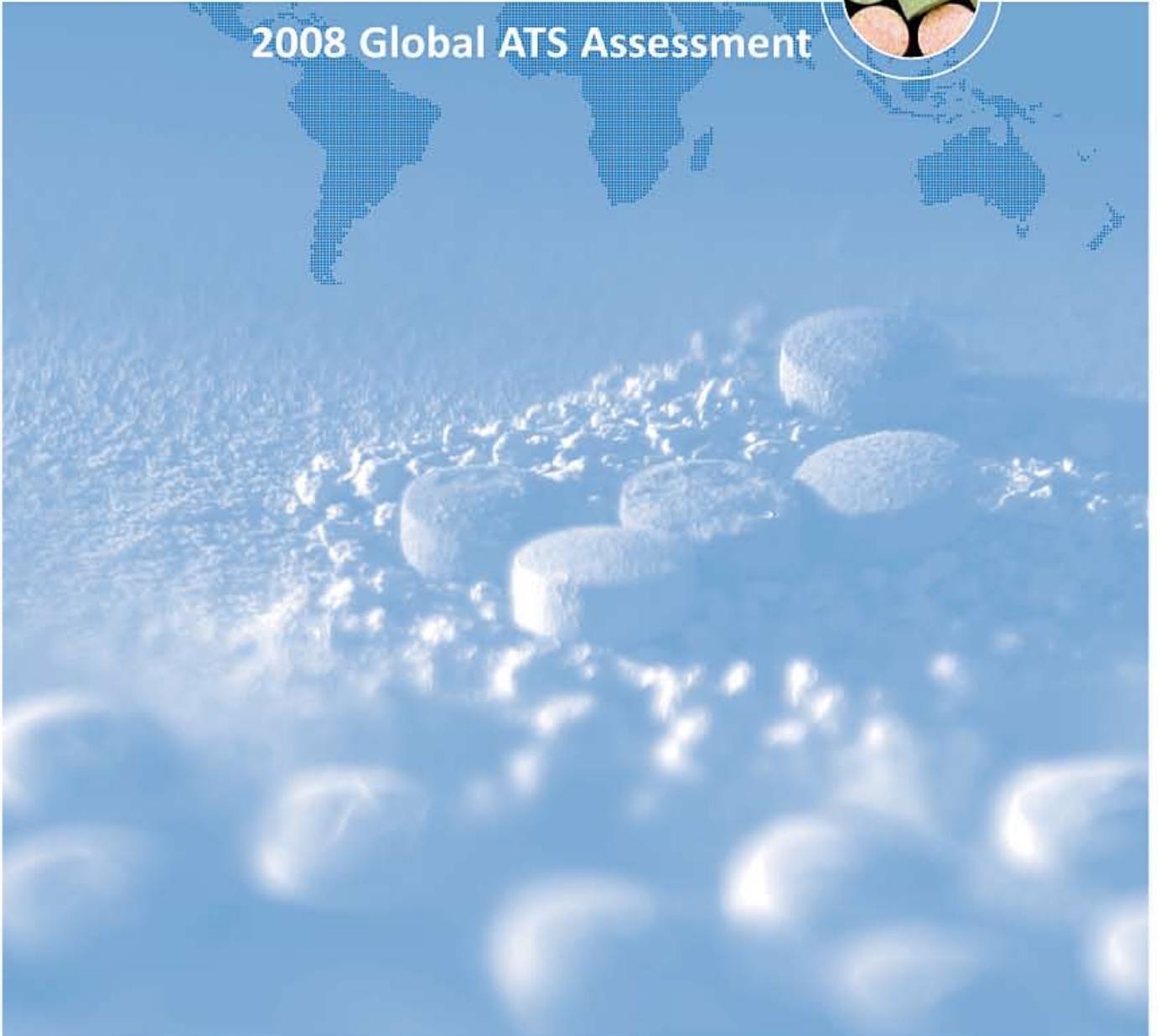




UNITED NATIONS  
*Office on Drugs and Crime*

# AMPHETAMINES AND ECSTASY

2008 Global ATS Assessment



## Acknowledgements

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

This publication has not been formally edited.



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## PREFACE

Around the world, millions of people take pills and powders generically known as *amphetamine-type stimulants* (ATS), an aggregate term that includes amphetamine, methamphetamine and ecstasy. Over time these drugs have become a cheap and available tonic for our fast and competitive times – for entertainment in discos, but also for greater stamina in an assembly line or behind a steering wheel. Indeed, the number of people who have taken ATS at least once in the past 12 months exceeds that of people taking cocaine and heroin combined.

As of late, however, there have been important signs of change, some for the better.

First and foremost, on the global average, *ATS consumption* has stabilized in the past few years, though the improvement occurred mostly in developed countries. Elsewhere, especially in East and South-East Asia, as well as in the Middle East, the problem has worsened. Some countries are in denial about it, and do not even report their situation to the United Nations. Other countries are ill-equipped to fight the pandemic, in terms of information gathering, regulatory frameworks, law enforcement, forensics, or health care. This inability to deal with the ATS problem is a major concern, since it affects the very regions most vulnerable to a future spread of the ATS problem.

*ATS production* has also stabilized worldwide, at about 500 tons per year. Yet, divergent geographical trends once again emerge: decreasing lab seizures in, for example, the United States and the European Union (evidence of lessening of supply), have been offset by a rise in ATS production in neighbouring countries. Growing supplies have also been identified in East and South-East Asia. Major ATS seizures in the Middle East (especially in the Gulf countries) indicate that the problem is spreading southward, to countries that had been spared till now.

Looking backward over *the past decade*, we can now detect two important chronological benchmarks. *First*, the time when the ATS became a global problem. World-wide, the alarm bells started to ring little more than a decade ago: it was a new type of addiction that added momentum to the simultaneously rapid spread of the other major illicit drugs (opiates, cocaine and cannabis). It was at this time, and for this reason, that the United Nations General Assembly convened in 1998 a Special Session (UNGASS) dedicated to the improvement of drug control. The *second* benchmark, a bit less precise, refers to when the ATS problem began to stabilize, at least in some parts of the world. It was at this time that UNODC published the first world report on the ATS (2003), documenting the sources of this threat, its momentum and remedies. What looked like a containment of the problem, and still does if considered in the global aggregate, now needs to be qualified by the caveat that important supply and demand shifts (mentioned above) are taking place: first and foremost, the diversification of both production and consumption, away from developed countries and into the transition and the developing ones.

Over *the next few years*, further progress in controlling ATS presents serious challenges, some very different from the difficulties of dealing with plant-based drugs like cocaine, heroin or cannabis.

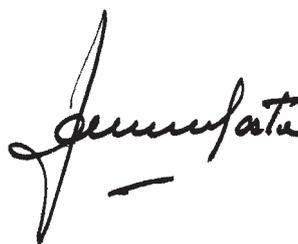
The first challenge is *difficulty of measurement*. Unlike hectares of plant-based crops that can be spotted and measured using satellites or ground surveys, ATS production facilities are much harder to detect and measure. Supply estimates are extrapolated from seizures of precursors and ATS end-products; demand estimates from very rough and ready calculations of the number of people taking the drugs. In much of the developing world, including the countries most affected, data are scarce or non-existent.

The second challenge is the *simplicity of the ATS supply chain*. The precursor chemicals needed to make ATS are easily accessible. They are produced by the tens of millions of tons worldwide, for legitimate industrial purposes. Unlike plant-based drugs that are cultivated, refined and shipped halfway around the world, methamphetamine can be produced in hidden laboratories (even in a kitchen) using off-the-shelf ingredients and easily obtainable recipes (from the internet). Suppliers quickly adapt to the latest trends, and cater to local markets. When one lab is shut, another opens. When one type of precursor chemical is unavailable, producers switch to an alternative.

The third challenge is the *link between the ATS supply push and demand pull*. ATS can be made in the residence, or at least in the neighbourhood, of the consumer. Law enforcement, which has many points of intervention when the trafficking chain stretches geographically across two continents (Afghan heroin sold in Europe, and Colombian cocaine sold

in the US), has little possibility of intervention when production (*the supply push*) is so close to retail outlets. There is even less possibility of intervention when industrial-scale labs, which can produce hundreds of kilos or millions of tablets, are located in areas where law enforcement is weak or corrupt, or local officials are complicit. Trying to control supply is futile if there is a *demand pull*: because some people perceive ATS to be harmless (“pills do not kill or spread HIV/AIDS”, it is said), synthetic drugs are frequently subject to benign neglect in attitudes, policy and enforcement that only slow down remedial action.

This report shows that we know more about ATS than we did five years ago when UNODC produced the first global survey of ecstasy and amphetamines. But it also reveals that further evidence is needed in order to provide a more complete picture of the problem. UNODC’s SMART programme (*Synthetics Monitoring: Analyses, Reporting and Trends*) will provide the international community with the evidence needed to take more targeted action, such as more determined enforcement, more powerful prevention and more effective treatment.



Antonio Maria Costa  
Executive Director  
United Nations Office on Drugs and Crime



A stylized world map composed of small dots, rendered in a light green color, set against a darker green background. The map is centered and occupies the upper half of the page.

## INTRODUCTION

At the request of the Commission on Narcotic Drugs (CND), the United Nations Office on Drugs and Crime (UNODC) produced a global review of amphetamine-type stimulants (ATS) in 1996.<sup>1</sup> The report provided an in-depth analysis of both the licit and illicit ATS markets and their historical development and concluded that ATS have the potential to become a global problem on a scale comparable to that posed by plant-based narcotic drugs.

This report, as well as a subsequent conference in Shanghai in 1996 which discussed the findings from both a technical and a political perspective, provided the basis for the adoption of an *Action Plan against illicit manufacture, trafficking and abuse of amphetamine-type stimulants and their precursors* at the UN General Assembly's Special Session (UNGASS) in 1998. Acknowledging that ATS markets are rapidly changing in scope and geographical spread, the *Action Plan* called for the international community to prioritize the problem of ATS.

Coinciding with the mid-term review of the *Action Plan*, UNODC published *Ecstasy and amphetamines - Global Survey 2003*. This report provided an in-depth analysis of the size and nature of the ATS threat with a special focus on the impact of ATS use on society. It concluded that there is continuing demand for ATS and that the market is expanding to incorporate new users in countries previously unaffected by the ATS problem.

Further to the above reports, the global ATS situation has been reported annually since 1999 as part of UNODC's analysis of trends in world drug markets.<sup>2</sup>

To date, at the 10-year mark of the 1998 UNGASS review process, it is clear that even though some progress has been made in the implementation of the *ATS Action Plan*, significant efforts are still required to understand the ATS problem better and tackle it more effectively. What has emerged is that generalization of the situation at the global level tend to obscure regional developments and delay the identification of emerging trends.

The present report aims at updating information available since the *Global Survey 2003*, with a special focus on regional trends. It does this mainly by comparing and contrasting the situation in 2001/02 with data from 2006/07 and in some instances 2008. Timelines dating back to 1998 are provided where they are useful in aiding contextual understanding. To reflect regional characteristics, the report begins with an assessment of the situation in Asia, where ATS represent the primary drug problem in a number of countries. This is followed by Oceania, the Near and Middle East, Europe, Africa, North America and finally Central and South America and the Caribbean. While all regions in the world are touched upon, focus is primarily given to the ATS situation in countries and regions where available data suggest that the most significant changes have occurred over the past five years and/or where there are indications for further spread.

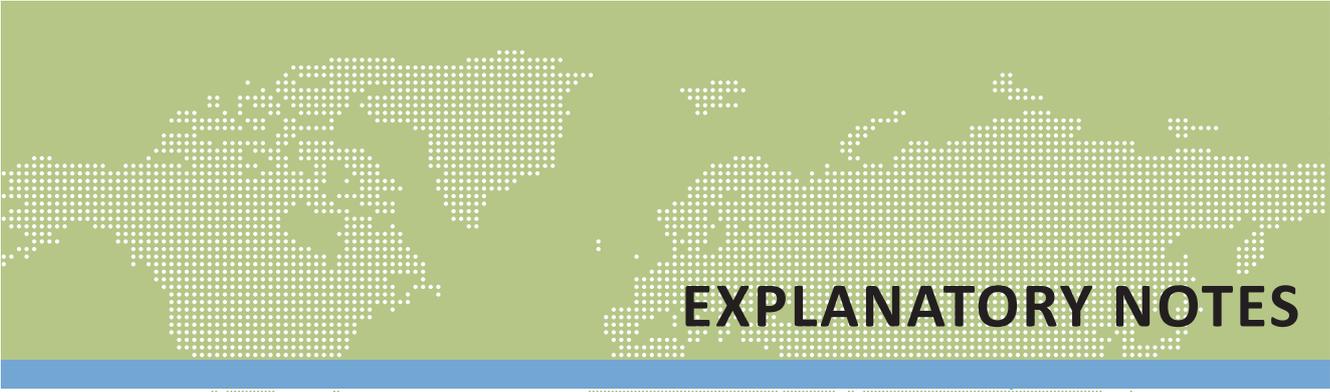
Beyond this regional focus, the present report also highlights selected methodological constraints of ATS-related data gathering including the central role of qualitative information and forensic data to understand the range of products available in illicit ATS markets and the starting materials actually used for manufacture.

Data presented in this report was obtained from UNODC's Annual Reports Questionnaire (ARQ), from annual and technical reports of the INCB, government reports, inter-governmental organizations (e.g. EUROPOL, Interpol/ICPO, WCO), UNODC field offices, and from regional data collection mechanisms such as the Drug Abuse Information Network for Asia and the Pacific (DAINAP).

Electronic copies of the report *Amphetamines and Ecstasy - 2008 Global ATS Assessment* can be accessed via [www.unodc.org](http://www.unodc.org).

Comments and feedback on the report are welcome and can be sent to: [lab@unodc.org](mailto:lab@unodc.org)

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1 UNDCP Technical Series Number 3, *Amphetamine-type stimulants: a global review* (1996).  
2 Published as UNDCP's *Global Illicit Drug Trends* and UNODC's *World Drug Report*.



## EXPLANATORY NOTES

This Report has not been formally edited.

The designations employed and the presentation of the material in this publication do not imply the expression of any opinion whatsoever on the part of the Secretariat of the United Nations concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Countries and areas are referred to by the names that were in official use at the time the relevant data were collected.

The following notes describe certain terms, regional designations, data sources and timeframes used throughout this document.

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

In various sections of this report, amphetamine and methamphetamine are also referred to as *amphetamines-group substances*. In cases where countries report to UNODC without indicating the specific ATS they are referring to, the term non-specified amphetamines is used. Tablets which are marketed to contain an *ecstasy-group substance*, but may actually contain a variety of other substances, are referred to as 'ecstasy'.

**Terms:** Since there is some scientific and legal ambiguity about the distinctions between drug 'use', 'misuse' and 'abuse', this report uses the neutral terms, drug 'use' or 'consumption'.

**Maps:** The boundaries and names shown and the designations used on maps do not imply official endorsement or acceptance by the United Nations. A dotted line represents approximately the line of control in Jammu and Kashmir agreed upon by India and Pakistan. The final status of Jammu and Kashmir has not yet been agreed upon by the parties. Disputed boundaries (China/India) are represented by cross hatch due to the difficulty of showing sufficient detail.

The data on population used in this Report comes from: United Nations, Department of Economic and Social Affairs, Population Division (2007). World Population Prospects: The 2006 Revision.

In various sections, this Report uses a number of regional designations. These are not official designations. They are defined as follows:

- East Europe: European CIS countries
- South-East Europe: Turkey and the non-EU Balkan countries
- West and Central Europe: EU 25, EFTA, San Marino and Andorra
- North America: Canada, Mexico and the United States of America (USA)
- Near and Middle East: Afghanistan, Bahrain, Iran, Iraq, Israel, Jordan, Kuwait, Lebanon, Oman, Pakistan, Qatar, Saudi Arabia, Syria, United Arab Emirates (UAE), and Yemen
- East and South-East Asia: Brunei Darussalam, Cambodia, China (and Hong Kong (SAR of China), Macau (SAR of China), and Taiwan (Province of China)), Indonesia, Japan, Republic of Korea, Lao PDR, Malaysia, Mongolia, Myanmar, Philippines, Singapore, Thailand, and Viet Nam
  - Greater Mekong Subregion (GMS): Cambodia, Lao PDR, Myanmar, Thailand, Viet Nam, and bordering provinces of China
  - North-East Asia: Japan, Philippines, Republic of Korea
  - Southern Archipelago: Brunei Darussalam, Indonesia, Malaysia and Singapore
  - South Asia: Bangladesh, India, Maldives, Nepal, and Sri Lanka
  - Central Asia and countries of the Caucasus: Armenia, Azerbaijan, Georgia, Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, Uzbekistan

- Oceania: Australia, Fiji, Kiribati, Marshall Islands, Micronesia, Nauru, New Zealand, Palau, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu, Vanuatu, and other Pacific island states and territories
- OECD Member Countries: Australia, Austria, Belgium, Canada, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Japan, Korea, Luxembourg, Mexico, Netherlands, New Zealand, Norway, Poland, Portugal, Slovak Republic, Spain, Sweden, Switzerland, Turkey, United Kingdom (UK), and the USA

**Data Sources and timeframes:** The data contained in this report draws almost exclusively upon official sources as reported in the UNODC Annual Reports Questionnaire (ARQ) by Member States, annual and technical reports of the INCB, official government and inter-governmental entities (e.g. Interpol/ICPO, EUROPOLI, WCO, CICAD), UNODC Field Office and HONLEA reports, data systems (e.g. DAINAP, CEN) and the scientific literature. The data throughout the report compares and contrasts trends from 2001/02 with data from 2006/07 and in some instances 2008.

Data related to seizures of ATS, their precursors and clandestine laboratories 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. Thus, some figures may differ from previously published figures. All data reported herein reflect the most up-to-date and accurate information available at the time of publication.

#### The following abbreviations have been used in this report:

AIDS	Acquired Immune-Deficiency Syndrome
ARQ	UNODC Annual Reports Questionnaire
ATS	Amphetamine-type stimulants
BMK	Benzyl methyl ketone (P-2-P)
BZP	Benzylpiperazine
CEN	World Customs Organization's Customs Enforcement Network
CICAD	Inter-American Drug Abuse Control Commission
CIS	Commonwealth of Independent States
DAINAP	Drug Abuse Information Network for Asia and the Pacific
DEA	Drug Enforcement Administration (USA)
DELTA	UNODC Database on Estimates and Long Term Trend Analysis
EMCDDA	European Monitoring Centre for Drugs and Drug Addiction
ESPAD	European School Survey Project on Alcohol and other Drugs
EUROPOL	European Police Office
F.O.	UNODC Field Office
Govt.	Government
HIV	Human Immunodeficiency Virus
HONLEA	Heads of National Drug Law Enforcement Agencies
ICMP	UNODC Global Illicit Crop Monitoring Programme
IDU	Injecting drug use
INCB	International Narcotics Control Board
INCSR	International Narcotics Control Strategy Report (USA)
Interpol/ICPO	International Criminal Police Organization
MBDB	N-Methyl-1-(3,4-methylenedioxyphenyl)-2-butanamine
MDA	3,4-Methylenedioxyamphetamine (tenamfetamine)
mCPP	<i>m</i> -chlorophenylpiperazine
MDE	3,4-Methylenedioxyethylamphetamine
MDMA	3,4-Methylenedioxymethamphetamine

NGO	Non-Governmental Organization
NIDA	National Institute of Drug Abuse (USA)
OECD	Organization for Economic Co-operation and Development
P-2-P	1-Phenyl-2-propanone (BMK)
PEN	International Narcotics Control Board's Pre-Export Notification online system
PMK	3,4-Methylenedioxyphenyl-2-propanone (3,4-MDP-2-P)
SAMHSA	Substance Abuse and Mental Health Services Administration (USA)
UAE	United Arab Emirates
UNAIDS	Joint and Co-sponsored United Nations Programme on Human Immunodeficiency Virus/Acquired Immunodeficiency Syndrome
UNODC	United Nations Office on Drugs and Crime
WCO	World Customs Organization
WDR	UNODC World Drug Report
WHO	World Health Organization
1988 Convention	United Nations Convention Against Illicit Traffic in Narcotic Drugs and Psychotropic Substances, 1988
2C-B	4-Bromo-2,5-dimethoxyphenethylamine (Nexus)
2C-T-2	4-Ethylthio-2,5-dimethoxyphenethylamine
3,4-MDP-2-P	3,4-Methylenedioxyphenyl-2-propanone (PMK)
4-MTA	4-Methylthioamphetamine

### Weights and measurements

u.	Unit
lt.	Litre
mg	Milligram
kg	Kilogram
mt	Metric ton

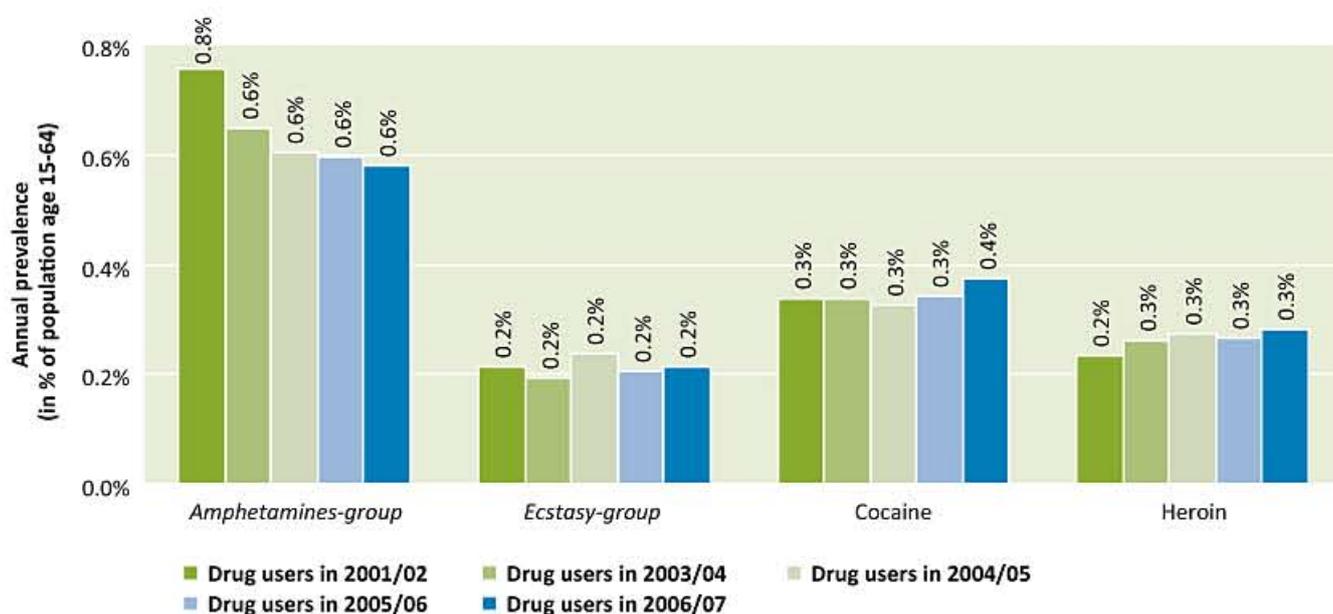


# EXECUTIVE SUMMARY



Amphetamine-type stimulants (ATS) are firmly established on global illicit drug markets with use continuing to exceed that of heroin and cocaine combined. Although the number of those who have used ATS at least once in the last 12 months has stabilized at around 34 million worldwide, increases have occurred in parts of the world that previously had only very small ATS-related problems. Successes in mature markets, mostly in developed countries, appear to have been offset, and perhaps have obscured for some time, the changes in markets in the developing world.

## Extent of illicit drug use, by drug type\* 2001/02-2006/07



\* Excluding cannabis

Source: UNODC estimates; government reports; EMCDDA; CICAD; local studies

The widespread use of ATS is a result of their attractiveness to users: they seem to appeal to the needs of today's societies and have become part of what is perceived to be a modern and dynamic lifestyle; in some segments of society, they continue to be used frequently for occupational purposes. The popularity of ATS is also a result of a market potential with continuously high profits and low risks that maintains its attractiveness to criminal groups around the world.

While none of these aspects are new and, in fact, the evolution of the ATS problem in any one region or subregion often follows a distinct pattern, there have been a number of significant developments over the past five years, since UNODC last reviewed the nature and extent of the ATS problem, published in *Ecstasy and Amphetamines - Global Survey 2003*.<sup>1</sup>

1 Accessible at: [http://www.unodc.org/pdf/publications/report\\_ats\\_2003-09-23\\_1.pdf](http://www.unodc.org/pdf/publications/report_ats_2003-09-23_1.pdf)

## 2008 GLOBAL ATS ASSESSMENT

### Intrinsic characteristics of ATS contributing to their attractiveness vis-à-vis the traditional plant-based drugs heroin and cocaine:

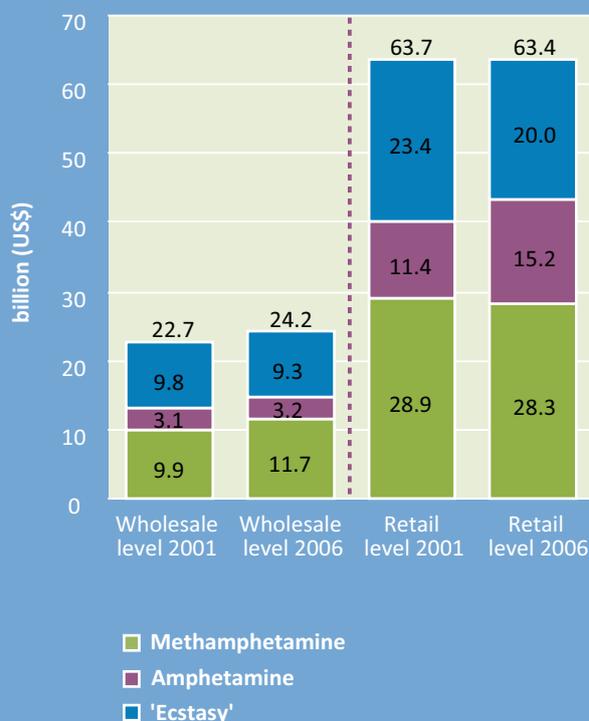
#### On the demand side

- ATS are attractive because they are perceived as enhancing performance and communication and have come to embody a modern and fashionable lifestyle (the extent to which ATS are used for occupational or recreational purposes depends on the specific substance);
- ATS can be taken by mouth. In addition to being 'convenient' for the user, the use of pills also avoids injection or smoking and the dangers of social stigma associated with these administration routes;
- ATS are affordable (available on retail markets in single pill units);
- The recreational use of ATS is generally perceived as being little harmful, and controllable; public health risks of ATS are frequently underestimated in public perception, as well as in the judicial and enforcement areas;

#### On the supply side

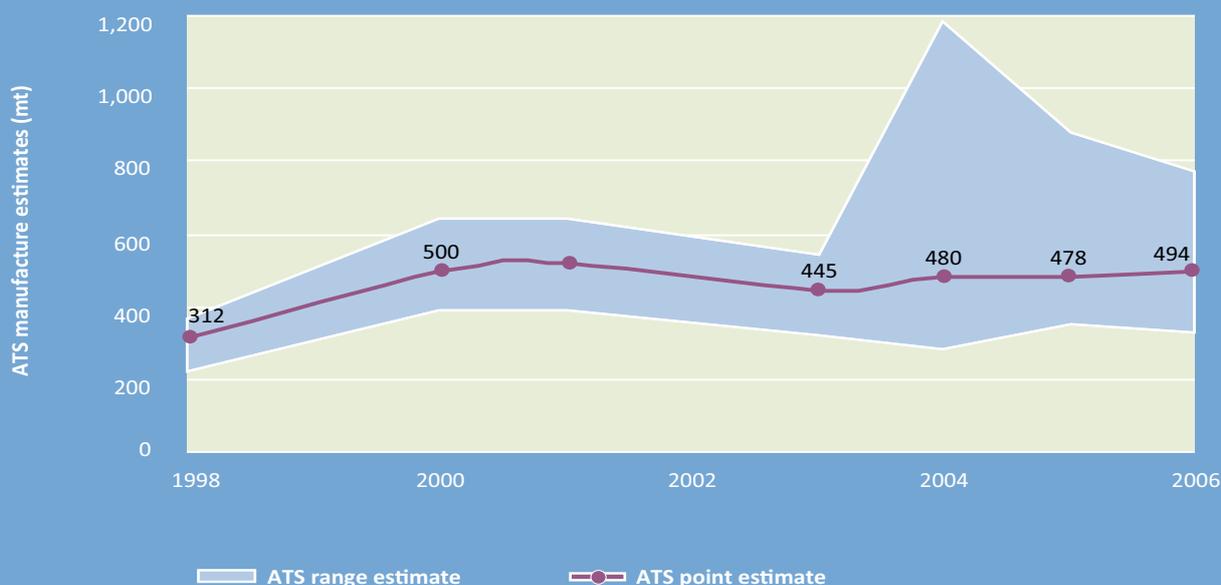
- ATS are attractive because of high profits: with little initial investment, hugely profitable quantities of drugs can be manufactured;
- ATS can be made readily from a variety of starting materials (precursors) using a variety of synthesis methods. When a traditional precursor becomes unavailable, the desired precursor may itself be synthesized from a pre-precursor chemical;
- ATS manufacture is not limited to certain geographic locations. It can take place anywhere, easily camouflaged, and be relocated as enforcement pressure increases (e.g. makeshift laboratories set up to supply a single order and then dismantled to prevent detection);
- Because there are no geographical limitations, ATS laboratories can be located close to the areas of consumption, thus minimizing the risk of detection when trafficking end-products across international borders;
- Awareness of ATS end-products and/or their precursors is still limited in some parts of the world where other drugs are prevailing, thus minimizing the risk for illicit operators and trafficking groups;
- For operators of small-scale 'kitchen' laboratories (typically methamphetamine laboratories), ATS are attractive because manufacture does not require advanced knowledge of chemistry and can be accomplished by anyone from readily available chemicals.

### Estimates of the value of the ATS market at the wholesale and the retail level (in billion US\$) for 2001 and for 2006



Source: UNODC, *Ecstasy and Amphetamines - Global Survey 2003*; UNODC, *World Drug Report 2008*; UNODC ARQ/ DELTA

### Point-estimates and ranges\* of ATS manufacture 1998-2006



\* Details of the methodology can be found in the annual *World Drug Report*.

Source: UNODC ARQ/ DELTA; UNODC, *Ecstasy and Amphetamines - Global Survey 2003*

The developments since 2001 include:

- ATS use is stabilizing in developed countries, increasing in developing countries.
- Regional shifts and rapid spread to new markets. Supply-driven increases in the Near and Middle East; demand-driven increase in 'ecstasy' manufacture close to consumer markets in North America; North America and East and South-East Asia emerging as sources of ATS for international markets; West Europe remains the major source of 'ecstasy' trafficked internationally, although its importance is declining; indications for growth in South America and Africa.
- Continuously high profits. The global ATS market value remains unchanged at about US\$65 billion; the mark-up between wholesale and retail prices can be as high as 400%.
- Increased involvement of organized crime. Transnational organized crime groups are increasingly forging partnerships internationally and with domestic crime groups, resulting in more sophistication in manufacturing and trafficking operations including the sourcing of precursors (e.g. Asian-sourced precursors, West African and Asian traffickers, and West European and North American chemists).
- Increases in size and sophistication of clandestine operations. The past five years saw the emergence of some of the biggest clandestine ATS laboratories ever detected. Successes in precursor controls resulted in changes in illicit manufacturing methods (using substitute chemicals or forms not currently under international control), in the precursor sources (pharmaceutical preparations instead of bulk precursors), and in precursor trafficking patterns to countries and regions that lack the infrastructure to counter this trend (examples of new precursor trafficking routes through Africa, Central America, the Near and Middle East, and West Asia).
- Diversification of ATS products. In several parts of the world, ATS tablets contain an increasing variety of substances both controlled and non-controlled. New forms of existing drugs (e.g. crystalline methamphetamine) are appearing in markets where they had not been seen before. This has implications for users and the associated interventions, and it may mask a persistent ATS problem that is no longer recognized due to no awareness of the new products.
- Vulnerability. Recent shifts in ATS markets suggest a correlation with the infrastructure and level of preparedness of a country and it being targeted by organized crime groups involved in ATS. There are also indications that many developing countries are struggling to cope with the consequences of increased ATS manufacture, trafficking and/or use, with their law enforcement, judicial, prison and health care resources being overwhelmed and unable to respond adequately.

The report provides evidence for these developments, with a special focus on subregional patterns and trends, and highlights the challenges ahead.

## ATS manufacturing patterns changing

ATS are attractive to clandestine operators because there are no geographical limitations to where they can be manufactured, they have many starting materials and manufacturing methods, and they offer enormous profit margins. The ATS retail market is valued at about US\$65 billion, practically unchanged from five years ago, with a mark-up between retail and wholesale value of the overall market of up to 400%.

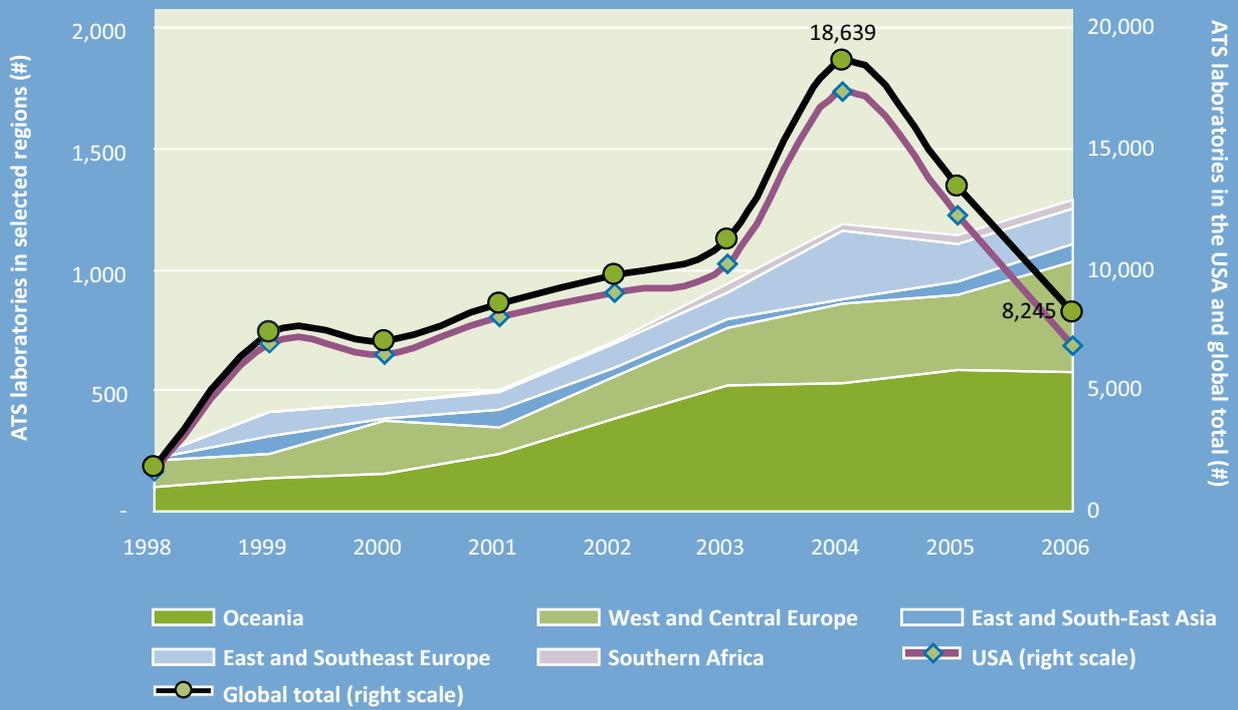
On a global scale, ATS manufacture has stabilized at high levels since the early 2000s with estimates close to 500 mt annually. *Amphetamines-group substances* (i.e. largely amphetamine and methamphetamine) account for more than three-quarters of ATS manufactured worldwide, while the manufacture of *ecstasy-group substances* (i.e. MDMA, MDA, MDE) is significantly less widespread (around 20%). Methamphetamine continues to be the most widely manufactured ATS, although its share has declined from 62% in 2003 to 54% in 2006. Over the same period, the percentage share of amphetamine more than doubled (from 12% to 26%), mostly related to expanding markets in the Near and Middle East (notably Saudi Arabia), which are believed to be mainly sourced from South-East European laboratories, primarily in Bulgaria and Turkey.

