Drugs of 1961. Ninety four percent (183 countries) are State Parties to the 1971 Convention on Psychotropic Substances. About the same number (182 countries) are State Parties to the 1988 Convention. These are among the highest rates of adherence to any of the United Nations multilateral instruments…" United Nations Office on Drugs and Crime, *Making drug control fit for purpose': Building on the UNGASS decade*. Presented to Commission on Narcotic Drugs, Fifty-first session, Vienna, 10-14 March 2008.

4 For example, Yale law professor Steven Duke recently opined we should, "…end[ ] the market for illegal drugs by eliminating their illegality. We cannot destroy the appetite for psychotropic drugs… What we can and should do is eliminate the black market for the drugs by regulating and taxing them as we do our two most harmful recreational drugs, tobacco and alcohol."

http://online.wsj.com/article/SB124061360462654683.html

Similarly, Harvard economist Jeffrey Miron recently argued, "The right policy … is to legalize drugs while using regulation and taxation to dampen irresponsible behavior related to drug use…This approach also allows those who believe they benefit from drug use to do so, as long as they do not harm others… Legalization is desirable for all drugs, not just marijuana. …It is impossible to reconcile respect for individual liberty with drug prohibition."

http://edition.cnn.com/2009/POLITICS/03/24/miron.legalization.drugs/index.html

Others have been cautious, arguing generally against "prohibition" while limiting discussion of taxation to cannabis. For example, Milton Friedman and 500 other economists endorsed a plan to legalise and tax cannabis in the United States in June 2005: http://www.prohibitioncosts.org/

5 World Bank, *Tobacco control in developing countries*. Oxford: Oxford University Press, 2000.

6 There are several ways drugs can kill, including their acute physical effects, their long term health impact, and their influence on behaviour. Neither alcohol nor tobacco are likely to kill the user through their acute effects; the same cannot be said of heroin or stimulant drugs, particularly for those with pre-existing health conditions. Long term health consequences have not been well studied for many of the illicit drugs, but heavy tobacco and cannabis smoking pose similar hazards. Unlike tobacco, alcohol can have an extremely dangerous impact on behaviour, but so can most of the currently illicit drugs. According to the Oxford Medical Companion (1994), "…tobacco is the only legally available consumer product which kills people when it is used entirely as intended." This would not be the case if drugs like crystal methamphetamine were legalised.

7 http://www.who.int/substance_abuse/facts/en/

8 United Nations Development Programme, *Human Development Report 2007/2008.* New York, UNDP, 2008.

9 Data on drug prices from WDR 2008; data on GDP per capita from Human Development Report 2007/2008. Restrictions on coca cultivation have softened since 2006, and the reported price of cocaine in Bolivia has dropped to US$3.50 per gram, despite the fact that cocaine remains illegal and seizures have increased. The impact this will have on cocaine use in Bolivia has yet to be evaluated, but there is evidence of rising problems with cheap cocaine base products throughout the region.

10 World Health Organisation, *Report on the global tobacco epidemic 2008*. Geneva: World Health Organisation, 2008, p. 271.

11 http://www.who.int/tobacco/mpower/appendix_2_the_americas.xls

12 WHO 2008 *op cit*, p. 20.

13 Food and Agricultural Organization, "Projections of tobacco production, consumption and trade to the year 2010", Rome: FAO, 2003.

14 World Health Organisation 2008, *op cit.*, p. 12.

15 Framework Convention Alliance, "How big was the global illicit tobacco trade problem in 2006?" www.fctc.org/dmdocuments/fca-2007-cop-illicit-trade-how-big-in-2006-en.pdf

16 Food and Agricultural Organization, 2003, *op cit*.

17 *Ibid*.

18 See World Drug Report 2005.

19 Hozic, A. 'Between the cracks: Balkan cigarette smuggling'. *Problems of Post-Communism*. Vol 51, No 3. 2004, pp. 35-44.

20 See the forthcoming *Transnational Trafficking and the Rule of Law in West Africa: A threat assessment*. Vienna: UNODC, 2009.

21 Caulkins, J. and P. Reuter, 'Towards a harm-reduction approach to enforcement'. *Safer Communities*, Vol 8, No 1, 2009, p.12.

22 Age range in survey differs between countries: Denmark (16-64); Germany (18-64); United Kingdom (16-59); United States (12+) – all others, 15-64.

23 See endnote 24 below.

24 The International Narcotics Control Board was initially apprehensive when Portugal changed its law in 2001 (see their annual report for that year), but after a mission to Portugal in 2004, it "noted that the acquisition, possession and abuse of drugs had remained prohibited," and said "the practice of exempting small quantities of drugs from criminal prosecution is consistent with the international drug control treaties…"

25 This is different from the Dutch "coffeeshop" approach, where drug tourists are free to consume cannabis in certain premises without risking a summons from the police, and known cannabis vendors are allowed to advertise their outlets.

26 See the reports of the Instituto da Droga e da Toxicodependência: http://www.idt.pt

27 Eurostat, *Statistics in focus:* http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/KS-SF-08-019/EN/KS-SF-08-019-EN.PDF

28 http://www.emcdda.europa.eu/stats08/gpstab3

29 http://www.unodc.org/documents/data-and-analysis/Studies/Drug-

Trafficking-WestAfrica-English.pdf

30 Barrett, D., R. Lines, R. Schleifer, R. Elliott, and D. Bewley-Taylor, *Recalibrating the Regime: The Need for a Human Rights-Based Approach to International Drug Policy*. Beckley Foundation Report 13, 2008.

31 The best known examples come from the United States, in particular the Violent Crime Task Force in High Point, North Carolina.

32 This was the case in the Boston Gun Project, also known as "Operation Ceasefire". See, Braga, A., D. Kennedy, A. Piehl and E. Waring, *Reducing Gun Violence: The Boston Gun Project's Operation Ceasefire*. National Institute of Justice Research Report, NCJ 188741, September 2001. http://www.ncjrs.gov/pdffiles1/nij/188741.pdf

33 See World Drug Report 2008, p. 9. Note that this is different than the concept of "dependent drug users" explored elsewhere in this report, but the share of the adult population is roughly the same.

34 Greater London Alcohol and Drug Alliance, *London: The highs and lows 2*. London: Greater London Authority, 2007.

35 Leggett, T. 'Review of the world cannabis situation'. *Bulletin on Narcotics*. Volume LVIII, Nos. 1 and 2, 2006.

36 While estimates of this sort are hard to find, the Office of National Drug Control Policy has estimated that "heavy users" consumed 80% of the cocaine and 90% of the heroin in the United States in 1989. ONDCP, *What America's users spend on illicit drugs*. Washington, D.C.: Executive Office of the President, 1991, p. 25.

37 See, for example, the evaluation by Hawken and Kleiman of Project H.O.P.E: http://www.pewcenteronthestates.org/uploadedFiles/HOPE_Research_Brief.pdf

38 Home Office of the United Kingdom, Offender management caseload statistics 2005. *Home Office Statistical Bulletin* 18/06, December 2006, page 88.

39 Leggett, T. 'Why wait? By-laws and regulations for high-impact crime prevention'. *South Africa Crime Quarterly*, No 8, June 2004.

40 Or, as UN Habitat notes, "[after urban flight] ….'slumlords' attempt to extract profits from whomever remains, usually obtaining good returns at no outlay on their largely depreciated capital, no matter how low the rents." UN HABITAT, *Global report on human settlements 2003: The challenge of the slums*. Nairobi: UN Habitat, 2003, p 29.

41 Leggett, 2004, *op cit*.

42 According to Howell and Decker, "Most gang violence is endemic to gang life, separate from drug trafficking because of several reasons. Violence is a part of the everyday life of gang members, even when they are apart from the gang; it is in their neighbourhoods and within families. Second, conflict differentiates gangs from other law-violating youth groups. Third, violence is an expected part of their individual status and roles as gang members." Howell, J. and S. Decker, 'The Youth Gangs, Drugs, and Violence Connection.' United States Office of Juvenile Justice and Delinquency Prevention *Juvenile Justice Bulletin*. Washington, D.C.: United States Department of Justice, 1999, p. 8.

43 Levitt, S. And S. Venkatesh, 'An economic analysis of a drug-selling gang's finances'. *The Quarterly Journal of Economics*, August 2000. http://www.streetgangs.com/academic/gangfinance.pdf

44 Other techniques for breeding mistrust, such as the distribution of inert substances packaged to look like drugs (e.g. copycat ecstasy pills with popular logos) or the infiltration of user chat groups could also dampen the spread of the market.

45 Reuter, P. and J Haaga, *The organization of high-level drug markets: An exploratory study*. Washington, D.C., The Rand Corporation, 1989.

46 See, for example, Volume 19, Issue 4 of the *International Journal of Drug Policy* (2008).

47 Degenhardt, L., P. Reuter, L. Collins, and W. Hall, 'Evaluating explanations of the Australian "heroin shortage"'. *Addiction*, Vol 100, No 4, 2005, pp. 459–469.

48 Although "kitchen labs" for crystal methamphetamine have been an issue in the United States, a bit of precursor control can assure that this practice does not become widespread, and the smell and other hazards of homemade amphetamines manufacture tend to render small-scale production uncompetitive, particularly in urban areas.

49 Leggett 2006, *op cit*. Along these lines, the spread of low potency pollen in cultivation areas might be more effective than eradication.

50 Again, methamphetamine is a possible exception in areas where access to precursors is uncontrolled.

51 Government of Afghanistan and UNODC, *Afghanistan Opium Winter Rapid Assessment, January 2009*. Kabul: UNODC, 2009, p. 15.

52 See, for example, Baumer, E., J. Lauritsen, R. Rosenfeld, and R. Wright, 'The Influence of Crack Cocaine on Robbery, Burglary, and Homicide Rates: A Cross-City, Longitudinal Analysis'. *Journal of Research in Crime and Delinquency*, Vol 35, No 3, 1998, pp. 316-340.

53 See the discussion on "set and setting" in the opening chapter of Reinarman and Levine's *Crack in America*. Los Angeles, University of California Press, 1997.

54 See Leggett 2006, *op cit*.

55 Tragler, G., J. Caulkins, and G. Feichtinger, 'Optimal Dynamic Allocation of Treatment and Enforcement in Illicit Drug Control'. *Operations Research*, 2001, Vol 49, No 3, pp. 352-362.

56 During the first session of the Convention negotiations, held between 19 and 29 January 1999, various definitions of "organized crime" were discussed, most of which related to participation in a group. In the negotiation text submitted by France, for example, organised crime was defined as "the activities pursued [the acts committed] within the framework of [in relation to] a criminal organization." UNODC, *Travaux préparatoires of the negotiations for the elaboration of the United Nations Convention against Transnational Organized Crime and the Protocols thereto*. Vienna: UNODC, 2006, p. 7.

57 This point is further made clear in the protocol's definition of human trafficking, which requires no cross-border movement.

58 http://www.unodc.org/documents/data-and-analysis/Caribbean-study-en.pdf

59 Europol, *European Union Situation Report on Drug Production and Drug Trafficking 2003 – 2004.* The Hague: Europol, 2005.

60 http://www.unodc.org/documents/data-and-analysis/Balkan_study.pdf

61 UNODC, *Crime and its impact on the Balkans and affected countries*. Vienna: UNODC, 2008.

62 *Ibid*.

63 *Ibid*.

64 UNODC, *Crime and development in Central America: Caught in the crossfire*. Vienna: UNODC, 2007.

65 Forthcoming, 2009.

66 For more on this idea, see Kleiman, M. *Against excess: Drug policy for results.* New York: Basic Books, 1993.

67 Collier, P. *The bottom billion: Why the poorest countries are failing and what can be done about it.* Oxford: Oxford University Press, 2007.

68 *Ibid*, p. 27.

3. STATISTICAL ANNEX

3.1 Production

3.1.1 Afghanistan

Fact Sheet[1] - Afghanistan Opium Survey 2008[2]

	2007	Change on 2007	2008
Net opium poppy cultivation (after eradication)	193,000 ha (177,000-209,000 ha)	-19%	157,000 ha (130,000-190,000 ha)
in per cent of agricultural land[3]	2.5%		2.1%
Number of poppy-free provinces (out of 34)	13	+38%	18
Eradication	19,047 ha	-71%	5,480 ha
Weighted average opium yield	42.5 kg/ha	+15%	48.8 kg/ha
Potential production of opium	8,200 mt (7,530-8,960 mt)	-6%	7,700 mt (6,330-9,308 mt)
Number of households involved in opium cultivation	509,000 (437,000-653,000)	-28%	366,500 (315,000-470,000)
Number of persons involved in opium poppy cultivation	3.3 million	-28%	2.4 million
in per cent of total population[4]	13.7%		9.8%
Average farm-gate price (weighted by production) of fresh opium at harvest time	US$ 86/kg	-19%	US$ 70/kg
Average farm-gate price (weighted by production) of dry opium at harvest time	US$ 122/kg	-22%	US$ 95/kg
Current GDP[5]	US$ 8.2 billion		US$ 10.2 billion
Total farm-gate value of opium production	US$ 1 billion (0.912-1.088)	-27%	US$ 730 million (601-885)
in per cent of GDP	12%		7%
Potential export value of opium, morphine and heroin (border areas of neighbouring countries)	US$ 4 billion (3.5-4.5 billion)		US$ 3.4 billion (2.7-4.3 billion)
Indicative gross income from opium per ha/year	US$ 5,200	-10%	US$ 4,662
Indicative gross income from wheat per ha/year	US$ 546	+198%	US$ 1,625

1 The information in this section comes from the Afghanistan Opium Survey 2008 (UNODC/Ministry of Counter Narcotics, Afghanistan, November 2008), and can also be found at http://www.unodc.org/unodc/en/crop-monitoring/index.html. Source unless otherwise indicated: National monitoring system supported by UNODC.

2 The figures in brackets represent the lower and upper limits of the 90% confidence interval

3 The area available for agriculture has been updated by UNODC based on Landsat 7 ETM images.

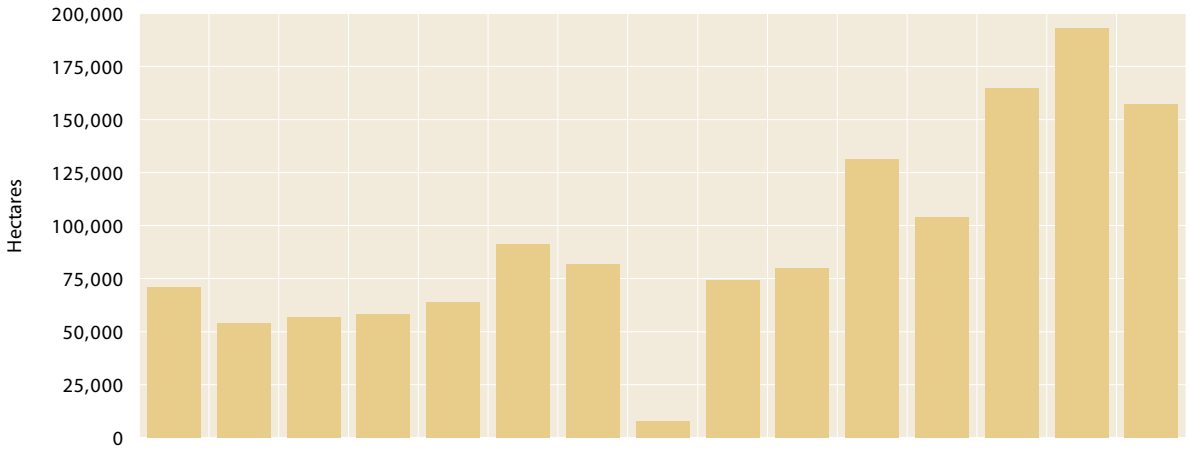
4 Population 24.1 million in Afghan year 1385 (April 2006 to March 2007) and 24.5 million in Afghan year 1386 (April 2007 to March 2008); source: Afghan Government, Central Statistical Office.

5 GDP Afghan year 1385 (April 2006 to March 2007), revised figure, and GDP for Afghan year 1386 (April 2007-March 2008; preliminary estimates); GDP growth in constant Afghanis amounted to 16.2% in the Afghan year 1386, up from 11.2% in the Afghan year 1385; source: Government of Afghanistan, Central Statistical Office. The inflation (change in the Consumer Price Index) amounted to 16.9% in 2007 and 27.1% over the first two quarters of 2008 (Source: IMF International Financial Statistics, October 2008). Foreign exchange rate of the Afghan currency remained practically unchanged (2006: Afghanis 49.93; 2007: Afghanis 49.96; first two quarters of 2008: Afghanis 49.65 for US$ 1).

Cultivation and eradication

The total opium poppy cultivation in 2008 in Afghanistan was estimated at 157,000 ha, a reduction of 19% compared to 2007. Almost the entire cultivation (98%) was confined to seven out of 34 provinces, all of which had security problems: five of these provinces were in the south (Hilmand, Kandahar, Uruzgan, Daykundi and Zabul provinces) and two in the west of Afghanistan (Farah and Nimroz provinces). In 2008, 18 provinces were poppy-free, five more than 2007. This included the eastern province of Nangarhar, which, in 2007, had the second largest area under opium poppy cultivation in the country. Only a very small portion of the total cultivation took place in the north (Baghlan and Faryab provinces), north-east (Badakhshan province) and east (Kunar, Laghman and Kapisa provinces). Together, these provinces accounted for less than 2% of cultivation. Eradication activities in 2008 were severely affected by resistance from insurgents. In 2008, a total of 5,480 ha of eradicated opium poppy fields were verified by the Ministry of Counter Narcotics, Afghanistan/UNODC. This included governor-led eradication (4,306 ha) and eradication led by the centrally controlled Poppy Eradication Force (1,174 ha).

Afghanistan, opium poppy cultivation (ha), 1994-2008

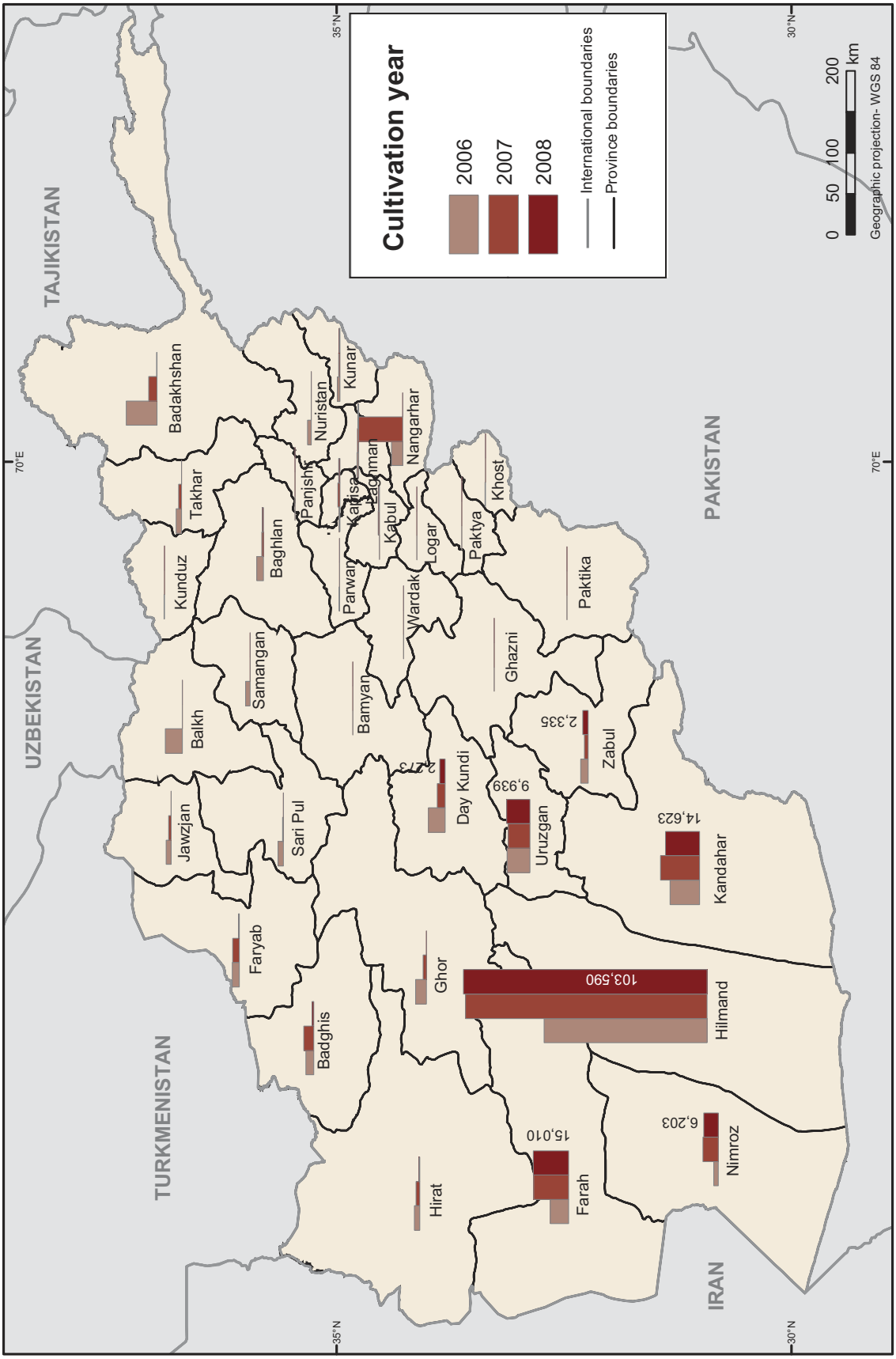


	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Cultivation	71,000	54,000	57,000	58,000	64,000	91,000	82,000	8,000	74,000	80,000	131,00	104,00	165,00	193,00	157,00

Afghanistan, regional distribution of opium poppy cultivation (ha), 2007-2008

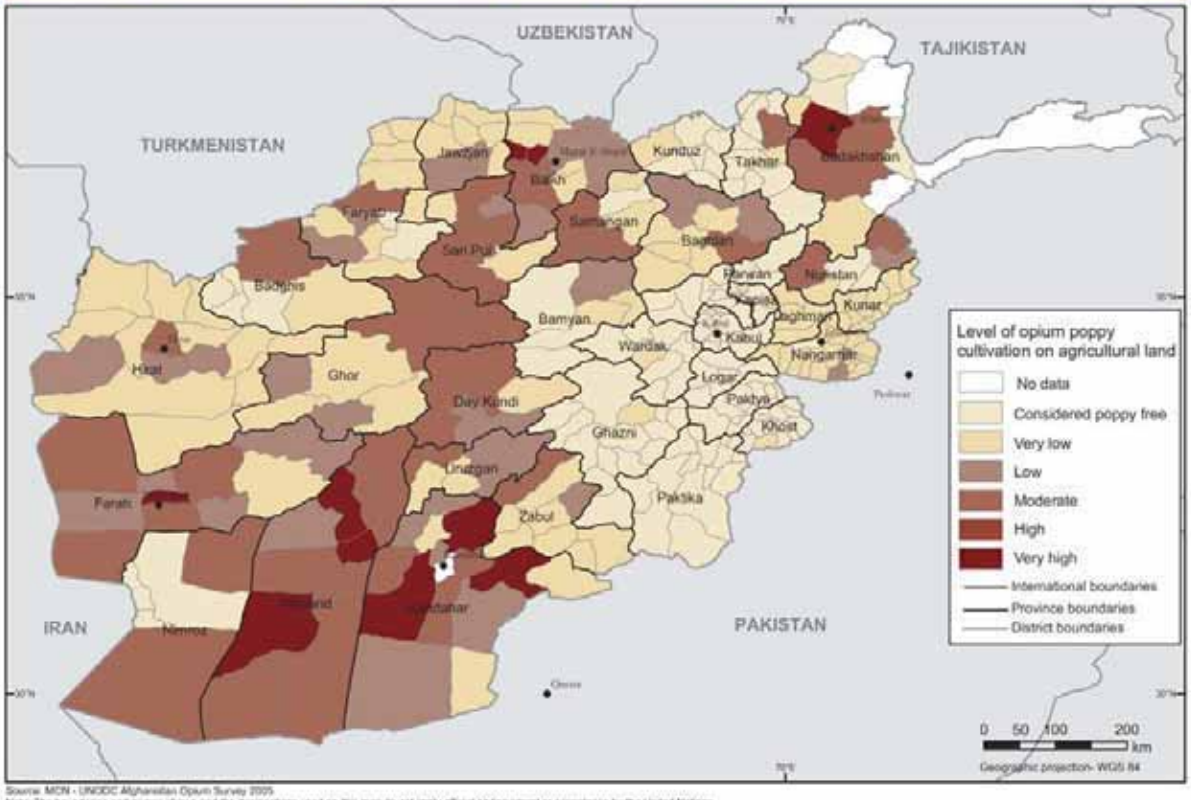
Region	2007 (ha)	2008 (ha)	Change 2007-2008	2007 (ha) as % of total	2008 (ha) as % of total
Southern	133,546	132,760	-1%	69%	84%
Northern	4,882	766	-84%	3%	0.5%
Western	28,619	22,066	-23%	15%	14%
North-eastern	4,853	200	-96%	3%	0.1%
Eastern	20,581	1,151	-94%	11%	0.7%
Central	500	310	-38%	0.3%	0.2%
Rounded total	193,000	157,000	-19%	100%	100%

Opium poppy cultivation in Afghanistan, 2006 – 2008



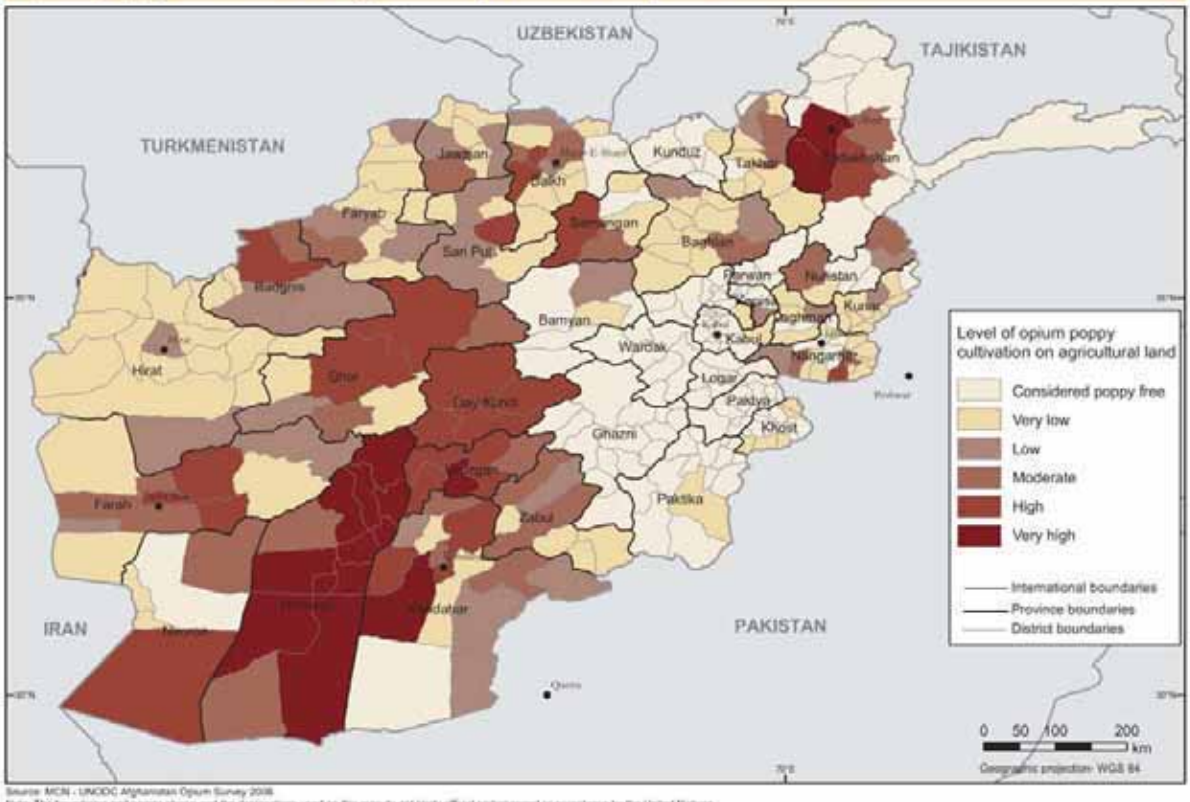
Source: MCN - UNODC Afghanistan Opium Survey 2008
Note: The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.