On a global scale, after strong increases peaking in 2004, the number of clandestine laboratories<sup>2</sup> has declined over the last two years, mainly as a result of a significant decrease in the number of small-scale ('kitchen') methamphetamine laboratories in the USA. Effective precursor controls are believed to be responsible for this decline, successfully limiting access to the precursor chemicals required by the smaller illicit laboratory operators.

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<sup>2</sup> Includes laboratories of any size and state of operation, as well as waste dumpsites and chemical and glassware seizures ('warehouses').

ATS laboratory seizures (all sizes): world, USA and key regions outside the USA 1998-2006



Source: UNODC ARQ/ DELTA

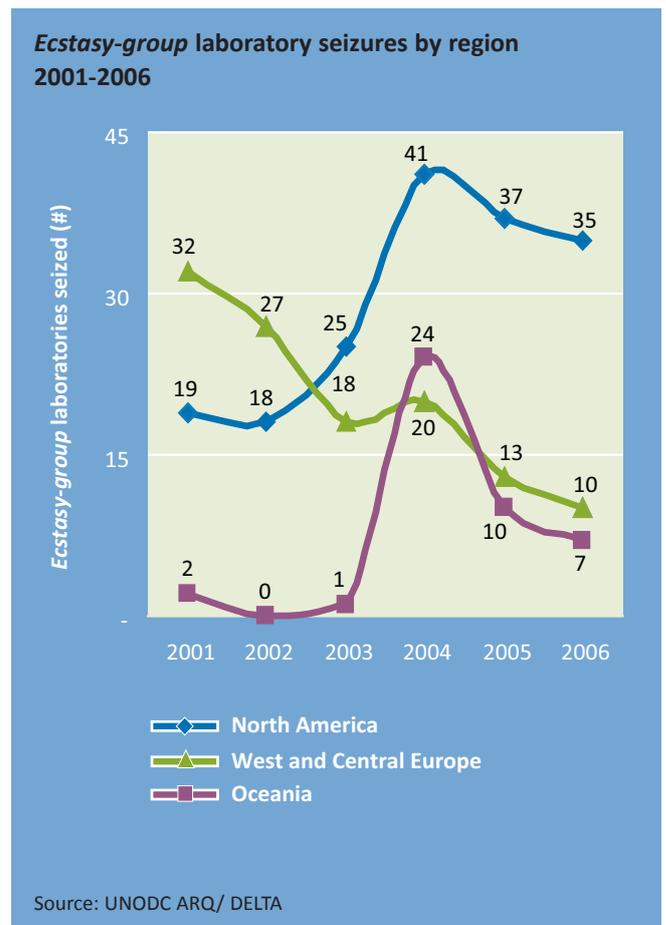
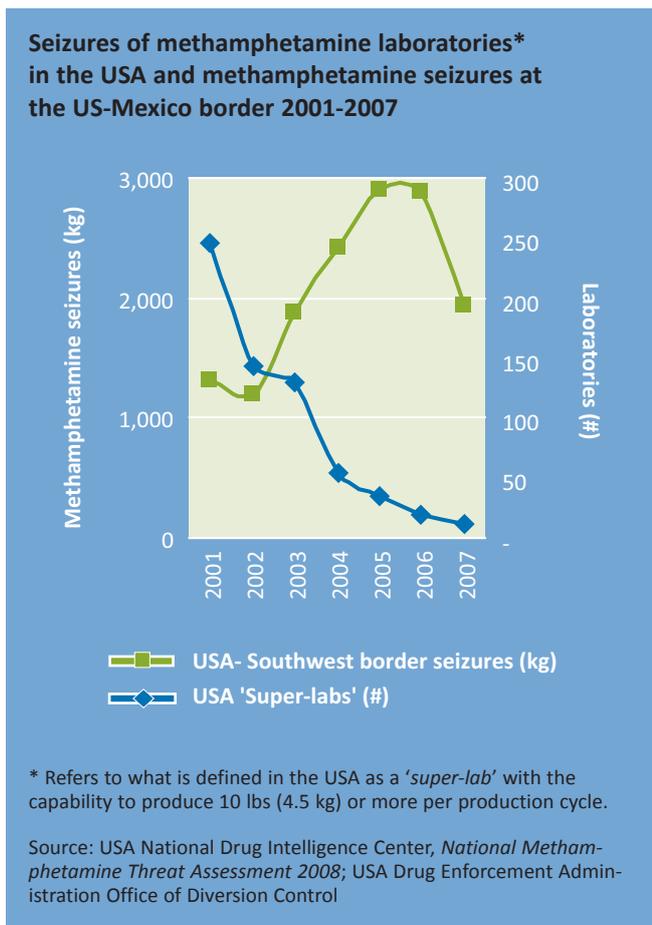
Clandestine methamphetamine/MDMA laboratory located in Cikande (west of Jakarta), Indonesia (Nov 2005)



However, the decline in the number of methamphetamine laboratories in the USA has masked trends in other subregions, many of which have seen substantial increases since 2001 both in numbers (+17% annual average growth) and size. Countries that reported significant<sup>3</sup> growth in ATS manufacture since 2001 included China, the Philippines, Canada, Czech Republic, Australia, New Zealand, South Africa, and most recently Indonesia, Malaysia, and Turkey.<sup>4</sup> Although information about capacity is not systematically available, clandestine laboratories in Canada, Mexico and in countries in southern and eastern Asia tend to be industrial-scale operations. The largest laboratories to-date have been reported from countries in East and South-East Asia, namely Indonesia and Malaysia.

In addition to the decrease in small-scale ('kitchen') laboratories in the USA, the number of industrial-scale laboratories discovered in that country has also declined dramatically from 245 in 2001 to 11 in 2007. This trend coincided with a significant increase in the quantity of methamphetamine seized along the US-Mexico border<sup>5</sup> where clandestine operators had relocated after the introduction of successful domestic precursor controls in the USA. Following historical patterns of subregional relocations ('ballooning') of clandestine ATS manufacture, increasing efforts in Mexico to control clandestine manufacture could result in shifts further south. There are already reports of sporadic clandestine ATS manufacture in South America, and evidence is also emerging of new patterns and a higher incidence of precursor trafficking in that region.

There are also indications of recent changes in the global 'ecstasy' market. The most significant development is the decrease in *ecstasy-group* manufacture in West Europe and the concurrent increase in subregions close to consumer markets in North America (Canada) and Oceania (Australia). A similar trend of supply following demand appears to be emerging also in South-East Asia, although to a lesser degree, with increasing 'ecstasy' laboratory seizures to supply markets in the region and possibly also in neighbouring Oceania.



.....

3 Significant either in size or number of clandestine operations reported.

4 All countries encountered the manufacture of methamphetamine, except Turkey, where amphetamine manufacture has emerged since 2001. Australia, Canada and Indonesia reported the recent manufacture of both methamphetamine and 'ecstasy'.

5 Border seizures are defined as seizure at either the US-Mexico border or within 150 miles of that border inside the USA.

**Clandestine ATS laboratory capacity**

There is no commonly accepted definition of what constitutes a clandestine laboratory nor how to classify and report its 'size', 'capacity' or 'output'.

Clandestine ATS laboratories vary significantly in terms of size and sophistication. Simple counts of laboratory seizures can therefore only give a broad picture of the trends in clandestine ATS manufacture. Lack of detail in relation to laboratory seizure incidents is not limited to information on size but also applies to the type of facility (e.g. whether the laboratory produced ATS powder or was a tableting facility) and the distinction of whether the site was a functional laboratory, a chemical warehouse or even a dumpsite.

**Classification of laboratories**

A frequently made distinction between laboratories is that of size, classifying them into two general groups: "for personal use" and "with the intent to supply". Other relevant classification criteria include the sophistication of the laboratory, the level of knowledge of the chemist, and the duration during which a laboratory has been operating. Based on the above criteria, laboratories may be classified as:

- (i) **'Kitchen' laboratories** that use only basic equipment and simple procedures; chemical knowledge is limited or non-existent, with the operator simply following the instructions; usually there are no significant stores of precursors.
- (ii) **Other small-scale laboratories** where the operator has advanced chemical knowledge. Such laboratories may be the ones where more complex ATS are manufactured; they may or may not be of similar size as 'kitchen' laboratories but frequently employ non-improvised equipment.

(iii) **Medium- to large-scale laboratories** that use commercially available standard equipment and glassware and that may operate for longer periods of time; these laboratories are not very mobile and recovery of precursor material becomes a realistic possibility in many cases (it is these types of laboratories for which production estimates are the most viable and reliable).

(iv) **'Industrial-scale' laboratories** that use custom-made oversized equipment and glassware (or purchased as redundant equipment from industrial process sources). Such industrial operations produce significant amounts of ATS in very short periods of time, limited only by access to precursors, reagents and consumables in adequate quantities and the logistics and manpower to handle large amounts of drugs or chemicals and process them into the next step.

The USA Department of State uses the terms 'mega-lab' and 'super-lab' to describe large-scale industrial facilities, with a 'mega-lab' being described as having the capability to produce 1,000 kg or more per production cycle and a 'super-lab' as the capability to produce 10 lbs (4.5 kg) or more per production cycle (the term 'mega-lab' was first coined in 2005 after some of the biggest methamphetamine laboratories worldwide had been discovered in South-East Asia).

It is important to note that most laboratories do not produce continuously seven days per week and 52 weeks per year, and that cycles of daily, weekly or monthly capacities cannot simply be extrapolated.

The concept of laboratory capacity therefore needs to have emphasis on the precursor chemicals and reagents that are available reliably and/or can be replenished realistically to sustain manufacture. Estimates based on size or volume of equipment, which is sourced only once, will likely result in unrealistic (over) estimation.

**Examples**

Information on clandestine laboratory capacity available to UNODC (2001-2008) demonstrates the diversity of terminology applied to describe laboratory capacity and, most significantly, does not indicate the method utilized to arrive at the stated figure (i.e. size, precursors at hand, waste estimates, etc.):

**Methamphetamine**

Zamboanga City, Philippines (2008):	monthly production capacity of 1 mt of crystalline methamphetamine
Klang, Malaysia (2007):	60 kg batch of crystalline methamphetamine
Poland (2007):	400 gram per day
Canada (2006):	10 kg batches ('super-lab'); 20 or more pounds per production cycle
Kulim, Malaysia (2006):	theoretical production cycle of 1.4 mt-1.7 mt of crystalline methamphetamine (laboratory did not operate at full capacity)
Semenyih, Malaysia (2004):	estimated output: 1 mt
Cikande, Indonesia (2005):	batches of 75 kg of crystalline methamphetamine
Fiji (2004):	production cycle estimates: 500-1,000 kg of crystalline methamphetamine per week

**MDMA ('ecstasy')**

Belgium/Netherlands (2007):	120 kg MDMA (1,440,000 tablets); daily production capacities of 30 kg of MDMA base; over 100 litres of MDMA base per batch per day
Cikande, Indonesia (2005):	theoretical capacity (if in full production): 200 kg of ATS per day; 100 kg of 'ecstasy' per week

**Amphetamine**

Belgium/Netherlands:	daily production capacities of 20 kg of amphetamine; production of up to 40 to 50 kg of amphetamine base per batch
Poland (2005/06/07):	scale of production: 1-10 kg of final product; 3-4 kg per batch; 3 kg per day
Bulgaria (2005):	more than 100 kg; raw materials for 10 kg of amphetamine
Serbia and Montenegro (2003):	annual production capacity: 150 kg (reported combined for 2 laboratories); 167,000 tablets

Available data for seizures of 'ecstasy' precursors (3,4-MDP-2-P) also reflect the recent change on the 'ecstasy' market, with increases in North America (Canada) and declines in West Europe (Netherlands), although manufacture in West Europe still remains globally significant.

On a global scale and for all ATS, precursor seizures in 2006 reached their lowest level in five years. This is believed to be in part the result of increasingly effective precursor control efforts together with successes from targeted operations and enforcement. ATS manufacture, which remained unchanged over the period, appears to have increasingly relied on the diversion of pharmaceutical preparations containing ATS precursors (especially methamphetamine precursors) and the use of alternative or substitute chemicals not currently under international control. At the same time, there have also been changes in precursor trafficking patterns, reflected in several recent reports of new trafficking corridors through Africa, the Near and Middle East, and West Asia.<sup>6</sup> The majority of suspicious methamphetamine precursor chemicals shipments through these regions were believed to be destined for Mexico.

**ATS trafficking patterns changing and more involvement of organized crime**

Given the lucrative market, the involvement of organized crime is not new to ATS, although the *intra*-regional nature of illicit manufacture and trafficking in the past did not require the building up of complex international networks. This has changed, with Member States reporting a tendency for the ATS trade to be increasingly dominated by various transna-

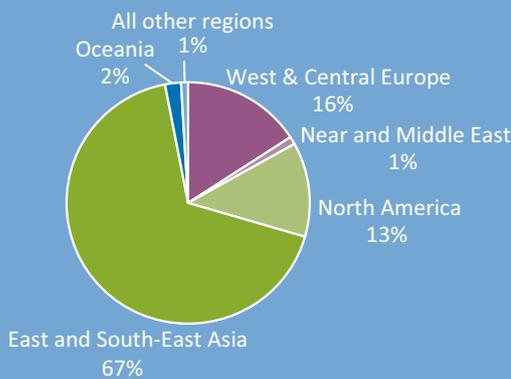
<sup>6</sup> International Narcotics Control Board, *Precursors and chemicals frequently used in the illicit manufacture of narcotic drugs and psychotropic substances, 2007* (March 2008); EUROPOL, *Production and Trafficking of Synthetic Drugs and Precursors*, The Hague, Netherlands (March 2007).

**Seizures of 3,4-MDP-2-P in the Netherlands and Canada 2001-2006**

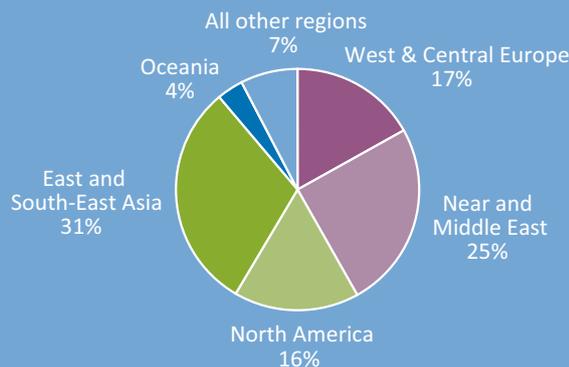


Source: INCB, *Precursors and chemicals frequently used in the illicit manufacture of narcotic drugs and psychotropic substances, 2007* (March 2008) and previous years

**ATS seizures by region 2000/01 (39.7 mt average)**



**ATS seizures by region 2005/06 (47.1 mt average)**



Source: UNODC ARQ/ DELTA

tional organized crime groups working in concert with domestic crime groups. For example, Japan reported (2006) that one in two ATS-related arrests are of members of organized crime groups, a 27% increase in just three years. The partnerships between foreign and domestic crime groups result in, among other things, more sophistication in manufacturing (e.g. massive facilities, large-scale procurement of precursors, staged operations, mobile laboratories, industrial scrubbers to mask chemical fumes) and trafficking operations. They also include unusual partnerships between increasingly diverse nationalities and ethnicities (e.g. Asian-sourced precursors, West African and Asian traffickers, West European and North American chemists) acting in concert for purely business purposes.

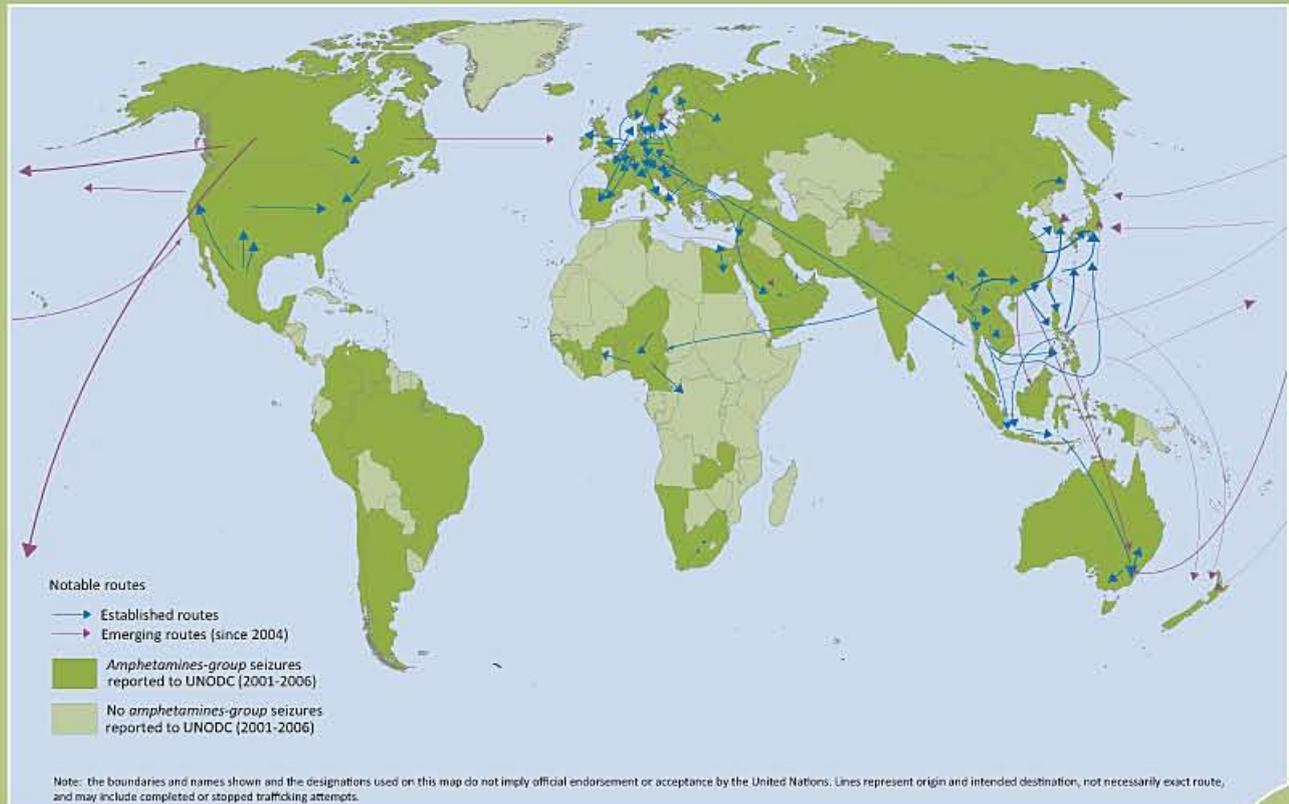
Over the last few years, the methamphetamine market has moved from being a cottage-type industry (with many small-scale manufacturing operations) to more of a cocaine- or heroin-type market, characterized by a higher level of integration and involvement of organized crime groups that control the entire chain from the provision of precursors, to manufacture and trafficking of the end-product. For example, Asian organized crime groups operating in Canada reportedly receive significant precursor shipments from Asia, which are then manufactured into methamphetamine and *ecstasy-group substances*. These same criminal groups then reportedly smuggle the finished product into the USA but also to a growing international market outside of the region.

Although the majority of ATS are still manufactured within the regions they are consumed, there is evidence of increasing *inter-regional* trafficking during the 2001-2006 period (see maps on the next page). In addition to North America (primarily Canada), East and South-East Asia have also emerged as sources of ATS for international markets. West Europe remains the major source of 'ecstasy' trafficked internationally, although its importance appears to be declining slightly.

*Inter-regional* trafficking has fuelled the spread of the ATS problem worldwide, as reflected in the number of countries reporting ATS seizures. For methamphetamine alone, there was a 58% increase in the number of countries that reported seizures (from 19 to 30) between 2001 and 2006. In 2006, first-time seizures of methamphetamine were reported by Saudi Arabia, Georgia, Niger and Bangladesh. First-time seizures were also reported for new forms of ATS, e.g. crystalline methamphetamine instead of tablets which have been more common in the region. In 2008, for example, Nepal reported the first seizures of crystalline methamphetamine.

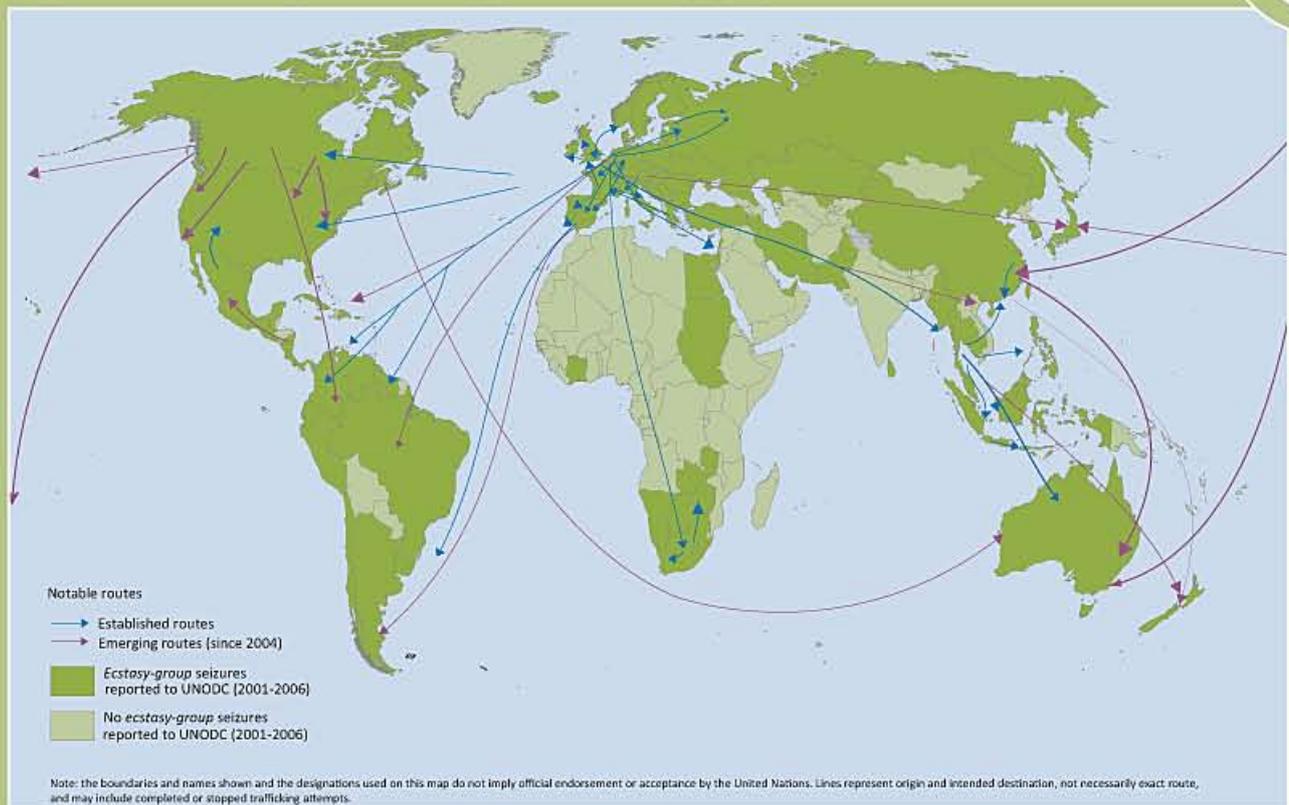
The most significant development has been the substantial increase in ATS seizures in the Near and Middle East, mainly Saudi Arabia, from about 1% of global totals in 2000/01 to one-quarter of all reported seizures in 2005/06. As a result of this increase, the percentage share of East and South-East Asia, previously the subregion with the largest share of

## Snapshot of notable changes in trafficking patterns for *amphetamines-group substances* 2001-2006



Source: UNODC *Global Illicit Drug Trends, 2003*; *World Drug Report 2008* and previous years

## Snapshot of notable changes in trafficking patterns for *ecstasy-group substance* 2001-2006

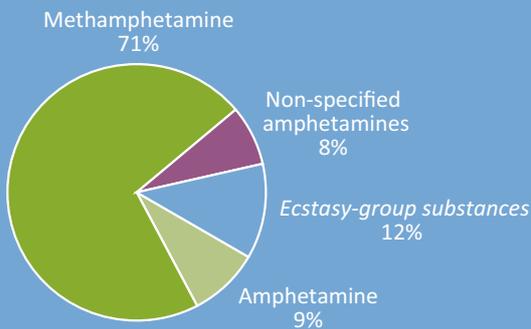


Source: UNODC *Global Illicit Drug Trends, 2003*; *World Drug Report 2008* and previous years

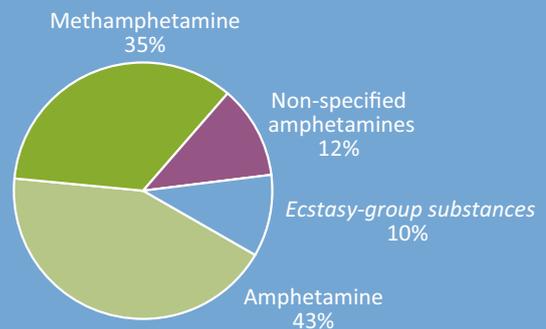
ATS global seizures, more than halved during that period, from 67% to 31%. The shares of North America and West and Central Europe remained relatively stable at around 13-17%, each, while Oceania doubled from 2% to 4% (the shares of "all other regions" increased from 1% to 7% during that period).

The regional shifts noted during the 2001-2006 period were accompanied by a steady increase in global ATS seizures, with levels in 2006 nearly reaching the previous peak in 2000. This growth was primarily due to the quadrupling of reported amphetamine seizures in the Near and Middle East. As a result, amphetamine has surpassed methamphetamine as the most trafficked ATS in 2005/06.

ATS seizures by type 2000/01 (39.7 mt average)

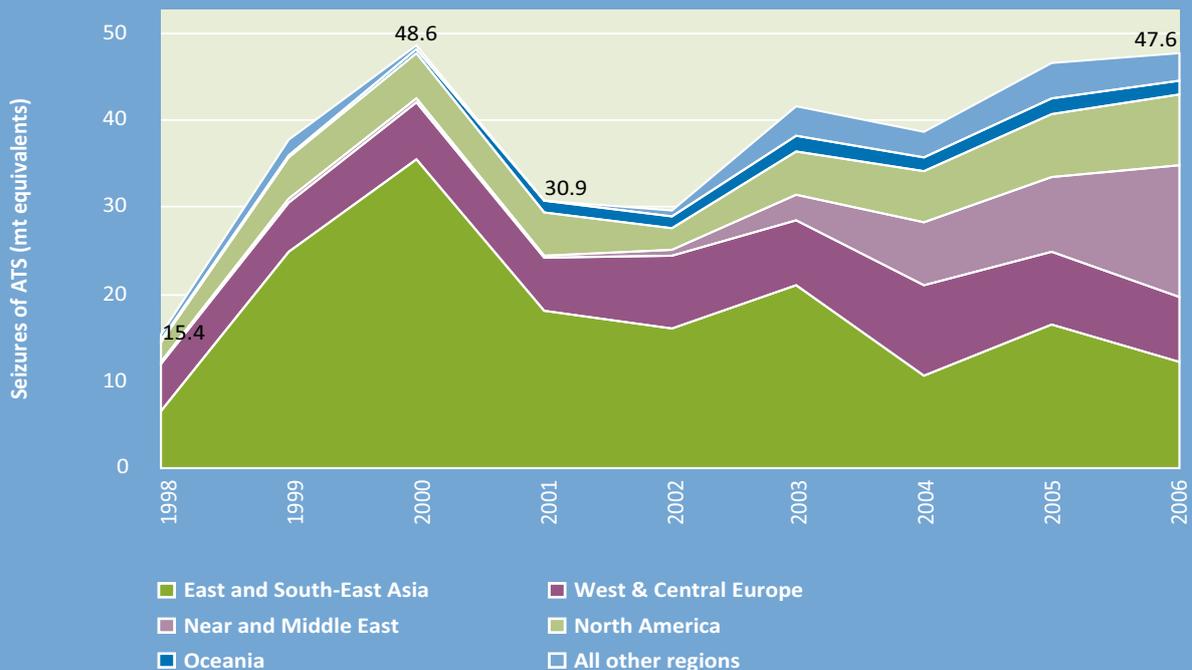


ATS seizures by type 2005/06 (47.1 mt average)



Source: UNODC ARQ/ DELTA

ATS seizure trends by region 1998-2006



Source: UNODC ARQ/ DELTA; World Customs Organization (WCO), *Customs and Drugs Report 2006* (June 2007)

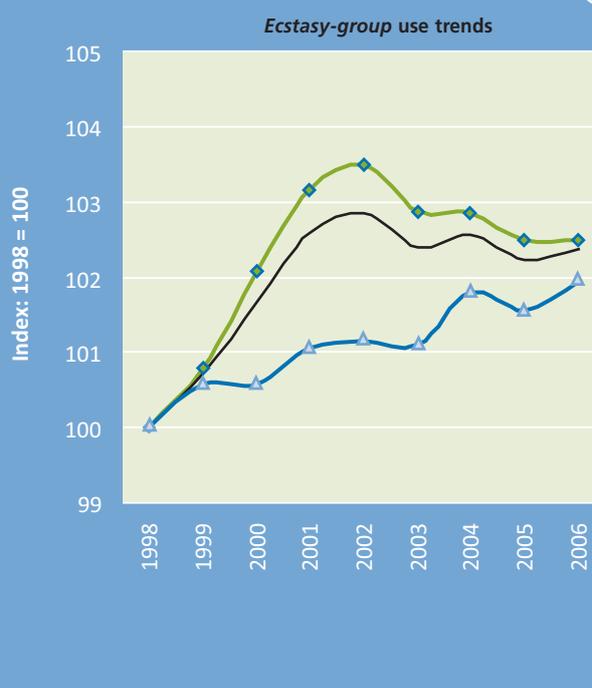
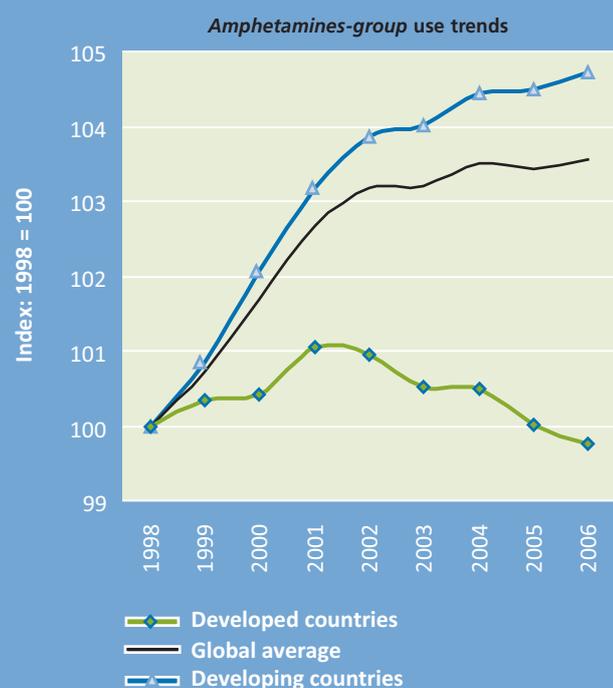
## Annual prevalence estimates, by ATS and region 2002 and 2006

Region and selected subregions	Amphetamines-group			Ecstasy-group		
	In percent of population 15-64 years (2002)	In percent of population 15-64 years (2006)	Change between 2002 and 2006	In percent of population 15-64 years (2002)	In percent of population 15-64 years (2006)	Change between 2002 and 2006
Europe	0.44	0.45	↔	0.56	0.54	↔
Americas	0.89	0.96	↔	0.75	0.53	↓
North America	1.25	1.27	↔	1.28	0.81	↓
South America*	0.54	0.66	↑	0.17	0.25	↑
Asia	0.76	0.53	↓	0.02	0.08	↑
East and South-East Asia	1.28	0.90	↓	0.04	0.13	↑
Near and Middle East	0.07	0.15	↑	0.02	0.02	↔
Oceania	2.78	2.14	↓	2.23	3.21	↑
Africa	0.44	0.43	↔	0.02	0.04	↑
<b>Global</b>	<b>0.73</b>	<b>0.58</b>	<b>↔</b>	<b>0.21</b>	<b>0.21</b>	<b>↔</b>

\*Includes South and Central America, and the Caribbean.

Source: UNODC, *World Drug Report 2004* and *World Drug Report 2008*

## ATS use trends as perceived by experts, by substance, developed\* and developing\*\* countries 1998-2006



\* OECD countries  
 \*\* Non-OECD countries

Sources: UNODC ARQ; UNODC Field Offices; Drug Abuse Information Network for Asia and the Pacific (DAINAP); UNODC, Global Assessment Programme on Drug Abuse (GAP); Govt. reports; EMCDDA; CICAD; HONLEA reports and local studies

## ATS consumption patterns changing

Shifts in ATS trafficking patterns have been mirrored by shifts in use. Between 2002 and 2006, the largest increase in *amphetamines-group* use was reported from the Near and Middle East, where annual prevalence estimates more than doubled, i.e. from the region that also showed the most substantial growth in ATS seizures. However, despite the strong increases, annual prevalence estimates in that region remain below the global average, a fact likely related to limited reporting. In absolute numbers, the majority of ATS users continue to live in East and South-East Asia, the most populous subregion in the world. While some declines were reported in that subregion, annual prevalence estimates (2006) remain above the global average. Mature *amphetamines-group* markets show stable (Europe, North America) or even decreasing (Oceania) use trends. This is in contrast to the situation a few years ago when ATS markets expanded across developed regions, including the USA.

'Ecstasy' use has expanded in most parts of the world since 2002, although the average global prevalence estimate remained unchanged. This is due to off-setting declines in major markets in North America and to a lesser degree in Europe, the two regions where, in absolute numbers, the majority of 'ecstasy' users live. Annual prevalence estimates for 2006 are significantly above the global average for Oceania, but also for Europe and the Americas. While remaining small in relative terms, prevalence estimates for *ecstasy-group substances* in East and South-East Asia more than tripled between 2002 and 2006.

Experts' perceptions support the overall picture at global level. About half of the experts that reported on *amphetamines-group* and *ecstasy-group* use trends indicated a stabilizing trend. For *amphetamines-group substances* and *ecstasy-group substances* 41% and 30%, respectively, of experts saw a worsening of the ATS problem. However, ATS use trends as perceived by experts are strongly subregionally specific, as detailed in the regional chapters of this report.

Trends in ATS use<sup>7</sup> can also be correlated with the development levels of countries. While developed nations<sup>8</sup> have managed to stabilize or even reduce the size of their *amphetamines-group* problem over the last five years, growth continues in developing countries, although at slower pace than before 2001.

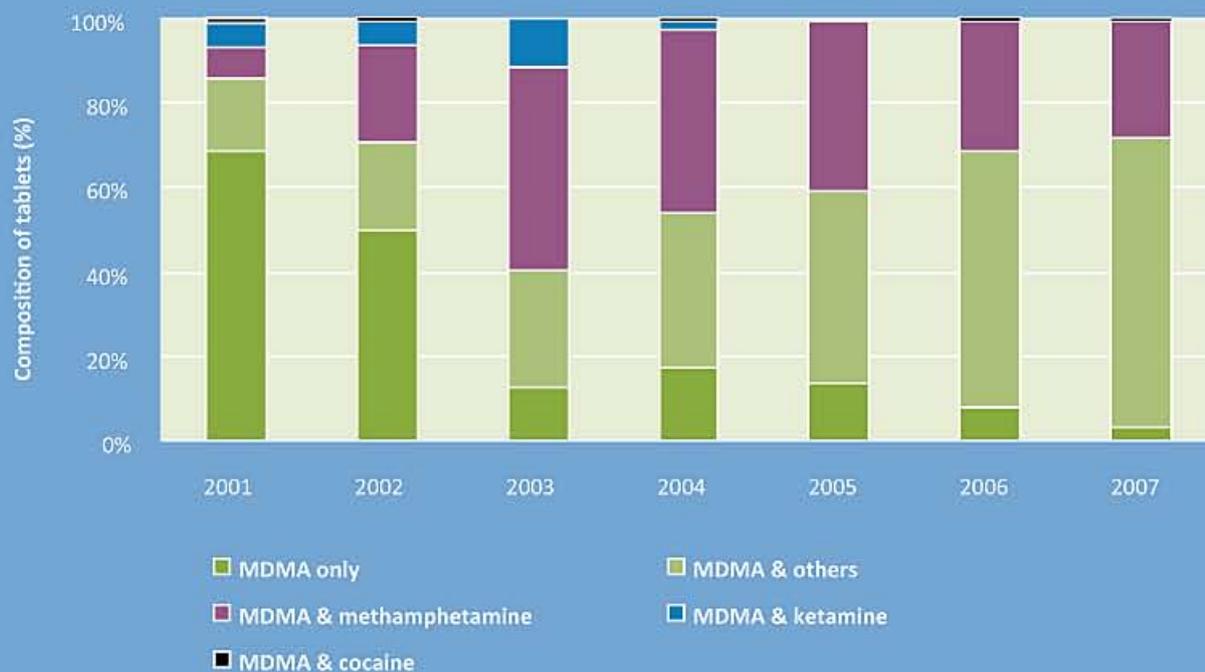
In contrast, *ecstasy-group* use has long been confined to developed countries with substantial growth rates over the 1998-2001 period. Since 2001, however, use in developed countries has been perceived as declining, while increases, albeit moderate, are occurring in developing nations.