Opium poppy cultivation in Afghanistan (at district level) 2005



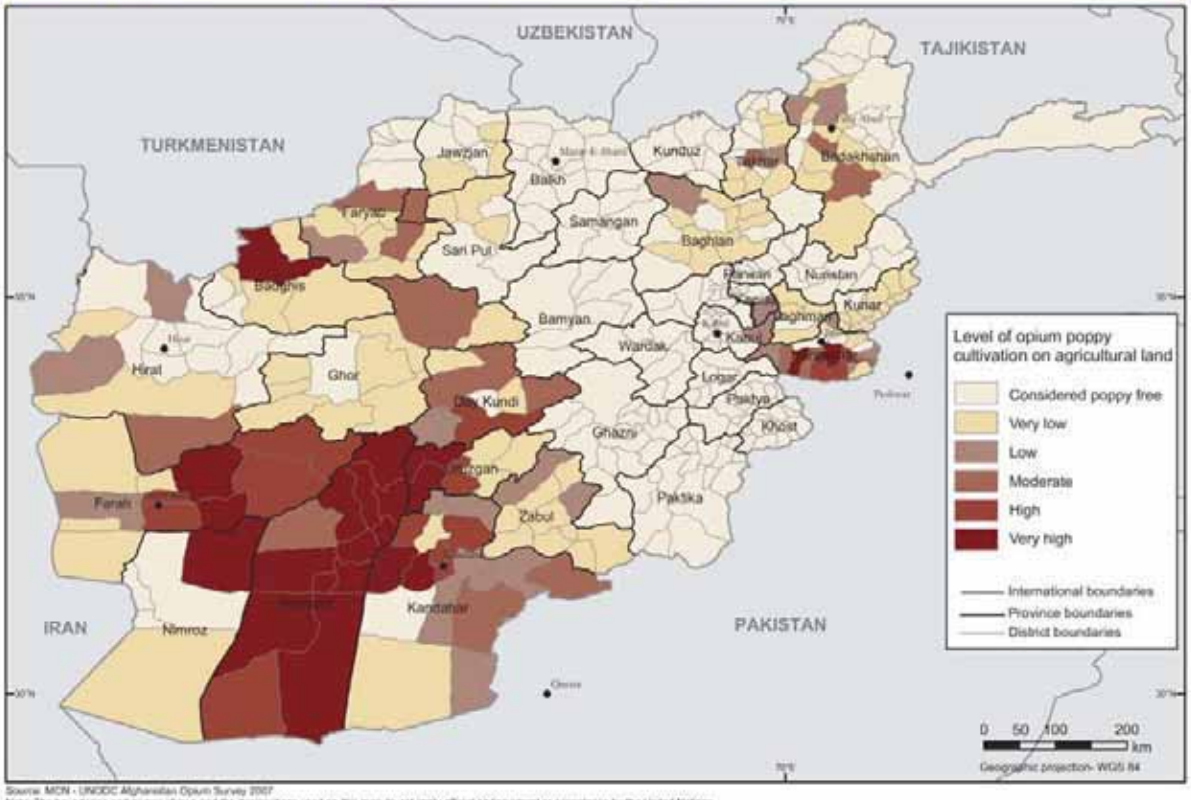
Source: MCN - UNODC Afghanistan Opium Survey 2005
Note: The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.

Opium poppy cultivation in Afghanistan (at district level) 2006



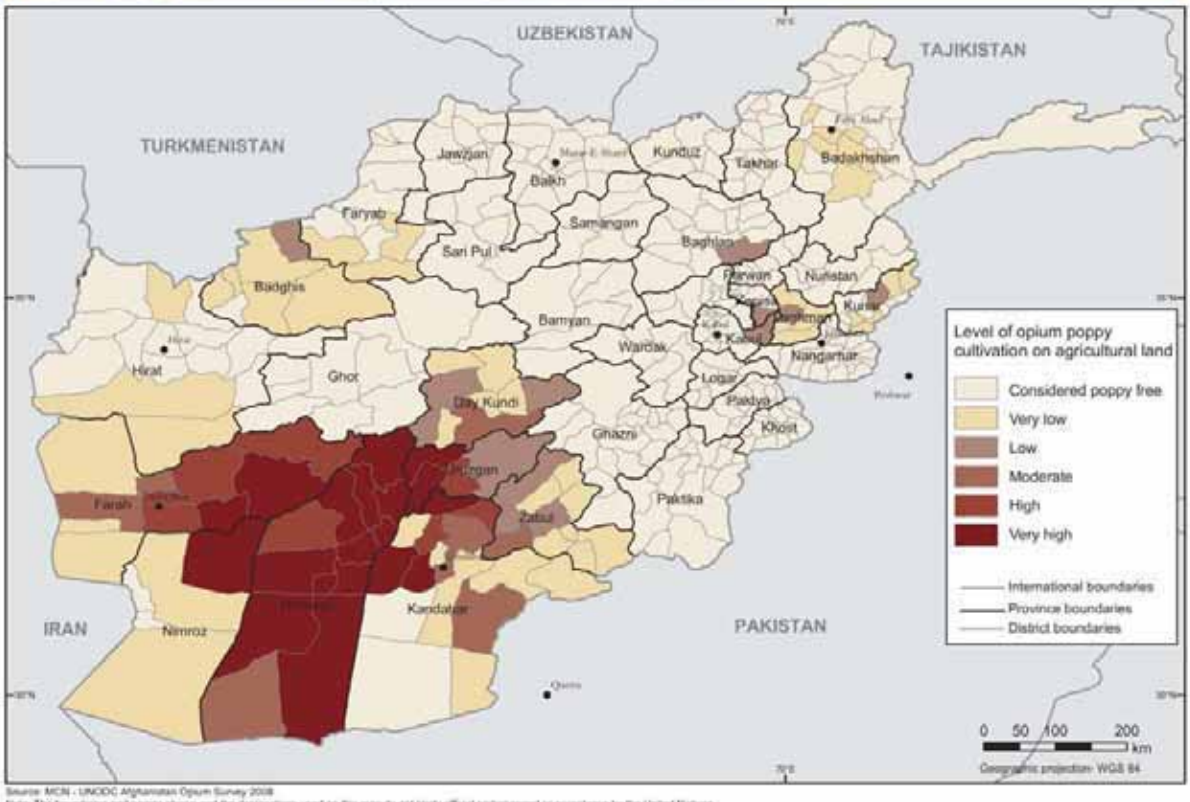
Source: MCN - UNODC Afghanistan Opium Survey 2006
Note: The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.

Opium poppy cultivation in Afghanistan (at district level) 2007



Source: MCN - UNODC Afghanistan Opium Survey 2007
Note: The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.

Opium poppy cultivation in Afghanistan (at district level) 2008



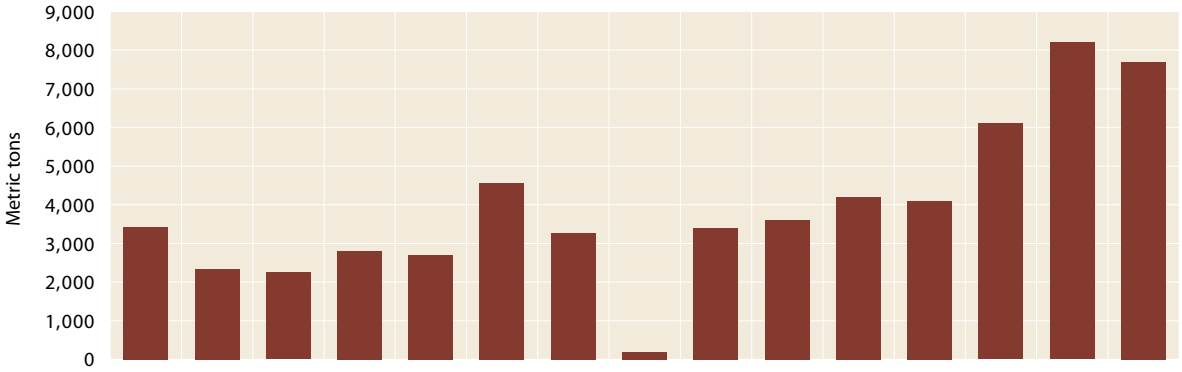
Source: MCN - UNODC Afghanistan Opium Survey 2008
Note: The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.

Production

The total opium production in 2008 was estimated at 7,700 mt, a reduction of 6% compared to 2007. Due to higher than average yields in the seven provinces where most of the opium poppy cultivation took place, the decrease in production was smaller than the decrease in cultivation.

Taking domestic consumption of opium, seizures and opium exports into account, Afghanistan's morphine and heroin production destined for export was estimated at 630 mt in 2008, a decrease of 5% compared to 666 mt in 2007.

Afghanistan, potential opium production (mt), 1994-2008

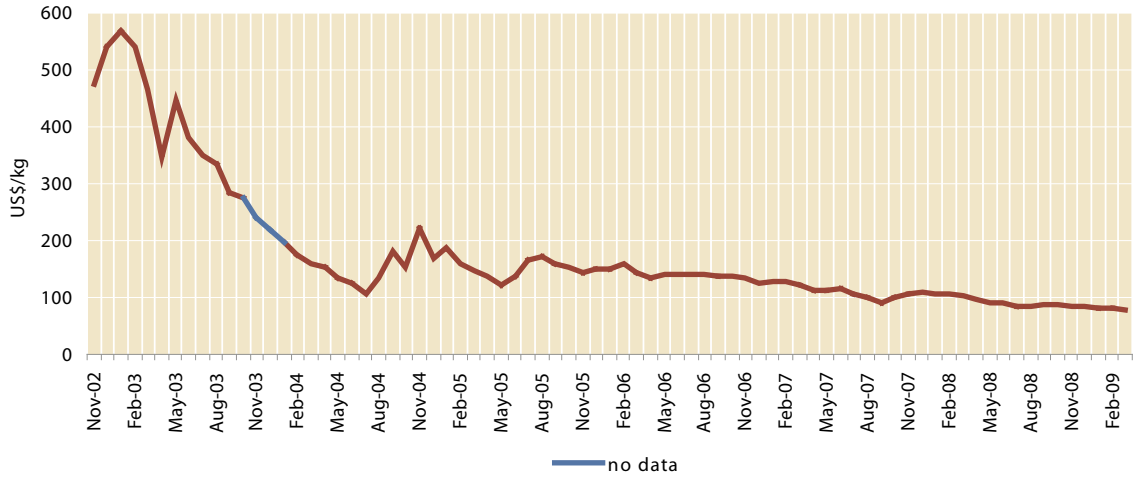


	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Production	3,416	2,335	2,248	2,804	2,693	4,565	3,276	185	3,400	3,600	4,200	4,100	6,100	8,200	7,700

Prices

Farm-gate prices for dry opium at harvest time decreased by 22% to US$ 95/kg in 2008, compared to US$ 122/kg in 2007 (price weighted by production). Regional trader prices for dry opium decreased in all regions except the Central Region. Prices fell by 30% in the Eastern Region, 20% in the Northern, 20% in the Southern and 17% in the Western Region. In general, in 2008, regional trader price differences were less pronounced than in the three previous years. Regional prices tended to be higher in the Eastern and Western Regions, which are thought to be the two main exit routes for opium and heroin exports, and low in the South, where the bulk of opium production occurs. Low prices can be a consequence of many factors, including difficult marketability of opium due to law enforcement activities, cost of transport from northern to southern Afghanistan for heroin production and onward trafficking to other countries, or a high volume of opium being offered on the market.

Afghanistan, monthly farm-gate prices of dry opium (US$/kg), Nov 2002 - Mar 2009

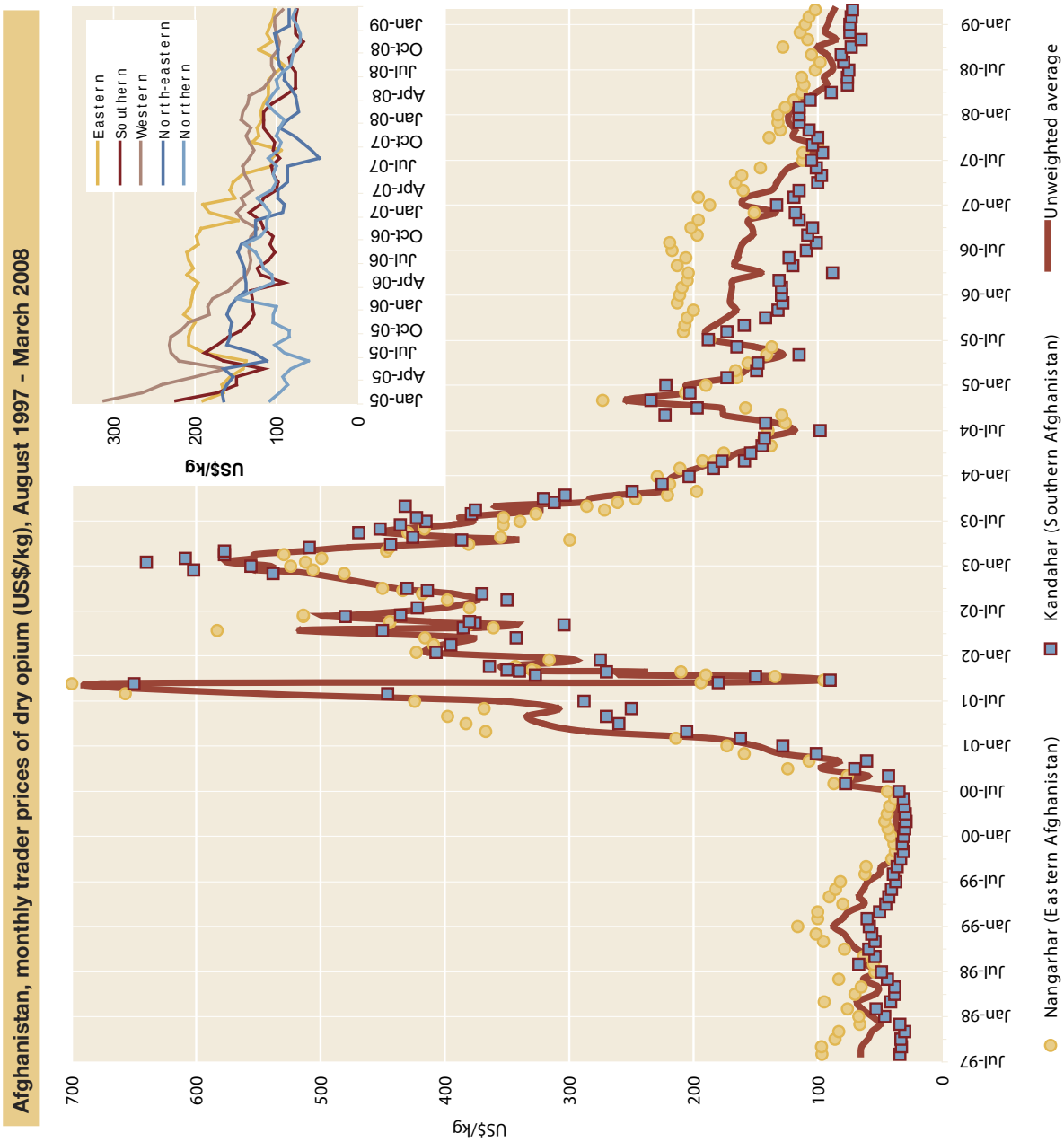


Farm-gate value

The gross income for farmers who cultivated opium poppy was estimated at US$ 730 million in 2008. This is a decrease from 2007, when farm-gate income for opium was estimated at US$ 1 billion. The farm-gate value of opium as a proportion of GDP decreased in 2008 to 7% compared to 12% in 20076. The total farm-gate income from opium in Afghanistan is calculated based on dry opium prices at harvest time.

Households involved

In 2008, the survey estimated that 366,500 families were involved in opium poppy cultivation compared to 509,000 families in 2007 (a decrease of 28%). Given an average of 6.5 members per family, this represents an estimated total of about 2.4 million persons, or 9.8% of Afghanistan's population of 24.5 million.



6 These percentages were calculated considering the 2007 GDP estimated by the Central Statistical Office of Afghanistan at US$ 10.2 billion.

3.1.2 Bolivia (Plurinational State of)

Fact Sheet Bolivia Coca Survey 2008[1]

	2007	Change on 2007	2008
Coca cultivation	28,900 ha	+6%	*30,500 ha*
Of which in the Yungas of La Paz	*19,800 ha*	+5%	*20,700 ha*
in Chapare	*8,800 ha*	+8%	*9,500 ha*
in Apolo	*300 ha*	+0%	*300 ha*
Of which permitted by Bolivian law 1008	*12,000 ha*		*12,000 ha*
Production of sun-dried coca leaf	51,000 mt	+6%	*54,000 mt*
Potential production of cocaine HCl	104 mt	+9%	*113 mt*
National weighted average farm-gate price of coca leaf (outside state market)	US$ 4.1/kg	+32%	*US$ 5.4 Kg*
Total farm-gate value of coca leaf production	US$ 214 million		n.a.
GDP[2]	US$ 9.1 billion		
Farm-gate value of coca leaf production in per cent of GDP	2.4%		
Farm-gate value of coca leaf production in per cent of value of 2007 agricultural sector	16%		
Reported eradication of coca bush*	6,269 ha	-13%	5,484 ha
Reported seizure of sun-dried coca leaves*	1,730 mt	+21%	2,095 mt
Reported seizure of cocaine base*	14,912 kg	+25%	18,584 kg
Reported seizure of cocaine HCl*	2,923 kg	+148%	7,246 kg
Reported destruction of coca laboratories[3]*	4,087	+22%	4,999
Of which cocaine HCl processing laboratories	6		

* As reported by the Government of the Plurinational State of Bolivia.

Cultivation and eradication

In 2007, the total area under coca cultivation in Bolivia increased by 6% to 30,500 ha, the third consecutive yearly increase. Overall, cultivation levels remained well below the levels reached in the early and mid-1990s. Increases in the country's two largest cultivation regions, the Yungas of La Paz and Chapare, occurred roughly at the same rate.

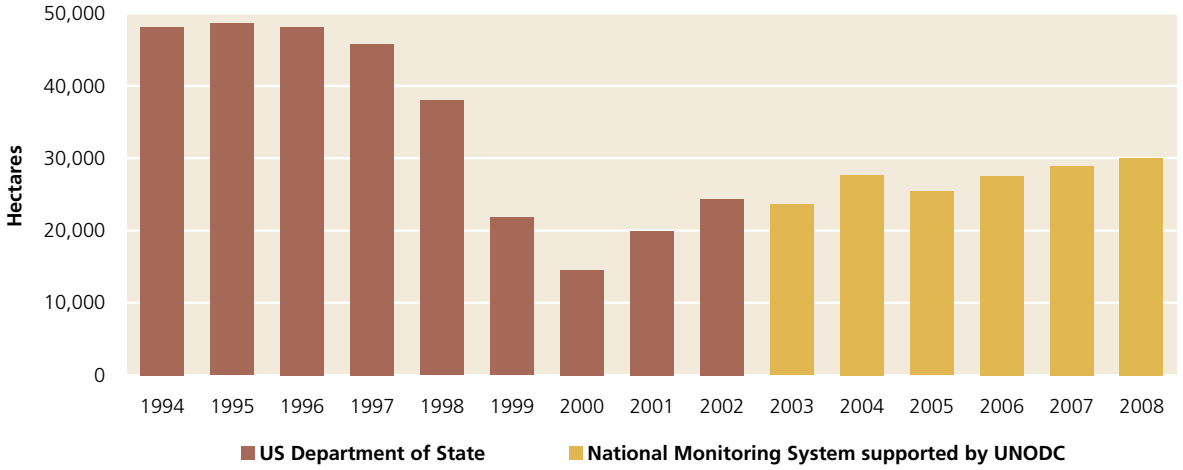
The Government of the Plurinational State of Bolivia reported 5,484 ha of eradication of coca bush, which is less than in 2007 but more than in 2005.

1 The information in this section comes from the report on Coca Cultivation in Bolivia (UNODC/Government of Bolivia, June 2009), and can also be found at http://www.unodc.org/unodc/en/crop-monitoring/index.html

2 Source: Instituto Nacional de Estadística de Bolivia (INE).

3 Excluding coca leaf maceration pits.

Bolivia, coca cultivation (ha), 1994-2008



Production

In 2007, potential cocaine production in Bolivia increased by 9% to113 mt. The increase in cocaine production is more pronounced than for the area under coca cultivation. This is because areas of relatively low yield where coca leaf is produced for traditional purposes have not been included.

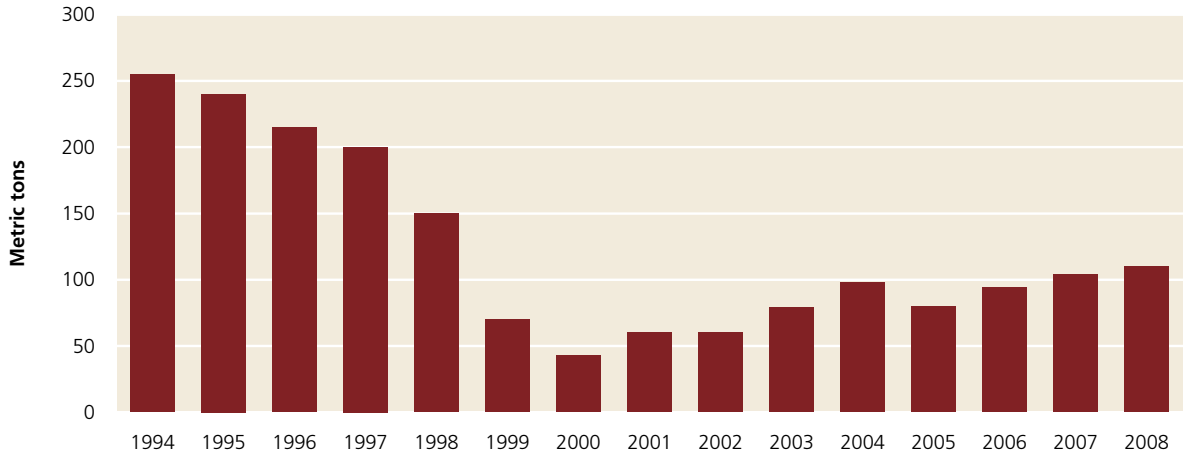
Prices

Farm-gate prices of sun-dried coca leaf in Chapare Region outside the state-controlled market experienced a strong increase in 2008 and reached a level of over US$ 6/kg (average US$5.5/kg), which was last reached in 2002. However, information from the first months of 2009 indicates a return to prices of around US$ 4/kg after good coca leaf harvests in the preceding rainy season. Coca leaf prices in the Yungas of La Paz, on the other hand, remained relatively stable over the course of the year. The monthly average price ranged from 36 bolivianos (Bs) or US$ 5.1/kg to Bs 39 or US$ 5.3/kg. The annual average is of Bs 38 was similar to 2007, however, expressed in US$ terms, it increased from US$ 4.8/kg in 2007 to US$ 5.2/kg in 2008 due to a change in the currency exchange rate.

The annual average price of sun-dried coca leaf in the state-controlled market increased significantly both in Bolivianos and US$ terms, from an average of Bs 35 or US$ 4.6/kg in 2007 to Bs 44 or US$ 6.1/kg in 2008 (weighted by the amount of coca leaf traded in the state-controlled markets of Sacaba in Chapare region and Villa Fatima in La Paz).