This development is of concern as it relates to the potential for future growth, given that many of these countries are emerging economies with growing middle-classes that may represent lucrative new markets for 'ecstasy'. An added concern is that many of these countries are characterized by large proportions of youth, an age group potentially vulnerable to ATS use, particularly 'ecstasy'.

7 Trends are based on expert perceptions reported in response to UNODC's ARQ. Points allocated for trend data: 'strong increase': 2; 'some increase': 1; stable: 0; 'some decline': -1; 'strong decline': -2. Reported drug use trends were weighted by the proportion of *amphetamines-group* users in a country expressed as a percentage of global *amphetamines-group* use. If all countries had reported 'some increase', the global trend line would have increased by one point each year and would have reached 114 by 2006.

8 There is no established convention for the designation of "developed" countries or areas in the United Nations system. See United Nations Standard country or Area Codes for Statistical Use. Series M, No. 49, Rev. 4 (United Nations publication, Sales No. M.98.XVII.9). Therefore, for the purposes of this analysis, "developed countries" are the member countries of the Organisation for Economic Co-operation and Development (OECD)

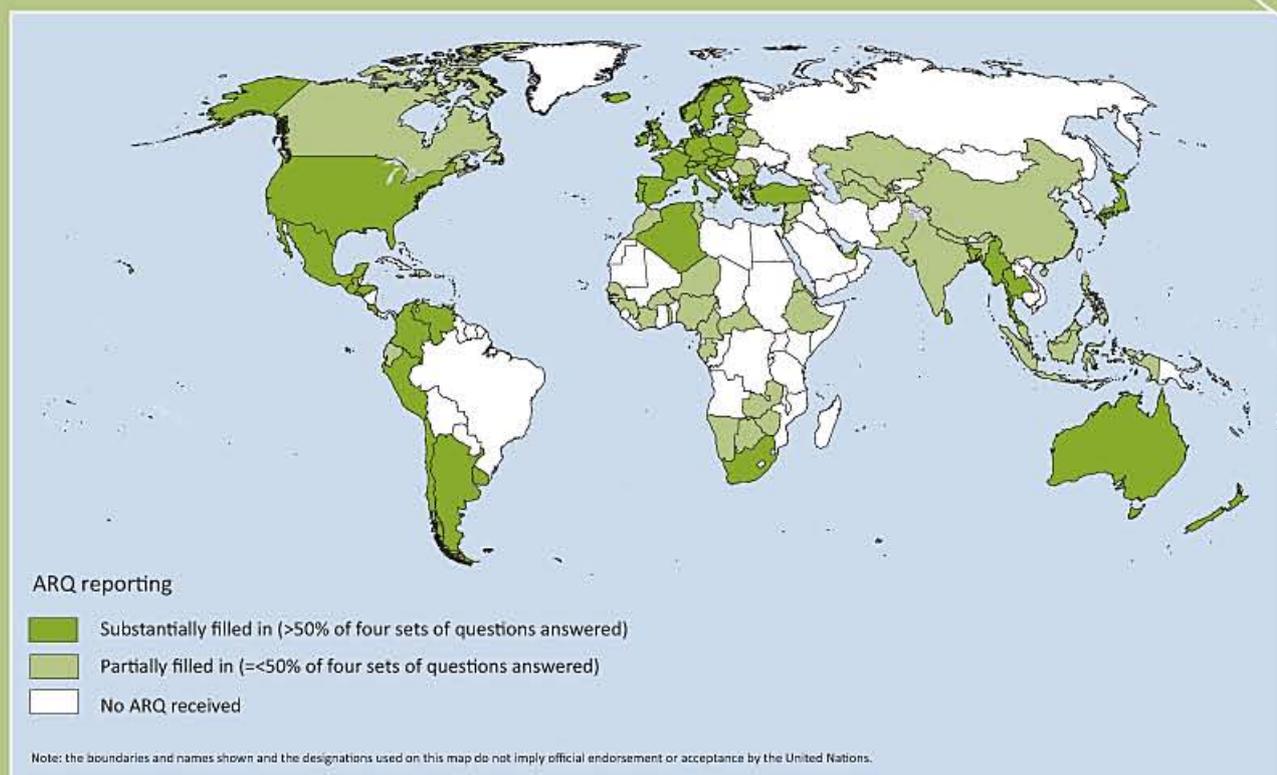
## Changes in the composition of 'ecstasy' tablets: Canada, 2001-2007



Note: results of forensic tests of substances submitted by law enforcement initially "believed" to be 'ecstasy'.

Source: Health Canada Drug Analysis Service, *Illicit Drug Surveillance*, (2008); *Illicit Synthetic Drugs Surveillance in Canada*, presentation at the Expert Meeting for Global Illicit Synthetic Drug Monitoring Programme, Tokyo, Japan (Feb 2008)

## Member State completeness of response to the 2006 Annual Reports Questionnaire (Part II: Demand)



Source: UNODC ARQ (2006)

## Diversification of ATS

Although limited in scope, available forensic information suggests that what users believe to be 'ecstasy' (i.e. containing MDMA) is in many countries often a variety of other substances, including substances not currently under international control, such as ketamine.<sup>9</sup> For instance, in Canada,<sup>10</sup> the share of 'ecstasy' tablets with only MDMA as the active ingredient decreased from 69% in 2001 to just 3% in 2007.

Similar declines in the share of ATS tablets containing the specific ATS for which they were marketed have also been reported, for example, in the Netherlands ('ecstasy'), UK ('ecstasy') and Viet Nam ('ecstasy' and methamphetamine).

This mismatch between marketed and actual content has implications for prevalence estimates of 'ecstasy' use, which may therefore reflect very different markets in different regions. Of more concern than annual prevalence estimates is the fact that those substances and combinations thereof have very different, often unexpected and sometimes fatal health consequences.<sup>11</sup>

Another development has been the emergence of new forms of ATS, such as high purity crystalline methamphetamine in several countries in South-East Asia that previously only had methamphetamine tablets. Limited awareness of crystalline methamphetamine among law enforcement personnel may mask the real extent of this new development, which also has serious health implications as crystalline methamphetamine is also used intravenously.

## Methodological constraints

Analysing ATS markets and developing an evidence base upon which actions to counter the ATS problem can be built relies on accurate, comparable and timely data. UNODC analyses are based on data reported by Member States. However, there is irregular and/or incomplete reporting<sup>12</sup> from several key regions, including East and South-East Asia (e.g. Viet Nam), South Asia, the Near and Middle East (e.g. Saudi Arabia), subregions within the Americas (e.g. Brazil), much of Africa and most Pacific islands states and territories. As this report shows, these are the very regions for which there are already indications of future spread of the ATS problem.

Irregular or incomplete reporting from Member States is compounded by the varying quality of data provided. Specifically, and similar to other drugs, information about the extent of ATS consumption (prevalence rate) is the weakest indicator, as household and other surveys are lacking or are outdated in some countries in several of the most affected regions (according to supply side indicators and/or expert opinion). Unfortunately, this happens to be the case in several populous countries (i.e. China and India), thus affecting regional and global prevalence estimates. Another major limitation, as this report shows, is the lack of systematic forensic information - on the specific ATS substances, the actual precursors used and the size and capacity of clandestine laboratory operations. Without these data, which provide critical evidence for both demand and supply side trends, specific regional shifts and emerging trends in ATS markets fail to be detected in a timely manner. Lack of these data, together with lack of price data, also affects estimates of wholesale and retail market values, mark-ups, and the profitability of the ATS market.

Finally, and specific to ATS (and synthetic drugs generally) there is the need to estimate manufacture indirectly since there are no geographical limitations to ATS manufacture. The current methodology to estimate ATS manufacture is based on triangulation of the estimates of three sub-components (seizures of ATS end-products, seizures of ATS precursors, and ATS prevalence rates). Each of the sub-components relies on data reported by Member States and, where incomplete or absent, on a variety of assumptions and extrapolations. Nevertheless, the triangulation model represents the best practice thus far for estimating global manufacture.

## Conclusion

Information provided in this report indicates that there have been significant changes over the past few years, including increases in size and sophistication of clandestine laboratories, changes in precursors and manufacturing methods, and changes in the forms and content of ATS end-products. At the same time, there are mixed developments on the demand side, with successes in some parts of the world (stabilization of ATS use in developed countries) but continued increases

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9 Ketamine, which has been used for decades as a recreational hallucinogen, emerged - initially largely unnoticed - as an ingredient in 'ecstasy' tablets on the East and South-East Asian ATS market over the last few years.

10 Canada is one of the few countries from which consistent time series forensic information is available.

11 PMA (*para*-methoxyamphetamine) reappeared in 'ecstasy' tablets in Australia in 2007, and has been associated with a number of deaths in that country.

12 Reporting is generally better for the ARQ on supply issues, and Member States' reporting can be uneven between the two ARQ types. An example is Russia that did not submit data on drug demand (ARQ Part II) but substantially filled in the ARQ on Supply (Part III).

in developing countries. Much of the latter increase is the result of a rapid supply-driven spread to new markets, such as amphetamine in the Near and Middle East. At the same time, there are indications of a shift of 'ecstasy' manufacture from Europe closer to consumer markets in North America. The divergent developments for amphetamine and 'ecstasy' reflect different stages of the supply-push and demand-pull interplay of illicit drug markets and appear to confirm that supply-driven market opportunities that characterize a developing market are gradually replaced by a demand-driven expansion once a market has matured.

Apart from new markets in the Near and Middle East, developments in East and South-East Asia and the Pacific are also cause for considerable concern. Some of the biggest clandestine laboratories that have ever been detected were dismantled in this subregion. As a result, East and South-East Asia have now emerged as another source of ATS for international markets, although available seizure and consumption data fail to explain the whereabouts of the enormous amounts of ATS that could potentially be manufactured in the region.

A central theme that emerges from the report is that the spread of ATS in recent years is strongly correlated with inadequate infrastructure, inadequate implementation of existing regulatory frameworks and/or the lack of resources to respond to the ATS phenomenon in a timely and strategic manner. Developed countries with adequate resources at their disposal show a stabilization or even decrease of ATS manufacture, trafficking and/or use, while more vulnerable<sup>13</sup> countries that are often nearby appear to be increasingly targeted by criminal organizations for illicit manufacture and/or trafficking operations.

Action to counter the ATS problem requires an evidence base of information. Unfortunately, but not surprisingly, data limitations are biggest in countries and regions where available indicators point to the strongest increases in the ATS problem, reflecting the lack both of infrastructure and experience, and of the resources and ability to respond adequately.

The rapid changes which occur in ATS markets, driven largely by transnational organized crime groups that control the entire chain from the provision of precursors, to manufacture and trafficking of the end-product, create a series of challenges related to assessing the ATS situation and, ultimately, to Member States' law enforcement, judicial, prison and health care systems, which need information to respond adequately to the current challenges and those ahead.

The evidence presented in this report shows that analyses without subregional market detail result in estimates with a high level of generalization. While this may be acceptable for analyses of overall, global trends, it cannot be acceptable, and may in fact be misleading, at subregional or national level, considering that inflated estimates divert resources from where more urgent intervention is required while deflated estimates lead to inactivity, which allows the problem to proliferate.<sup>14</sup>

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13 Vulnerability, in this regard, is a result of both limited awareness and lack of preparedness to address the ATS phenomenon adequately, and real limitations in human, financial and technological resources, i.e. the overburdening of national infrastructures and law enforcement, judicial, prison and health care resources.

14 Bacha M., *The dangers of inaccurate trafficking estimates*, UNCRI Journal, Vol. 1(2) (2002).



# **ATS MARKETS: REGIONAL TRENDS**







# ASIA

## Regional overview

Asia has a long-standing history of manufacture, trafficking and consumption of ATS and in recent years the East and South-East Asian subregions have been particularly challenged. Other subregions within Asia including South Asia, Central Asia and countries of the Caucasus, also face difficulties with respect to ATS but available data show that they are limited in comparison.

Since 2001, methamphetamine and some 'ecstasy' laboratories and related facilities have been reported in more than half of all countries in East and South-East Asia, including Cambodia, China, Hong Kong (SAR of China), Indonesia, Malaysia, Myanmar, Taiwan (Province of China), Thailand, the Philippines, the Republic of Korea, and Viet Nam. In 2001, the total number of reported methamphetamine laboratories in East and South-East Asia was 63; largely unchanged at 66 in 2006. Although the number of methamphetamine laboratories seized in East and South-East Asia may appear small compared to other regions, they are often large-scale facilities capable of industrial-scale manufacture. Notable developments were observed in 2007, including larger numbers of laboratory seizures in China, Indonesia, Malaysia, and the Philippines, and first time large-scale manufacture confirmed in Cambodia.

### East and South-East Asia: ATS laboratories, seizures, and annual prevalence rates 2001-2006

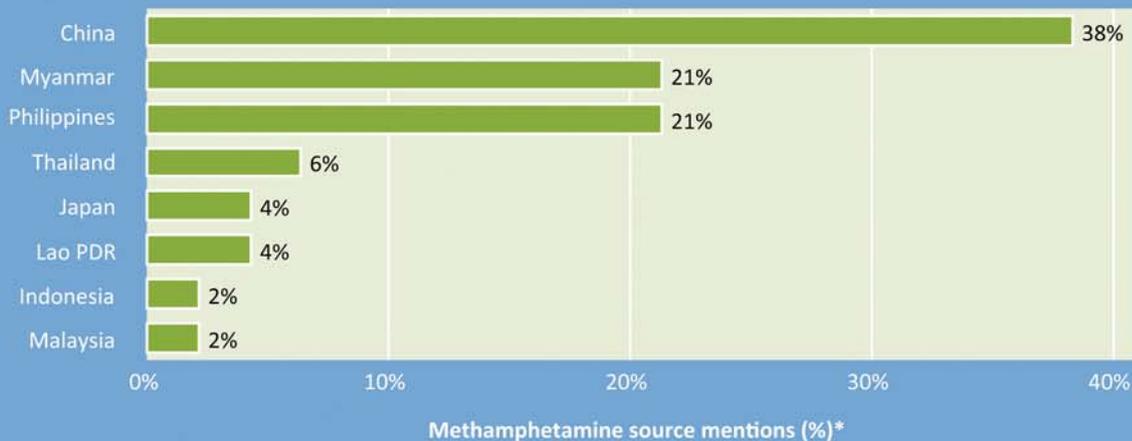
MEASURE	DRUG GROUP	2001	2002	2003	2004	2005	2006
Laboratory (#)	Methamphetamine	63	21	29	13	49	66
	Amphetamine			6			
	Other synthetic/combined stimulants						1
	Ecstasy-group substances	12	13	2			3
	<b>Total</b>	<b>75</b>	<b>34</b>	<b>37</b>	<b>13</b>	<b>49</b>	<b>70</b>
Seizures (kg)	Methamphetamine	17,720.0	15,102.9	20,257.2	9,472.8	10,747.8	9,772.1
	Amphetamine	72.9	0.1	3.6	65.3	5,182.3	20.6
	Other synthetic/combined stimulants	55.2	399.4	235.6	286.1	166.7	2,339.1
	Ecstasy-group substances	361.4	500.8	612.1	731.6	456.4	105.7
	<b>Total</b>	<b>18,209.5</b>	<b>16,003.2</b>	<b>21,108.4</b>	<b>10,555.9</b>	<b>16,553.2</b>	<b>12,237.5</b>
Annual Prevalence (15-64)*	Amphetamines-group substances	1.4%	1.3%	1.2%	1.0%	0.9%	0.9%
	Ecstasy-group substances	0.0%	0.0%	0.1%	0.2%	0.1%	0.1%

\* Prevalence estimates were standardized for population 15-64 years of age beginning 2004, thus prior years are only broadly comparable. Source: UNODC ARQ/ DELTA; World Drug Report 2004-2008; Global Illicit Drug Trends 2003

Countries reporting to UNODC cite the origin of seized drugs as a means of identifying source countries of ATS manufacture. During the 2002-2006 period, the three countries in East and South-East Asia most often mentioned as sources for methamphetamine were China (38%), Myanmar (21%), and the Philippines (21%). Additionally, several countries have noted that organized drug syndicates are becoming increasingly transnational and substantially more sophisticated in their methods of trafficking.

In 2006, 47% of Asian countries reported an increase in methamphetamine use, while the number of countries reporting reduced use, was 42%. It is important to note that some of the countries reporting a stabilization or decrease continue to have some of the highest prevalence estimates (such as the Philippines and Thailand). In addition, some countries with high levels of methamphetamine use document a decrease in one form of the drug and an increase in another form; Thailand for instance has reported a decrease in the tablet form and an increase in the crystalline form. Increases in methamphetamine use have recently been reported by Bangladesh, Cambodia, China, Hong Kong (SAR of China), Lao PDR,

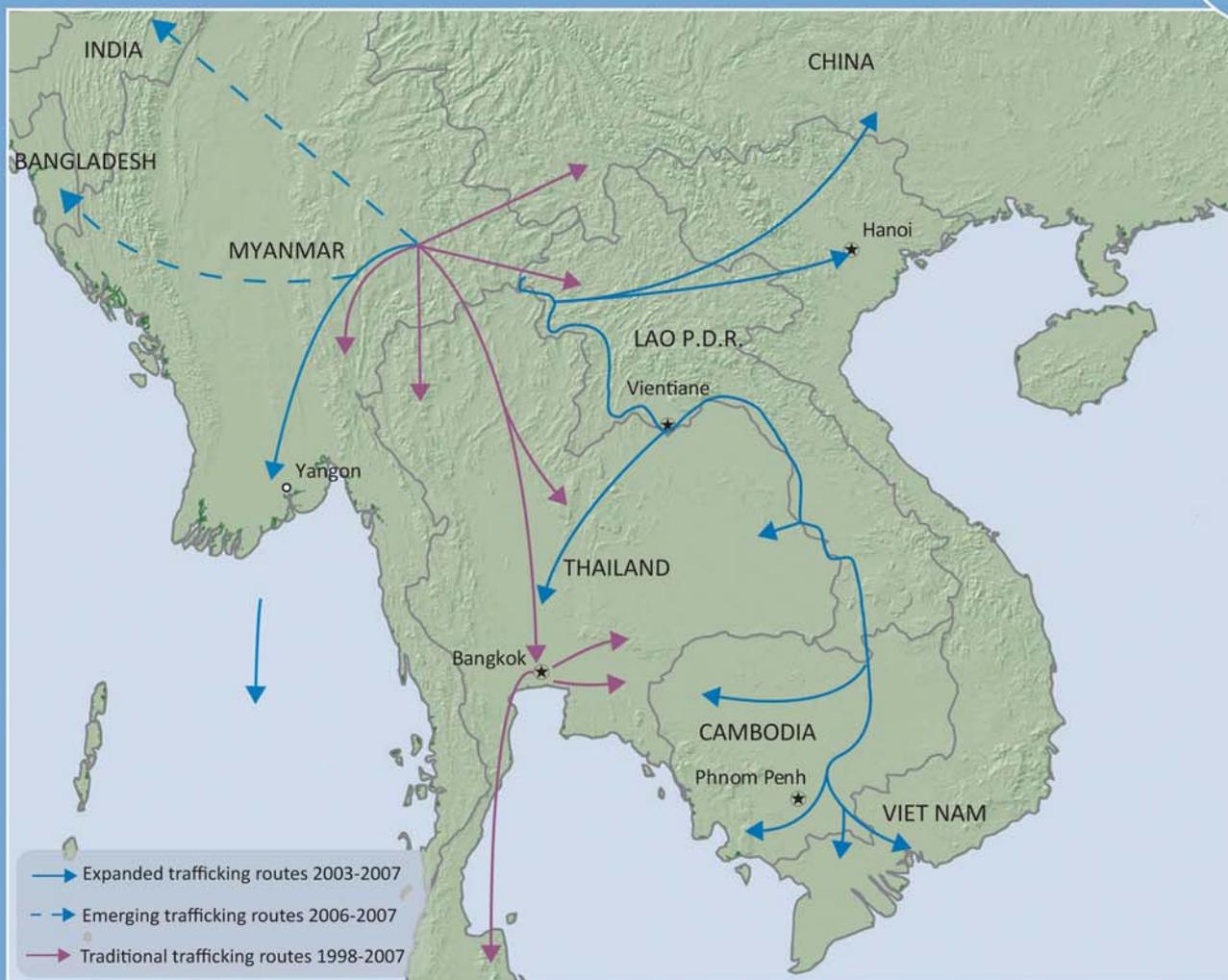
## East and South-East Asia: sources of methamphetamine 2002-2006



\* Number of times a country was mentioned by other countries as the source of seized methamphetamine in East and South-East Asia over the 2002-2006 period, expressed as proportion of all such mentions (N=47); mentions of source do not necessarily imply that methamphetamine was manufactured in these countries.

Source: UNODC ARQ/ DELTA

## Greater Mekong Subregion: primary methamphetamine trafficking routes



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

Source: UNODC, *ATS Trafficking Route Information and Select Seizures and Production Facility Seizures in East Asia and the Pacific* (Feb 2007)

Macao (SAR of China), Myanmar, Nepal and Thailand (crystalline form). 'Ecstasy' can be found in most Asian countries, albeit at relatively low levels. In 2006, six countries reported a decline in 'ecstasy' while an additional three reported stabilization and four reported an increase. These variations of different forms of ATS within Asia and the subregions signal shifts as existing markets mature and new markets emerge.

This chapter provides an overview of the evolution of ATS in Asia between 2001 and 2007/08. The region is divided into subregions and the dynamics within each are discussed with particular attention given to East and South-East Asia. The analysis begins with a review of the Greater Mekong Subregion (comprised of Cambodia, Lao PDR, Myanmar, Thailand, Viet Nam and bordering provinces of China) followed by neighbouring China including Hong Kong (SAR of China) and Taiwan (Province of China), North-East Asia including Japan and the Republic of Korea, the Philippines, Southern Archipelago nations of Indonesia and Malaysia followed by South Asia concentrating on Bangladesh, India and Nepal, and then finally Central Asia and countries of the Caucasus.

## Greater Mekong Subregion

The Greater Mekong Subregion (GMS) is an area heavily impacted by ATS, specifically methamphetamine, manufacture, trafficking and use. Some of the largest seizures of methamphetamine in the world occur in the GMS, manufacture takes place within many of the countries, and judicial and treatment systems are dominated by methamphetamine cases. Myanmar, bordering provinces of China and Thailand have been affected the most over the past decade. Since 2003/04 when Thailand significantly increased law enforcement efforts in the so-called 'war on drugs', shifts in the GMS took place as illicit trafficking activity was relocated from the Golden Triangle<sup>1</sup> into neighbouring countries, including Lao PDR, Cambodia and Viet Nam that experienced surges in use, seizures and arrests.

### Myanmar

Significant manufacture of methamphetamine occurs within Myanmar, with the product subsequently trafficked throughout the GMS. It appears that manufacture may be increasing, allegedly controlled by the United Wa State Army (UWSA), the Shan State Army-South (SSA-S) and groups in the Kokang Autonomous Region. In 2006, Myanmar authorities reported eight methamphetamine tableting operations seized - the highest number ever reported to UNODC - while intelligence in neighbouring countries suggested that there were 53 clandestine laboratories operating along the Myanmar-Thai border that year. In 2007 five methamphetamine tableting facilities were documented, all of which were located in the eastern and northern parts of the Shan State and the Wa Region bordering China, Lao PDR and Thailand. While there have been reports for several years of tableted methamphetamine (known locally as 'yaba') in the markets of China, Lao PDR, Cambodia, Thailand and Viet Nam, and to a lesser extent Malaysia, reports from 2007 show methamphetamine from Myanmar shifting west into new markets in Bangladesh, India and Nepal.

Myanmar does not have a chemical industry to produce ATS precursor chemicals, which are predominantly trafficked from China and India. Recent seizures in Myanmar amounted to 325 kg, 1,288 kg and 530 kg of ephedrine in 2005, 2006 and 2007, respectively.

Most ATS seized in Myanmar are in the form of methamphetamine tablets. In 2006 as a result of a focused law enforcement campaign, tablet seizures topped 19 million, contributing to the total of 2.8 mt of ATS reportedly seized; three times the largest amount previously reported to UNODC by Myanmar.<sup>2</sup>

#### Myanmar: primary methamphetamine precursor trafficking routes



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

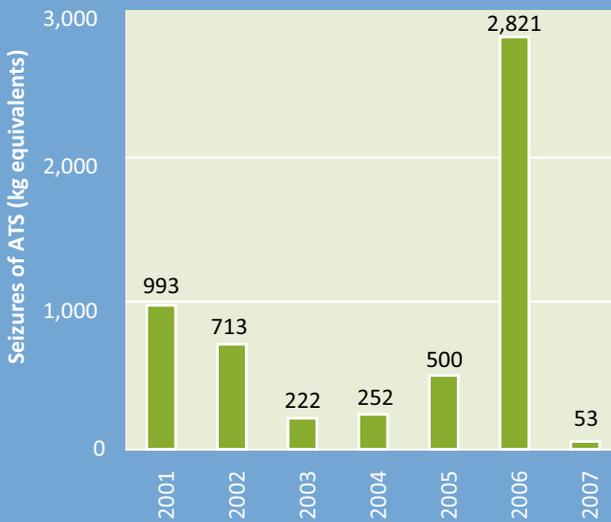
Source: *The growing significance of illicit manufacture of amphetamine-type stimulants in the region*, presented at the 4<sup>th</sup> International Forum on the Control of Precursors for ATS, Tokyo, Japan (Feb 2008)

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1 The Golden Triangle is an area overlapping the border of China, Lao PDR, Myanmar and Thailand.

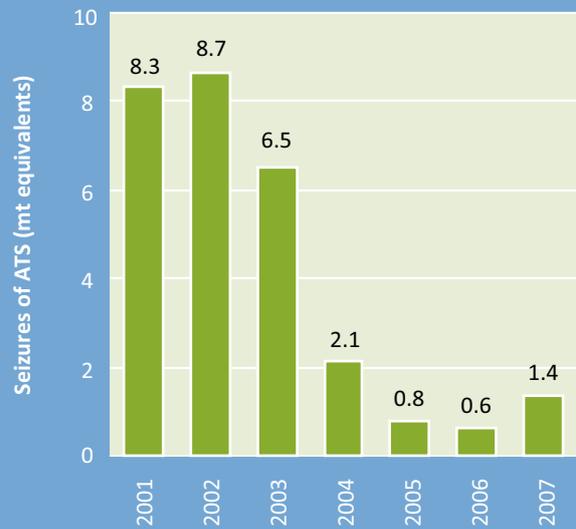
2 Methamphetamine tablets produced in Myanmar are assumed to contain 30 mg of active ingredient. Reports for 2007 suggest declines in tablets seized.

## Myanmar: seizures of ATS 2001-2007



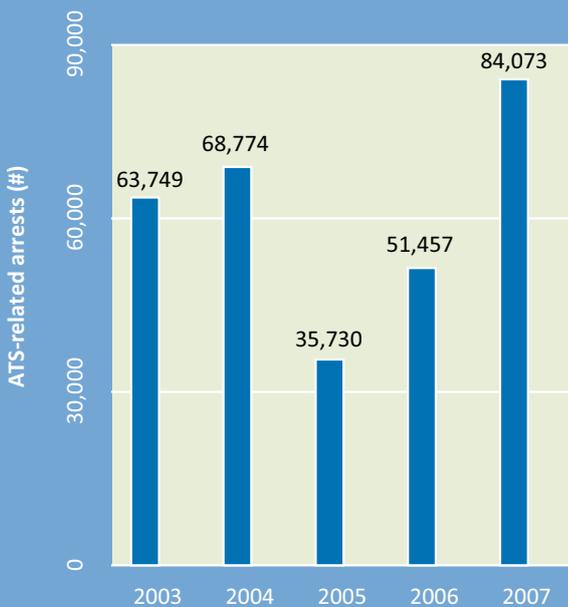
Source: UNODC ARQ/ DELTA; *The growing significance of illicit manufacture of amphetamine-type stimulants in the region*, presented at the 4<sup>th</sup> International Forum on the Control of Precursors for ATS, Tokyo, Japan (February 2008)

## Thailand: seizures of ATS 2001-2007



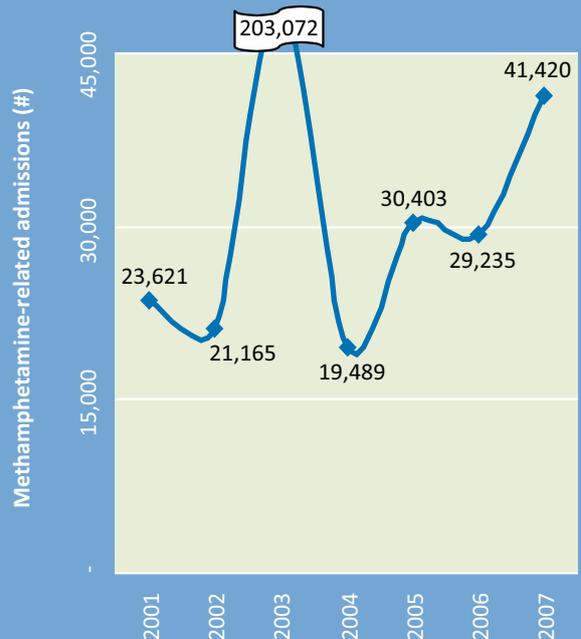
Source: UNODC ARQ/ DELTA; Drug Abuse Information Network for Asia and the Pacific (DAINAP)

## Thailand: ATS-related arrests 2003-2007



Source: UNODC ARQ/ DELTA

## Thailand: methamphetamine-related admissions to treatment 2001-2007



Sources: Office of the Narcotics Control Board, *Thailand Narcotics Annual Report 2003*; Drug Abuse Information Network for Asia and the Pacific (DAINAP)

The appearance of crystalline methamphetamine ('ice') in large-scale seizures was first reported in 2001 and has been reported since with increasing frequency, suggesting that manufacture in Myanmar may be diversifying and perhaps shifting to higher-potency forms of methamphetamine. In January 2005, one interception alone yielded 178 kg of high purity crystalline methamphetamine found in a sea container in Yangon bound for Malaysia.

The most commonly used drugs in Myanmar remain heroin and opium, followed most recently by the tablet form of methamphetamine. While use of heroin and opium has been noted as decreasing in recent years, methamphetamine use has been increasing each year since 2003.

## Thailand

The most recently reported ATS manufacturing operations in Thailand date back to 2001, when 10 methamphetamine laboratories were dismantled. Seizures of methamphetamine tablets declined 84% from 8.3 mt to 1.4 mt between 2001 and 2007, coinciding with the suppression efforts of the 'war on drugs' during 2003/04. Meanwhile the crystalline form of methamphetamine ('ya-ice') seems to be making some inroads into the Thai market; a large seizure of 148 kg took place in June 2006 and many smaller seizures have happened since.

The main source for both forms of methamphetamine in Thailand is believed to be Myanmar, either trafficked directly through the northwest of the country, or indirectly entering through Lao PDR or Cambodia after circumventing the Golden Triangle and being shipped down the Mekong River or overland through established road networks. Crystalline methamphetamine is understood to be trafficked into Thailand for both domestic consumption and for re-export to Malaysia, Indonesia, Singapore, Brunei Darussalam, the Philippines, Hong Kong (SAR of China) and Japan. Shipments of crystalline methamphetamine as well as tablets have also been reported from Myanmar via Thailand with Malaysia<sup>3</sup> as a final destination. On average, only 15 kg of *ecstasy-group substances* are seized annually.

Forensic profiling of the most common methamphetamine tablet type seized in 2006 and 2007 indicates that the methamphetamine powder was likely manufactured in laboratories run by two different criminal groups. These tablets were most prevalent in the northern regions of Thailand, bordering Myanmar. The methamphetamine powder found in the second most dominant type of methamphetamine tablet (more commonly encountered in the north-eastern and eastern regions of Thailand) is believed to have been manufactured in four different production sites in Myanmar before entering Thailand via Lao PDR and Cambodia, bypassing the Golden Triangle.

The number of ATS-related arrests increased significantly since 2005, the lowest level since the 2003 crackdown. Of the 84,073 ATS-related arrests in 2007, 97% were for methamphetamine tablet related offences, 2% for crystalline methamphetamine and less than 1% for 'ecstasy'-related offences. Increasing crystalline methamphetamine arrests may in part be due to trafficking of small amounts by a large number of couriers, which also accounts for lower levels of seizures since 2005. On average, methamphetamine-related arrests have accounted for 75% of all drug-related arrests.

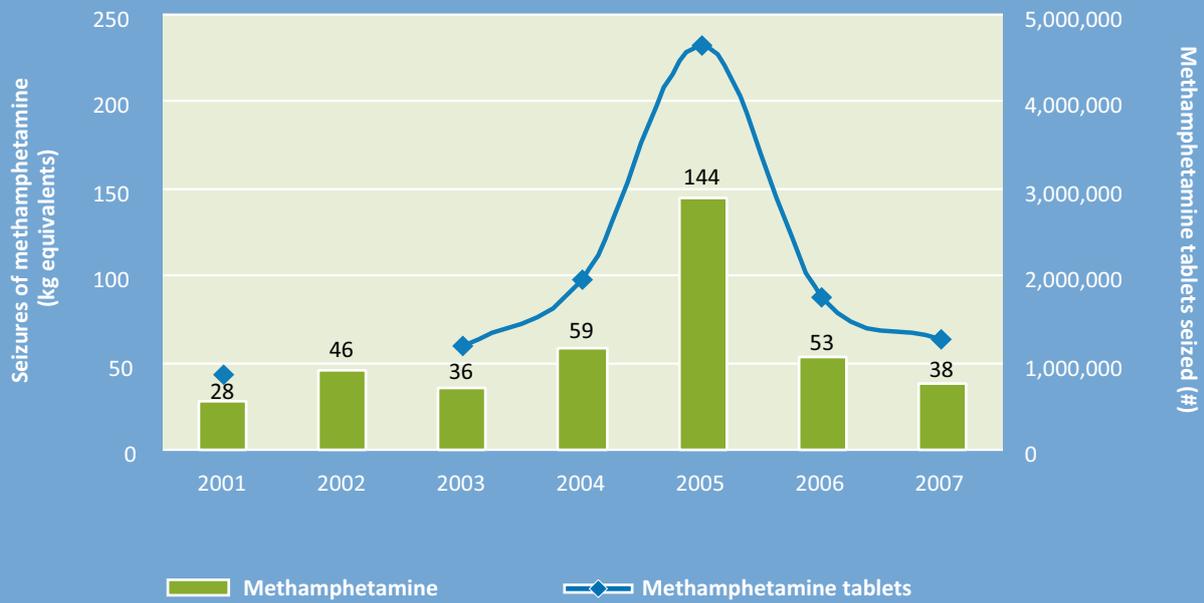
Treatment data in Thailand shows a significant decline in admissions following the nearly 10-fold increase in 2003, when tens of thousands were in compulsory treatment. However, after the situation stabilized throughout 2005 and 2006, increases were noted in 2007, following a similar trend to arrest statistics.

Among other things, the 'war on drugs' had the effect of reducing self-reporting of illicit drug use in surveys; results between 2003 and 2006 indicate unusually low prevalence rates possibly related to law enforcement pressure applied during this initiative.

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3 In 2007 the primary destination of crystalline methamphetamine was reported to be Malaysia.