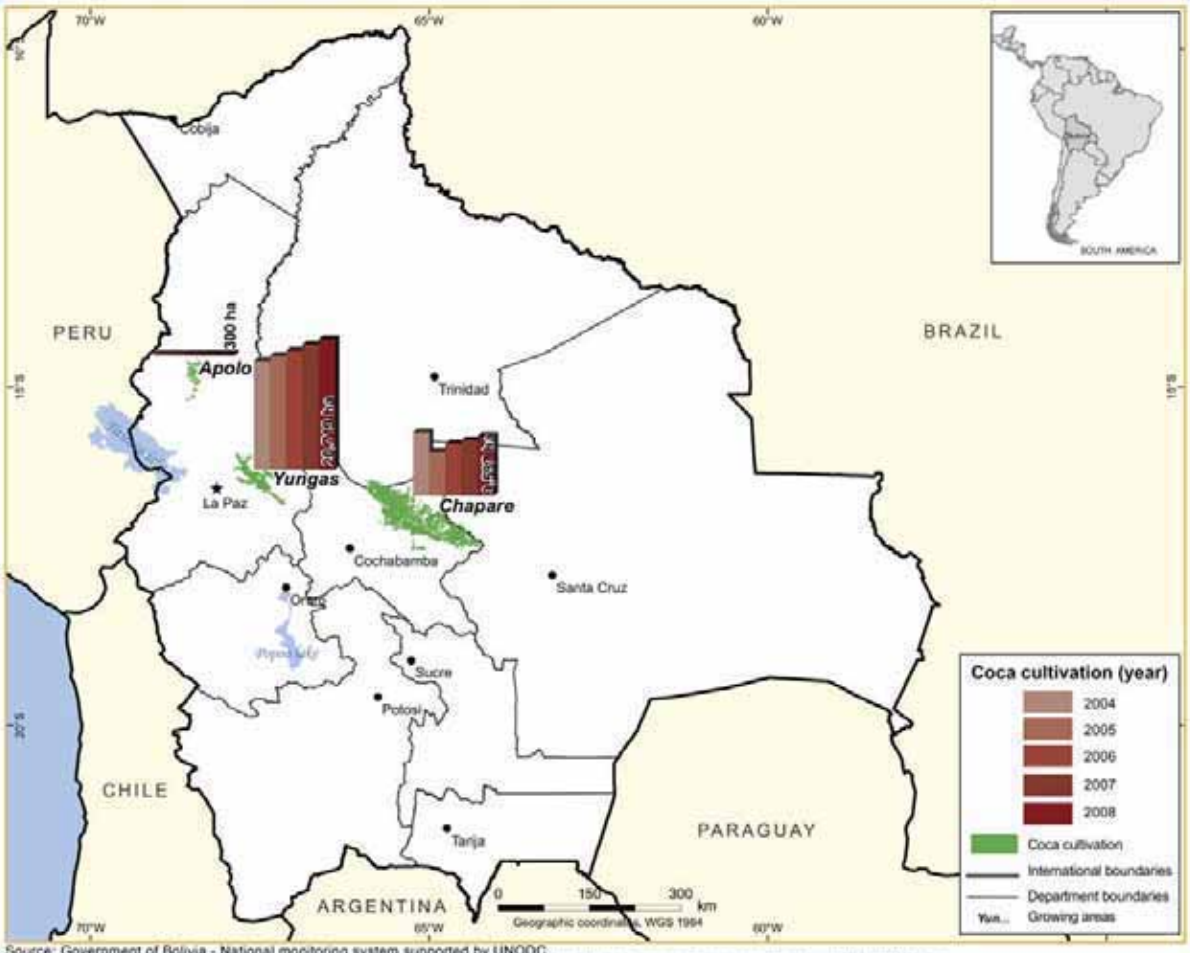
Bolivia, potential cocaine production (mt), 1994-2008

Note: Production estimates for 2004 and 2005 were updated in 2007 based on a new UNODC study on coca leaf yield in the Yungas of La Paz.
Sources: 1994-2002: Comisión Interamericana para el Control del Abuso de Drogas (CICAD) and US Department of State, *International Narcotics Control Strategy Report.* Since 2003: UNODC calculations, partly based on UNODC coca leaf yield surveys.



Bolivia, monthly farm-gate prices of sun-dried coca leaf, Chapare Region (US$/kg), 1990-2008

Bolivia, coca cultivation by region 2004-2008



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

3.1.3 Colombia

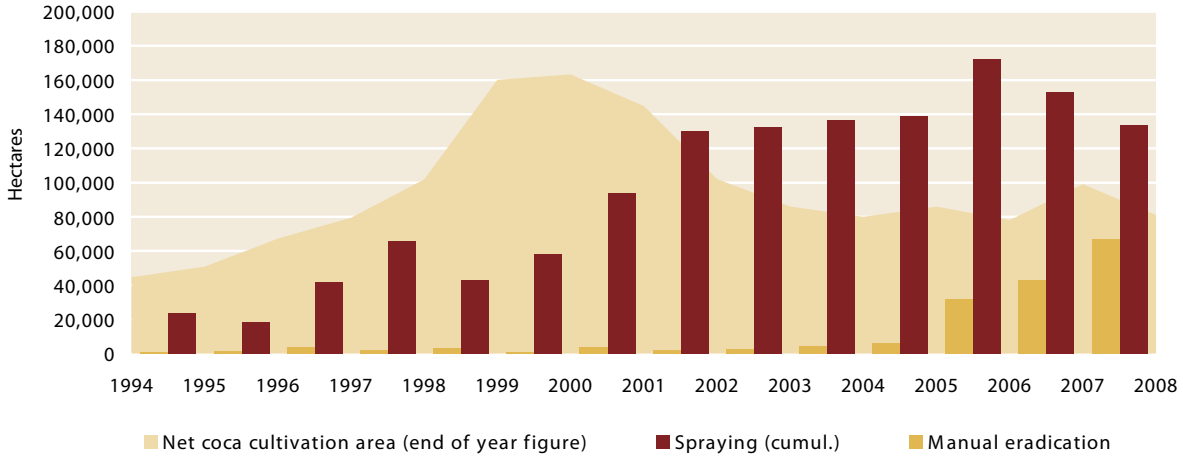
Fact sheet – Coca Survey 2008[1]			
	2007	Change on 2007	2008
Net coca cultivation (rounded total) *Of which in Pacific region* *Central region* *Putumayo-Caquetá region* *Meta-Guaviare region* *elsewhere*	99,000 ha *25,960 ha* *20,950 ha* *21,130 ha* *19,690 ha* *11,170 ha*	-18% *+15%* *-11%* *-34%* *-38%* *-44%*	81,000 ha *29,920 ha* *18,730 ha* *13,960 ha* *12,150 ha* *6,200 ha*
Potential production of cocaine	600 mt	-28%	430 mt
Average farm-gate price of coca paste	US$ 943/kg COP 1,959,000/kg	+2% -4%	US$ 963/kg COP 1,887,855/kg
Average wholesale price of cocaine*	US$ 2,198/kg COP 4,567,000/kg	+7% 0%	US$ 2,348/kg COP 4,580,000/kg
Total farm-gate value of the production of coca leaf and its derivatives	US$ 934 million	- 53%	US$ 441 million
in per cent of GDP in per cent of agricultural sector	0.5% 5%		0.3% 2%
Reported aerial spraying of coca bush*	153,134 ha	-13%	133,496 ha
Reported manual eradication of coca bush*	66,805 ha	+43%	95,634 ha
Reported seizure of cocaine*	126,641 kg	+63%	206,100 kg
Reported destruction of coca processing laboratories*	2,360	-6%	2,207
Of which cocaine HCl processing lab.	*265*		636
Reported opium poppy cultivation*	714 ha	-45%	394 ha
Potential opium latex production	34 mt*	n.a.	31 mt**
Potential heroin production (rounded)	1.4 mt*	n.a.	1.3 mt**
Average farm-gate price of opium latex	US$ 286/kg	+11%	US$ 318/kg
Average heroin price	US$ 10,780/kg	-8%	US$ 9,950/kg
Reported seizure of heroin	537 kg		696 kg

* As reported by the Government of Colombia. Figures for 2008 are preliminary.
** Own calculations based on regional yield figures and conversion ratios from US Department of State.

1 The information in this section comes from the report on Coca Cultivation in Colombia (UNODC/Government of Colombia, June 2009), and can also be found on the internet (http://www.unodc.org/unodc/en/crop-monitoring/index.html). Source unless otherwise indicated: National monitoring system supported by UNODC.

Colombia, Coca cultivation and reported eradication/spraying (ha), 1994-2008

Sources: Cultivation: 1994-1998: CICAD and US Department of State, International Narcotics Control Strategy Report; since 1999: National Illicit Crop Monitoring System supported by UNODC; eradication/spraying: Government of Colombia.



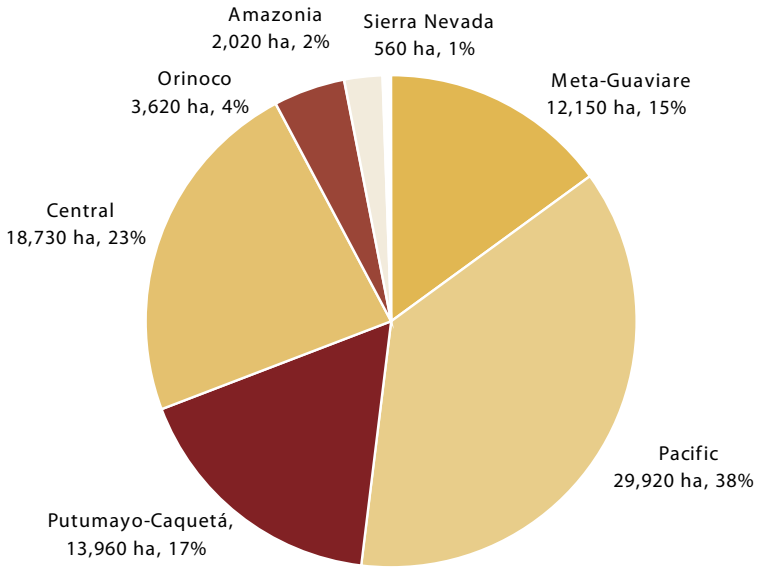
Cultivation and eradication

In 2008, the area under coca cultivation decreased by 18% to 81,000 ha, roughly the same level as in 2006. Most of the decrease of 18,000 ha took place in the regions of Meta-Guaviare, Putumayo-Caquetá and Orinoco. On the other hand, a significant increase was observed in the Pacific region as well as in some smaller cultivation regions. Thus, the Pacific region remained the region with the largest area under coca cultivation, with just below 30,000 ha or 38% of the total area, followed by the Central region (23%), Putumayo-Caquetá (17%) and Meta-Guaviare (15%).

The Colombian authorities continued to intensify manual eradication activities, which increased by 43% and reached a record high of 95,634 ha in 2008. In the Departments of Putumayo and Antioquía (Central region) alone, 30,834 ha and 19,366 ha were eradicated, respectively. In addition, in 2008, more than 133,000 ha of coca bush were sprayed in 14 Departments. Most spraying took place in the Department of Nariño (Pacific region), where over 54,000 ha were sprayed, followed by Guaviare, Putumayo, Caquetá and Antioquía.

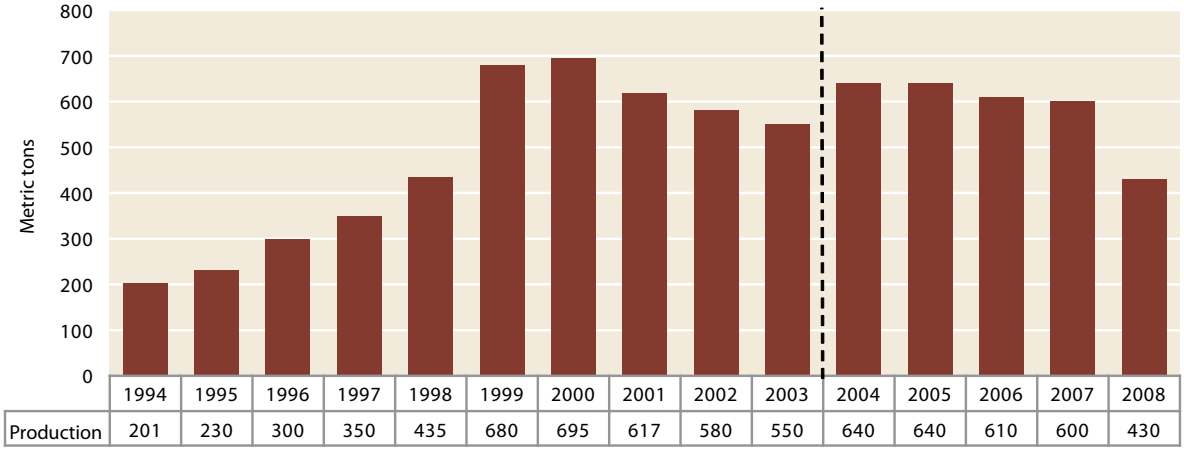
Colombia, coca cultivation by region, 2008

Source: National Illicit Crop Monitoring System supported by UNODC



Colombia, potential cocaine production (mt), 1994-2008

Note: Cocaine production estimates for 2004 and later are not directly comparable with previous years.
Sources: see Table 5 Global illicit cultivation of coca bush and production of coca leaf and cocaine.



Production

In 2008, the potential cocaine production in Colombia was estimated at 430 mt, much lower than in any of the four preceding years for which comparable data is available. The reduction in potential cocaine production (-28%) was more pronounced than the decrease in area under coca cultivation (-18%). Among other reasons, this was due to strong area decreases in some of the main coca cultivation regions (Meta-Guaviare, Putumayo-Caquetá and Orinoco), which were only partly counterbalanced by area increases in Pacific and other regions with average or below average yields. Lower coca leaf yields in Meta-Guaviare and Putumayo-Caquetá also contributed to the overall reduction in potential cocaine production.

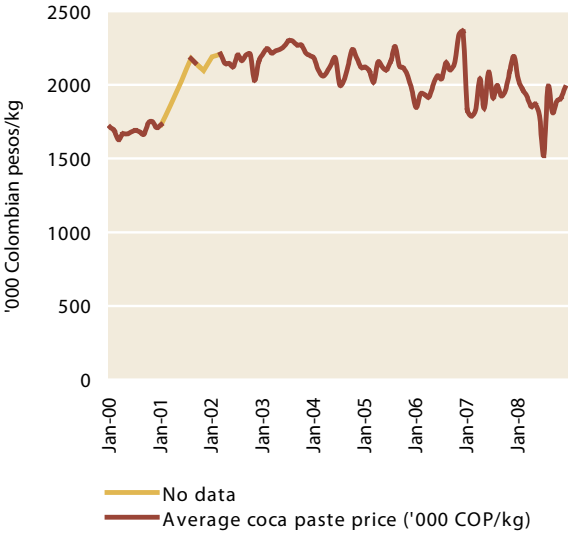
Prices for coca leaf, cocaine and opium

UNODC's monitoring of coca leaf prices in Colombia is not yet fully developed and the availability of monthly average farm-gate prices differs from region to region and over the course of a year. Thus, small-scale price changes should be interpreted with caution. Farm-gate prices are also thought to be influenced by armed groups who are able to control prices in their region of influence.

Farm-gate prices in Colombian pesos (COP) for coca leaf and derivatives changed little in 2008 compared to 2007. Over the last three years, farm-gate prices for coca leaf and paste were decreasing, despite higher costs of agricultural inputs and precursors necessary for producing coca paste. On average, the per kilo price of fresh coca leaf decreased from COP 2,400/kg or US$ 1.2/kg in 2007 to COP 2,200/kg or US$ 1.1/kg in 2008.

Farm-gate prices of coca paste have seemed relatively

Colombia, monthly farm-gate prices of coca paste ('000 COP/kg), Jan. 2000 to Dec. 2008

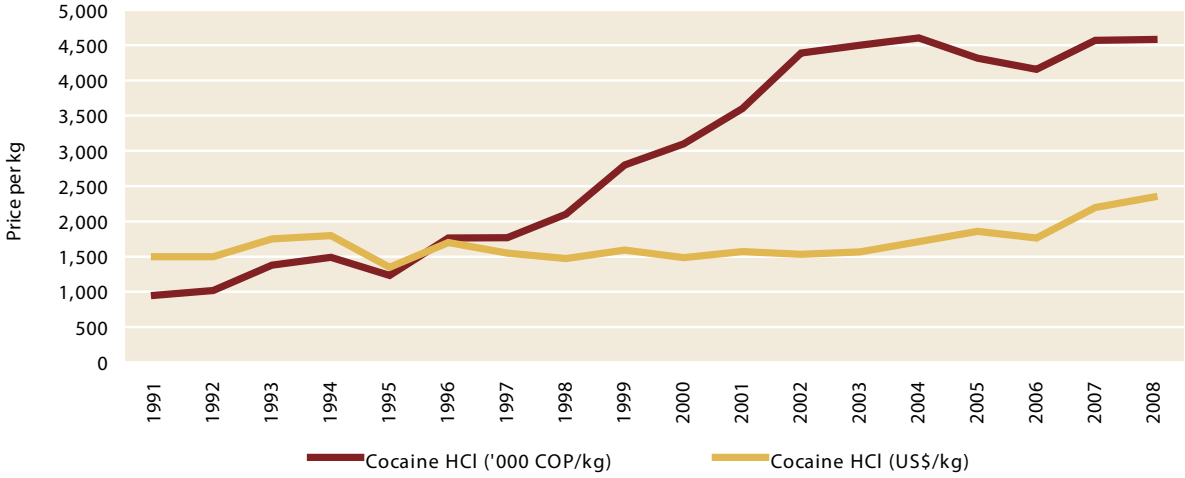


stable or slightly declining since 2004. Regional price averages ranged between a maximum of COP 2,056,000/kg in the Central region and a minimum of COP 1,714,583/kg in the Pacific region. In 2007, both the regional maximum and minimum prices were slightly higher with a maximum of 2,121,107/kg observed in the Central region and the minimum at COP 1,772,677/kg in the Putumayo-Caquetá region.

Coca leaf, which in Colombia is sold as fresh leaf (not sun-dried as in Bolivia and Peru), and coca paste, which many farmers in Colombia produce on the farm, are traded in Colombian pesos. Cocaine at the wholesale level, however, is thought to be traded mainly in US dollars. Wholesale prices of cocaine in Colombian cities

Colombia, annual wholesale prices of cocaine HCl (US$/kg and '000 COP/kg), 1991-2008

Note: Prices of unknown purity in major cities of Colombia. Source: Colombian Directorate of Anti-Narcotics (DIRAN).

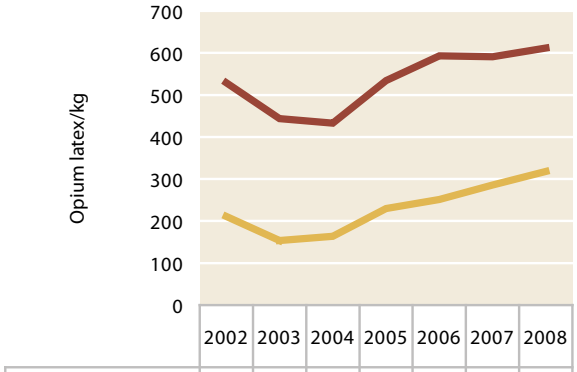


increased by 7% in US dollar terms from US$ 2,198/kg in 2007 to US$ 2,348/kg in 2008. In Colombian peso terms, however, prices did practically not change, due to a stronger peso.

The trend of increasing farm-gate prices observed since 2004 in both US dollar and Colombian peso terms for opium latex continued in 2008. However, wholesale prices for heroin decreased compared to 2007. According to reports of the Government of Colombia, the area under opium poppy cultivation shrank to a few hundred hectares.

Colombia, farm-gate opium latex prices, 2002-2008

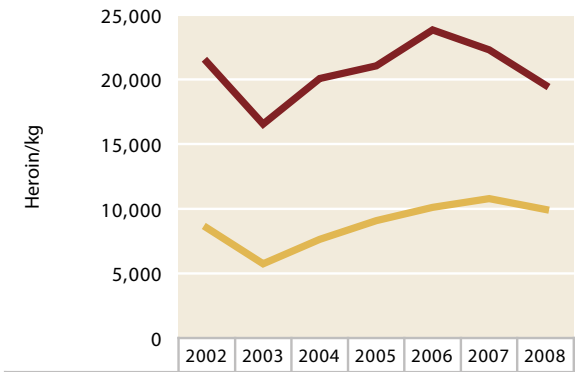
Source: DIRAN



	2002	2003	2004	2005	2006	2007	2008
Opium latex ('000 COP/kg)	529	444	433	534	593	591	612
Opium latex (US$/kg)	211	154	164	230	251	286	318

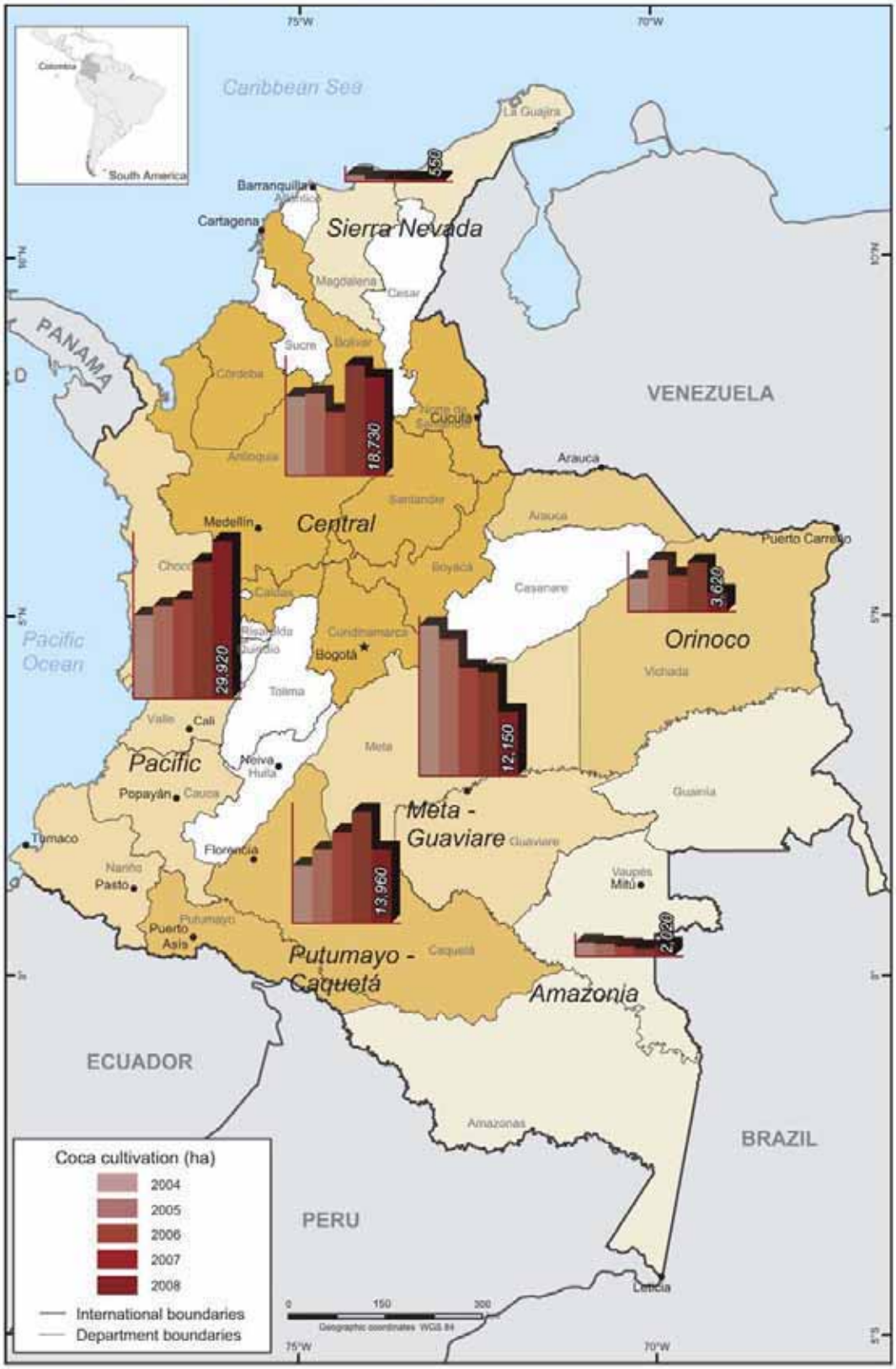
Colombia, farm-gate wholesale heroin prices, 2002-2008

Source: DIRAN



	2002	2003	2004	2005	2006	2007	2008
Heroin ('000 COP/kg)	21370	16561	20067	21051	23822	22294	19560
Heroin (US$/kg)	8520	5740	7635	9070	10103	10780	9950

Colombia, coca cultivation by region, 2004-2008



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

3.1.4 Lao People's Democratic Republic

Fact Sheet – Lao PDR Opium Survey 2008[1]

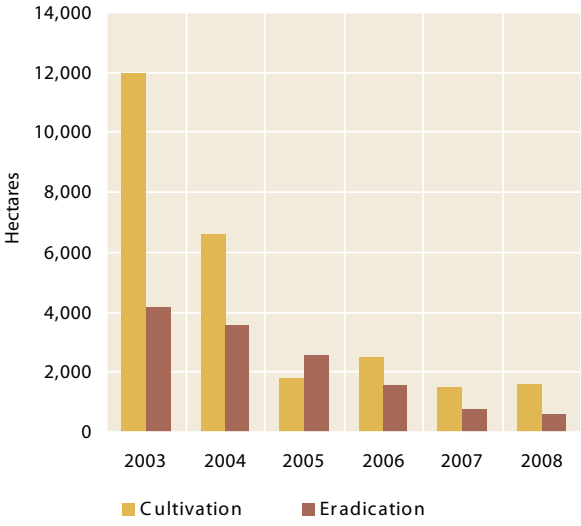
	2007	Change on 2007	2008
Opium poppy cultivation[2]	1,500 ha (1,230-1,860 ha)	+7%	1,600 ha (711-2,687 ha)
Average dry opium yield	6 kg/ha	-	6 kg/ha[3]
Potential production of dry opium	9.0 mt	+7%	9.6 mt
Average retail/wholesale price of opium[4]	US$ 974/kg	+26%	US$ 1,227/kg
Eradication[5]	779 ha	-26%	575 ha
Number of new opium addicts	7,700	-36%	4,906[6]
Average drug prevalence rate (in northern Lao PDR)	0.30%		0.19%

Cultivation and eradication

In 2008, opium poppy cultivation was found in all six surveyed provinces in the north of Lao PDR (Phongsaly, Luang Namtha, Oudomxay, Luang Prabang, Xieng Khouang and Huaphanh provinces). The total area under opium poppy cultivation in the Lao PDR increased by 7% in 2008 to 1,600 ha. Overall, the level of opium poppy cultivation in the country remains extremely low and is restricted to isolated plots in remote areas.

According to Government reports, eradication took place on 575 ha (during or after the helicopter survey). In the majority of cases, eradication took place when opium harvesting was already underway. The largest area eradicated was in Phongsaly where 310 ha or 54% of the total eradication was undertaken, followed by Huaphanh (53 ha) and Oudomxay (47 ha).

Lao PDR, opium poppy cultivation* and eradication (ha), 2003-2008



* after eradication

1 The information in this section comes from the report on Opium Poppy Cultivation in South East Asia (UNODC/Governments of Lao PDR, Myanmar and Thailand, December 2008), and can also be found on the Internet (http://www.unodc.org/unodc/en/crop-monitoring/index.html).