## Lao PDR: seizures of methamphetamine and tablets seized 2001-2007



Source: UNODC ARQ/ DELTA; Drug Abuse Information Network for Asia and the Pacific (DAINAP)

## Cambodia: primary trafficking routes for methamphetamine before and after 2003



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

Source: Cambodia National Authority for Combating Drugs; UNODC

## Lao PDR

Lao PDR has not reported clandestine methamphetamine manufacture since 1998 and seizures of methamphetamine tablets ('yaba'), have declined slightly since their peak in 2005 - the same year authorities identified it as their primary drug problem. This decline may be related to lower interception rates resulting from reported changes in trafficking *modus operandi* since 2005/06, when traffickers began utilizing numerous couriers and varying routes for small shipments of methamphetamine tablets transiting into Lao PDR, avoiding detection of larger shipments. At approximately the same time, authorities began reporting an increase in methamphetamine use along trafficking routes adjacent to the Mekong River including major cities starting from Luang Prabhang in the north near the Golden Triangle, the capital Vientiane in central Lao PDR, and Savannakhet and Pakse in the south.<sup>4</sup> The first seizure of crystalline methamphetamine reported was in 2005, indicating that the supply of methamphetamine entering Lao PDR was diversifying.

In 2004, Sonsanga Treatment Centre in Vientiane reported that 95% of all treatment admissions (1,103) were for the use of methamphetamine tablets and the majority of patients treated were young adults.<sup>5</sup> While absolute numbers for drug-related arrests (averaging less than 500 annually, and nearly all methamphetamine-related) are modest when compared to neighbouring countries. ATS-related treatment admissions and arrests together represent a significant burden on the limited law enforcement, judicial, prison and health care resources of Lao PDR.

## Cambodia

Cambodia has seen a rapid increase in methamphetamine trafficking and use since 2003. Seizure, arrest and use data illustrate strong increases around 2003/04, peaking in 2005, before stabilizing at elevated levels in 2006. Between 2001 and 2006, there were seven methamphetamine tableting operations reported in Cambodia, and in April 2007, police dismantled a large-scale laboratory - allegedly in operation for more than six months - in the Kampong Speu Province that was reported to have produced at least 1 mt of chloropseudoephedrine, an intermediate in the manufacture of methamphetamine. A site for converting the intermediate into methamphetamine has not been located to date. In August 2007, significant quantities of undetermined chemicals and a high capacity tableting press were also seized by authorities in Phnom Penh.<sup>6</sup>

Prior to 2003, trafficking of illicit drugs into the country occurred at the Cambodian-Thai border but since the Thai 'war on drugs', methamphetamine in both tablet and crystalline forms has entered Cambodia via its northern border with Lao PDR before being trafficked via the Mekong River to Phnom Penh for domestic consumption, and for onward shipment to Thailand and Viet Nam.

Cambodia's rugged borders with Lao PDR, Thailand, Viet Nam and long coastline on the Gulf of Thailand, allow for relatively easy trafficking and contribute to low interception rates by authorities. ATS seizures (primarily methamphetamine tablets, known locally as 'yama') have been relatively modest but have increased from 2 kg in 2001 to 29 kg in 2006, including a 12.4 kg seizure of high purity crystalline methamphetamine ('ma takouk') bound for Malaysia at the Phnom Penh airport.

Total quantities (expressed in kg) appear small, however the conversion from tablets into kilogram equivalents<sup>7</sup> masks the volume of methamphetamine tablets that were recently reported:

39,876 tablets seized in Stueng Treng (December 2006); 17,763 tablets in Phnom Penh (April 2007), and 8,304 tablets in Kratie Province and 9,844 tablets in Stueng Treng (April 2007). However, the largest seizure to date remains the approximately 600,000 methamphetamine tablets seized in Sombor District of Stueng Treng in 2004. Increases in ATS tablet seizures were also correlated with increases in ATS-related arrests which occurred as a result of the shifts from the Thai 'war on drugs' in 2003/04.

Similar to other GMS countries, crystalline methamphetamine is also appearing in Cambodia, as reflected in the 12 kg seizure of that form at Phnom Penh airport in 2006 and a further seizure of 2.2 kg going from Cambodia to Malaysia via air (April 2007). In early 2008, 105 kg of ephedrine powder was intercepted going from Cambodia to Australia via air cargo.<sup>8</sup>

4 National Project Workplan Update at the Improving ATS Data and Information Systems, The Lao National Commission for Drug Control and Supervision, presented at the Regional ATS Forum (August 2007).

5 Ibid.

6 National Project Workplan for National Authority for Combating Drugs, Cambodia, Improving ATS data and information systems, presented at the Regional ATS forum (August 2007).

7 Conversion factors assume that each *amphetamines-group substances* tablet contains 30 mg of active ingredient (amphetamine or methamphetamine).

8 Australian Customs and Australian Federal Police Joint Media Release: *Chemical to make \$35 million of ice found in coffee* (Dec 2007).

### Hong Kong (SAR of China)

Hong Kong (SAR of China) reported eight ATS-related laboratory facilities between 2001 and 2006; six 'ecstasy' (tablet and repacking laboratories) and two methamphetamine laboratories. Overall, when considering the volumes of ATS trafficked through the area, ATS seizures in Hong Kong (SAR of China) have been relatively modest at 96 kg annually, with 78% being crystalline methamphetamine. At the same time, the retail price of crystalline methamphetamine has remained largely stable since 2002.

Law enforcement reports note that seizures of methamphetamine (both tablets 'maku' and crystalline 'ice') and 'ecstasy' tablets have been declining since the beginning of 2007, while seizures of, and arrests for, ketamine - often found in 'ecstasy' - have increased. Ketamine seizures were first reported in Hong Kong (SAR of China) in 2001 (81.5 kg) increasing to more than 1 mt by 2006.<sup>16</sup>

### Taiwan (Province of China)

Data specific to ATS-related activity in Taiwan (Province of China) are inconsistently reported. Within this context there have been some reports of methamphetamine manufacture (10 laboratories in 2003) and trafficking. Between 2001 and 2007 78% of ATS seized was reportedly methamphetamine and between 2001 and 2006, approximately 10% of the methamphetamine seized globally occurred in Taiwan (Province of China) (11.5 mt). However, 2006 and 2007 inexplicably saw large drops in the amount of ATS seized, with only 196 kg and 142 kg reported, respectively.

Methamphetamine is the second most common illicit drug for treatment admissions, following heroin,<sup>17</sup> with methamphetamine admissions dropping from 42% in 2001 to 29% in 2006. According to the data a large proportion of those in treatment were for poly-drug use (methamphetamine and heroin).

Several Taiwan (Province of China) jurisdictions and agencies conduct urinalysis for illicit drugs. Results of drug tests since 2001 show that methamphetamine-positive tests have fluctuated from a low of 13% to 25% positive results, generally following the pattern of treatment admissions.

### North-East Asia

Trafficking and use of ATS, primarily crystalline methamphetamine, has taken place in Japan and to a lesser extent the Republic of Korea for a long period of time. In general terms, although both law enforcement and demand reduction efforts have been comprehensive, ATS continue to be a problem due to the size and value of the market.

16 Taiwan (Province of China) reported its first seizure in 2001 (9.5 kg).  
 17 National Bureau of Controlled Drugs, Department of Health, Taiwan (Province of China) (2007).

### Emergence of ketamine

Ketamine is 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 knowingly or unknowingly as an active ingredient in what is sold on illicit markets as 'ecstasy'.

While its appearance on ATS markets is a relatively recent phenomenon, ketamine has been used as a recreational hallucinogen for decades, after it was first noted in the USA in 1971. Its effects are similar to those of phencyclidine (PCP) but with a much shorter duration and are dose dependant. Ketamine use can lead to loss of self-control and acute intoxication, severely affecting perception of the body, time and reality, and it has been linked to long-term memory and cognitive difficulties. Large doses lead to the what is known as "k-hole", described as a psychedelic out-of-body or 'near-death' experience.

Ketamine use has been reported in Asia, Europe and North America, and it has already been placed under national control in several countries. In 2001, only two countries reported seizures of ketamine to UNODC but by 2006, this number had increased to 20, including multi-ton seizures in China, Hong Kong (SAR of China), and Taiwan (Province of China). Argentina, Australia, Brunei Darussalam, Cambodia, Canada, France, Hungary, Indonesia, Italy, Macau (SAR of China), Malaysia, Myanmar, Philippines, Russia, Serbia, Singapore, and Thailand have also reported seizures.

REGION	2001	2002	2003	2004	2005	2006
Americas						30.51
Asia	91.03	63.20	832.23	823.66	3,195.12	4,243.90
Europe					122.40	4.06
Oceania				0.00	0.04	0.00
<b>Grand Total (Kg)</b>	<b>91.03</b>	<b>63.20</b>	<b>832.23</b>	<b>823.66</b>	<b>3,317.56</b>	<b>4,278.47</b>

Source: UNODC/ DELTA

Although seizures remained small in Singapore at 3.6 kg and 0.7 kg in 2005 and 2006, respectively, ketamine was ranked as the second leading drug of abuse in that country. In China, which accounted for the majority of ketamine seizures, the drug was ranked as the fifth leading drug of abuse in 2006, and in 2007 10.5 mt of ketamine was reportedly seized. Ketamine is reported as the primary drug of abuse in Hong Kong (SAR of China).

Ketamine manufacture requires a complicated multi-step process, using a variety of precursors and numerous solvents and reagents. As a consequence of this, ketamine sold illicitly for recreational purposes to-date comes almost exclusively from diverted bulk drug or pharmaceutical preparations or theft, primarily from veterinary suppliers and clinics. Clandestine ketamine laboratories have been noted in several countries with the number reportedly increasing, although given the availability of the drug from diverted sources these laboratories were mostly tablet or other processing facilities.

Although not required to do so, in the 2005/06 ARQs, nine Member States mentioned ketamine as an emerging drug of abuse. These included countries from Europe (Greece, Hungary, Italy, and UK), the Near and Middle East (Israel), Oceania (Australia), and the Americas (Canada and Argentina).

The emergence of ketamine on illicit ATS markets has long remained unnoticed given that there are no reporting requirements for drugs not under international control. However, as the effects of ketamine depend very much on the dose, uncertainty about its content in 'ecstasy' tablets is of concern and poses a particular risk.

### Ketamine seizures reported to UNODC 2001-2006



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

Source: UNODC ARQ/ DELTA

Methamphetamine tablets started becoming available in the capital of Cambodia around 2001, with the high purity crystalline form following about three years later. During this time referrals to military-style drug treatment camps increased 7-fold from 2001 to 2006, before they began to show some signs of stabilization. Authorities believe that this levelling off may be due to improved drug education, treatment and rehabilitation by government institutions, local grassroots levels programs and international agency assistance.

Since 2004, methamphetamine tablets have been ranked the leading drug of abuse, while crystalline methamphetamine began gaining in popularity in 2006 as its availability increased. A recent profile of 12 provinces showed that methamphetamine, which was previously reported primarily in the capital Phnom Penh and other major cities (Battambang and Sihanoukville), has spread to many rural provinces of the country.<sup>9</sup> In a survey of drug users across 60 communities, 63% specifically identified methamphetamine as their primary drug of choice and lifetime and past month prevalence of surveyed drug users were 47% and 27%, respectively. Although intravenous drug use was not yet wide spread, methamphetamine injection was identified in every province surveyed.

## Viet Nam

ATS have quickly emerged as a new phenomenon in Viet Nam, a country that has historically had an opium and heroin problem (85% of registered drug users are heroin users). The first ATS (methamphetamine) laboratory was reported to UNODC in 2005, and the first ATS precursor chemical seizure (ephedrine) in 2006. Since 2002, imports of pseudoephedrine and ephedrine to Viet Nam have increased 262% and with more than 11,000 wholesalers, suppliers, and manufacturers it provides an increasing opportunity for diversion to illicit manufacture.

Unlike other countries in the subregion, ATS seizures remain low in Viet Nam with an annual average of 2.6 kg (2001-2006 period). Among other things, the low seizure reports are likely the result of a continued focus by enforcement agencies on heroin as opposed to ATS. The most common form of ATS has been methamphetamine tablets ('yaba') with little crystalline methamphetamine reported. From very low levels between 2001-2004, ATS-related tablet seizures have increased 4-fold to some 230,000 tablets in 2006.<sup>10</sup>

Methamphetamine imported into the country is believed to be sourced primarily from Myanmar, and subsequently trafficked through Lao PDR and Cambodia to southern Viet Nam and the urban centre of Ho Chi Minh or from the North through Lao PDR to Hanoi. While authorities have reported that a large number of drug trafficking syndicates have been detected and dismantled, drug trafficking routes largely remain intact.

## Injecting drug use (IDU) and ATS

The nature and extent of harms of ATS use are directly linked to the route of administration. Methamphetamine can be administered orally, nasally (snorted), smoked or intravenously injected. As smoking and injection provide faster onset of effects and more potent 'highs' than swallowing, problem users tend to switch to these routes of administration which, however, also increase adverse consequences. A recent Australian study, for example, found that due to the search for a stronger, quicker 'high', 40% of regular methamphetamine users moved from non-injecting to injecting. Once users begin injecting, it is only a small percentage (9%) who cease injecting.

Drug injection (particularly when or if it involves risky injecting behaviours such as sharing of needles) carries with it significant risk of contracting blood borne viral infections, such as hepatitis C and HIV/AIDS, and other health risks related to the process of injecting a illicitly manufactured drug. Injection drug use accounts for approximately 10% of new HIV infections globally and 30% of infections outside of Africa. According to a recent report on the global epidemiology of methamphetamine injection, problematic methamphetamine use appears more widespread in East Asia, North America, several European countries, New Zealand and Australia. East Europe and Central Asia also have an increasing number of persons living with HIV - largely due to injecting drug use.

Of concern is the rise in the use of ATS and the potential for injection and the association with HIV/AIDS in East Asia. In the near future, spread of HIV/AIDS are predicted to occur increasingly in China where coincidentally ATS use is reported to be on the increase. In 2007, 4.9 million people were estimated to be living with HIV in Asia, which included the 440,000 people who became newly infected in that year. Currently, among the 15-44 year-old age bracket, AIDS accounts for more deaths annually in Asia than do tuberculosis and other diseases. Although still thought to be at moderate levels in most countries in East Asia, in 2005/06 five countries reported injection of methamphetamine to UNODC, including Brunei Darussalam, Cambodia, China, Indonesia and Japan. In the case of Japan where HIV prevalence is low, it was reported as the primary route of administration.

Once HIV prevalence in injecting drug users reaches high levels, it can take years of intense, wide-scale prevention programming to decrease infection rate levels. Countries in Asia such as Bangladesh, Cambodia, China, India, Indonesia, Malaysia, Nepal, Thailand and Viet Nam have started programmes to address the spread of HIV through injection.

## Percent HIV positives among injecting drug users in selected cities in Asia 1997-2007



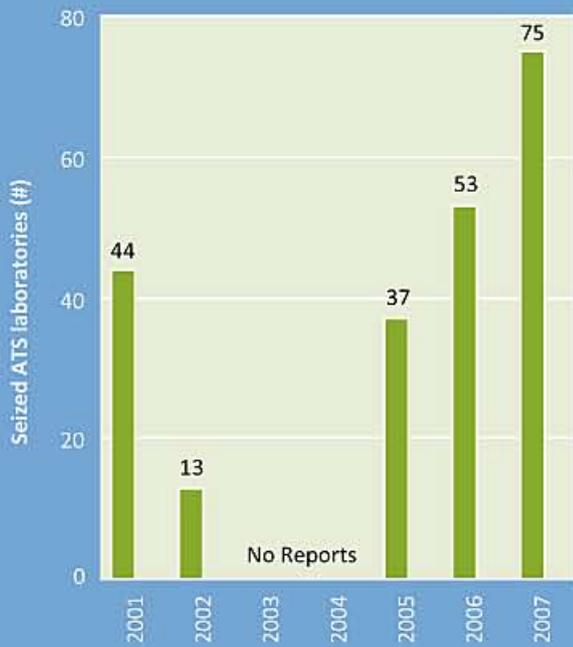
Source: Report of the Commission on AIDS in Asia, *Redefining AIDS in Asia: Creating an Effective Response* (2008)

9 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).

10 These include combinations of amphetamine, methamphetamine, and ecstasy-group substances. Limited forensic information from 2006 suggests that some ATS tablets marketed as ecstasy-group substances often contained ketamine.

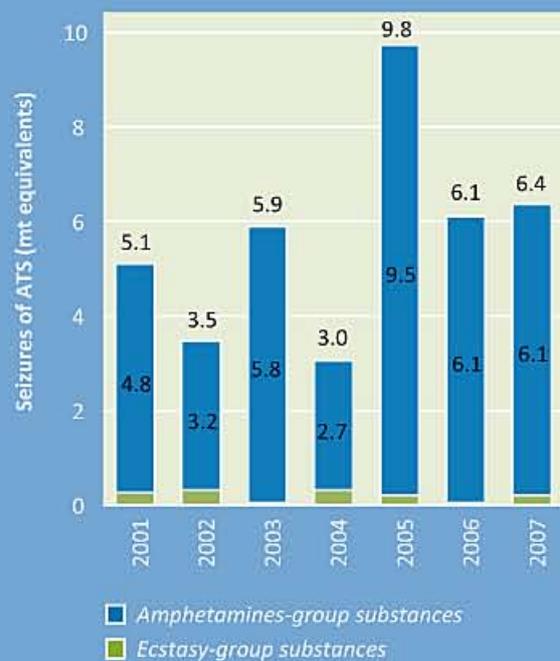
# 2008 GLOBAL ATS ASSESSMENT

China: seized ATS laboratories 2001-2007



Source: UNODC ARQ/DELTA

China: seizures of ATS 2001-2007



Source: UNODC ARQ/DELTA

China: provinces identified with serious ATS-related problems 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.

Source: China National Narcotics Control Commission (NNCCC) (2008); Drug Law Enforcement of China, *Some Successful Experience*, National Narcotics Control Commission, presented at the 31<sup>st</sup> HONLEA Meeting, Bangkok, Thailand (Nov 2007); Office of China National Narcotics Control Commission (NNCCC), *The Current ATS Problem and Control Situation in the PRC* (Sept 2006); Office of China National Narcotics Control Commission (NNCCC), *Measures Implemented in China for the prevention of Illicit Production of Synthetic Drugs and their Precursors*, presented at the Europe-Asia Cooperation on Synthetic Drugs and their Precursors conference, Paris (March 2007).

## China

China is part of the GMS sharing southern borders with Myanmar, Lao PDR, and Viet Nam, while also bordering the Korean peninsula and the Pacific Ocean in the north and east, and with South and Central Asia in the southwest and west China. Clearly impacted by ATS, China is reporting seizures of large numbers of manufacturing facilities and seizures of methamphetamine in both crystalline and tablet form with indications that ATS use continues to increase year-on-year.

From 2001 to 2007 94% of ATS manufacture has been for methamphetamine, with notable increases since 2005. Prior to 2006, most of the clandestine methamphetamine manufacturing activity in China occurred in the south-eastern provinces of Guangdong and Fujian.<sup>11</sup> However, increased law enforcement controls in these two provinces appear to have shifted some manufacture to central China including Anhui, Henan, Sichuan, Chongqing, Hubei and Hunan, and north to the provinces of Gansu and Liaoning.<sup>12</sup>

Beginning in mid-2005, seizures of ATS (methamphetamine and 'ecstasy') surpassed that of heroin, reflecting the changing trend of domestic manufacture, trafficking and consumption. Between 2001 and 2006, China's methamphetamine seizures (29.4 mt) accounted for 27% of the reported global total seized (110.3 mt). A substantial proportion of the methamphetamine seized is believed to have been manufactured in northern Myanmar, and by 2006 nearly all provinces in China had reported seizing tablets produced in Myanmar. The largest seizures of methamphetamine are typically reported from the provinces of Yunnan and Guangdong, confirming the two main trafficking routes for methamphetamine: the Golden Triangle, and the southeast coastal areas of China. 'Ecstasy' continues to be sourced primarily from the Netherlands and other European countries and is often mixed with other drugs.

Starting in 2002, the quantity of methamphetamine trafficked from Myanmar through Yunnan Province increased at a rapid rate; Chinese authorities reported 18% of methamphetamine seizures in Yunnan Province that year and by 2006 this share increased to 56%. The increase in seizures was due in part to a major anti-trafficking initiative and improved interdiction efforts along border areas of Yunnan Province beginning in 2005. As a result, shifts of some trafficking routes took place and in 2007 Guangxi Province<sup>13</sup> was added to the anti-trafficking initiative to reduce the possibility of methamphetamine being redirected to enter China from Viet Nam. Increases in trafficking were also noted in Guangdong Province in 2007, where 67% of the country's methamphetamine powder and 73% of methamphetamine tablets were reportedly seized.

As with other countries in the region, ATS trafficking in China is increasingly dominated by transnational crime groups united for business purposes versus groups that were previously bound by national or ethnic ties. For example, in October 2006, a transnational drug trafficking organization was dismantled in Xinjiang Autonomous Region with arrests of foreign suspects from five different African countries. Foreign drug suspects captured in China are reported to come from more than 20 countries and territories.

Although China is potentially one of the world's largest methamphetamine markets, there are no national prevalence estimates and use is believed to be slightly lower than in other East and South-East Asian countries.<sup>14</sup> However within this context experts in China have reported increases in the use of methamphetamine tablets and crystalline methamphetamine in recent years. Supporting evidence for this trend can be found in the country's increased registered ATS users. Where in 2004, 1.7% used ATS by 2007 this had increased to 11.1%.<sup>15</sup> This trend is also consistent with the increase in reported clandestine methamphetamine laboratories and seizures.

Several provinces in China with high population centres have been identified as having serious ATS-related manufacturing, trafficking and use problems. Increased disposable income coupled with significant supply suggest that the country will likely continue to experience increased ATS use.

11 In 2007 75% of seized ATS laboratories were in Guangdong Province.

12 Office of China National Narcotics Control Commission (NNCCC), *The Current ATS Problem and Control Situation in PRC* (Sept 2006).

13 Guangxi Province contains a number of primary ATS trafficking routes.

14 To date no national drug-related household survey has ever been undertaken in China.

15 China National Narcotics Control Bureau, Ministry of Public Security, presentation *Drug data collection in China*, Global ISDMP Meeting, Tokyo, Japan (Feb 2008).

## 2008 GLOBAL ATS ASSESSMENT

**Hong Kong (SAR of China): crystalline methamphetamine price per gram, by market type 2002-2006**



Source: UNODC Regional Centre for East Asia and the Pacific, *Patterns and Trends of Amphetamine-type Stimulants (ATS) and Other Drug of Use in East Asia and the Pacific 2006* (June 2007)

**Hong Kong (SAR of China): ATS-related drug registry trends 2001-2007**



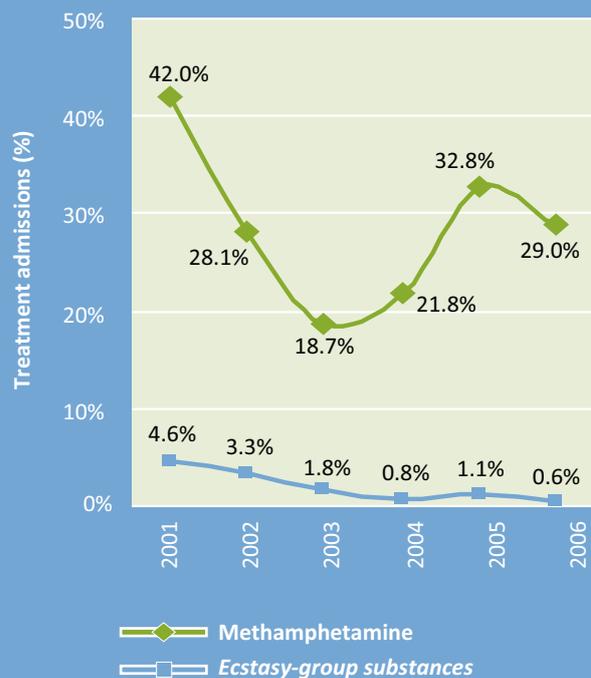
Source: Central Registry of Drug Abuse, Statistics Unit, Hong Kong Narcotics Division (2008)

**Taiwan (Province of China): seizures of ATS 2001-2007**



Source: National Bureau of Controlled Drugs, Department of Health, Taiwan (Province of China) (2008)

**Taiwan (Province of China): treatment admissions 2001-2006**



Source: National Bureau of Controlled Drugs, Department of Health, Taiwan (Province of China) (2007)

### Hong Kong (SAR of China)

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### Taiwan (Province of China)

Data specific to ATS-related activity in Taiwan (Province of China) are inconsistently reported. Within this context there have been some reports of methamphetamine manufacture (10 laboratories in 2003) and trafficking. Between 2001 and 2007 78% of ATS seized was reportedly methamphetamine and between 2001 and 2006, approximately 10% of the methamphetamine seized globally occurred in Taiwan (Province of China) (11.5 mt). However, 2006 and 2007 inexplicably saw large drops in the amount of ATS seized, with only 196 kg and 142 kg reported, respectively.

Methamphetamine is the second most common illicit drug for treatment admissions, following heroin,<sup>17</sup> with methamphetamine admissions dropping from 42% in 2001 to 29% in 2006. According to the data a large proportion of those in treatment were for poly-drug use (methamphetamine and heroin).

Several Taiwan (Province of China) jurisdictions and agencies conduct urinalysis for illicit drugs. Results of drug tests since 2001 show that methamphetamine-positive tests have fluctuated from a low of 13% to 25% positive results, generally following the pattern of treatment admissions.

### North-East Asia

Trafficking and use of ATS, primarily crystalline methamphetamine, has taken place in Japan and to a lesser extent the Republic of Korea for a long period of time. In general terms, although both law enforcement and demand reduction efforts have been comprehensive, ATS continue to be a problem due to the size and value of the market.

16 Taiwan (Province of China) reported its first seizure in 2001 (9.5 kg).  
 17 National Bureau of Controlled Drugs, Department of Health, Taiwan (Province of China) (2007).

### Emergence of ketamine

Ketamine is 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 knowingly or unknowingly as an active ingredient in what is sold on illicit markets as 'ecstasy'.

While its appearance on ATS markets is a relatively recent phenomenon, ketamine has been used as a recreational hallucinogen for decades, after it was first noted in the USA in 1971. Its effects are similar to those of phencyclidine (PCP) but with a much shorter duration and are dose dependant. Ketamine use can lead to loss of self-control and acute intoxication, severely affecting perception of the body, time and reality, and it has been linked to long-term memory and cognitive difficulties. Large doses lead to the what is known as "k-hole", described as a psychedelic out-of-body or 'near-death' experience.

Ketamine use has been reported in Asia, Europe and North America, and it has already been placed under national control in several countries. In 2001, only two countries reported seizures of ketamine to UNODC but by 2006, this number had increased to 20, including multi-ton seizures in China, Hong Kong (SAR of China), and Taiwan (Province of China). Argentina, Australia, Brunei Darussalam, Cambodia, Canada, France, Hungary, Indonesia, Italy, Macau (SAR of China), Malaysia, Myanmar, Philippines, Russia, Serbia, Singapore, and Thailand have also reported seizures.

REGION	2001	2002	2003	2004	2005	2006
Americas						30.51
Asia	91.03	63.20	832.23	823.66	3,195.12	4,243.90
Europe					122.40	4.06
Oceania				0.00	0.04	0.00
<b>Grand Total (Kg)</b>	<b>91.03</b>	<b>63.20</b>	<b>832.23</b>	<b>823.66</b>	<b>3,317.56</b>	<b>4,278.47</b>

Source: UNODC/ DELTA

Although seizures remained small in Singapore at 3.6 kg and 0.7 kg in 2005 and 2006, respectively, ketamine was ranked as the second leading drug of abuse in that country. In China, which accounted for the majority of ketamine seizures, the drug was ranked as the fifth leading drug of abuse in 2006, and in 2007 10.5 mt of ketamine was reportedly seized. Ketamine is reported as the primary drug of abuse in Hong Kong (SAR of China).

Ketamine manufacture requires a complicated multi-step process, using a variety of precursors and numerous solvents and reagents. As a consequence of this, ketamine sold illicitly for recreational purposes to-date comes almost exclusively from diverted bulk drug or pharmaceutical preparations or theft, primarily from veterinary suppliers and clinics. Clandestine ketamine laboratories have been noted in several countries with the number reportedly increasing, although given the availability of the drug from diverted sources these laboratories were mostly tablet or other processing facilities.

Although not required to do so, in the 2005/06 ARQs, nine Member States mentioned ketamine as an emerging drug of abuse. These included countries from Europe (Greece, Hungary, Italy, and UK), the Near and Middle East (Israel), Oceania (Australia), and the Americas (Canada and Argentina).

The emergence of ketamine on illicit ATS markets has long remained unnoticed given that there are no reporting requirements for drugs not under international control. However, as the effects of ketamine depend very much on the dose, uncertainty about its content in 'ecstasy' tablets is of concern and poses a particular risk.

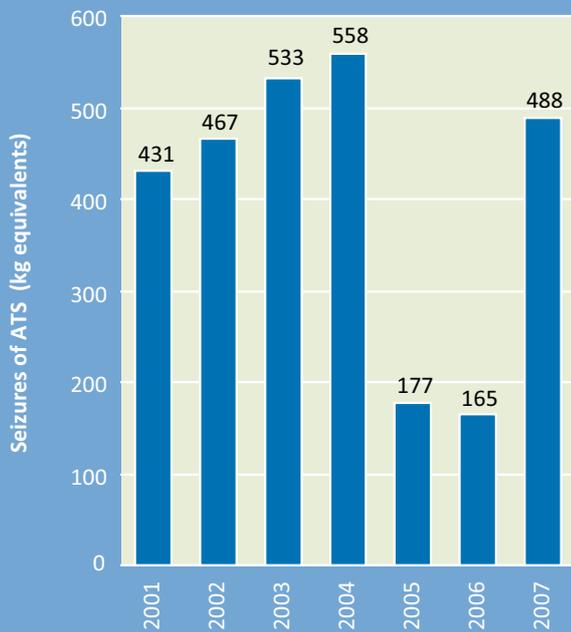
### Ketamine seizures reported to UNODC 2001-2006



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

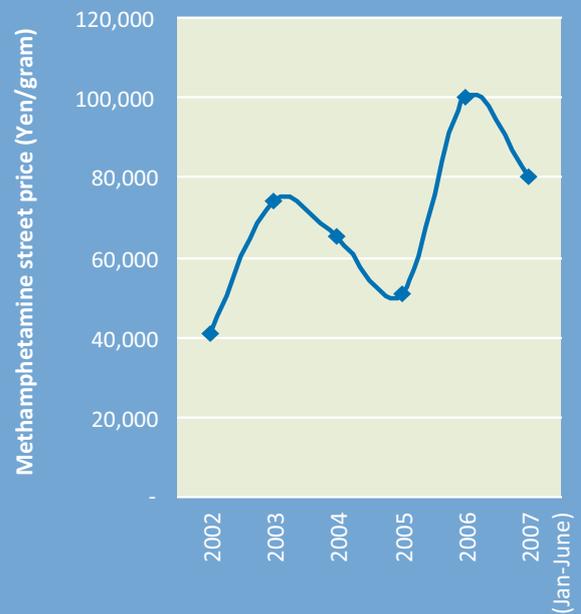
Source: UNODC ARQ/ DELTA

## Japan: seizures of ATS 2001-2007



Source: UNODC ARQ

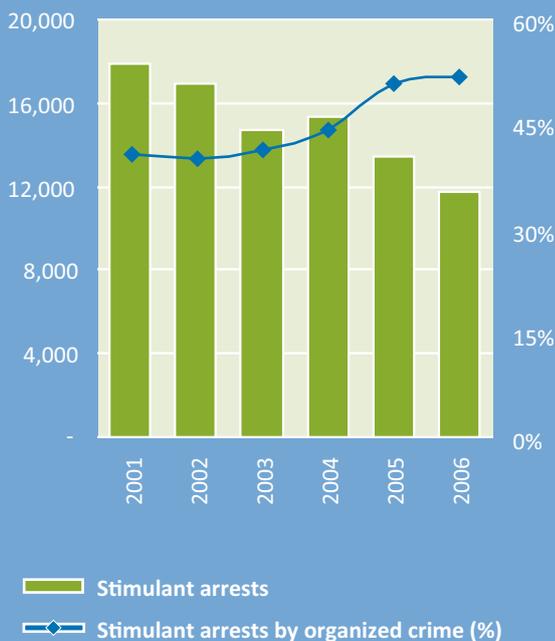
## Japan: street prices for methamphetamine 2002-2007



Note: In 2007, US\$1 was ¥117.18 Yen.

Source: Drug and Firearms Division, Japan National Police Agency, *Current Methamphetamine Situation in Japan*, at the 31<sup>st</sup> HONLEA Meeting, Bangkok, Thailand (Nov 2007)

## Japan: stimulant law arrests and proportion by organized crime 2001-2006



Source: Ministry of Health, Labour and Welfare, *The general situation of administrative measures against narcotics and stimulants abuse 2007* (Dec 2007)

## Korea: arrests for psychotropic law violations 2003-2007



Source: Narcotics Control Team, Korea Food and Drug Administration (2007)

## Japan

Beginning in the early 1950s, the late 1970s and again in the late 1990s, several waves of methamphetamine use occurred in Japan, and although the situation has improved methamphetamine continues to be the primary drug of concern. Life-time prevalence rate of methamphetamine use is reported as 0.3% (2005) for the population age 15 and above and 0.4% in the student population (2006).

Japan has never reported domestic clandestine ATS laboratory activity to UNODC but has reported notable seizures of methamphetamine. ATS seizures saw a decline by approximately 66% in 2005 and 2006 compared to levels over the 2001-2004 period. This is the result of fewer large-scale seizures from maritime shipments as trafficking organizations use increasingly sophisticated means to avoid detection. For instance, offshore transshipments from larger ocean-going vessels to smaller boats or via dropped buoys increasingly around outlying islands allowed for drugs to be shipped to the mainland without detection.

Methamphetamine in the Japanese market has in recent years reportedly been sourced from Democratic People's Republic of Korea, China and Hong Kong (SAR of China). However, between 2003 and 2005, Canada, and to a lesser degree Malaysia, quickly emerged as additional source countries, accounting for 7% and 5% of seizures respectively. By 2006, their shares had increased to 21% and 9% respectively. In 2007, Canada was identified as the most common source of trafficked methamphetamine for the Japanese market, accounting for 66% of seizures with known origin.

Between 2002 and 2007, the street price for methamphetamine doubled, possibly due in part to authorities dismantling a Democratic People's Republic of Korea-based trafficking organization in May 2006. However, the high profit margin for methamphetamine in Japan has led traffickers to change trafficking *modus operandi* and utilize alternate routes; methamphetamine seizures at Narita Airport for instance, were six times higher in 2006 than in 2005.

An increasing proportion of drug arrests are related to domestic organized crime syndicates (Yakuza), suggesting increasing involvement of organized criminal groups in the trafficking of transnationally sourced stimulants. In 2003, 41% of arrestees for stimulant-related drug crimes were identified by authorities as being associated with the Yakuza. Three years later that figure had increased to 52% meaning that more than half of all arrestees for stimulant-related drug crime are now related to organized crime syndicates.<sup>18</sup>

## Republic of Korea

Although the Republic of Korea is currently perceived to be a low-level consumer nation with a modest 0.1% estimated annual prevalence for *amphetamines-group* use, several trends in manufacture, trafficking, and use point to increases in the methamphetamine (known locally as '*philopon*') problem. In May 2006, authorities intercepted ephedrine-containing cold medicines trafficked into the Republic of Korea from Canada via international mail in an attempt to domestically manufacture methamphetamine. The following year, authorities reported the first methamphetamine manufacturing incident associated with the use of diverted over-the-counter precursors in a small vehicle-based laboratory.<sup>19</sup>

Annual ATS seized between 2001 and 2006 averaged 55 kg annually, most of which was methamphetamine trafficked from international sources. In 2003, the authorities of the Republic of Korea reported that 67% of trafficked and seized methamphetamine originated from China while the remainder was sourced primarily in the Philippines (24%) and to a lesser extent the USA and Japan. However, by 2006 and continuing through 2007, nearly all (99%) seized methamphetamine was reported to have originated in China. 'Ecstasy' appears to enter the Republic of Korea from many varying sources, such as the USA, Canada, Germany, and Australia. There are also indications that the Republic of Korea is becoming a transshipment point for transnational organized crime groups to traffic drugs and precursors originating from China, Thailand, and the Philippines into the USA, Europe and Japan.<sup>20</sup> For example, in 2004, authorities identified the Republic of Korea as the transit point for 46 million tablets of pseudoephedrine-containing cold medicines smuggled from Hong Kong (SAR of China) and China into Mexico.

Arrests for psychotropic law violations account for more than 70% of all drug-related arrests in the Republic of Korea with most violations are for methamphetamine and 'ecstasy'-related offences. Between 2003 and 2007, the number of arrests for psychotropic-related offences increased by almost 80%, to 8,000.<sup>21</sup>

18 Japan Ministry of Health, Labour and Welfare, *The general situation of administrative measures against narcotic and stimulant abuse, 2007* (Dec 2007).

19 Narcotics Control Team, Korea Food and Drug Administration, *Current situation and recent trends about ATS in Korea (Republic)*, presented at the 4th International Forum on the Control of Precursors for ATS, Tokyo, Japan (Feb 2008).

20 Ibid.

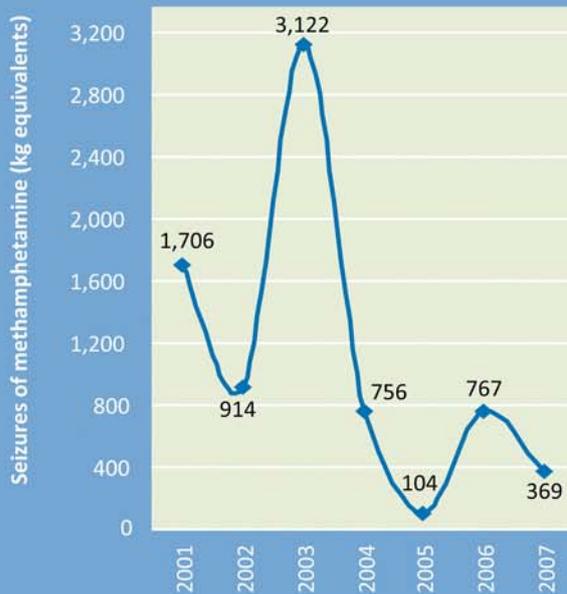
21 Ibid.

## Philippines: seized methamphetamine manufacture-related facilities 2001-2007



Source: UNODC ARQ/ DELTA; Philippine Dangerous Drugs Board (2008)

## Philippines: seizures of methamphetamine 2001-2007



Source: UNODC ARQ/ DELTA; DAINAP

## Philippines: confirmed and suspected coastal trafficking points for ATS



Note: data as of July 2008 and seizures are for years up to 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.

Source: Philippine Drug Enforcement Agency

## Philippines

Although some improvement in the ATS situation has been reported in recent years, significant manufacture, trafficking and use of crystalline methamphetamine (*'shabu'*) continue to occur in the Philippines. With the highest estimated annual prevalence rate in the world, the impact on Philippine society and government resources is profound.

After two years of relatively low numbers, a notable increase in the seizure of methamphetamine-related manufacturing facilities - nine laboratories and 13 chemical warehouses - was reported in 2007. Although methamphetamine laboratories have primarily been concentrated in or near the greater Metro Manila area, increased law enforcement efforts in the capital have shifted manufacture and storage facilities to rural areas and more vulnerable regions such as Southern Tagalog, the Bicol, and Mindanao.<sup>22</sup>

ATS manufacture in the Philippines is dominated by a few transnational organized crime syndicates working in concert with domestic organized crime groups, whose number increased notably in 2007. These groups traffic bulk ephedrine into the country - for which there is little legal importation and domestic need - taking advantage of the extensive coastline shipping ephedrine to predetermined landing points for subsequent manufacture into crystalline methamphetamine.<sup>23</sup> Almost all chemists in clandestine laboratories have been reported to be foreign nationals.

### Philippines: reported organized crime group trends 2003-2007

	2003	2004	2005	2006	2007
Transnational Drug Groups	15	10	9	7	8
Local Drug Groups	285	165	181	149	249
Foreign Nationals Arrested	72	56	30	28	34

Source: Philippine Dangerous Drugs Board (2008)

A joint operation conducted by Philippine and Chinese authorities in December 2006 involved the seizure of a laboratory run by the Shao Chuntian syndicate in Calumpit Bulacan, outside of Manila. During the investigation a metric ton of ephedrine was seized in China and numerous suspects were arrested.<sup>24</sup> It is reported that approximately 1 mt of methamphetamine was manufactured for export prior to seizure of the laboratory. In a case with some similarities, Philippine and Chinese authorities dismantled the Cai Aishan transnational drug manufacture and trafficking organization in June 2007, resulting in the discovery of a methamphetamine laboratory in the Philippines. 180 kg of methamphetamine and semi-finished product, as well as two warehouses containing 10 mt of precursors were seized.<sup>25</sup>

In February 2008, a massive laboratory was discovered in Zamboanga City (on the southern island of Mindanao) that reportedly had a 1,000 kg monthly production capacity of crystalline methamphetamine. The operation was reportedly run by an international drug syndicate for an extended period of time and it was believed some of the finished product was exported to Malaysia.

In May 2008, the Philippine Drug Enforcement Agency (PDEA) identified the Subic Bay Freeport in Zambales northwest of Manila as a transshipment point for illicit drugs from several countries in Asia, after authorities successfully intercepted and seized 745 kg of crystalline methamphetamine. Reportedly the first significant illicit drug trafficking discovered in Subic Bay. The seizure would make 2008 the year with the highest seizure total since 2003.

Since 2004, the Philippines has had the highest estimated annual methamphetamine prevalence rate (6%) globally, which experts have recently reported as either stable or slightly declining (2006). Although treatment admissions for methamphetamine have steadily dropped by almost half (6,195 in 2003 to 3,256 in 2006), they still account for 68% of new treatment admissions.<sup>26</sup>

22 USA Department of State, *2007 International Narcotics Control Strategy Report* (March 2007).

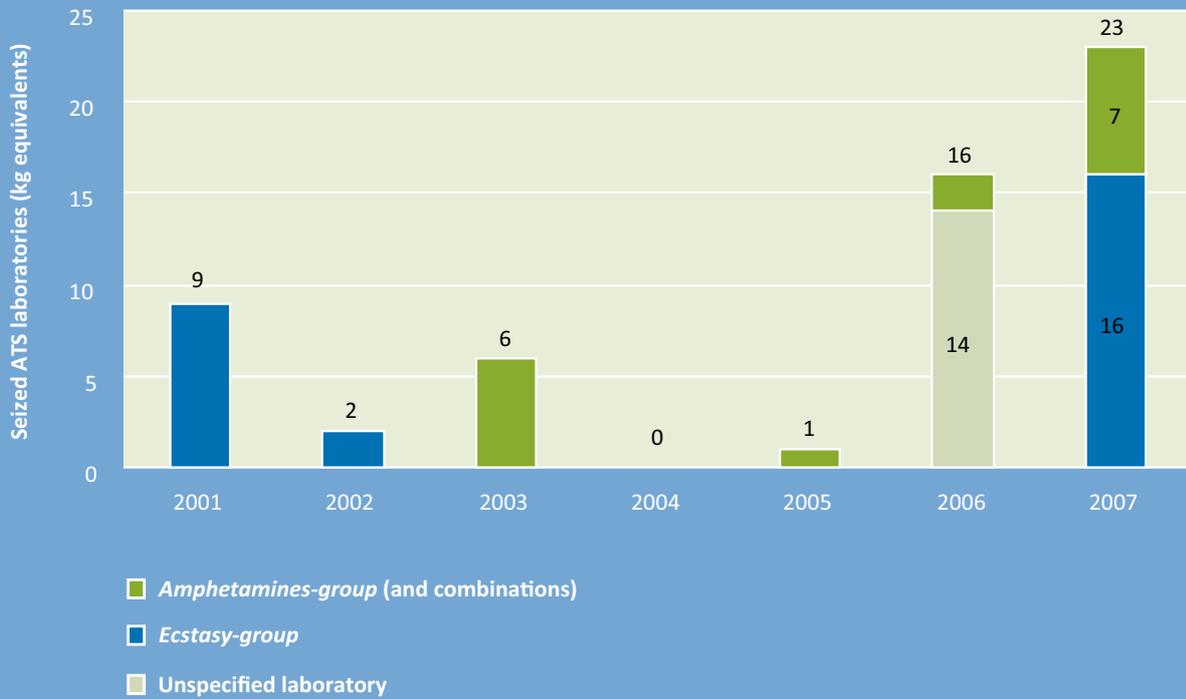
23 Between 2003 and 2007, there was only 25 kg of legal importation of ephedrine (2006). *Philippines Country Report*, presented at the 4<sup>th</sup> International Forum on the Control of Precursors for ATS, Tokyo, Japan (Feb 2008).

24 China National Narcotics Control Bureau, Ministry of Public Security, presentation *Drug data collection in China*, Global ISDMP Meeting, Tokyo, Japan (Feb 2008).

25 Ibid.

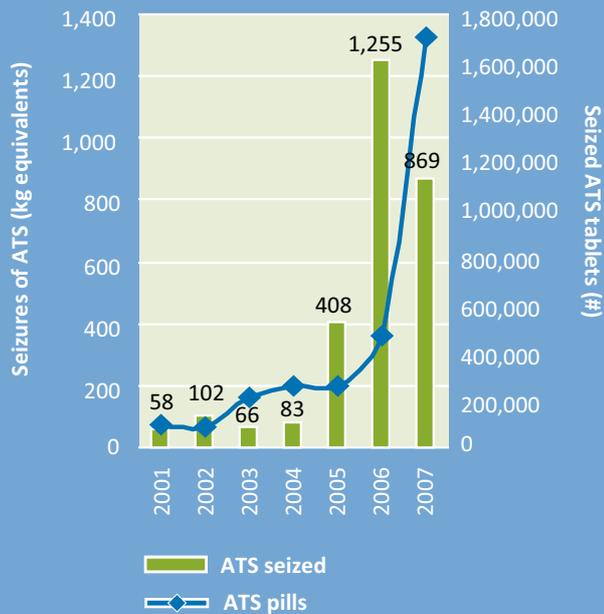
26 Treatment data are those provided by the public health system and do not include treatment provided by non-government and faith-based treatment providers.

## Indonesia: seized methamphetamine manufacture-related facilities 2001-2007



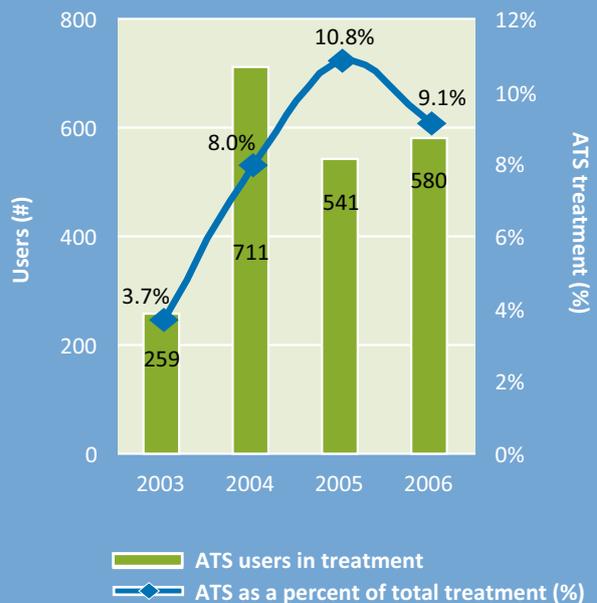
Source: UNODC ARQ/ DELTA

## Indonesia: seizures of ATS and tablets seized 2001-2007



Source: UNODC Regional Centre for East Asia and the Pacific, *Patterns and Trends of Amphetamine-Type Stimulants (ATS) and Other Drugs of Use in East Asia and the Pacific 2006* (June 2007); Drug Abuse Information Network for Asia and the Pacific (DAINAP)

## Indonesia: ATS-related treatment numbers and proportion of total treatment 2003-2006



Source: UNODC Regional Centre for East Asia and the Pacific, *Patterns and Trends of Amphetamine-Type Stimulants (ATS) and Other Drugs of Use in East Asia and the Pacific 2006* (June 2007)

## Southern Archipelago

To varying degrees, significant manufacture, trafficking and use of ATS has recently started to take place in Indonesia and Malaysia. Seizures of some of the largest methamphetamine manufacturing facilities ever found have taken in recent years in this subregion, and although the market is not well understood and prevalence estimates are limited, indications are that ATS use is increasing.

### Indonesia

Indonesia illustrates the speed with which shifts in the scope and size of clandestine manufacture, trafficking and use can occur. While ATS issues have existed in the country for many years, 2005 marked the beginning of significant changes in manufacture ('ecstasy' and methamphetamine), seizures, and treatment admissions.

In 2001, authorities reported nine drug laboratories, which by 2007 had increased to 23 of notable size. This included a methamphetamine mega-lab in Cikande near Jakarta in 2005, which at the time, was one of the largest methamphetamine laboratories ever recorded. In 2006, authorities reported 16 clandestine laboratories to UNODC, though basic forensic information was not provided thereby limiting interpretation of the situation. Given the low historical reporting of non-ATS laboratories - the last being a coca-related facility in 1998 - it is highly likely that the laboratories were methamphetamine and 'ecstasy' laboratories.

Consistent with increases in clandestine manufacture, Indonesia has also reported increasing ATS seizures for the past several years. While an annual average of 77 kg of ATS (mostly methamphetamine) was seized between 2001 and 2004, significant seizures started to appear in 2005 (404 kg), and have continued since, reflecting a 15-fold increase over 2001. ATS tablet seizures have also grown exponentially during this period, with record seizures of tablets (1.7 million) reported in 2007.

The increases in ATS seizures over the 2001-2007 period suggest that international drug syndicates are increasingly targeting Indonesia for ATS shipments and manufacture. In March 2008, approximately 600 kg of crystalline methamphetamine transported from China via sea was seized in Cengkareng, West Java with the *modus operandi* similar to the largest seizure in 2006. If confirmed, the seizures during the first half of 2008 alone could exceed the total amount seized during the second biggest seizure year on record.

Between 2004 and 2006, ATS use consistently ranked on average as the third ('ecstasy') and fourth (methamphetamine) most serious drug problem, with an increasing trend, as reflected in treatment numbers. In 2003, ATS-related treatment accounted for less than 4% of all drug treatment episodes. This doubled the following year, and has remained at elevated levels since. In 2007, authorities reported a further increase of ATS use and for the first time injection of crystalline methamphetamine.<sup>27</sup> These increased levels of use suggest ATS spill-over into the general population as a result of increasing manufacture and trafficking within Indonesia.

### Malaysia

ATS manufacturing and trafficking problems appear to be rapidly increasing in Malaysia in both size and sophistication presumably a result of syndicates shifting operations south of the GMS. In 2004 and 2006 large industrial-scale operations were dismantled with the 2006 laboratory in Kulim (northern Malaysia) being one of the largest ever seized in the world.

In March 2008, another methamphetamine laboratory was discovered by authorities in Senai Johor, just north of Singapore, with arrests that included nationals from North America and Asia.

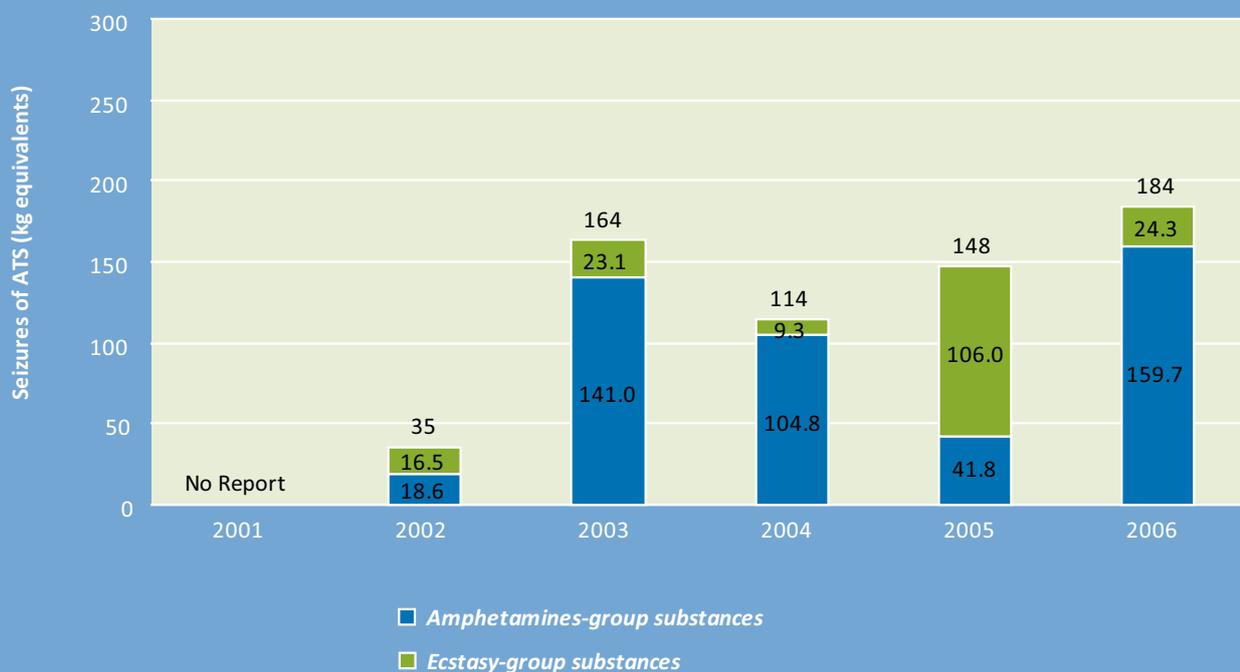
Malaysia has also reported increasing ATS seizures since 2004, although the substances have

Malaysia: industrial-scale ATS manufacture Kulim (2006)



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27 Drug Abuse Information Network for Asia and the Pacific (DAINAP).

## Malaysia: seizures of ATS 2001-2006



Source: UNODC ARQ/ DELTA

differed throughout the years. In 2002, methamphetamine accounted for 17% of all seized ATS but increased to 76% by 2006. There have been several more recent reports of interceptions of significant quantities of crystalline methamphetamine ('*syabu*') destined for Malaysia, including those originating from Myanmar in 2005 and Cambodia in 2006 and 2007 and reports of crystalline and tablet methamphetamine being trafficked via Thailand. In April 2008 the break-up of one of the largest drug trafficking syndicates in the country took place, which reportedly supplied ATS to transnational organized crime groups in Oceania and Asia.

While less used than either heroin or cannabis, ATS have quickly emerged as a category of drugs of abuse, with methamphetamine available in both the crystalline and tablet forms. Although estimated annual prevalence of *amphetamines-group* use (0.6%) is less than the regional average estimate (0.9%), the combination of trafficking to and from Malaysia and incidents and size of clandestine laboratories suggest that increases in use may follow.

## South Asia

There are indications that manufacture, trafficking and use of ATS (primarily methamphetamine) has started to take place in South Asia. The South Asia subregion is vulnerable as a result of readily available ATS precursor chemicals, a prevention focus largely on other drugs, a large youth population of potential consumers, and close proximity to East and South-East Asia where ATS is already a significant problem. Limited seizures of methamphetamine manufacturing facilities in recent years may be an initial demonstration of the intention of transnational organized crime syndicates to use South Asia for manufacture, trafficking and ultimately new markets.

### India

India has a significant chemical industry and is one of the largest exporters of licit ephedrine and pseudoephedrine, making it a target for ATS precursor diversion and illicit manufacturing of ATS by international drug trafficking organizations. In 2003, the first clandestine ATS laboratory (ATS not specified) was reported and dismantled in Kolkata (in east India), followed by another laboratory in 2004 located in Hyderabad (south-eastern India). Elevated activity related to ATS reappeared in 2006, with the discovery of an illicit laboratory in Gurgaon (northern India). The laboratory was reportedly set-up by transnational organized crime groups from East Asia and North America to manufacture ephedrine-based meth-

amphetamine. In a separate incident (November 2006), after prolonged surveillance, a sea container holding a complete mobile laboratory and chemicals for illicit manufacture of methamphetamine was seized in transit off the coast near Kolkata. It was believed to be part of a larger organization for manufacture most likely in New Delhi. In 2007 a clandestine methamphetamine-related laboratory for the extraction of precursors from pharmaceutical preparation was discovered in Mumbai. Authorities seized 290 kg of pseudoephedrine destined for Australian laboratories and arrested five persons including foreign nationals involved in the extraction process.

In Moreh (eastern State of Manipur on the India-Myanmar border), methamphetamine is commonly trafficked into India while precursor chemicals are trafficked to Myanmar as part of a larger criminal network which has also included the trafficking of counterfeit currency, pharmaceuticals and other illicit drugs. The area is vulnerable to significant illicit trafficking due to the lack of a clearly demarcated border and generally unrestricted movement of people and goods.

The most current estimate (2001) of *amphetamine group* use in India's population (15-64 years) is 0.2%. Use at that time was reported to be mostly limited to regions such as Kerala (on the southern coast), Uttar Pradesh (in the northeast near the Nepal border), and Manipur - the area also noted for its methamphetamine and precursor trafficking. Given the identification of several clandestine ATS operations in India, confirmed proliferation of methamphetamine seizures from neighbouring Myanmar and other countries of East and South-East Asia and the speed with which ATS can emerge in a new market, the potential for ATS to expand in India should not be underestimated.

### Bangladesh

Bangladesh is situated between one of the biggest producers of licit ATS precursors (India) and one of the biggest methamphetamine manufacturing countries (Myanmar). In the last few years, methamphetamine tablets ('yaba') began entering the country from Myanmar. Commensurate with this development, experts reported increasing levels of ATS use between 2002 and 2007 with expansion in users principally amongst youth. Authorities in 2007 noted particularly strong increases of methamphetamine use mostly in larger cities, accompanied by reports of the high purity crystalline form now appearing in the market. In November 2007, Bangladesh authorities seized 1.2 million methamphetamine tablets originating in Myanmar confirming the westward shift of some methamphetamine trafficking routes.

### Nepal

In 2002 and again in 2006, authorities reported both seizures of methamphetamine and amphetamine. In June 2008, the seizure of 1.8 kg of crystalline methamphetamine at Tribhuvan International Airport (bound for Doha, Qatar) was reportedly the first seizure of high purity crystalline form in the country, and the biggest ATS seizure ever reported by Nepal. This incident indicates the potential of Nepal as a new transshipment point and as a route from which methamphetamine is entering the Near and Middle East. While no nationally representative prevalence studies are known to exist in Nepal, authorities have reported an increase in ATS use.

### Central Asia and countries of the Caucasus

The amount of information available from Central Asia and countries of the Caucasus related to ATS is sparse, but emerging reports suggest ATS expansion may be occurring, albeit from very low levels. The subregion has had some small-scale manufacture of methcathinone (locally known as ephedrone) from processing natural *Ephedra*, which grows throughout the region. In 2007 Kyrgyzstan reported its first methcathinone manufacturing operation to UNODC since 1999 and seized small amounts of the drug. Georgia reported its first methamphetamine seizure in 2006 (2.42 kg), Kazakhstan reported seizures of 3.6 kg of 'ecstasy' (2005), and Tajikistan seized nominal amounts of amphetamine in 2003.





# OCEANIA

## Regional overview

Oceania is a region characterized by enormous differences in size and capacity of countries, and a large maritime area traversed by international shipping lanes. Given that almost three quarters of people in the region live in Australia or New Zealand, what occurs in these markets accounts for the overall regional trend. Because reliable ATS data for the Pacific island states and territories are largely missing, the interpretation of the ATS situation in this part of the subregion remains difficult.<sup>1</sup>

Over the last two decades the Oceania region has been characterized by high levels of ATS use. Indirect indicators for illicit manufacture and trafficking of ATS suggest that there may have been an increase in supply over the 2001-2006 period, possibly as a result of the availability of precursor chemicals and various ATS end-products afforded by close proximity to Asia.<sup>2</sup> Most 'ecstasy' is imported (traditionally from West Europe and increasingly from North America), but manufacture and trafficking of ATS also occurs within the region.

After strong increases until 2003, ATS manufacture and trafficking in Oceania appear to have stabilized at high levels, as reflected in the number of dismantled clandestine laboratories. Although it is difficult to determine the cause for stabilization, some successes in precursor control and increases in treatment may have been contributing factors. Annual prevalence rates for *amphetamines-group substances* increased until 2003/04 but have since declined. 'Ecstasy' use also increased until 2003/04 and has now stabilized. Reported annual prevalence rates for both *amphetamines-group substances* and *ecstasy-group substances* in Oceania remain the highest in any region of the world.

### Oceania: ATS laboratories, seizures, and annual prevalence rates 2001-2006

MEASURE	DRUG GROUP	2001	2002	2003	2004	2005	2006
Laboratory (#)	Methamphetamine	39	147	201	183	204	211
	Amphetamine				221	269	280
	Other synthetic/ combined stimulants	201	240	314	107	101	97
	Ecstasy-group substances	2		1	24	10	7
	<b>Total</b>	<b>242</b>	<b>387</b>	<b>516</b>	<b>535</b>	<b>584</b>	<b>595</b>
Seizures (kg)	Methamphetamine	2.6	6.4	509.2	268.2	131.7	216.4
	Amphetamine	1.5	11	200.4	4.4	166.2	30.1
	Non-specified amphetamines	876.0	561.1	0.2	6.4	30.3	984.4
	Ecstasy-group substances	349.7	747.6	1,110.9	1,338.8	1,483.2	537.1
	<b>Total</b>	<b>1,229.9</b>	<b>1,316.1</b>	<b>1,820.6</b>	<b>1,617.7</b>	<b>1,766.5</b>	<b>1,768.0</b>
Annual Prevalence (15-64)*	<i>Amphetamines-group substances</i>	2.8%	2.8%	3.0%	3.0%	2.9%	2.1%
	<i>Ecstasy-group substances</i>	2.2%	2.2%	3.1%	3.0%	2.9%	3.2%

\* Prevalence estimates were standardized for population 15-64 years of age beginning 2004, thus prior years are only broadly comparable.

Source: UNODC ARQ/ DELTA; *World Drug Report 2004-2008*; *Global Illicit Drug Trends 2003*

1 The latest seizure reports received by UNODC were from Fiji (2002) and the Marshall Islands (2004). Some data was also reported for New Caledonia (1999) and Niue (associate state of New Zealand) since 2005.

2 The intensification of specific law enforcement efforts focusing on ATS, which were reported from New Zealand, may also explain part of the increase.

# 2008 GLOBAL ATS ASSESSMENT

**Australia: seized ATS laboratories 2001-2007**



\* Preliminary estimates

Source: UNODC ARQ/ DELTA; Australia Crime Commission, *Illicit Drug Data Report (2006-07)*

**Australia: annual prevalence of ATS use\* 2001-2007**



\* Aged 14 years and older

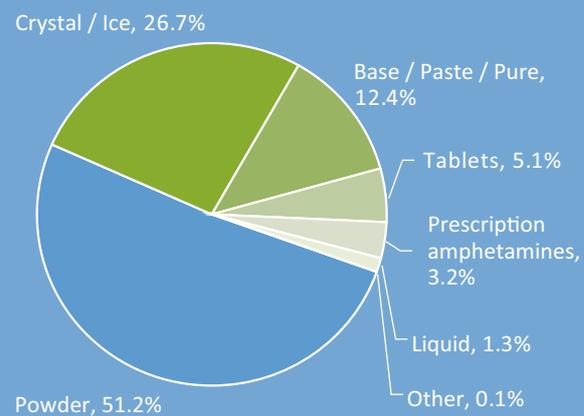
Source: Australian Institute for Health and Welfare (AIHW), 2007 *National Drug Strategy - Household Survey 2007*, Canberra, Australia (April 2007)

**Australia: ATS-related arrests 2002/03-2006/07**



Source: Australian Crime Commission (ACC), *Illicit Drug Data Reports 2002-2007*

**Australia: main forms\* of amphetamines-group substances consumed\*\* 1995-2007**



\* As classified on the Australian street market

\*\* Proportion of recent (i.e. within last 12 months) users aged 14 years and older

Source: AIHW, 2007 *National Drug Strategy Household Survey. First Results* (April 2008)

ATS precursors (e.g. ephedrine and pseudoephedrine) and crystalline methamphetamine are commonly sourced from countries in East and South-East Asia, with seizures of such substances increasing in recent years. 'Ecstasy' enters the region from North America (primarily Canada) and Europe (mainly the Netherlands and Belgium, and sometimes via the UK).

The following is a summary of the main trends over the 2001-2006/07 period in Australia and New Zealand, supplemented with available information about the ATS situation in Pacific island states and territories.

## Australia

Overall, after substantial increases in the late 1990s and early 2000s, the ATS market in Australia has now stabilized. For example, the number of dismantled ATS laboratories, including ATS precursor laboratories, steadily increased since 2001 and has now leveled off, albeit at high levels. This is due in part to stronger restrictions and improved monitoring of pseudoephedrine-containing over-the-counter pharmaceutical sales, thus reducing domestic diversion of precursor chemicals.<sup>3</sup>

While there has been recent shifts in regions, the majority of clandestine laboratories detected (48%) have been in the northeast of the country (Queensland).

Since 2002, illicit ATS manufacture in Australia has increased in sophistication. This is evidenced by the first detection of a crystalline methamphetamine laboratory, by staged manufacturing operations to reduce detection, and by greater partnerships between domestic (e.g. outlaw motor-cycle gangs) and transnational organized crime groups (e.g. Asian organized crime groups) to acquire precursor chemicals and distribute them domestically. In response to improved domestic chemical controls, ATS manufacture also became more flexible relying less on a single method, but instead utilizing a variety of methods to continue manufacture.

In 2001/02, 30% of imported methamphetamine was thought to be sourced from the USA, 20% from Thailand, and 15% from the Philippines. 'Ecstasy' was primarily sourced from the UK (55%) and the Netherlands (10%). By 2006/07, Canada had become the source of more than 90% of imported methamphetamine. Additionally, roughly 39% percent of tableted *amphetamines-group substances* were reported to come from India and about 20% from the Netherlands. Countries of embarkation for 'ecstasy' (weighing over one kilogram) were primarily Italy, the Netherlands, the UK, and Belgium.<sup>4</sup> Since 2003/04 there has also been an increasing trend towards the trafficking of multiple, small quantities of *amphetamine-group substances* by post. While seizures of *ecstasy-group substances* have steadily declined since 2003/04, authorities in June 2007 seized 4.4 mt of 'ecstasy' - the largest single seizure ever recorded and equal to the total global 'ecstasy' seizures reported for all of 2006 - shipped from Italy.

Australia's household surveys have shown a steady decline of methamphetamine use for those aged 14 and older, from an annual prevalence rate of 3.4% in 2001 to 2.3% in 2007, equivalent to a decline of 26% over the 2001-2006 period. 'Ecstasy' use, by contrast, increased 33% in the same age group, and over the same period from 2.9% to 3.5%.

The total number of ATS-related arrests increased by 83% between 2002/03 and 2006/07. However, drug testing of arrestees shows a trend towards stabilization or moderate decline for methamphetamine use. Beginning from around 2004/05 the proportion of those arrestees testing positive for methamphetamine declined, resulting in about 24% of arrestees testing positive in 2007. The decline was most pronounced in Queensland (the location of most dismantled methamphetamine laboratories), followed by sites in western and southern Australia. In 2007, 41% of arrestees self-reported using *amphetamines-group substances* in the past year, with the crystalline form of methamphetamine most commonly mentioned (63%). More than half of arrestees who used *amphetamines-group substances* were poly-drug users; 52% reported always injecting *amphetamines-group substances* while 44% usually smoked it. The proportion testing positive for 'ecstasy' increased from 0.7% in 2001 to 2.5% in 2006, in line with household survey results. Drug testing results for arrestees thus mirror the trends in the annual prevalence rates for methamphetamine and 'ecstasy' use in the general population.

Drug testing results for arrestees also mirror the trends in the general population with regard to use of the different forms of methamphetamine and the gradual shift from the traditional use of methamphetamine in powder form to use of crystalline methamphetamine ('ice'), and to injecting use. In 2007, the two most common forms of methamphetamine used were powder (51%) and crystalline methamphetamine (27%). Although still the most used form, the proportion of methamphetamine powder use has declined from 2001, while the proportion of crystalline methamphetamine appears to have increased.

3 Specifically Project STOP, a real-time online system notifying pharmacists as to whether a customer is eligible to purchase pseudoephedrine-based pharmaceuticals, is believed to have contributed to a 23% decline in the number of clandestine laboratories discovered in Queensland (2005).

4 "Embarked" does not necessarily mean where manufacture occurred.

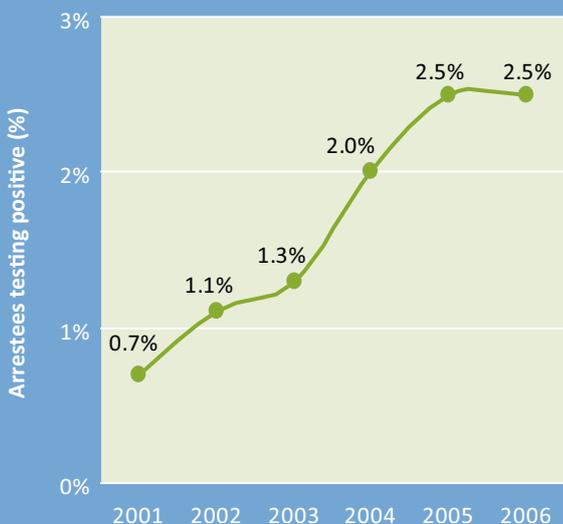
Australia: arrestees testing positive for methamphetamine, by region\* 2001-2007



\*New South Wales (Bankstown and Parramatta); Queensland (Southport and Brisbane); South Australia (Elizabeth and Adelaide); Western Australia (Perth); Australia (unweighted average of results from all sites). Note: unweighted average of arrestees tested.

Source: Australian Institute of Criminology (AIC), *Drug Use Monitoring in Australia (DUMA). 2006 Annual Report on Drug Use among Police Detainees*, Canberra, Australia (2007), and preliminary DUMA data for 2007

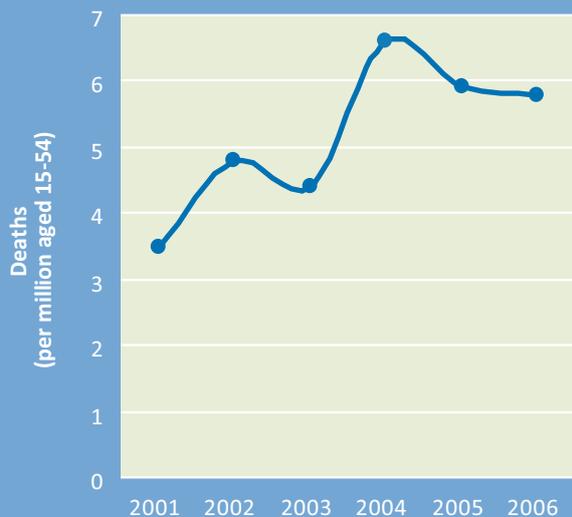
Australia: arrestees testing positive for 'ecstasy', by region\* 2001-2006



\* New South Wales (Bankstown and Parramatta); Queensland (Southport and Brisbane); South Australia (Elizabeth and Adelaide); Western Australia (Perth)

Source: Australian Institute of Criminology (AIC), *Drug Use Monitoring in Australia (DUMA). 2006 Annual Report on Drug Use among Police Detainees*, Canberra, Australia (2007), and preliminary DUMA data for 2007

Australia: methamphetamine-related deaths 2001-2006



Source: Degenhardt L. & Roxburgh A., *Cocaine and amphetamine related drug-induced deaths in Australia 2005*, National Drug and Alcohol Research Centre, Sydney, Australia (2007); Campbell G., Sindicich N., Burns L. & Black E., *Cocaine use in Australia. Drug Trends Bulletin, April 2008*, National Drug and Alcohol Research Centre, Sydney, Australia (2008)

Drug-related deaths for methamphetamines increased rapidly from 2001 before stabilizing in 2005/06, consistent with reports of hospitalization rates for methamphetamine and indicators of availability.<sup>5</sup> Death rates for methamphetamine were higher than for cocaine, but significantly lower than opiate-related death, with the majority of these deaths occurring in New South Wales.