2 Source of cultivation, yield and production estimates: National monitoring systems supported by UNODC. The figures in brackets represent the lower and upper limits of the 90% confidence interval.

3 In the absence of a yield survey in 2008, the yield per hectare for 2007 was used.

4 Source: Lao PDR National Commission on Drug Control and Supervision (LCDC), Provincial authorities survey. Due to the limited market for opium, a clear distinction between farm-gate, wholesale and retail prices could not be established.

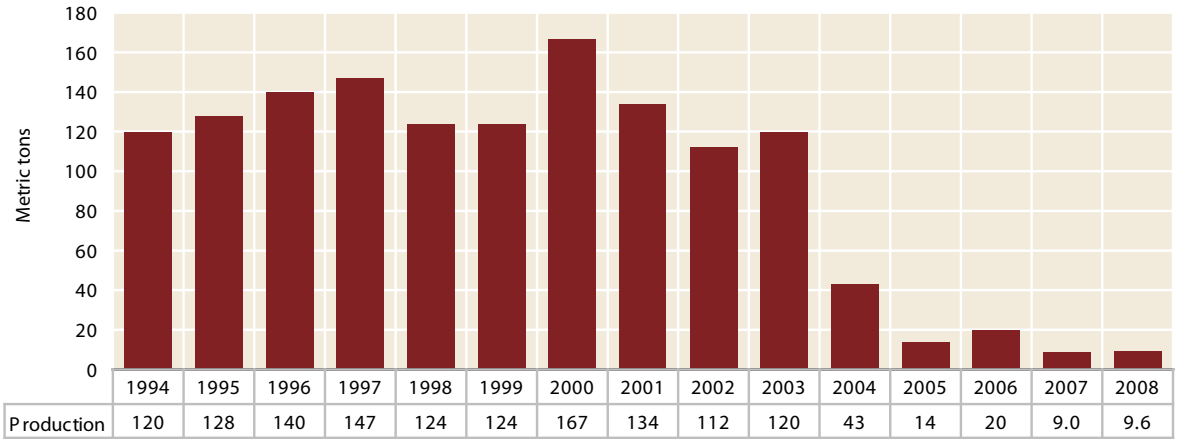
5 Source: LCDC. The 2006 and 2007 eradication campaigns were conducted before and after the survey. In 2008, eradication was mainly conducted during and after the survey.

6 The number does not take into account the possible relapse of recently treated addicts. There were 7,774 addicts, who had been treated since 2003, who relapsed. The total number (cumulative – since 2003) of current addicts in 2008 is 12,680. The relapse rate is 34%.

Production

The potential production of opium in the year 2008 was estimated at 9.6 mt, representing a 7% increase in production over 2007 based on the estimated area under cultivation. Bad weather conditions in northern Lao PDR did not permit the survey team to undertake a yield survey in 2008. Observations made from the helicopter indicated that the crop health was similar to that of 2007, that is, characterised by poor fields and low plant vigour. At the harvest stage, the capsules observed were small and capable of producing only a limited amount of opium gum. Therefore, the 2007 yield estimate of 6 kg/ha was also used to estimate production in 2008.

Lao PDR, potential opium production (mt), 1994-2008

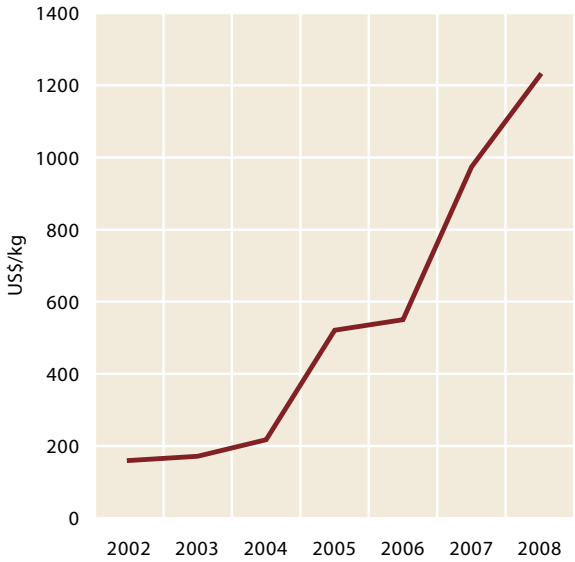


	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Production	120	128	140	147	124	124	167	134	112	120	43	14	20	9.0	9.6

Prices

Opium prices were collected at the provincial level by local authorities during or soon after the 2008 opium harvest.[7] The average opium price increased to US$ 1,227/kg in 2008, a 26% increase over the same period in 2007. Strong regional disparities in price indicated that there were significant local variations in supply and market access. Opium prices ranged between US$ 556/kg and US$ 744/kg in Phongsaly and Huaphanh provinces, where opium poppy production still exits, and reached record levels of US$ 2,209/kg and 2,124/kg in Vientiane, the capital city, and Luang Prabang province where opium poppy cultivation has been completely eliminated, or is very scarce, and while demand is high.

Lao PDR, annual opium prices (US$/kg), 2002-2008



Addiction

In line with a decrease in opium cultivation, the Government reports a decline in the prevalence rate of opium use the northern provinces from 0.6% in 2006 to 0.3% in 2007 and 0.2% in 2008 (expressed as a percentage of the population aged 15 and above). Relapse, however, continues to be a problem. In 2008, 4,906 opium addicts were identified as having relapsed. The total number of addicts amounted to 12,680 persons.

7 Since 2006, no clear distinction can be made between retail, wholesale and farm-gate prices. Only limited amounts of opium are thought to be sold in or to markets outside the province of origin.

3.1.5 Myanmar

Fact Sheet - Myanmar Opium Survey 2008 [1]

	Year 2007	Change on 2007	Year 2008
Opium poppy cultivation in Myanmar[2]	27,700 ha (22,500-32,600 ha)	+3%	28,500 ha (17,900-37,000 ha)
Opium poppy cultivation in Shan State	25,300 ha	0%	25,300 ha
Average opium yield (weighted by area)	16.6 kg/ha	-13%	14.4 kg/ha
Potential production of dry opium in Myanmar (including the Shan State)	460 mt	-11%	410 mt
Opium poppy eradication in Myanmar[3]	3,598 ha	+34%	4,820 ha
Average farm-gate price of opium[4]	US$ 261/kg	+15%	US$ 301/kg
Total potential value of opium production	US$ 120 million	+2%	US$ 123 million
Estimated number of households involved in opium poppy cultivation in Myanmar	163,000	+3%	168,000
Number of persons involved in opium poppy cultivation in Myanmar	815,000	+3%	840,000
Estimated number of households involved in opium poppy cultivation in the Shan State	148,900	0%	148,900
Average yearly household income in opium producing households (Shan State) of which from opium sales Per capita income in opium producing households (Shan State)	US$ 501 US$ 227 US$ 100	+37% +11% +37%	US$ 687 US$ 253 US$ 137
Household average yearly income in non-opium poppy producing households (Shan State) Per capita income in non-opium producing households (Shan State)	US$ 455 US$ 91	+58% +58%	US$ 721 US$ 144
Addiction prevalence rate in Shan State and Kachin (population aged 15 and above)	0.75 %	+47%	1.1 %

1 The information in this section comes from the report on Opium Poppy Cultivation in South-East Asia (UNODC/Governments of Lao PDR, Myanmar and Thailand, December 2008), and can also be found on the Internet (http://www.unodc.org/unodc/en/crop-monitoring/index.html). Source unless otherwise indicated: National monitoring system supported by UNODC.

2 The figures in brackets represent the lower and upper limits of the 90% confidence interval.

3 Source: Central Committee for Drug Abuse Control, Myanmar (CCDAC).

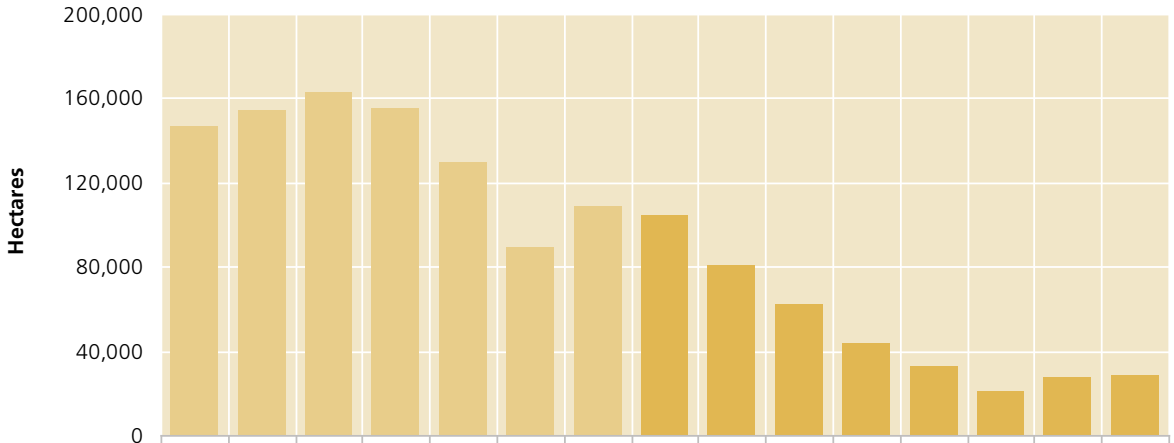
4 For 2007: yearly average price. For 2008: price at harvest time.

Cultivation and eradication

In 2008, the total area under opium poppy cultivation in Myanmar was estimated at 28,500 ha. Despite the small increases observed in the past two years, opium poppy cultivation in Myanmar remains far below the levels reached in the 1990s. The vast majority of the opium poppy cultivation in Myanmar continued to take place in South Shan (53%) and East Shan State (33%). In 2008, the most important increase in opium poppy cultivation was observed in East Shan State, with 36% more opium poppy under cultivation as compared to 2007, whereas in South Shan State cultivation decreased by 17%.

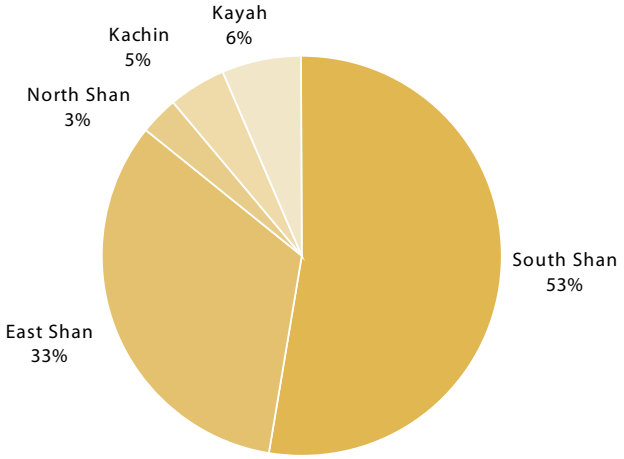
According to official reports from the Government of Myanmar, a total of 4,820 ha were eradicated in 2007-2008, which is an increase of 34% compared to the eradication in 2006-2007 when 3,598 hectares were eradicated. Eradication in Kachin State was four times higher than a year earlier but still below the level reported in 2005. Eradication in East Shan State increased by 13% and in South Shan State by 33%. In Chin State, eradication teams eradicated all the opium poppy found in the region, which was mainly concentrated in the border areas.

Myanmar, opium poppy cultivation (ha), 1994-2008



	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
UNODC								105,0	81,40	62,20	44,20	32,80	21,50	27,70	28,50
US Dept of State	146,6	154,0	163,0	155,1	130,3	89,50	108,7								

Myanmar, distribution of opium poppy cultivation by region, 2008



Opium poppy eradication as reported by the Government, 2002-2008

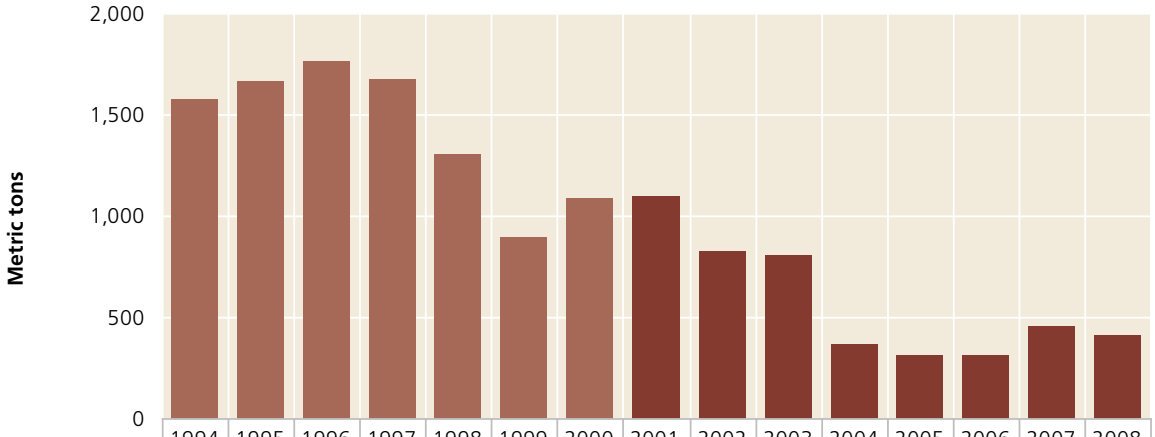
Administrative Unit	2002	2003	2004	2005	2006	2007	2008
North Shan State	6,223	235	172	1,211	76	916	932
South Shan State	511	182	2,170	1,203	3,175	1,316	1,748
East Shan State	14	91	195	124	32	1101	1,249
Special Region 2 (Wa)	94	55	0	0	0	0	0
Shan State	6,842	563	2,537	2,538	3,283	3,333	3,929
Kachin State	97	56	126	1,341	678	189	790
Kayah State	527	9	83	8	0	12	12
Other States	3	8	74	20	9	64	89
Total	7,469	638	2,820	3,907	3,970	3,598	4,820

Production

Based on a total of 312 fields measured in the survey, the weighted national average opium yield for 2008 is estimated at 14.4 kg/ha, leading to an estimated potential opium production of 410 mt. In 2007, the estimated yield was 16.6 kg/ha and the estimated potential opium production was 460 mt.