Australia's ability to respond to the ATS problem is illustrated in the increase in treatment between 2001-2006 (+33%). As a proportion of total drug treatment provided, ATS were generally stable, accounting for 18-20% of all treatment from 2001/02 to 2005/06.<sup>6</sup>

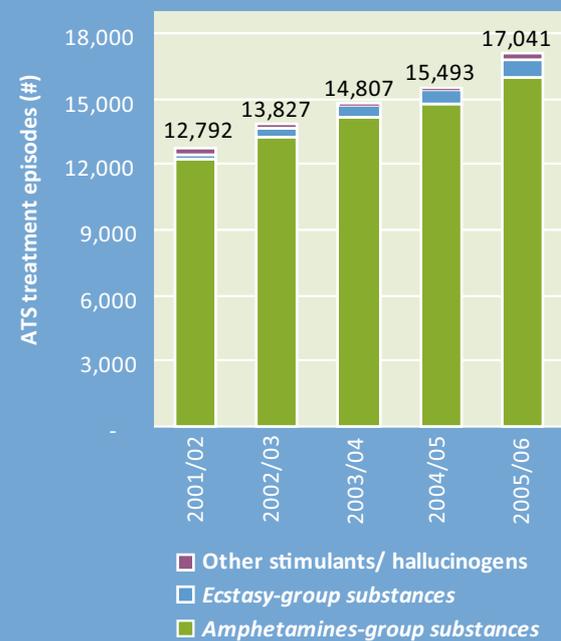
## New Zealand

Similar to neighbouring Australia, several indicators suggest after rapid increases until 2003 that the ATS market in New Zealand has begun to show signs of stabilization. ATS manufacture in New Zealand is primarily related to methamphetamine (locally known as 'P'), for domestic consumption. The rapid spread of ATS manufacture is reflected in the increase in clandestine laboratory seizures, especially between 2001 and 2003, from 39 to 201. Seizures have stabilized at that high level since. Most of these laboratories are located in the districts surrounding the Auckland region, however, reports point to a spread of manufacture into regions of the South Island, controlled to a high degree by organized crime networks.

While customs authorities report increased trafficking of tableted pharmaceutical preparations from Asia,<sup>7</sup> the majority (65%) of clandestine laboratory operations are believed to rely on domestically sourced pseudoephedrine as a precursor.<sup>8</sup> The voluntary nature of New Zealand's approach to limiting the sales of pharmaceuticals containing ATS precursors through pharmacy outlets continues to present a loophole that is exploited by illicit manufacturers.

There are indications of increasing cooperation between various domestic organized crime (e.g. outlaw motorcycle and ethnic groups) and transnational Asian organized crime groups as domestic manufacture is supplemented by imports of ATS and precursors. Significant border seizures were reported in 2007 for methamphetamine in various forms, including the interception of what was believed to be the first of several 2 kg shipments of crystalline methamphetamine sourced from Canada by New Zealand and Hong Kong (SAR of China)-based Asian organized crime groups, and a seizure of 35 lt. of liquid methamphetamine originating from China by Chinese-based criminal groups.

Australia: ATS treatment episodes 2001/02-2005/06



Source: Australian Institute for Health and Welfare, *Interactive alcohol and other drug treatment services data (2008)*

New Zealand: seized ATS laboratories 2001-2007



\* Preliminary estimates

Source: UNODC, ARQ/ DELTA; New Zealand National Drug Intelligence Bureau (2008)

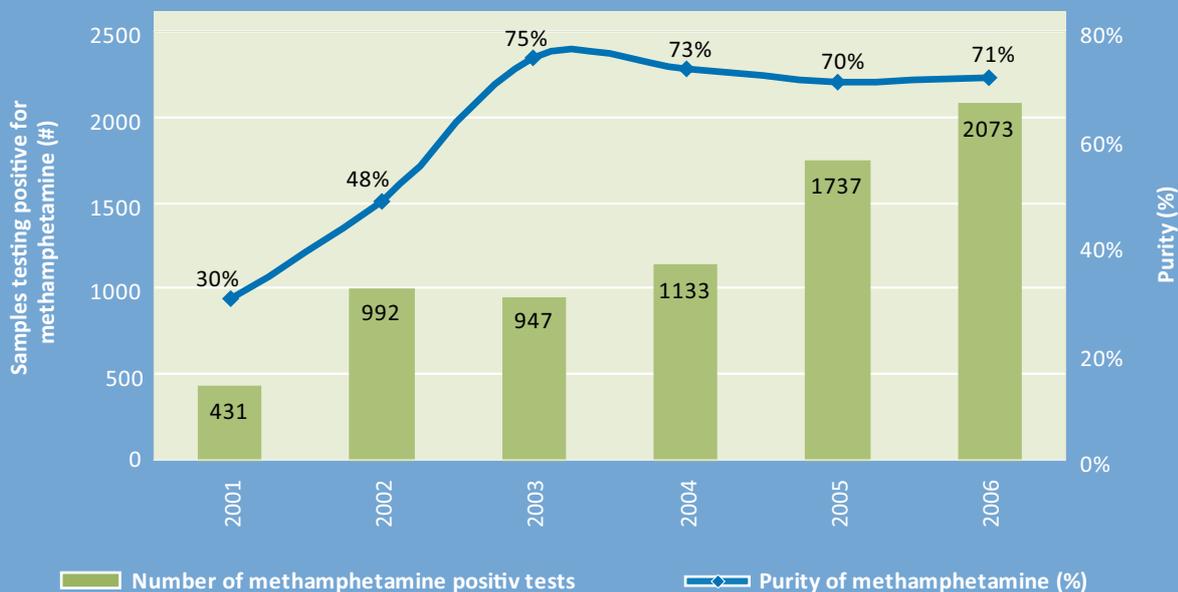
5 Degenhardt L. & Roxburgh A., *Cocaine and amphetamine related drug-induced deaths in Australia 2005*, National Drug and Alcohol Research Centre, Sydney, Australia (2007).

6 Excludes primary treatment episodes for tobacco and alcohol addiction. Australia Institute for Health and Welfare, *Interactive alcohol and other drug treatment services data*.

7 The amount of tableted pseudoephedrine seized in the first two months of 2008 alone (756,000 tablets) were equivalent to half of the total precursor interceptions of 2007.

8 Note: 17% are internationally imported (in form of pharmaceutical preparations) and the source of the remainder is undetermined (18%).

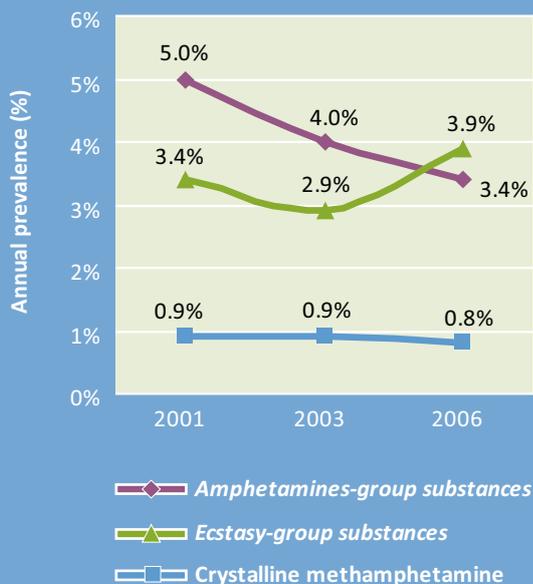
## New Zealand: drug seizures testing positive for methamphetamine, and purity levels of selected cases 2001-2006



Note: purity levels reported by governments represent those samples that are seized and tested, i.e. they are not representative of all illicit drugs. For example, not all drugs seized by law enforcement are subject to forensic analysis and in some instances seized drugs are only analysed for court proceedings on significant cases. Therefore, the purity figures reported will generally be of higher purity than what may be typically used.

Source: Institute of Environmental Science and Research (ESR), New Zealand; Ian Axford Fellowship in Public Policy, New Zealand *Methamphetamine Purity Trends: Technical Report (June 2007)*, New Zealand (2007)

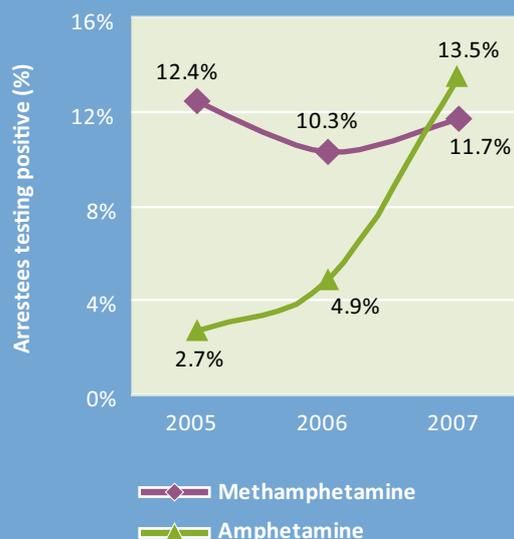
## New Zealand: annual prevalence of ATS use\* 2001-2006



\* Aged 15 to 45 years

Source: Centre for Social and Health Outcomes Research and Evaluation (SHORE), *Trends in drug use in the population in New Zealand: Findings from national household drug surveying in 1998, 2001, 2003 and 2006 (March 2007)*

## New Zealand: arrestees testing positive for methamphetamine and amphetamine\* 2005-2007



\* New Zealand sites: North Island (Whangarei, Henderson, and Hamilton); South Island (Dunedin)

Note: 2005 data include quarters two and three and 2007 data include only the first and second quarters.  
Source: New Zealand Police, *NZ-ADAM Annual Report 2007 (October 2007)*

## New Zealand: drug-related offences 2001-2007



Note: new category specific to ATS as of July 2003.

Source: Statistics New Zealand

Some of the methamphetamine trafficking into New Zealand is believed to be carried out in the form of a barter trade, in exchange for illicitly harvested shellfish, a phenomenon noted in other countries as well (e.g. South Africa).

The rapid increase of methamphetamine on the New Zealand market can be seen in the number of positive test results that were returned for seized substances. Purity levels for those specific cases tested showed fast increases consistent with increased domestic manufacture. The increasing numbers of tests may reflect the changes that occurred in the law; possession of clandestine laboratory equipment became a chargeable offence after 2003.

The annual prevalence (aged 15-45) of *amphetamines-group substance* use is on the decline since it peaked in 2001. Household surveys show a decrease from 5% in 2001 to 3.4% in 2006. Use of crystalline methamphetamine ('ice'), which also peaked in 2001, but at much lower levels (0.9%), has remained relatively stable. In contrast, 'ecstasy' use - versus ecstasy-like "party-pills" - rebounded in 2006 to 3.9%, up from 3.4% in 2001. Stable price data for 'ecstasy' (at between \$60-\$80 New Zealand Dollar (US\$44-US\$59)) suggest that rising demand for 'ecstasy' went hand in hand with rising levels of supply.

Under the New Zealand Arrestee Drug Abuse Monitoring programme (NZ-ADAM), recent arrestees are drug tested in jail at several sites around the country. Reports from the programme indicate that between 2005 and 2007 nationwide methamphetamine-positive tests among arrestees declined slightly, from 12.4% to 11.7%. However, positive tests for amphetamine increased inexplicably from 2.7% to 13.5% during the same period. Data also point to increases in arrestees testing positive for methamphetamine in the South Island, where levels so far had been significantly lower.

## Ecstasy-like "party-pills"

There are a multitude of synthetic drugs with new ones being reported every year, several with ecstasy-like properties. One common group of synthetics is the so-called 'piperazines', which include 1-benzylpiperazine (BZP), *m*-chlorophenylpiperazine (*m*CPP), and 3-trifluoromethylphenylpiperazine (TFMPP). The effects of BZP are described as stimulant-like, similar to amphetamine, TFMPP produces hallucinogen-like effects, while *m*CPP has been shown to produce stimulant and hallucinogenic effects similar to MDMA. In combination, 'piperazines' can mimic the effects of 'ecstasy'.

Currently, 'piperazines' are not under international control and are often marketed as legal alternatives to 'ecstasy' and misrepresented as natural or herbal. 'Piperazines' are available in powder form, but they more frequently appear as tablets. They are often sold on illicit markets as 'ecstasy', and they may also be included as adulterants in 'ecstasy' tablets. 'Piperazines' are available via the Internet or in party shops, and their use is typically associated with youth and dance events.

'Piperazines' are typically taken orally, but can also be smoked and snorted. A few cases of injecting use of *m*CPP have also been reported, usually in users who also inject MDMA. Use of some 'piperazines' has been associated with serious side-effects resulting in medical emergencies and hospital admissions, often as a result of high dosage and/or poly-drug use.

Use of BZP was first reported in 1996 among youth in the USA and in Sweden in 1999. New Zealand's well studied and previously legal - banned as of 2008 - BZP "party-pill" market was established in 2000. Because of the legal availability of 'piperazines', their easy accessibility and perceived safety, a large percentage of the population in that country reported using the drugs recreationally. A 2006 household survey of 13 to 45 year olds identified a lifetime prevalence of 20.3% with an annual prevalence of 15.3%. Of current illicit drug users who used 'party-pills' 28% indicated that they only 'use legal party pills when they cannot get illicit drugs', 27% indicated that they 'use legal party pills with illegal drugs to enhance their effects or duration of their effects', and 45% reported that they 'use legal party pills so they do not have to use illegal drugs'. If compared to illicit drug use prevalence, BZP would have been the second most common drug used by the population (behind cannabis).

Similar to ATS, the chemical synthesis of most 'piperazines' is not technologically demanding, using relatively simple and easily available precursors. However, since BZP (and 'piperazines' generally) is widely available from legitimate sources, it is not typically manufactured illicitly. Clandestine 'manufacture' is therefore usually limited to the processing of bulk material (in powder or liquid form) obtained legitimately through the Internet or from chemical suppliers, into tablets.

Due to their growing popularity, seizures of 'piperazines' have increased since 2000 and Member States have reported concern with 'piperazines' in their responses to UNODC's ARQ, reflected in nine BZP mentions from mostly West European countries in 2005-06, and an additional 14 mentions related to *m*CPP, most notably from East and Central European countries.

While the extent of trafficking and use of 'piperazines' are still minor compared to *ecstasy-group substances*, a number of countries have already placed those substances under national control (i.e. under drug control, medicine-related or equivalent legislation), including Australia, Belgium, Denmark, Estonia, Greece, Italy, Japan, Lithuania, Malta, New Zealand, Sweden and the USA. In Europe, after a formal risk assessment under the EU early warning mechanism, EU Member States have been called on to control BZP by 2009.

As with increases in ATS manufacture and trafficking, New Zealand also saw a substantial increase in ATS-related offences. These cases increased threefold, from 922 offences in 2003 (as of July, when the specific category was introduced) to more than 3,000 in 2006, a level at which it appears to have begun stabilizing. Some of this increase was due to additional behaviours being classified as offences (e.g. possession of drug laboratory equipment). However this increase also has a direct impact on resources needed to apprehend, prosecute, imprison, and as is often the case, treat offenders who have a variety of health-related issues.

## Pacific island states and territories

Information related to ATS manufacture, trafficking and use in the region (excluding Australia and New Zealand) are virtually non-existent given that most Pacific island states and territories do not contribute to the UNODC ARQ.<sup>9</sup> From the limited information that is available, there are several incidents that point to a pattern where the region is increasingly being targeted for ATS manufacture and trafficking. For instance, there have been reports of kitchen-sized laboratories seized in Guam and there are indicators that manufacture may be spreading to other islands. But the most significant manufacturing case in the entire region was reported on Fiji in 2004, involving an industrial-scale methamphetamine laboratory. The facility was operated by Asian organized crime groups and purportedly had 700 lt. of liquid methamphetamine, 5 kg of finished crystalline methamphetamine and enough precursors, including thionyl chloride, on site for the manufacture of an additional 1,000 kg of methamphetamine.<sup>10</sup> Production cycle estimates for this laboratory were between 500 and 1,000 kg of crystalline methamphetamine per week,<sup>11</sup> making it one of the largest laboratories ever seized.

There are indications that the Pacific island states and territories are increasingly being used as transshipment points to conceal the origin of shipments of ATS and their precursors between manufacturers in South-East Asia and distributors in Australia and New Zealand.<sup>12</sup> Steady methamphetamine seizure incidents began being reported in 2003, albeit in mostly small amounts. However, several large trafficking cases have also occurred in the subregion; 74 kg of methamphetamine was found on a ship destined for Fiji and Australia in 2002, and 2.5 kg of pseudoephedrine precursor was intercepted *en route* to Brisbane, Australia, from Fiji in 2003.<sup>13</sup> In 2007, Samoan authorities seized 11 grams of suspected methamphetamine, though forensic confirmation was unavailable. Both Guam and the Northern Mariana Islands appeared to have notable methamphetamine markets, with authorities in the Northern Mariana Islands attributing nearly all of their drug crimes to methamphetamine. Additionally, crystalline methamphetamine use has been reported in three main cities of Papua New Guinea, increasing concerns that the Pacific region is being used as a manufacturing, warehousing, and/or transshipment point with leakage into the domestic market.

Precursor trafficking is of recent concern in the region's islands. There have been reports of seizures of ATS precursors from Papua New Guinea, Samoa, Tonga, Vanuatu and French Polynesia. The biggest incident was in 2002, when authorities stopped an attempt to import up to 12 mt of methamphetamine precursor chemicals (ephedrine from India and pseudoephedrine from China) into Papua New Guinea.<sup>14</sup> In 2007, reports of significant thefts of pharmaceutical preparations containing pseudoephedrine on the island of Tonga surfaced, which were believed to have been trafficked into New Zealand for illicit methamphetamine manufacture.

Concerns continue over increased trafficking through Pacific island states and territories of ATS precursor chemicals and diverted pharmaceuticals containing ATS precursors, as these countries often do not have the necessary legislation, infrastructure and/or the enforcement capabilities in place to prevent, detect, seize, or report such shipments. In fact, of the 12 countries worldwide which are not as yet parties to the 1988 *United Nations Convention Against Illicit Traffic in Narcotic Drugs and Psychotropic Substances* (the 1988 Convention) which foresees, *inter alia*, a number of measures in the area of precursor control (Article 12) seven countries are located in the Oceania region. In other words, there are almost as many countries in the region which signed and ratified the 1988 Convention (Australia, Cook Islands, Fiji, Micronesia, New Zealand, Samoa, Tonga and Vanuatu) as there are countries which have not done so (Kiribati, the Marshall Islands, Nauru, Palau, Papua New Guinea, Solomon Islands and Tuvalu). This makes the latter Pacific island states and territories especially vulnerable to exploitation by transnational organized crime networks particularly given the rapid expansion of transportation links to Asia and the Americas.

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9 Niue is the only island territory that has reported consistently in the UNODC ARQ since 2006.

10 McCusker R., *Transnational crime in the Pacific Islands: real or apparent danger?*, Australian Institute of Criminology, Canberra, Australia (March 2006).

11 Schloenhardt A., *The market for amphetamine-type stimulants and their precursors in Oceania*, Australian Institute of Criminology, Canberra, Australia (2007).

12 Pacific Islands Forum Secretariat, *Pacific Transnational Crime Assessment (May 2008)*, *Transnational crime a security threat in the Pacific* (June 2008).

13 McCusker R., *Transnational crime in the Pacific Islands: real or apparent danger?*, Australian Institute of Criminology, Canberra, Australia (March 2006).

14 Schloenhardt A., *The market for amphetamine-type stimulants and their precursors in Oceania*, Australian Institute of Criminology, Canberra, Australia (2007).

# NEAR AND MIDDLE EAST

## Regional overview

The Near and Middle East has long been associated with trafficking and use of a specific ATS product, *Captagon*.<sup>1</sup> While there has generally been little data to quantify the extent of the problem, recent reports of large-scale seizures of both ATS end-products and their precursors provide new insight, suggesting significant changes in the scope and magnitude of the ATS problem in the region. While ATS seizures (primarily reported to be *Captagon*) in 2001 amounted to 316 kg (or 1% of reported global totals), this figure increased to 15 mt (32% of global totals) by 2006,<sup>2</sup> and for the first time also included significant seizures of methamphetamine. Moreover, in 2006 there were also first indications of illicit shipments of ATS precursor chemicals (primarily pseudoephedrine and some ephedrine) sent to and/or trafficked through countries in the region, a trend that continued in 2007.

Limited attention and law enforcement focus on *amphetamines-group substances* and *ecstasy-group substances* may explain the historical scarcity of ATS data in the Near and Middle East. However, recent increase of ATS problems in the region does not come as a surprise considering the region's proximity to manufacturing areas in South-East Europe (including Bulgaria and Turkey) where ATS manufacture appears to be on the rise. The Near and Middle East is also prone to potentially increased trafficking from other Asian countries with which it shares trade and immigration linkages. It provides for a natural corridor for the trafficking of ATS precursors from eastern and southern Asia to markets in Europe and the Americas. Moreover, immigrants from other parts of Asia are also a potential target group of traffickers. Spill-over effects to the local population are to be expected and are already substantiated by increased levels of ATS use in some countries in the region.

Each of the above point to the potential for further rapid increases in ATS trafficking and use throughout the Near and Middle East. At the same time, the region continues to be characterized by very limited information, especially data related to consumption, and the absence of national or regional infrastructures to generate, analyse, report and exchange ATS-related data.

### Near and Middle East: ATS laboratories, seizures, and annual prevalence rates 2001-2006

MEASURE	DRUG GROUP	2001	2002	2003	2004	2005	2006
Laboratory (#)	Methamphetamine						
	Amphetamine						
	Other synthetic/ combined stimulants						
	<i>Ecstasy-group substances</i>						
	<b>Total</b>	–	–	–	–	–	–
Seizures (kg)	Methamphetamine	0.0	0.0	0.0	16.5	1.1	223.6
	Amphetamine	41.5	146.3	2,872.4	6,992.3	8,286.8	12,787.2
	Other synthetic/ combined stimulants	260.7	320.0	0.7	58.1	99.8	2,027.8
	<i>Ecstasy-group substances</i>	13.7	99.6	11.7	31.6	27.4	0.8
	<b>Total</b>	<b>315.9</b>	<b>566.0</b>	<b>2,884.8</b>	<b>7,098.6</b>	<b>8,415.2</b>	<b>15,039.5</b>
Annual Prevalence (15-64)*	<i>Amphetamines-group substances</i>	0.1%	0.1%	0.1%	0.1%	0.1%	0.2%
	<i>Ecstasy-group substances</i>	<0.1%	<0.1%	<0.1%	<0.1%	<0.1%	<0.1%

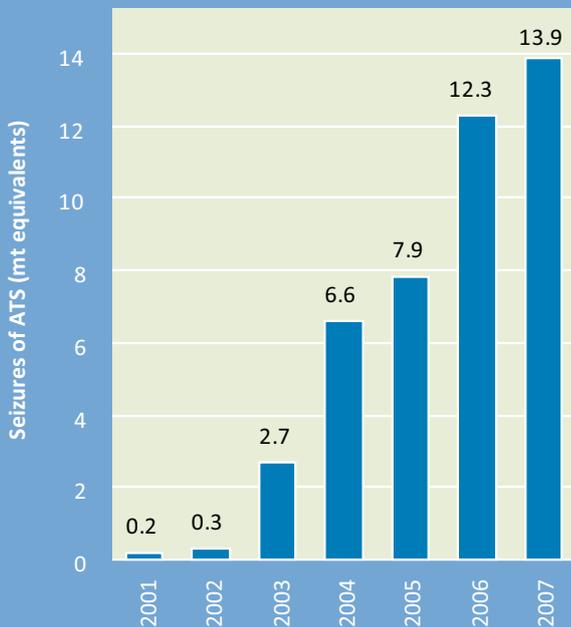
\* Prevalence estimates were standardized for population 15-64 years of age beginning 2004, thus prior years are only broadly comparable.

Source: UNODC ARQ/ DELTA; World Drug Report 2004-2008; Global Illicit Drug Trends 2003

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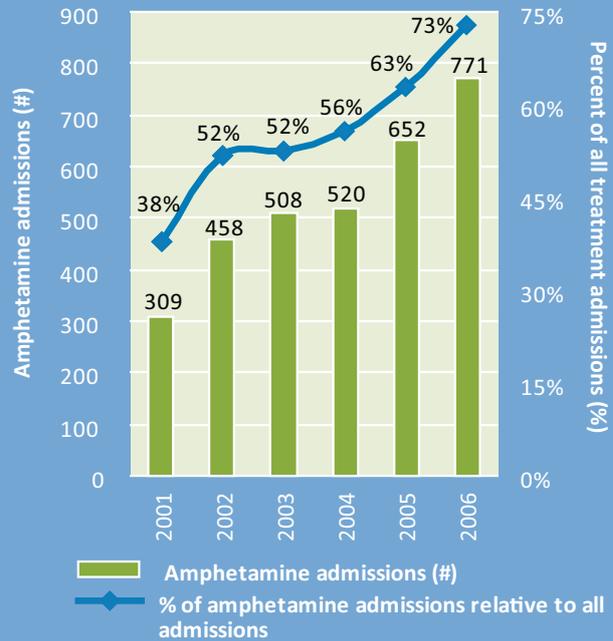
- Captagon* was originally the trade name for a pharmaceutical preparation containing fenetylline, an ATS that is metabolized in the body to amphetamine. Limited available laboratory information suggests that *Captagon* is no longer fenetylline, but amphetamine, typically in combination with caffeine and other substances.
- In order of magnitude the following regional countries reported ATS seizures greater than 10 kg in 2006: Saudi Arabia (12.3 mt), Oman (2.0 mt), Jordan (328 kg), Syria (273 kg), Lebanon (111 kg), Kuwait (17 kg), and Iran (16 kg). Other countries in the region which reported ATS seizures in 2006 in amounts less than 10 kg included Israel, United Arab Emirates, Bahrain, and Qatar.

**Saudi Arabia: seizures of ATS 2001-2007**



Source: UNODC ARQ/ DELTA; World Customs Organization (WCO), *Customs and Drugs Report 2007* (June 2008)

**Saudi Arabia: amphetamine treatment admissions (Dammam) 2001-2006**



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

The following section summarizes recent trends in the Near and Middle East, with the focus on Saudi Arabia where available data suggest a large increase in ATS trafficking and use. This is followed by an overview of the situation in other countries of the region along major trafficking routes, namely Syria, Jordan and Oman. The chapter closes with available information on ATS precursor trafficking through the region, an activity mainly affecting the United Arab Emirates (UAE), Syria and Iran. The analysis highlights the limitation in available data required as evidence for actionable interventions to reduce the supply and demand of both ATS end-products and their precursors.

## Saudi Arabia

Saudi Arabia is the most significant ATS market in the Near and Middle East. Seizure data show a significant increase particularly since 2003/04, mostly in the form of *Captagon*. In 2006, the largest amphetamine seizures in the world, totalling 12.1 mt, were reported by Saudi Arabia,<sup>3</sup> including the biggest single seizure (originating from Turkey) of more than 2 mt which was intercepted at the Jordanian/Saudi Arabian border. To lend perspective, the quantity of amphetamine seized in 2006 was greater than the sum of all seizures in the UK - the biggest amphetamine market in Europe - between 2001 and 2005.

The first substantial seizures of methamphetamine, totalling 216 kg, were reported in 2006. Jordan was identified as the departure country, although the actual source of the methamphetamine remained unknown. Increasing demand by the regions' migrant workers from other Asian countries and the high price that the substance commands could be possible explanations for the emerging trafficking in methamphetamine in what has traditionally been an amphetamine/*Captagon*-based market. Such 'migrant linkages' are further substantiated by the fact that methamphetamine in Saudi Arabia and the UAE is known as '*shabu*', a term originating from East Asia<sup>4</sup> and referring specifically to the high purity crystalline form. Methamphetamine is currently the most expensive drug on the Saudi Arabian market; one gram of methamphetamine costs on average 750 Saudi Riyal (US\$200), 40% higher than a gram of cocaine (450 Saudi Riyal or US\$120).

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3 Data provided in the World Customs Organization's, *Customs and Drugs Report 2006* (June 2007), identified *Captagon* seized in Saudi Arabia as amphetamine.

4 Primarily used in the Philippines, Indonesia and Japan.

ATS are usually trafficked into Saudi Arabia via Turkey, Syria, Jordan and Oman, with amphetamine believed to be manufactured in clandestine laboratories in Bulgaria, Turkey and some other countries of south-eastern Europe (e.g. Serbia), as well as in Syria close to the Turkish border.<sup>5</sup> 'Ecstasy' is mainly sourced from West Europe (in particular the Netherlands and Belgium).

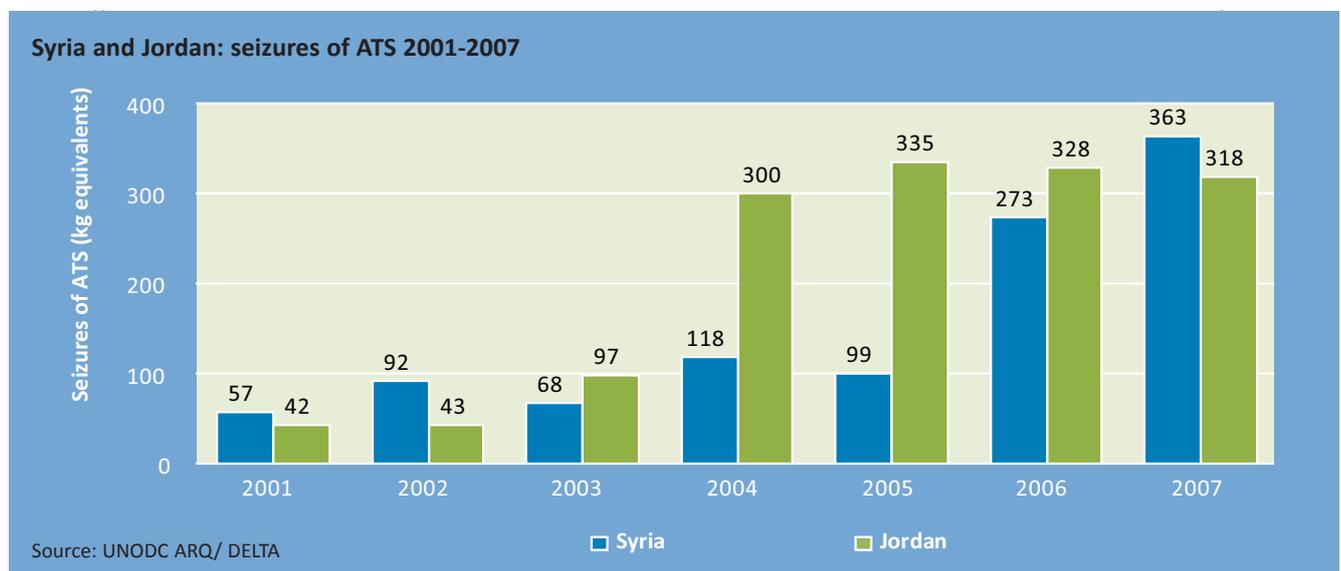
In addition to bulk seizures some 25.6 million non-specified ATS tablets were seized in 2007 including, several multi-million tablet interceptions, most likely of *Captagon* tablets, and 'ecstasy' tablets.<sup>6</sup> The high volume is reflected in the low street price of *Captagon* tablets which average 18 Saudi Riyal (US\$5) in 2008, making it one of the cheapest illicit drugs available in the country.

According to reports citing official government and news sources, rising levels of drug use have been reported since 2002. The number of drug dependent users was reported to have increased from 109,000 in 2002 to 150,000 in 2005. An additional increase of 17% was reported between 2006 and 2007.<sup>7</sup>

These trends are consistent with a recent study of a specialized drug treatment hospital in the largest province of Saudi Arabia, which found substantial increases in both the total treatment numbers and the proportion of treatment related to ATS.<sup>8</sup> Figures show that treatment admissions for *amphetamines-group* use increased by 150% between 2000/01 and 2005/06. The proportion of ATS-related treatment relative to all admissions nearly doubled (from 38% to 73%) during the same period. Treatment admissions saw their largest increases in 2005/06, around the time when significant seizures were detected. Combinations of amphetamine with cannabis and/or alcohol were the most commonly identified.

### Other countries along major trafficking routes

Concurrent with increases reported in Saudi Arabia, several countries throughout the region have reported substantial increases in ATS-related trafficking in recent years. Syria and Jordan - located along main trafficking routes between sources in Bulgaria and Turkey and the Saudi Arabian market - have each reported substantial increases in seizures of *Captagon* tablets (of unknown chemical content) from 2001 to 2007. Increases were reported in Jordan beginning 2003/04 where they have remained elevated since, and in Syria as of 2006.



5 Information provided by the Turkish delegation to an OSCE conference, held 17-18 July 2008 in Vienna.

6 The chemical composition of both these tablet types remains unknown. According to the Turkish National Police, in 2005, seized *Captagon* was a mixture of amphetamine, its intermediate (N-formylamphetamine), ephedrine, caffeine, and quinine. Another study in 2006 identified seized 'ecstasy' tablets to have a median MDMA tablet content of 35.1%. Tablets were also found to contain a wide range of other substances including ATS (dexamphetamine, N-formylamphetamine, amphetamine, methamphetamine), caffeine, barbiturates and benzodiazepines, and a number of excipients and tablet filters. (Nerkis S. and Oruç H.H., *Purity and Composition of Cannabis, Heroin and Ecstasy Samples Used in Bursa Region*, *Bagimlilik Dergisi* (2006))

7 USA Department of State, *2008 International Narcotics Control Strategy Report (INCSR)*, Vol 1 (March 2008).

8 AbuMadini M. S., Rahima S. I. A., Al-Zahrani M. A. & Al-Johi A. O., *Two decades of treatment seeking for substance use disorders in Saudi Arabia: Trends and patterns in a rehabilitation facility in Dammam* (2008), *Drug and Alcohol Dependence* (in press).

9 World Customs Organization (WCO), *Customs and Drugs Report 2007* (June 2008).

10 In 2006, authorities reported the seizure of just 275 *Captagon* tablets to UNODC.

11 The government of Iraq last reported seizures of precursor chemicals to INCB (i.e. Form D) in 2003.

There was also significant ATS precursor trafficking to or through Iran<sup>12</sup> and Syria in 2006. Syria reportedly stopped a shipment of 8 mt of pseudoephedrine from India for subsequent re-export to Mexico. In 2007 a legitimate pharmaceutical company in Syria legally imported and tableted large amounts of pseudoephedrine for export to Spain, the UAE, and Mexico. Many of the diverted precursors were reportedly destined for North America, most likely Mexico.

The location of the Near and Middle East between precursor chemical producing countries in Asia and ATS manufacturers in Europe and the Americas via Africa provides for high traffic volume and high risk. This, combined with a lack of awareness and infrastructure to address the rapidly emerging ATS problem, makes the Near and Middle East a vulnerable target for ATS-related illicit activities. Furthermore, the enormous purchasing power in the region, the high price of methamphetamine and resultant attractiveness for drug traffickers, as well as its rapid spread all contribute to the prospect of the Near and Middle East evolving into a potentially lucrative market for methamphetamine traffickers.

### Israel

Israel reports little domestic ATS-related activity - the last reported clandestine ATS laboratories were detected in the late-1990's and only modest ATS seizures are reported annually (e.g. 'ecstasy' seizures between 2001-2006 average about 30 kg). However, Israeli organized crime has formed a major part of the international 'ecstasy' trafficking networks. These enterprises historically served as brokers and transporters of 'ecstasy' manufactured in Europe to markets in North America, Oceania, and other regions. However, the importance of these trafficking rings was decreased following the disruption of several of groups over the last few years. While these trafficking groups operated mainly outside Israel, new indications suggest increasing activity is occurring via Israel. For instance, Australia reported intercepting 113 kg of bulk MDMA powder sent from Israel in March 2007, and the World Customs Organization reported a large 'ecstasy' seizure in 2007 in Israel, when 300 kg were found hidden in a shipping container which had originated in the Netherlands.<sup>13</sup> These examples suggest a possible resurgence of 'ecstasy' trafficking through the region.

.....  
<sup>12</sup> While never reported officially to UNODC, unconfirmed media reports suggest that methamphetamine is also being seized in the country.

<sup>13</sup> Australia Crime Commission, *Illicit Drug Data Report (2006-07)*; World Customs Organization (WCO), *Customs and Drugs Report 2007* (June 2008).



# EUROPE

## Regional Overview

Europe has one of the most established ATS markets in the world. Following increases in the 1990s, clandestine ATS manufacture and consumption appear to have largely stabilized. The main ATS of concern are amphetamine and *ecstasy-group substances*, with limited methamphetamine markets in some parts of Central and East Europe. ATS markets in recent years show general stabilization or moderate decline in West and Central Europe and greater uptake in the eastern and south-eastern subregions. There has also been a shift of 'ecstasy' manufacture away from West Europe into North America, Oceania and a number of developing countries in South-East Asia. There are indications that new source countries are emerging in South-East Europe and that manufacture is expanding in other eastern European countries.

Following many years of significant increases, European amphetamine use *in total* appears to have levelled off. In 2006, 22 European countries reported a stabilization of *amphetamines-group* use and 11 (32%) reported an increase. These increases appear to be concentrated in north-east and south-east Europe, while most of West and Central Europe shows stable or declining levels of amphetamine use.<sup>1</sup> *Ecstasy-group* use data also show a general stabilization due in large part to stable levels of use in West and Central Europe. In contrast, *ecstasy-group* use continues to rise in South-East Europe and East Europe, albeit from far lower levels.

The number of ATS laboratories dismantled between 2001 and 2006 more than tripled with a 11-fold increase in the number of methamphetamine laboratories and a three-fold increase of amphetamine laboratories. The largest number of amphetamine laboratories reported was by the Russian Federation<sup>2</sup>, followed by Poland, the Netherlands, Germany, Bulgaria, Belgium and Turkey. The Netherlands, Poland and Belgium are still the most commonly referred to source countries for amphetamine. Officially reported methamphetamine manufacture remains concentrated in the Czech Republic, Moldova and the Slovak Republic.<sup>3</sup>

### Europe: ATS laboratories, seizures, and prevalence rates 2001-2006

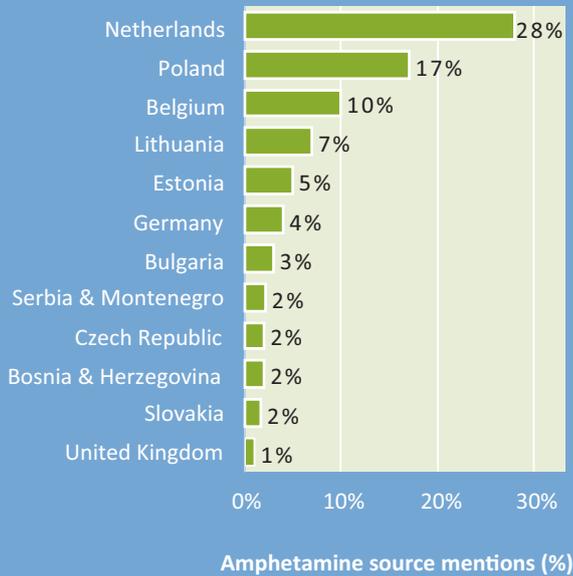
MEASURE	DRUG GROUP	2001	2002	2003	2004	2005	2006
Laboratory (#)	Methamphetamine	42	106	192	396	310	475
	Amphetamine	33	131	144	195	150	124
	Other synthetic/ combined stimulants	71	5		4		1
	<i>Ecstasy-group substances</i>	32	27	19	20	13	10
	<b>Total</b>	<b>178</b>	<b>269</b>	<b>355</b>	<b>615</b>	<b>473</b>	<b>610</b>
Seizures (kg)	Methamphetamine	49.3	68.6	141.0	173.4	135.2	186.8
	Amphetamine	3,662.2	4,236.1	5,316.0	5,612.2	7,736.2	6,284.0
	Non-specified amphetamines	79.0	310.1	221.4	2,934.1	257.5	815.8
	<i>Ecstasy-group substances</i>	2,325.5	4,562.4	2,561.6	4,129.4	2,062.6	2,234.4
	<b>Total</b>	<b>6,116.0</b>	<b>9,177.1</b>	<b>8,239.8</b>	<b>12,849.1</b>	<b>10,191.5</b>	<b>9,521.1</b>
Annual Prevalence (15-64)*	<i>Amphetamines-group substances</i>	0.5%	0.4%	0.5%	0.5%	0.5%	0.5%
	<i>Ecstasy-group substances</i>	0.5%	0.6%	0.6%	0.6%	0.6%	0.5%

\* Prevalence estimates were standardized for population 15-64 years of age beginning 2004, thus prior years are only broadly comparable.

Source: UNODC ARQ/ DELTA; *World Drug Report 2004-2008*; *Global Illicit Drug Trends 2003*

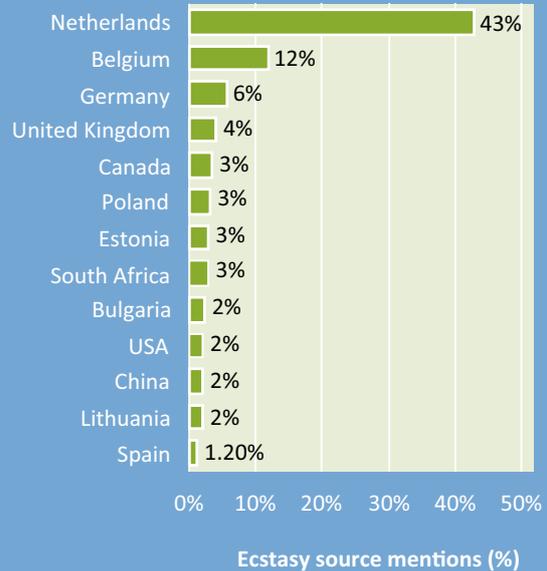
- Spain was the only country reporting a decline in amphetamine use in 2006.
- It is not certain whether all of the reported ATS laboratories in Russia produced amphetamine given that the current classification system used in that country does not seem to allow for any detailed specification according to the type of ATS produced. Seizures of ephedrine and pseudoephedrine in recent years indicate that methamphetamine and methcathinone may be produced in Russia.
- Small numbers of methamphetamine laboratories were also dismantled in Germany, Lithuania, Bulgaria and Austria.

## Sources of amphetamine\* 2002-2006



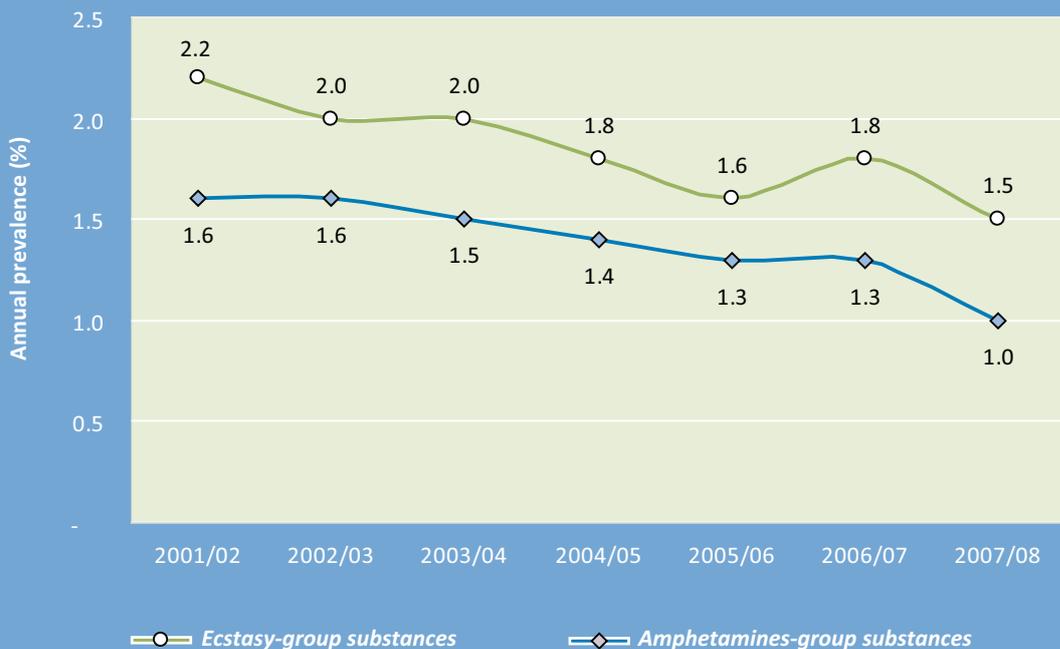
\* Number of times a country was mentioned by other countries as the source of seized amphetamine over the 2002-2006 period, expressed as proportion of all such mentions (N=47); mentions of source do not necessarily imply that amphetamine was manufactured in these countries.  
Source: UNODC, *World Drug Report 2008*

## Sources of 'ecstasy'\* 2002-2006



\* Number of times a country was mentioned by other countries as the source of seized 'ecstasy' over the 2002-2006 period, expressed as proportion of all such mentions (N=69); mentions of source do not necessarily imply that 'ecstasy' was manufactured in these countries.  
Source: UNODC, *World Drug Report 2008*

## England and Wales: annual prevalence of ATS among the general population\* 2001/02-2007/08



\* Aged 16 to 59 years

Source: Home Office, *Crime in England and Wales 2007/08: Findings from British Crime Survey and Police Recorded Crime*, London, UK (July 2008)

*Ecstasy-group* laboratories have been steadily declining since 2003, as some manufacture has shifted into other regions of the world. Between 2001 and 2006 most European 'ecstasy' laboratories were dismantled in the Netherlands (70%), followed by Belgium and Estonia.<sup>4</sup> In terms of the reported source of the *ecstasy-group substances* trafficked, the Netherlands was most commonly mentioned ahead of Belgium.

Europe's share of global amphetamine seizures has been falling due to increases in seizures in the Near and Middle East, sourced mainly from countries in south-eastern Europe. In addition, there were shifts in manufacture and trafficking from original EU-15 states to new-EU states as well as to non-EU countries.<sup>5</sup> Amphetamine seizures increased 72% between 2001 and 2006 with the largest seizures during that period reported by the UK (10.2 mt), followed by the Netherlands (5.2 mt), Bulgaria (4.3 mt), Germany (3.0 mt), Sweden, Poland, Norway and Belgium. *Ecstasy-group* seizures between 2001 and 2006 totalled 17.9 mt and were mostly reported from the Netherlands (34%), Belgium (20%), the UK (19%), Germany (8%), France, and Spain.

As a region, Europe offers some of the best available information related to the ATS situation. This is particularly true for West and Central Europe. This section focuses on changes in selected European manufacturing, trafficking and consumer countries.

## West and Central Europe

West and Central Europe have been faced with a significant ATS problem for many decades. The Netherlands and Belgium have been key export countries of both amphetamine and *ecstasy-group substances*, though their importance has been declining in recent years. Although methamphetamine manufacture and use appears to be increasing from very low levels, initial fears of a rapid spread of methamphetamine manufacture across the rest of the EU after the integration of 10 new countries in 2004 have not materialized thus far.<sup>6</sup>

### United Kingdom

The UK has for many years had the largest number of ATS users and commensurately the highest number of amphetamine seizures in Europe. Between 2001 and 2005 amphetamine seizures were stable, averaging 1.6 mt annually (equivalent to 31 % of amphetamine seizures in Europe).<sup>7</sup> The UK also used to be an important producer of *amphetamines-group substances*. However, no reports of clandestine manufacture in the UK have been submitted to UNODC since 2003<sup>8</sup> and there are no other indications of significant domestic manufacture currently taking place.

'Ecstasy' seizures have declined (from 766 kg in 2001 to 295 kg in 2005). However, the UK had in 2005 the second largest 'ecstasy' seizures in Europe after the Netherlands and the fifth largest 'ecstasy' seizures worldwide. Though there have been reports of 'ecstasy' tableting operations in the North of England<sup>9</sup> most continues to be sourced in the Netherlands or Belgium and arrives by sea.<sup>10</sup>

With already high and rapidly rising levels of ATS use in the first half of the 1990s,<sup>11</sup> UK authorities directed substantial efforts towards reducing ATS use (prevention campaigns targeting youth and enforcement targeting manufacture), resulting in a 30% decrease in the overall amphetamine prevalence rate between 2001/02 and 2007/08. Although significant improvements have been achieved, the annual prevalence rate for amphetamine use among the general population in England and Wales (1%) remains twice the European average (0.5%) and *ecstasy-group* use (1.5%) is three times the European average (0.5%).<sup>12</sup>

The decline in the ATS market was a major achievement, particularly for *ecstasy-group substances* where the retail price per tablet decreased 67% from £9 in 2000 to £3 (US\$6) in 2006.<sup>13</sup> This could have - but did not - lead to increased use.

4 Smaller numbers of 'ecstasy' laboratories were dismantled in Germany, the UK, Lithuania, Russia, France and Norway.

5 EU-15 refers to the 15 countries in the European Union before the expansion on May 1, 2004. These include Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden, and UK.

6 Concerns were particularly held in relation to the Czech Republic and to a lesser extent, Slovakia and some of the Baltic countries.

7 Seizure data for 2006 are not yet available. Seizures peaked at 3.3 mt in 1997 (equivalent to more than 60% of all seizures in West and Central Europe).

8 The UK data refers primarily to England and Wales, as is reported in their ARQ.

9 EMCDDA, United Kingdom 2007 National Report, by the REITOX National Focal Point: *New Developments, Trends and in-depth information on selected issues*; USA Department of State, *2008 International Narcotics Control Strategy Report (INCSR)*, Vol 1 (March 2008).

10 Serious Organized Crime Agency (SOCA), *The United Kingdom Threat Assessment of Serious Organised Crime (2006/07)*.

11 The annual prevalence rate in 1995/96 was 3.2% for the general population (16-59 years old).

12 EMCDDA Statistical Bulletin, 2007 (<http://www.emcdda.europa.eu/html.cfm/index34943EN.html>); EMCDDA, United Kingdom 2007 National Report, by the REITOX National Focal Point: *New Developments, Trends and in-depth information on selected issues*.

13 Serious Organized Crime Agency (SOCA), *The United Kingdom Threat Assessment of Serious Organised Crime (2006/07)*; EMCDDA, *United Kingdom Annual Report on the UK Drug Situation (2001)*; EMCDDA, United Kingdom 2007 National Report, by the REITOX National Focal Point, *New Developments, Trends and in-depth information on selected issues*.

## Environmental impact from ATS manufacture

Whether they are 'kitchen'-size or industrial-scale laboratories, clandestine ATS operations are responsible for significant environmental damage each year through the generation and dumping of hazardous waste created during the production cycle.

Illicit operators often dispose of leftover chemicals using a variety of environmentally damaging methods: buried in soil; dumped into public sewer systems or streams in rural areas, plumbing of rental homes or hotels; set alight or dumped out of trucks etc. Of most concern is water contamination as waste dumped into the soil or streams has the capability to reach the water table.

Data from the Netherlands show an average of three dumpsites for every clandestine laboratory discovered although this likely underestimates the impact of these typically large operations as most dumping incidents occur at night, near water, or are buried, making detection difficult. ATS dumpsites in the Netherlands on average have been found to contain about 1,000 lt. of toxic and often highly flammable chemicals.

For the smaller methamphetamine laboratories in the USA, the DEA calculates a methamphetamine product-to-waste chemical ratio of up to 1:5; that is for every kilogram of methamphetamine up to five kilograms of chemical waste such as sodium hydroxide, red phosphorus, hydriodic acid, and iodine are generated. At the height of the methamphetamine problem, more than 17,000 clandestine methamphetamine laboratories and dumpsites were detected in the USA.

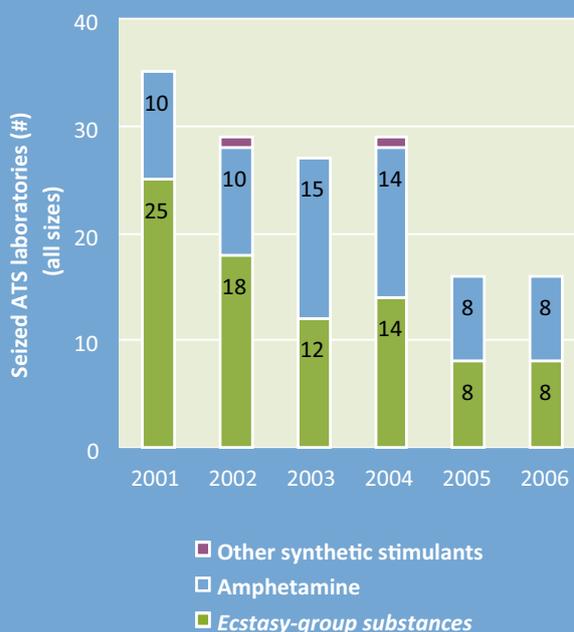
Initial stages of a clean-up begin with determining the nature and extent of the site in question and removing leftover chemicals and manufacturing equipment, while secondary stages include the costly removal of contaminated soil and sometimes destruction of contaminated buildings. Clean-up of smaller clandestine methamphetamine laboratories in the USA cost on average between US\$2,000-US\$3,000, while soil sanitation costs alone have been estimated to average US\$25,000 at larger dumpsites in the Netherlands.

Costs of clean-up at some industrial-scale ATS manufacture sites in South-East Asia, including one where more than 165 mt of precursor and waste chemicals were inventoried, are correspondingly high. Environmental impacts are not the only concern - tolls on law enforcement resources, medical, social, and public health and safety services are also involved. In the case of a laboratory seized in 2007 in Cambodia 5.8 mt of precursors were seized and donor nations coordinated with UNODC to allay the clean-up cost of US\$200,000.

Additionally, Cambodia is also one of several countries confronted with the environmental and ecological consequences of the production of saffron-rich oils, which are used for the illicit manufacture of 'ecstasy'. The illicit and unsustainable harvesting of saffron-rich trees as well as their subsequent large-scale distillation endanger both the flora and fauna in often fragile ecosystems and impact on the livelihood of the local population.

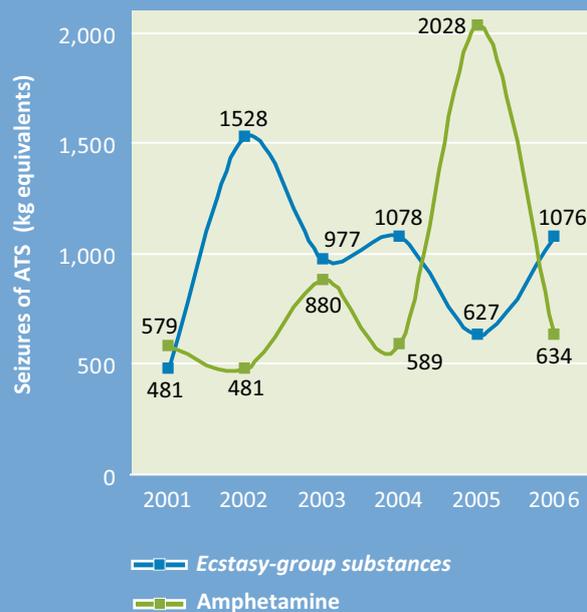


## Netherlands: seized ATS laboratories 2001-2006



Source: UNODC ARQ/ DELTA

## Netherlands: seizures of ATS 2001-2006



Source: UNODC ARQ/ DELTA

Amphetamine supplies also declined following the successful dismantling of a number of amphetamine laboratories in the UK and the Netherlands. While supply recovered by 2001 amphetamine demand continued to fall in subsequent years as the drug's image had changed and supply was not any longer the decisive factor for determining demand. Between 2003 and 2007 amphetamine purity remained relatively stable at around 10% as did the price per gram at around £9 (US\$18). The proportion of treatment demand for amphetamine remained unchanged at 4% of all drug-related treatment between 1999/2000 and 2005/06.<sup>14</sup>

### The Netherlands

The Netherlands continues to be a substantial manufacture and export country for amphetamine and *ecstasy-group substances*, although the extent of these activities has declined in recent years.

Following increased efforts by authorities to fight illicit manufacture, there are indications that the number of clandestine ATS laboratories has decreased since 2001 with manufacture shifting to other countries, including Belgium, Canada, Australia, and Indonesia.<sup>15</sup> While numbers have declined, several dismantled laboratories have been substantial in size, with the majority of ATS manufacture concentrated in the west and the south of the country, where laboratory seizures and chemical dumpsites are located.

There has also been a notable decline in the quantities of precursor chemicals seized by Dutch authorities. In 2001, nearly 11,000 lt. of 3,4-MDP-2-P (a precursor to manufacture *ecstasy-group substances*) were seized, compared to only 105 lt. in 2006.<sup>16</sup> Several large seizures in 2003 and 2004 are believed to have led to changes in precursor trafficking routes<sup>17</sup> and as a result to shifts of manufacture to other countries where precursor chemicals were more easily available.

Nonetheless, the Netherlands is consistently being identified by other countries as a main source of trafficked 'ecstasy' with 43% of all such mentions between 2002 and 2006. Between 2001 and 2006 the Netherlands seized the largest quantity of 'ecstasy' (5.8 mt) in Europe and the second largest quantity of amphetamine (5.2 mt, approximately half the quantity seized in the UK). Amphetamine seizures peaked in 2005 (2.0 mt), resulting in a temporary decline of amphetamine supply in a number of other European countries. *Ecstasy-group* seizures peaked in 2002 (1.5 mt), with 'ecstasy' seizures exceeding amphetamine seizures in most years between 2001 and 2006. There is a noticeable pattern of opposing trends of 'ecstasy' and amphetamine trafficking; when 'ecstasy' seizures have risen, amphetamine seizures have tended to fall and *vice-versa*.

A recent and notable development among 'ecstasy' seizures has been the seizure of 'ecstasy' (MDMA) in non-tablet forms.<sup>18</sup> In addition, new synthetic drugs are constantly emerging on the market; first-time seizures of 5,000 methamphetamine tablets (typically associated with South-East Asia), 385,000 tablets of the piperazine *m*-chlorophenylpiperazine (mCPP), and several new forms of 'ecstasy' were noted in 2006.<sup>19</sup>

The percentage of 'ecstasy' tablets containing only *ecstasy-group substances* decreased between 2001 and 2006, while the content of miscellaneous substances increased. Beginning around 2005 there were notable decreases in the amount of *ecstasy-group* ingredients used in the tablets sold as 'ecstasy', due in part to the dismantling of one of the largest illicit 'ecstasy' laboratory ever found in the country. These decreases were also noted in a number of other markets sourced with 'ecstasy' from the Netherlands.

Despite indications of less domestic manufacture and a stabilization in ATS use among the general population according to household survey results (*amphetamines-group substances*: 0.4% in 2001 and 0.3% in 2005; 'ecstasy': 1.1% in 2001 and 1.2% in 2005,<sup>20</sup> the proportion of primary amphetamine users in drug treatment heavily increased from 1.5% in 2001 to 5.9% in 2006, with the proportion of first-time amphetamine treatments at 8%.<sup>21</sup> Increases were also evident in the number of calls related to amphetamine/methamphetamine received by the National Poison Information Call Centre, from 4% in 2001 to 9% in 2007.<sup>22</sup>

14 EMCDDA, United Kingdom Annual Report on the UK Drug Situation (2001); EMCDDA, United Kingdom 2007 National Report, by the REITOX National Focal Point: *New Developments, Trends and in-depth information on selected issues*.

15 EMCDDA, Netherlands 2007 National Report, by the REITOX National Focal Point: *New Developments, Trends and in-depth information on selected issues*.

16 Note: EMCDDA, *Netherlands 2007 National Report*, by the REITOX National Focal Point: *New developments, trends and in-depth information on selected issues*, also report seizures of 174 lt. of P-2-P (a precursor in the manufacture of amphetamine) in 2006 which were not reported to the INCB.

17 EMCDDA, Netherlands 2007 National Report, by the REITOX National Focal Point: *New Developments, Trends and in-depth information on selected issues*.

18 Ibid.

19 Ibid. New forms of MDMA were noted as 'Original 69' and 'Explosion'.

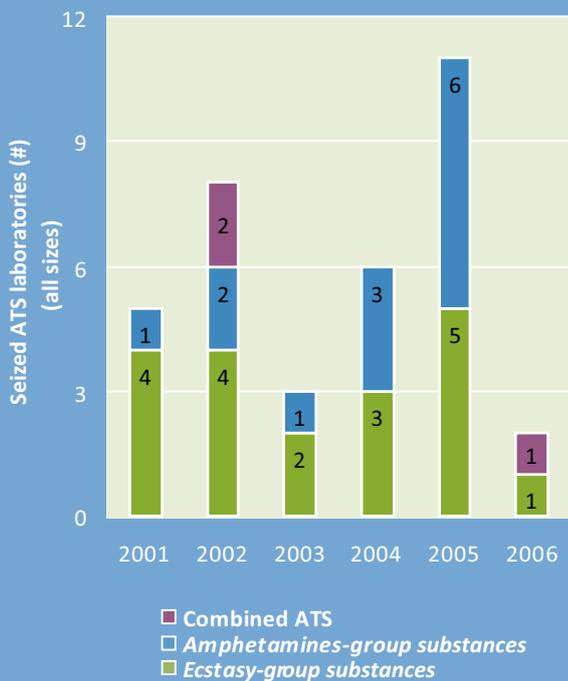
20 EMCDDA, Statistical Bulletin 2007.

21 EMCDDA, Netherlands 2007 National Report, by the REITOX National Focal Point: *New Developments, Trends and in-depth information on selected issues*.

22 Due to the unreliability of caller-sourced information no distinction is made between methamphetamine and amphetamine-related calls.

# 2008 GLOBAL ATS ASSESSMENT

Belgium: seized ATS laboratories 2001-2006



Source: UNODC ARQ/ DELTA

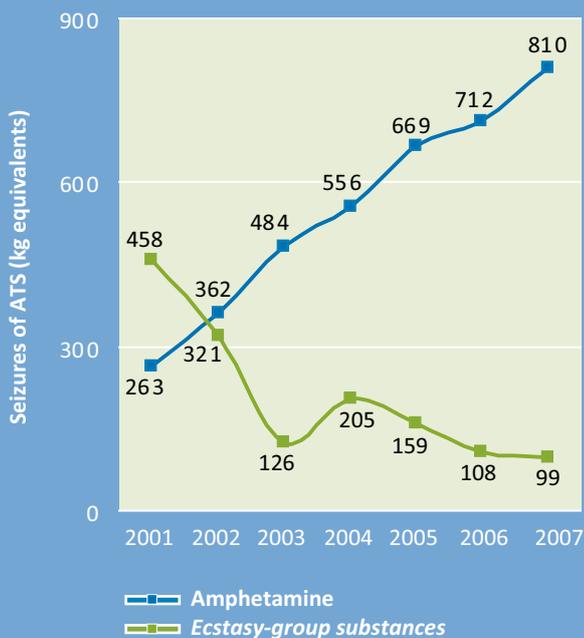
Belgium: annual prevalence of ATS among students\* 2000/01-2005/06



\* Aged 15 to 18 years

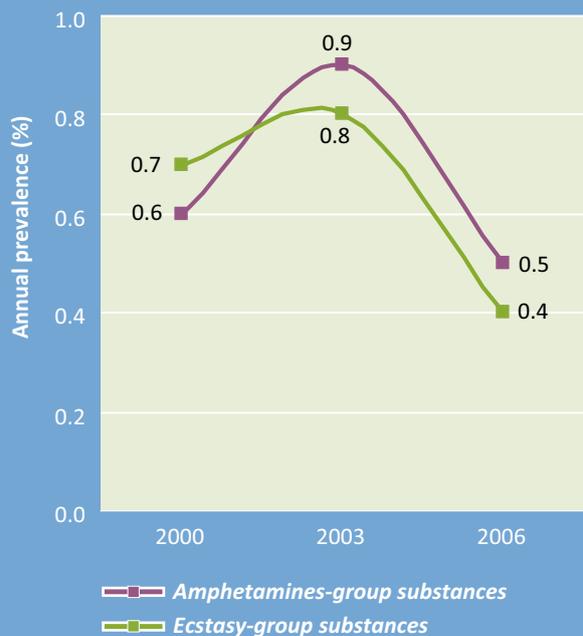
Source: EMCDDA, *Belgium National Report (2007)*; Unweighted average of student population (15-16 and 17-18 year olds)

Germany: seizures of ATS 2001-2007



Source: UNODC ARQ/ DELTA

Germany: annual prevalence of ATS \* 2000-2006



\* Aged 15 to 18 years

Source: Ministry of Health, *Federal Study on the abuse of psychoactive substances among adults in Germany*, quoted Germany 2007 National Report to the EMCDDA and EMCDDA Statistical Bulletin 2007

## Belgium

The Belgium ATS market consists primarily of amphetamine and 'ecstasy', with the country being a source and transit country, and to a lesser degree a consumer country. Linked to increasing law enforcement efforts in the Netherlands, some ATS manufacture has reportedly been relocated in recent years to Belgium. Clandestine ATS laboratory counts have fluctuated between 2001 and 2006, with no clear trend emerging. During this period, Belgium was identified by other countries as the source of trafficked 'ecstasy' and amphetamine, with 12% and 10% of all source mentions for 'ecstasy' and amphetamine, respectively.

ATS precursors in the period 2001-2004 were primarily sourced from China. From mid-2004, P-2-P sourced from Russia was found in large-scale amphetamine production sites, filling a gap that was made after law enforcement efforts had successfully targeted Asian precursor trafficking groups.<sup>23</sup> By 2007, P-2-P and 3,4-MDP-2-P trafficked from China began to re-appear, subsequently decreasing 3,4-MDP-2-P prices on the illicit market in Belgium and the Netherlands.

Between 2001 and 2006 Belgium seized 1.1 mt of amphetamine and 3.5 mt of 'ecstasy', the second greatest quantity of 'ecstasy' seized in Europe. In 2001, 20% of the 'ecstasy' seized was believed to be sourced in the Netherlands with the remaining 80% domestically manufactured. By 2006, the share of domestically manufactured 'ecstasy' had increased to 90%. Law enforcement authorities have noted that poly-drug shipments are common. In 2005, Mexico, Brazil and South Africa appeared to be new destination countries for ATS shipments by air.<sup>24</sup>

The use of amphetamine and 'ecstasy' decreased significantly in Belgium between 2000/01 and 2005/06 among students aged 15-18; 'ecstasy' use dropped by 12%, and amphetamine use by 47%.

The average street price for 'ecstasy' tablets decreased 47% from €6.3 in 2001 to €3.3 (US\$4) in 2006,<sup>25</sup> but this measure may be misleading as the MDMA content of 'ecstasy' tablets during this period reportedly declined. Moreover, prices vary significantly depending on both the location of purchase and the purchase quantity. For amphetamine powder, in 2001, the street price per gram was €11.9 at 22% average purity. In 2006 prices averaged €10.9 (US\$14) at 15% mean purity. Unadjusted for inflation, the price per gram of pure amphetamine therefore increased by about 34% over the 2001-2006 period. This strong price increase for amphetamine may also help to explain the strong reduction of amphetamine use among Belgium students.

## Germany

Germany is no longer one of the major ATS manufacturers due to close cooperation between the domestic chemical industry and law enforcement which makes sourcing domestic precursors more difficult. Germany remains however an important transit and consumer country of amphetamine, *ecstasy-group substances* and, to a far lesser degree, methamphetamine. 'Ecstasy' and amphetamine move from the Netherlands and Belgium to the domestic market and through to eastern, northern and southern European markets, while precursor chemicals move from eastern Europe (mainly Russia) to clandestine manufacturing sites in the Netherlands and Belgium.

The number of dismantled laboratories remained basically stable over the 2001-2007 period. Of the eight ATS laboratories discovered in 2007, three were clandestine methamphetamine laboratories, the first such laboratories reported since 2002. All of these ATS laboratories were small 'kitchen'-type operations.

Amphetamine seizures steadily increased three-fold from 263 kg in 2001 to 810 kg in 2007. The major proportion of the amphetamine seized entered Germany from the Netherlands (70% was seized at borders in 2007) with smaller quantities also being trafficked from Belgium and Poland. *Ecstasy-group substances* are primarily sourced in the Netherlands, and in contrast to amphetamine, the amount of *ecstasy-group substances* seized in Germany has steadily declined from 458 kg in 2001 to 99 kg in 2007 (-78%).<sup>26</sup>

Seizures of crystalline methamphetamine (known locally as 'crystal') have been reported since 2004, averaging 11 kg per year.<sup>27</sup> The majority of seizures are made in States located along the border with the Czech Republic (i.e. Bavaria, Saxony and Thuringia) where the drug is also mainly consumed.<sup>28</sup>

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

24 Belgium 2007 National Report to the EMCDDA by the REITOX National Focal Point: *New Developments, Trends and in-depth information on selected issues*.

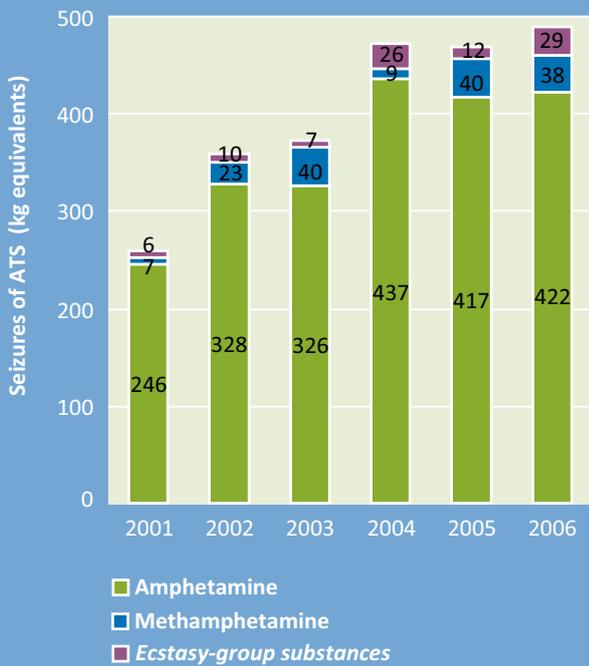
25 Belgian national report on drugs 2002; Belgium 2007 National Report to the EMCDDA by the REITOX National Focal Point: *New Developments, Trends and in-depth information on selected issues*.

26 German Bundeskriminalamt, *Narcotic Drugs Annual Report 2007*, Wiesbaden, Germany (2008).

27 German Bundeskriminalamt, *Narcotic Drugs Annual Report 2007*, Wiesbaden, Germany (2008).

28 Germany 2007 National Report to the EMCDDA by the REITOX National Focal Point: *New Developments, Trends and in-depth information on selected issues (2006/07)*.

Sweden: seizures of ATS 2001-2006



Source: UNODC ARQ/ DELTA

Sweden: lifetime prevalence of ATS use among military conscripts 2001-2006



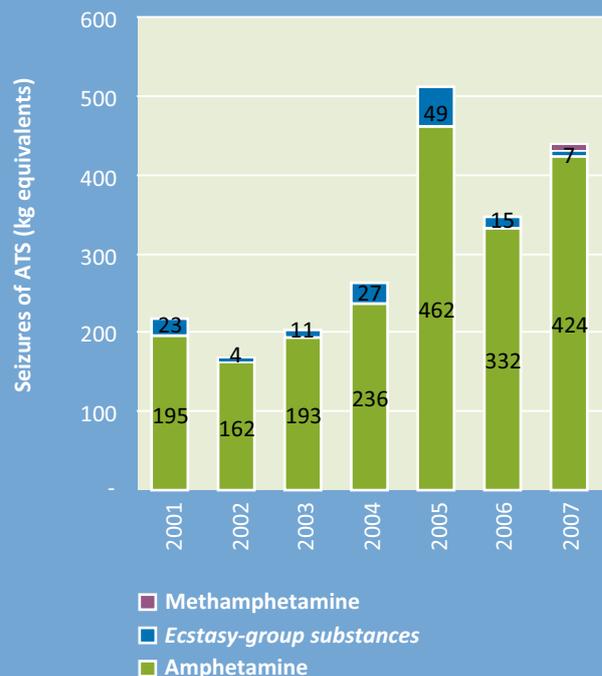
Source: Swedish Council on Information on Alcohol and Other Drugs (CAN)

Poland: seized amphetamine laboratories 2001-2007



Source: UNODC ARQ/ DELTA

Poland: seizures of ATS 2001-2007



Source: UNODC ARQ/ DELTA

While growing levels of seizures are often interpreted as an indication for rising levels of trafficking and availability, falling levels of purity between 2004 and 2007 and no major change in price may indicate the emergence of some shortage in supply. Household survey data show a strong decline in amphetamine use, from 0.9% in 2003 to 0.5% of the population (age 18-59) in 2006, as well as a strong decline in 'ecstasy' use. In light of this, intensification of police activities could be interpreted to have contributed to the decline of the market.

Data on the number of *amphetamine-group* offenders who came to the notice of the police for the first time showed a strong increase of 60% between 2001 and 2007.<sup>29</sup> A possible explanation for this discrepancy between household survey and police data could be Germany's increasing importance as an ATS transit country while domestic consumption remains declined. In contrast, both police data and household survey data show a significant decline in 'ecstasy' use; the former a 67% reduction and the latter a decline of 43%.