Due to the lower yield, opium production in 2008 was lower than in 2007 although the area under opium poppy cultivation was roughly the same. Most opium was produced in the Shan State (88%), particularly in South Shan (56%) and East Shan (30%).

Myanmar, potential opium production (mt), 1994-2008

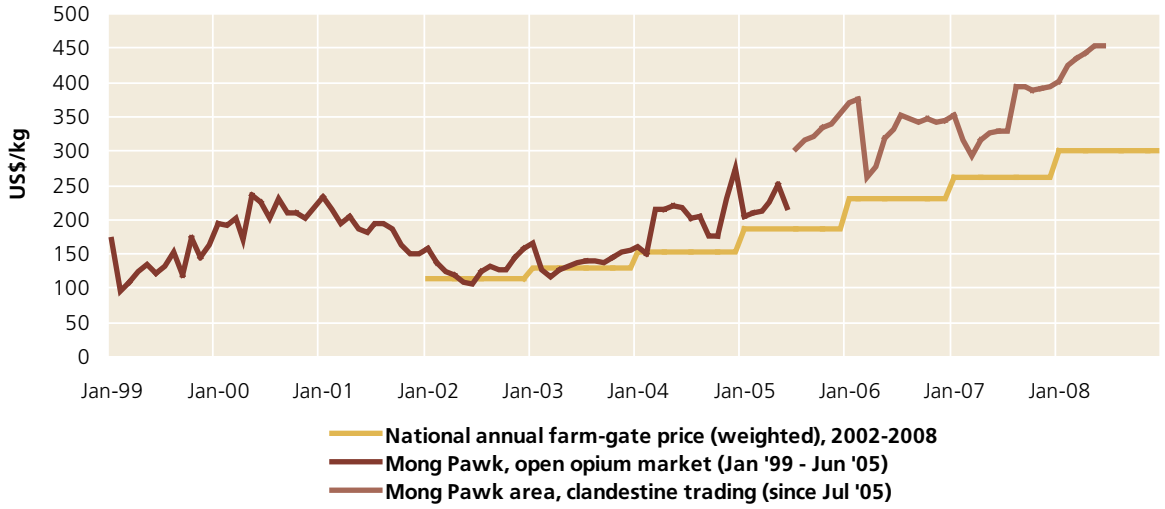


	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
UNODC								1,097	828	810	370	312	315	460	410
US Dept of State	1,583	1,664	1,760	1,676	1,303	895	1,087								

Prices

In 2008, the average farm-gate price of opium at harvest time was estimated at US$ 301/kg. This represents an increase of 15% compared to the average price reported in 2007 (US$ 261/kg). A similar price increase was observed between 2006 and 2007. In 2008, prices continued to differ strongly across states, with Kachin State reporting the highest price (US$ 518/kg) and South Shan State reporting the lowest (US$ 265/kg). The largest increase in price compared to last year was observed in Kachin and North Shan States; both states where little opium poppy cultivation took place. Whereas in South Shan and East Shan States, which together produced 88% of the opium, the price increase was less pronounced.

Myanmar, prices for dry opium (US$/kg), 1999-2008



The wholesale opium prices collected in the Mong Pawk area, which is located in Special Region 2 (Wa region), Shan State, by and large reflect the increase in farm-gate prices. The monthly opium wholesale prices, which were close to the average farm-gate price before the opium ban in the Wa region, seemed to have increased more rapidly than the farm-gate prices. This could be due to the higher risk premium, which traders have to consider in a region where opium poppy is banned. However, it has to be noted that wholesale prices were collected on the open opium market in Mong Pawk town until an opium ban was introduced by the authorities in mid-2005, but had to be collected from a wider range of places and under more difficult conditions after the ban. This limits comparability.

Household income and strategies

In 2008, the average annual cash income of an opium poppy growing household was estimated at US$ 687, while that of a non-opium poppy cultivating household was slightly higher, at US$ 721. As in past years, in most states, the average household cash income in villages that never grew opium poppy was higher than the average household income in villages in the same region that were still growing poppy in 2008 or had grown in the past. Villages reporting opium poppy cultivation were also characterised by lower food security compared to opium poppy-free villages. The survey findings suggest that non-poppy growing villages could achieve a higher level of food security through cultivation of rice. The importance of rice cultivation for food security and poppy cultivation is emphasized by the fact that villages with access to paddy land (irrigated rice fields) were less likely to grow opium poppy. The situation was different in South Shan State, where the average income in poppy growing villages was higher than non-poppy growing villages and over half of the average household cash income in poppy growing villages was reported to stem from opium. This may be due to the relatively large scale of poppy cultivation and higher than average opium yields in this region.

In 2008, the survey findings also indicated that households in former poppy growing villages could not find adequate means of substituting their lost cash income from opium. Villages growing opium poppy showed a significantly higher intensity of shifting cultivation, both in terms of acreage of forest cleared and duration of fallow periods, compared to non-growing villages. The most common coping strategy for the farmers who had stopped opium poppy cultivation was to grow more rice and maize and to sell livestock. There is also some evidence of migration occurring in the Wa region where opium poppy cultivation was abandoned in 2005.

Addiction

Within the surveyed area in 2008, the average level of addiction was higher in villages with opium poppy cultivation compared to non-growing villages. As in previous years, opium addiction continues to be a predominantly male phenomenon. The level of amphetamine-type stimulant (ATS) and heroin addiction was low compared to opium abuse in both growing and non-growing villages. The survey did not cover urban areas where these types of addiction are thought to be higher.

3.1.6 Peru

Fact sheet – Peru Coca Survey 2008[1]			
	2007	Change on 2007	2008
Coca cultivation	53,700 ha	+4%	56,100 ha
Of which in *Alto Huallaga*	*17,200 ha*	*+3%*	*17,800 ha*
Apurímac-Ene	*16,000 ha*	*+4%*	*16,700 ha*
La Convención-Lares	*12,900 ha*	*+2%*	*13,100 ha*
Elsewhere	*7,600 ha*	*+12%*	*8,500 ha*
Weighted average sun-dried coca leaf yield	2,200 kg/ha		2,200 kg/ha
Potential production of sun-dried coca leaf[2]	116,800 mt	+5%	122,300 mt
Potential production of sun-dried coca leaf available for cocaine production	107,800 mt	+5%	113,300 mt
Potential production of cocaine HCl	290 mt	+4%	302 mt
Average farm-gate price of sun-dried coca leaf	US$ 2.5/kg	+36%	US$ 3.4/kg
Average farm-gate price of sun-dried coca leaf (weighted)[3]	US$ 2.5/kg	+24%	US$ 3.1/kg
Average farm-gate price of coca paste	US$ 600/kg	+21%	US$ 723/kg
Average price of cocaine HCl*	US$ 851/kg	+10%	US$ 940/kg
Potential farm-gate value of sun-dried coca leaf	US$ 292 million		US$ 379 million
Reported eradication of coca cultivation*	12,072 ha	-16%	10,143 ha
Reported seizure of sun-dried coca leaves*	1,858 mt		n.a.
Reported seizure of coca paste*	6,260 kg	+82%	11,375 kg
Reported seizure of cocaine HCl*	8,119 kg	+107%	16,836 kg
Reported destruction of coca laboratories[4]*	665	+84%	1,224
Of which cocaine HCl processing laboratories	16	+19%	19
Reported seizure of opium latex*	126 kg		n.a.

* As reported by the Government of Peru.

1 The information in this section comes from the report on Coca Cultivation in Peru (UNODC/Government of Peru, June 2009), and can also be found on the Internet (http://www.unodc.org/unodc/en/crop-monitoring/index.html). Source unless otherwise indicated: National monitoring system supported by UNODC.

2 Includes all coca leaf potentially produced. For the calculation of coca leaf available for cocaine production, 9,000 mt of sun-dried coca leaf were deducted from this figure, which, according to Government sources, is the amount used for traditional purposes.

3 The weighted average price takes into account that different amounts of coca leaf are sold in different coca cultivation regions at different price levels. The exact volume of coca leaf traded and the prices of the transaction are not known. As an approximation, the annual average prices of the main coca cultivation regions were multiplied with the potential annual coca leaf production in these regions to calculate the weights. These regions represent 82% of estimated amount of coca leaf available for cocaine production.

4 Excluding coca leaf macerations pits.

Cultivation and eradication

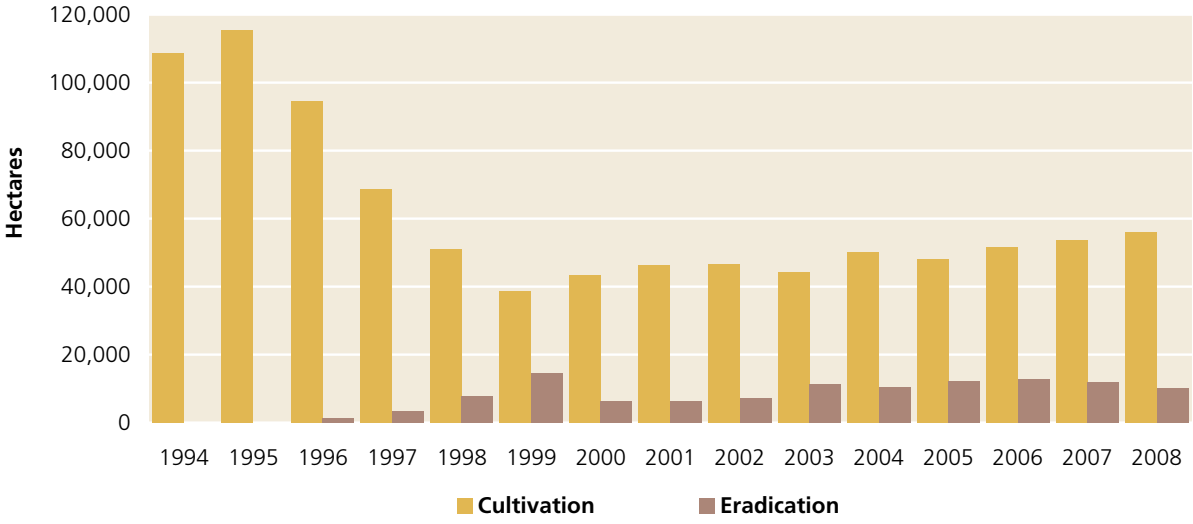
In 2008, the area under coca cultivation in Peru increased by 4% or 2,400 ha to 56,100 ha, which is the third, albeit relatively small, consecutive increase in three years. Peru remains the world's second largest cultivator of coca bush after Colombia. Peru's three largest cultivation region, Alto Huallaga, Apurímac-Ene and La Convención-Lares, represented 85% of the area under coca cultivation in 2008. The rate of expansion was average or below average in these regions, which nonetheless contributed most to the increase in absolute terms, and even more in most of the smaller production areas.

The area under coca cultivation eradicated, 10,430 ha in 2008, decreased by 16% compared to 2007 and was lower than in any year since 2003.

Government reports on eradication indicate that opium poppy cultivation continues to exist in Peru. However, the area currently cultivated with opium poppy is not known.

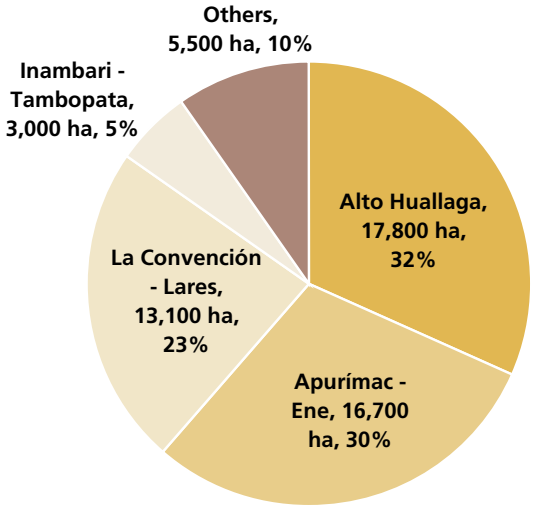
Peru, coca cultivation and eradication (ha), 1994 to 2008

Sources: Cultivation: 1994-1999, US Department of State. Since 2000, National monitoring system supported by UNODC. Eradication: CORAH (Coca Eradication in the Upper Huallaga Valley), DEVIDA (Peru National Comission for a Drug-Free Life).



Peru, coca cultivation by region, 2008

Source: National monitoring system supported by UNODC



Production

In 2008, total production of sun-dried coca leaf was estimated at 122,300 mt. After a deduction of 9,000 mt, which, according to Government reports, is the amount used for traditional purposes, 113,300 mt would be available for cocaine production. Based on a conversion rate of 375 kg of sun-dried coca leaf for one kilogram of pure cocaine, this corresponds to a potential cocaine production of 302 mt.