While total numbers remained relatively low, the number of inpatient treatment admissions for stimulants - typically associated with more problematic users - has increased by nearly 34% between 2002 and 2005. Inpatient treatment for stimulants accounted for less than 2% of all treatment admissions; outpatient treatment admissions accounted for 6.3% of all new admissions in 2006.<sup>30</sup>

## Sweden

Despite having the longest history of amphetamine use in Europe (dating back to the 1940s), use in Sweden appears to be declining since the beginning of the new millennium. With only four ATS laboratories having been reported since 2001 (mostly amphetamine), the country is not a major manufacturer of ATS; most amphetamine originates from the Netherlands, Belgium, Poland, Lithuania and Estonia. Sweden's total ATS seizures - accounting for just 1% of the global total over the 2001-2006 period - increased from 260 kg in 2001 to 489 kg in 2006 (+88%).<sup>31</sup> This seems to be largely due to increased law enforcement activities in response to the heightened use in the late 1990s.

Sweden has witnessed significant decreases in amphetamine use over the last two to three decades with annual prevalence rates at 0.2%, less than half the European average (0.5%). Lifetime prevalence of amphetamine use among military conscripts declined by half from 3.3 % in 2001 to 1.5% in 2006.

## Poland

Poland is the second most frequently mentioned source country for amphetamine trafficked in Europe. There was a decline in reported clandestine laboratories between 2005 and 2007, reversing the previous upward trend. Information on domestic use as well as information from neighbouring countries also suggest that amphetamine manufacture in Poland has declined. A new trend in ATS precursor trafficking was identified as of mid-2004 when Russian-sourced P-2-P was smuggled via organized crime groups through Baltic countries for use in large-scale amphetamine manufacturing operations in Poland, among other places.<sup>32</sup> Authorities believe that 70% of manufacture is for domestic consumption, with the remaining 30% destined for Scandinavian and other western European markets, typically trafficked via Germany. In addition to local manufacture of amphetamine, Polish authorities reported the first methamphetamine laboratory in 2007.

Consistent with reports of ATS manufacture, the bulk of reported ATS seizures are for amphetamine (97% in 2007) and to a much lesser degree for 'ecstasy' (2%) and methamphetamine (1%). ATS seizures have shown a steady increase, more than doubling since 2001, driven largely by amphetamine seizures. In 2006, Poland reported the seizure of methamphetamine (0.16 kg), rising to 5.7 kg in 2007.

In line with reports of rising supply over the period between 2001 and 2005, average street prices in Poland declined by 54% per gram of amphetamine, to €7.6 (US\$10), and by 62% for an 'ecstasy' tablet, to €2.5 (US\$3).<sup>33</sup> Based on information received in UNODC's ARQ, amphetamine prices rose again to €14.5 (US\$20) by 2007 while 'ecstasy' prices rose to €4.5 (US\$6) per tablet, suggesting that there is now less supply than just a few years ago.

29 Neighbouring Austria also reported a marked 74% upward trend in *amphetamines-group* violations between 2001-2007. In 2007, Austria reported 1,914 violations related to amphetamine (48% of all ATS related violations), 1,889 violations related to *ecstasy-group substances* (47%) and 198 violations (5%) related to methamphetamine. *Suchtmittelkriminalität, Jahresbericht 2007*, Vienna, Austria (2008).

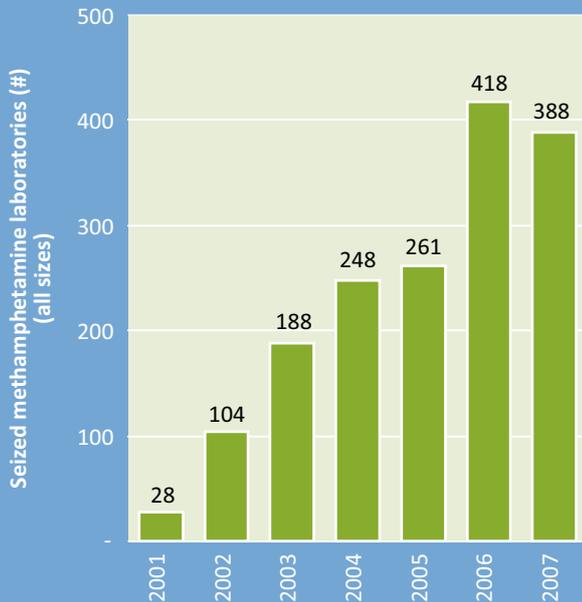
30 Germany 2007 National Report to the EMCDDA by the REITOX National Focal Point: *New Developments, Trends and in-depth information on selected issues* (2006/07). The stimulant category (ICD F15) excludes cocaine.

31 Amphetamine accounted for 86% of the total, methamphetamine for 8% and 'ecstasy' for 6% in 2006.

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

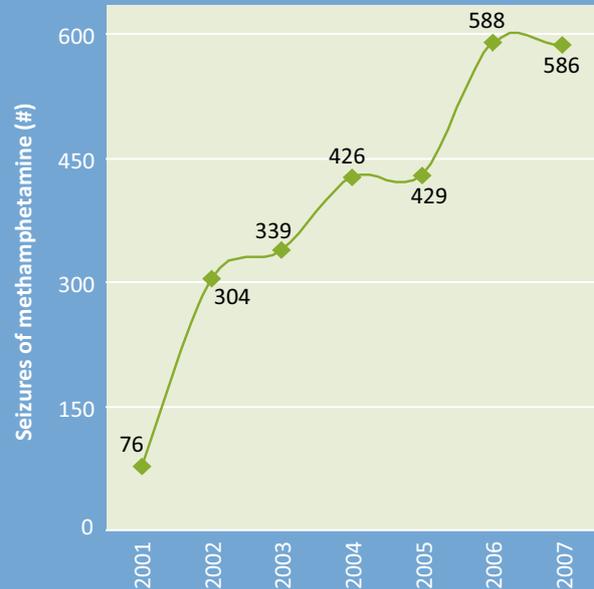
33 Purity levels, which could impact price, were not reported for amphetamine or the active ingredient in 'ecstasy' tablets. Poland 2006 National Report to the EMCDDA by the REITOX National Focal Point: *New Developments, Trends and in-depth information on selected issues*.

**Czech Republic: seized methamphetamine laboratories 2001-2007**



Source: UNODC ARQ/ DELTA

**Czech Republic: number of methamphetamine seizures 2001-2007**



Source: UNODC ARQ/ DELTA

General population surveys in Poland found a stabilization of annual amphetamine use between 2002 and 2006 at 0.7% of the population age 16-64 while 'ecstasy' use rose slightly (0.2% to 0.3%). Surveys among 15-16 year old students, in contrast, showed a marked decline in both amphetamine and 'ecstasy' use, suggesting that school-based prevention programmes yielded positive results. Lifetime prevalence of amphetamine use among 15-16 year old students fell in Poland by around 50%, from 7.4% in 1999 to 3.8% in 2007; prevalence of 'ecstasy' use declined over the same period by around 10%, from 2.8% to 2.5%.

## Czech Republic

The Czech Republic, unlike most other European countries, reports the manufacture, trafficking and use of methamphetamine (known locally as *Pervitin*)<sup>34</sup> as the primary ATS. The country accounts for 50% of all ATS laboratories detected in Europe (2001-2006), the vast majority of which are for methamphetamine manufacture mostly of small 'kitchen'-scale. In 2006, after a rapid and steady increase since the early 2000s, the number of detected methamphetamine laboratories peaked at a record 418, accounting for 88% of all European methamphetamine laboratories reported to UNODC in that year. In 2007, the Czech Republic reported the first indication of methamphetamine laboratory numbers stabilizing since the start of the millennium.

The number of reported methamphetamine seizures also showed a rapid increase between 2001 and 2007, similar to the increase in illicit laboratories. However, the amount per seizure remained small as did the total amount of methamphetamine seized (5.2 kg in 2006, down from 17.2 kg in 2001 - the largest seizures reported to date). Of the methamphetamine seizures in the Czech Republic, 88% are reported to be destined for domestic consumption, with smaller exports to Germany, Slovakia, the UK and Austria.

Nonetheless, as a consequence of domestic manufacture, the Czech Republic has the highest annual prevalence rate for methamphetamine use in Europe (0.7% of the population age 15-64) and related treatment demand and psychiatric hospital admissions. First-time methamphetamine treatment admissions increased steadily until they stabilized in 2004.

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<sup>34</sup> *Pervitin* use to be the trade name for a methamphetamine-containing pharmaceutical drug.

While absolute totals have since slightly declined, the proportion of first-time admissions for methamphetamine use compared to all drugs continued to increase. In 2006, there were more than 2,500 first-time seekers of treatment for methamphetamine, accounting for 63% of all drug-related first-time treatment demand cases.

Psychiatric hospitalizations show that stimulant admissions increased over the 2001-2006 period. With more than 1,000 psychiatric hospital admissions for stimulants use in 2006, this group of drugs accounted for more than one third of the total.<sup>35</sup> During the same period, increases were also reported for admissions related to poly-drug use, while opiate admissions decreased significantly.

## East and South-East Europe

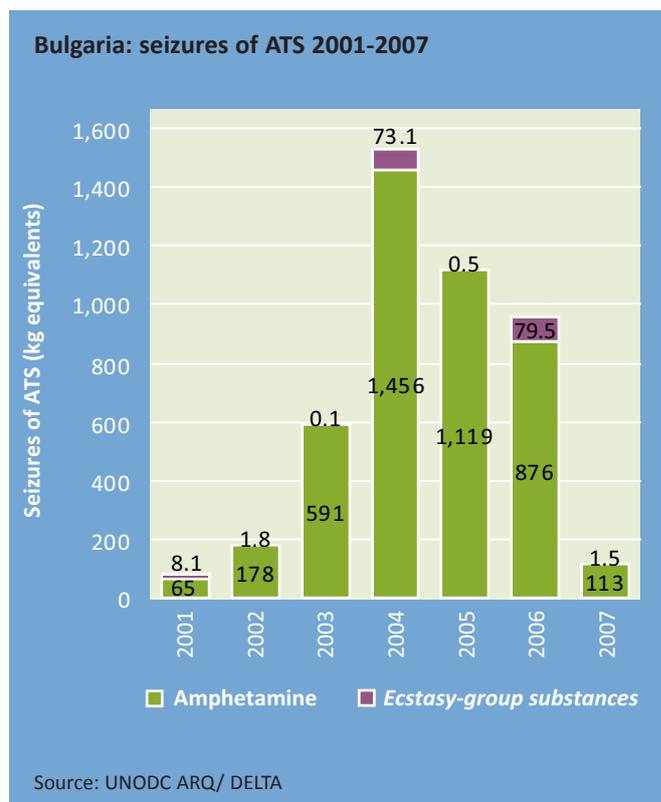
In contrast to stable or falling levels of manufacture, trafficking and consumption of ATS in West and Central Europe, the ATS market in East and South-East Europe appears to be growing.

South-East Europe has become more important in terms of manufacture and trafficking of ATS; the primary destination of ATS manufactured in the region (primarily in the form of so-called *Captagon* tablets<sup>36</sup>) are countries of the Near and Middle East where 35% of global *amphetamines-group* seizures took place in 2006. ATS manufacturing activities in South-East Europe used to be concentrated in Bulgaria, but in recent years there have been shifts towards other countries, including Turkey. Turkish authorities have additionally reported manufacturing locations in Serbia, other East European countries, and Syria in the Near and Middle East.<sup>37</sup> There are also indications that trafficking routes have expanded so that *Captagon* tablets are being smuggled into western Europe along the Balkan route and subsequently shipped by sea to markets in the Near and Middle East.<sup>38</sup> Recent years have also seen increasing trafficking and demand for *ecstasy-group substances* produced in West Europe.

### Bulgaria

Between 2001 and 2007, Bulgaria reported relatively small numbers of ATS laboratories (18 amphetamine and one methamphetamine laboratory). However, laboratories have been frequently large-scale operations associated with the manufacture of tableted amphetamine (*Captagon*) for markets in the Near and Middle East, primarily Saudi Arabia. The number of detected laboratories has been decreasing as ATS laboratories have shifted closer to the Near and Middle East and likely as a result of increased law enforcement activity following Bulgaria's EU membership. In 2007 only one amphetamine laboratory was dismantled.

Amphetamine seizures increased from 65 kg in 2001 to 1.45 mt in 2004 before falling to 113 kg in 2007. In addition, nominal amounts of methamphetamine were reportedly seized in 2003 and 2005. *Ecstasy-group* seizures have increased ten-fold from 8 kg in 2001 to almost 80 kg in 2006 (with Turkey the primary destination), before falling back to just 1.5 kg in 2007. This seems to suggest that domestic manufacture and trafficking in ATS have been declining in recent years, thus reversing the previous upward trend which had also resulted in increases of domestic amphetamine and 'ecstasy' consumption after 2002.



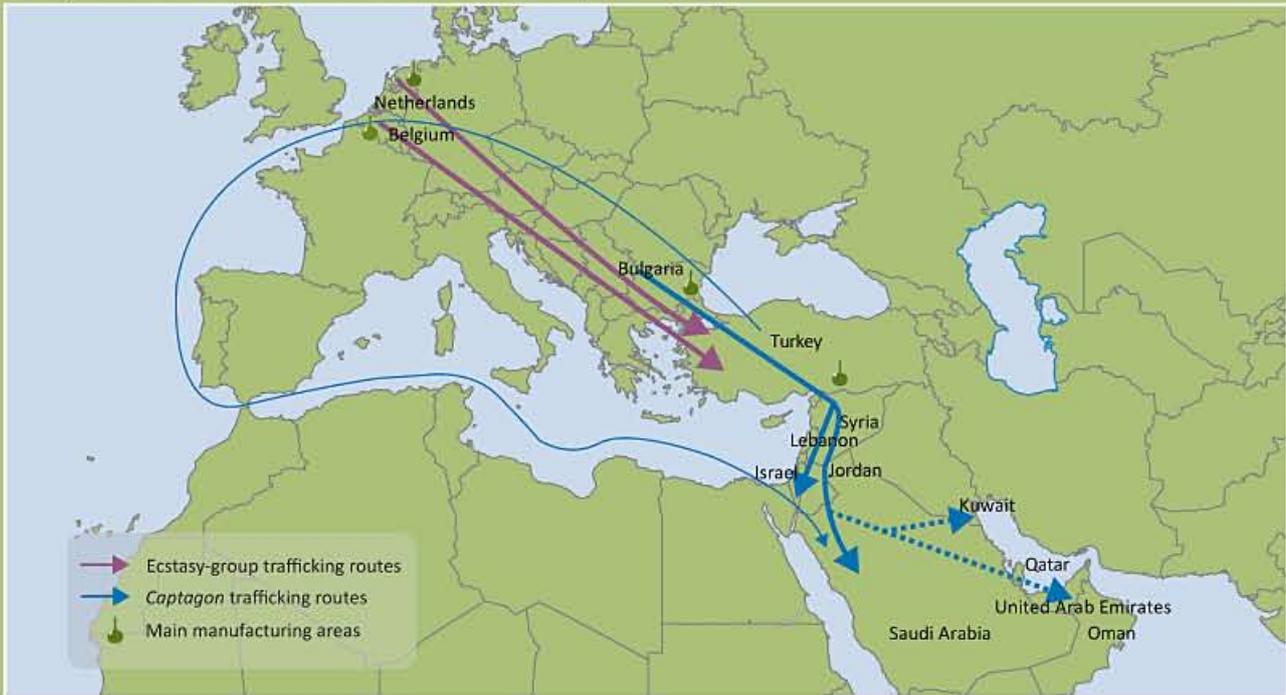
35 Drug Situation in the Czech Republic in 2006 - Annual Report Summary, *Zaostřeno na drogy* (Dec 2007); The stimulant category (ICD F15) excludes cocaine.

36 *Captagon* used to be the trade-name for fenetylline, but forensic analyses made in recent years suggest that substances sold as *Captagon* are mostly amphetamine tablets, mixed with other substances (often caffeine).

37 Ministry of Interior, Turkish National Police, Department of Anti-Smuggling and Organized Crime, *Turkish Report on Drugs and Organized Crime 2007*, Ankara, Turkey (Feb 2008).

38 Ministry of Interior, Turkish National Police, Department of Anti-Smuggling and Organized Crime, *Turkish Report on Drugs and Organized Crime 2007*, Ankara, Turkey (Feb 2008).

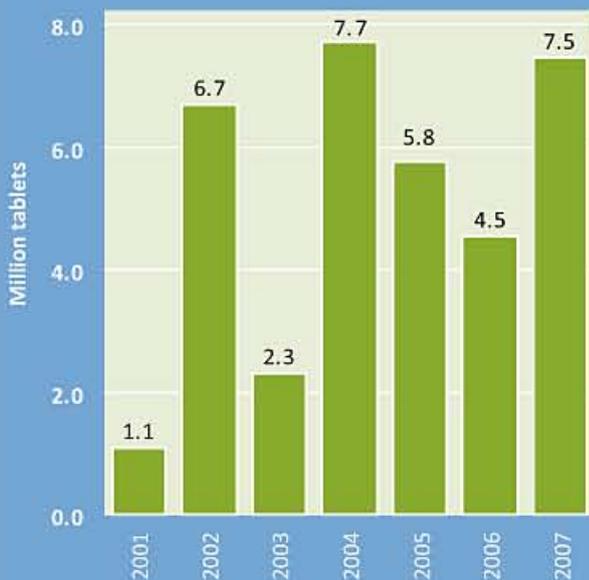
## Turkey: common ATS sources and notable trafficking routes



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

Source: UNODC, ARQ; Turkish National Police (Regional Conference on Mechanisms for Suppression and Prevention of International Illicit Trading in Precursors and Synthetic Drugs, Belgrade, June 2005); World Customs Organization (WCO), *Customs and Drugs Report 2007* (June 2008)

## Turkey: seizures of Captagon tablets 2001-2007



Source: Ministry of Interior, Turkish National Police, *Turkish Drug Report 2005 and 2007*

## Russia: seized ATS laboratories 2001-2006



Source: UNODC ARQ/ DELTA

## Turkey

In Turkey which has not traditionally been associated with significant ATS manufacture, ATS laboratory activity has been reported since 2000. Though most laboratories were regarded as small amateur facilities, Operation KİLİT in 2002 revealed more sophisticated manufacturing operations utilizing foreign chemists, staged operations, and significantly larger facilities.<sup>39</sup> The largest number of clandestine amphetamine (*Captagon*) laboratories was reported in 2006 (12), which included both manufacturing and tableting operations. At least two of those laboratories were located in industrial facilities, hinting at the possible size of operations. 2006 also saw the largest seizure in recent years of P-2-P (197 lt.).

Regional trafficking in ATS has significantly increased, with seizure totals of amphetamine, methamphetamine and non-specified amphetamines rising from just 33 kg in 2001 to 729 kg in 2006. Amphetamine seizures alone increased from 52 kg in 2005 to 130 kg in 2006 and 233 kg in 2007.<sup>40</sup>

Seizures of *Captagon* tablets rose from 1.1 million tablets in 2001 to 7.5 million in 2007 (though the latter figure is still below the peak of 7.7 million tablets seized in 2004). Of the tablets seized in 2007, 4.3 million were seized in joint operations with Saudi Arabia and 0.5 million in joint operations with Bulgaria. Amphetamine manufactured domestically and in Bulgaria transits to markets primarily in Saudi Arabia, Syria, Israel, Jordan, Kuwait, and the UAE.<sup>41</sup> There are indications that trafficking routes expanded in response to increased enforcement efforts in the Near and Middle East, so that *Captagon* tablets are now also being smuggled into western Europe along the Balkan route and subsequently shipped by sea to markets in the Near and Middle East. For example, the largest customs seizure of *Captagon* in 2007 - 6 million tablets - was made in Saudi Arabia after Turkish sourced *Captagon* was first trafficked to Belgium and then via sea freight to Saudi Arabia.<sup>42</sup>

Turkish authorities have also identified locations for the manufacture of *Captagon* tablets in Serbia, other East European countries, as well as in Syria,<sup>43</sup> close to the Turkish border. 93% of *Captagon* seizures in 2007 were made in provinces along the border with Syria and 6% in Istanbul. Despite increases in manufacture and trafficking, domestic consumption of *Captagon* has not been reported thus far.

'Ecstasy' seizures increased from 12 kg in 2001 to 159 kg in 2006 but appear to have declined by 31% in 2007. 86% of the total 'ecstasy' seizures were made in Istanbul in 2007, reflecting the city's position as a centre for distribution and storage for 'ecstasy' within Turkey.<sup>44</sup> 'Ecstasy' is typically sourced in the Netherlands and Belgium and transits over land routes. Initially fuelled by foreign tourists, the domestic 'ecstasy' market continues to expand.<sup>45</sup>

## Russian Federation

Russia consistently reports some of the highest numbers of ATS laboratories in Europe (775 or 68% of all European amphetamine laboratories in 2001-2006). Though prevalence rates for the country as a whole are still low, ATS have become commonplace on illicit markets in urban centres.<sup>46</sup> In 2003, *ecstasy-group* use in Moscow was reported to have affected 3% of 15-16 year old students (as high as the European average) and *amphetamines-group substances* were used by 1% of students in Moscow (European average: 2%).<sup>47</sup> The majority of laboratories in Russia reportedly manufacture amphetamine or a combination of ATS. Ongoing seizures of ephedrine and to a lesser extent pseudoephedrine point towards the manufacture of methamphetamine and methcathinone,<sup>48</sup> however, there are also indications of methamphetamine manufacture starting from P-2-P. Laboratory operations reportedly occur in St. Petersburg, in Central Russia

39 Turkish National Police, Regional Conference on Mechanisms for Suppression and Prevention of International Illicit Trading in Precursors and Synthetic Drugs, Belgrade, Serbia (June 2005).

40 Ministry of Interior, Turkish National Police, Department of Anti-Smuggling and Organized Crime, *Turkish Report on Drugs and Organized Crime 2007*, Ankara, Turkey (Feb 2008).

41 Turkish National Police, Regional Conference on Mechanisms for Suppression and Prevention of International Illicit Trading in Precursors and Synthetic Drugs, Belgrade, Serbia (June 2005).

42 World Customs Organization (WCO), *Customs and Drugs Report 2007* (June 2008).

43 Ministry of Interior, Turkish National Police, Department of Anti-Smuggling and Organized Crime, *Turkish Report on Drugs and Organized Crime 2007*, Ankara, Turkey (Feb 2008); and information provided by the Turkish delegation to an OSCE conference, held 17-18 July 2008 in Vienna.

44 Ministry of Interior, Turkish National Police, Department of Anti-Smuggling and Organized Crime, *Turkish Report on Drugs and Organized Crime 2007*, Ankara, Turkey (Feb 2008).

45 For the first time in 2006, in their ARQ Turkish authorities noted large increases in the use of 'ecstasy' and to a lesser degree of *amphetamines-group substances*.

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

47 Council of Europe (Pompidou Group), *The ESPAD Report 2003, Alcohol and Other Drug Use Among Students in 35 European Countries*, Stockholm, Sweden (2004).

48 A lack of forensic data precludes the identification of the specific end-product.

(including Moscow), and in the southern and eastern regions. Manufacture is mainly for the local market with little indication that it is intended for export markets.<sup>49</sup>

While overall decreases in total ATS laboratories have been reported, concerns remain that domestic amphetamine manufacture could potentially increase in the future. As of mid-2004, Russia was also reported to have temporarily replaced China as the main source for P-2-P found in western Europe. The P-2-P was smuggled via the Baltic States and destined for large-scale illicit amphetamine operations in the Netherlands and, to a lesser extent, in Belgium and Poland.<sup>50</sup>

### **Moldova**

Moldova has been reporting significant numbers of clandestine methamphetamine laboratories; 136 laboratories were reported in 2004, 49 in 2005, and 56 in 2006. The country ranks fourth highest in reported methamphetamine laboratories globally since 2004 despite the small size of the country. Manufacturing levels appear to be modest given that all laboratories were of the 'kitchen'-type; seizures reported in 2004, 2005 and 2006 have all been of small amounts (between 2.2 kg and 2.5 kg). Manufacture is primarily for domestic consumption with no indication of significant trafficking across borders. Prior to 2004, a substantial number of laboratories discovered in Moldova were methcathinone (e.g. 13 in 1997), suggesting that there has been a shift to the manufacture of methamphetamine since. Consistent with these trends, national experts reported some increase in *amphetamines-group* and *ecstasy-group* use in 2004 and 2006.

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49 The ARQs indicate that Belarus receives ATS from Russia, but in limited amounts.

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



# AFRICA

## Regional overview

There are indications that African countries are increasingly being targeted by transnational organized crime groups as transshipment points for illicit drugs and trafficking of ATS precursors mainly for use in clandestine methamphetamine laboratories in North America. This is of concern since the amount of drug information available for the continent, while slightly improved since 2001, remains extremely limited for nearly all subregions. While there are reports of increases in illicit ATS manufacturing activities and spreading use of ATS, the quality and availability of data (particularly that relating to prevalence), remains inadequate.

The current situation assessment relies in part on sporadic studies and anecdotal reports. The two exceptions to this broad generalization come from South Africa and Egypt, where the ATS problem is already a significant concern. A comprehensive assessment of the ATS situation for Africa as a whole remains hindered by a lack of prioritization of ATS and precursors, lack of resources and a lack of a national and regional data infrastructure to allow for consistent and timely reporting. The combination of weak regulatory and/or law enforcement infrastructure makes Africa vulnerable to increased ATS manufacture, trafficking and use.

### Africa: ATS laboratories, seizures, and annual prevalence rates 2001-2006

MEASURE	DRUG GROUP	2001	2002	2003	2004	2005	2006
Laboratory (#)	Methamphetamine		1		4	11	17
	Amphetamine						
	Other synthetic/ combined stimulants		13	36	23	28	18
	Ecstasy-group substances	5		1	1		
	<b>Total</b>	<b>5</b>	<b>14</b>	<b>37</b>	<b>28</b>	<b>39</b>	<b>35</b>
Seizures (kg)	Methamphetamine	1.4	0.1	0.0			1.1
	Amphetamine	4.6	2.1	0.6		0.0	1.0
	Non-specified amphetamines	18.7	14.1	2,327.3	348.2	2,064.5	833.1
	Ecstasy-group substances	10.3	58.9	40.6	195.6	1.4	27.5
	<b>Total</b>	<b>35.1</b>	<b>75.2</b>	<b>2,368.5</b>	<b>543.8</b>	<b>2,065.9</b>	<b>862.6</b>
Annual Prevalence (15-64)*	Amphetamines-group substances	0.5%	0.4%	0.4%	0.4%	0.4%	0.4%
	Ecstasy-group substances	0.00%	0.02%	0.03%	0.04%	0.04%	0.04%

\* Prevalence estimates were standardized for population 15-64 years of age beginning 2004, thus prior years are only broadly comparable.

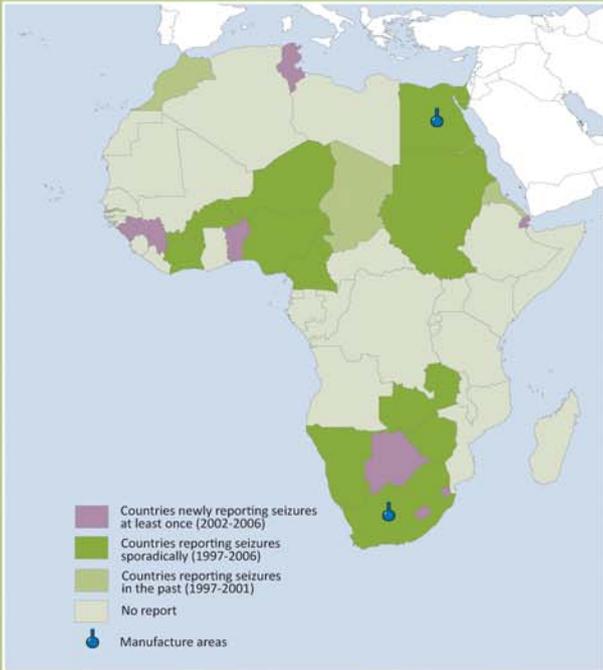
Source: UNODC ARQ/ DELTA; World Drug Report 2004-2008; Global Illicit Drug Trends 2003

Reports of clandestine ATS manufacture have been generally limited to two subregions: northern Africa and southern Africa, with the latter accounting for almost all reported ATS manufacture on the continent. This included the illicit manufacture of 'ecstasy' in 2001 and 2003 and, more importantly, a steady increase in methamphetamine manufacture since 2002. In North Africa, Egypt has a history of some stimulant manufacture, possibly methamphetamine in a form locally known as *Maxiton Forte* prior to 2000, and one reported case of 'ecstasy' manufacture in 2004.

Although ATS seizure data throughout Africa is limited, the trend which is discernable points to a geographic spread of ATS trafficking, though quantities seized thus far have been small. At some point during the five years prior to 2001, 15 African countries reported ATS seizures to UNODC. By 2006 the number had increased to include seven new countries mostly in Western Africa (Benin, Cameroon, Guinea, and Togo), as well as Djibouti in eastern Africa and Namibia and

# 2008 GLOBAL ATS ASSESSMENT

## Africa: countries reporting ATS seizures (any amount) 1997-2006



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

Source: UNODC ARQ/ DELTA

## South Africa: seized methamphetamine and methcathinone laboratories 2002-2006



Source: UNODC ARQ/ DELTA

## South Africa: seized methamphetamine precursors\* 2001-2006



\* Includes ephedrine and pseudoephedrine

Source: INCB, *Precursors and chemicals frequently used in the illicit manufacture of narcotic drugs and psychotropic substances*, 2007 (March 2008) and previous years

## South Africa: drug-related crime rate 2002-2007



Source: South African Police Services, *Annual Report of the South African Police Services, 2006/07*

Swaziland in southern Africa. Seizures of *ecstasy-group substances* in the five years prior to 2001 were reported by only four countries, but the number increased to 17 by 2006, including first-time seizures reported in Botswana, the Central African Republic, Côte d'Ivoire, Lesotho, Libya, Mauritius, Morocco, Sudan, and Zambia.

Increased trafficking activities and shifts in trafficking routes have also been reported for ATS precursors, with substantially higher volumes than for ATS end-products. Recent data suggest that precursor chemicals of significant tonnage, primarily pseudoephedrine and ephedrine, were either destined for or smuggled through Burundi, Congo (DR), Ethiopia, Ghana, Kenya, Nigeria, Somalia, Sudan, and the United Republic of Tanzania. In addition Zambia reported increases in domestically diverted pharmaceutical preparations containing ephedrine, although it remains unclear whether the ephedrine was intended for direct consumption, parallel pharmaceutical markets or for illicit manufacture of methamphetamine.

ATS use has been previously reported in many African countries, including Burkina Faso, Côte d'Ivoire, Egypt, Ghana, Nigeria, Senegal, Sierra Leone and South Africa. However, in the absence of reliable prevalence data on ATS use, it is difficult to assess its extent, but it is thought to be below the global average. Much of the increase reported thus far has been from South Africa where use of methamphetamine, methcathinone and 'ecstasy' appear to have increased. In particular the region in and around Cape Town was affected by this. In Nigeria, methamphetamine appears to have shifted from the northern parts of the country towards the southwest, notably among youth.<sup>1</sup>

The following section focuses on the two countries where available data allow for a limited analysis of the evolution of ATS since 2001, South Africa and Egypt. Burkina Faso is included as an example of a country in Western Africa, a sub-region where reports point to possible large-scale trafficking and use of ATS.

## South Africa

ATS manufacture and use have increased in South Africa since 2001. This includes 'ecstasy', methamphetamine (known locally as 'tik') and methcathinone (known locally as 'cat'). The number of ATS-related clandestine laboratories has grown from five 'ecstasy' laboratories in 2001 to 35 ATS laboratories of various types and sizes in 2006, although with substantial fluctuation over the years.

Historically, the majority of ATS laboratories were seized in the Gauteng Province in the northeast of the country. Other than 'ecstasy', most of the early laboratories were for methcathinone (93% in 2002).<sup>2</sup> However, since 2004 methamphetamine has become more prominent and by 2006, methamphetamine accounted for about half of all reported laboratories.

As a significant importer of licit ephedrine and pseudoephedrine, and with increases in reported laboratories, there is concern that domestic diversion of precursors into the illicit ATS market may be occurring in South Africa. Since 2001, reported seizures of methamphetamine precursors (including ephedrine and pseudoephedrine) have fluctuated widely, albeit with annual totals of less than 100 kg and mostly even less than 15 kg. It is evident that seizures of precursors do not follow the trend observed with illicit laboratories. For example, in 2006, the year with the highest incidence of clandestine methamphetamine laboratory seizures (17), only 10 kg of ephedrine were reportedly seized.

The growth in manufacture is related to increasing domestic consumption and is also reflected in increasing drug-related crime rates (i.e. an increase of 87% between 2002 and 2007). The limited seizure data available from countries close to South Africa provide little indication that methamphetamine manufactured in South Africa is exported. In addition to being domestically manufactured, methamphetamine continues to be trafficked into South Africa, sometimes with links to Asian transnational organized crime groups. This is often in the form of a barter trade with methamphetamine being trafficked into the country in exchange for illicitly harvested rare shellfish that are of high value in the Asian market, a phenomenon seen in other countries (e.g. New Zealand).<sup>3</sup> In 2006 South Africa reported a notable seizure of methamphetamine (27 kg) allegedly originating from Mozambique.<sup>4</sup>

Increases can also be seen in domestic consumption, as reflected in methamphetamine treatment admissions. For example, in Cape Town, the centre of much of the methamphetamine use in South Africa, demand for methamphetamine treatment increased rapidly from below 1% of all treatment admissions at the end of 2002 to 38% by 2007. Recent admission data suggest that methamphetamine use has shown its first signs of stabilization in Cape Town, but appears

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1 Makanjuola A.B., Daramola T.O. & Obembe A.O., *Psychoactive substance use among medical students in a Nigerian university*, World Psychiatry (2007); Abdulkarim A.A., Mokuolu O.A. & Adeniyi A., *Drug use among adolescents in Ilorin, Nigeria*, Tropical Doctor (2005).

2 Globally, methcathinone laboratories are typically reported by the USA, South Africa and Russia (where it is known as ephedrone).

3 The Institute for Security Studies, *The illicit abalone trade in South Africa - ISS Paper No 105* (April 2005).

4 Note: to date Mozambique has never reported any ATS seizure to UNODC.

## South Africa, Cape Town: methamphetamine admissions relative to all admissions 2001-2007



\* Includes Cape Town, Atlantic, and Worcester

Source: SACENDU, *Monitoring Alcohol and Drug Abuse Trends in South Africa* (2008)

to be spreading east to Port Elizabeth and East London, to Pretoria, and other locations in the north-eastern Gauteng Province.<sup>5</sup> In Gauteng Province, 3% of patients reported methcathinone as their primary substance of abuse, a trend that has remained stable.

## Egypt

Egypt is the other country in Africa with some available information on the ATS market. Specifically, there was limited clandestine manufacture of what is locally known as *Maxiton Forte*<sup>6</sup> (believed to be methamphetamine) prior to 2000. In addition, a case of attempted 'ecstasy' manufacture occurred in Alexandria in 2004.<sup>7</sup>

Over the 2001-2006 period, ATS seizures remained negligible. The reported totals of 16 kg in 2001 continued to decline down to 2 kg in 2006.<sup>8</sup> Contrary to the limited quantities ATS end-products seized, there were cases of significant diversion and attempted diversion of ATS precursors (mainly ephedrine and pseudoephedrine) in 2007.

In terms of the extent of ATS use in Egypt, a recent study examining students at Egyptian state universities across the country found that 2.2% of students had a life-time prevalence of synthetic stimulant use, of which approximately a third admitted current use.<sup>9</sup> A 2005/06 national survey assessing drug use in eight regions revealed that 10% of the population (aged 15 and older) had used drugs, with 3.1% being considered experimental users, 4.8% regular users, and 1.6% dependent users. 5.3% of those surveyed admitted using stimulants.<sup>10</sup> The annual prevalence of *amphetamines-group* use can be thus estimated at around 0.5% of the population age 15-64 which is close to the global average (0.6%).

5 SACENDU, Research Brief Vol 11(1), *Monitoring Alcohol and Drug Abuse Trends in South Africa* (2008).

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

7 USA Department of State, *International Narcotics Control Strategy Report (INCSR) 2008*, Vol 1 (March 2008).

8 *Maxiton Forte* seizures are typically reported in liquid form. For the purposes of standardized reporting, litres are converted into kilogram equivalents at the ratio of 1 lt. = 1 kg. A lack of forensic data precludes a determination of the proportion of active ingredient in the liquid form, i.e. whether it is the drug in liquid form or whether it is a solution of the drug.

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

10 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 (2007).

## Central and Western Africa

Detailed information related to ATS use in other parts of Africa is extremely limited. Use has been reported in several countries in Central and Western Africa (including Côte d'Ivoire, Ghana, Nigeria, Senegal and Sierra Leone), and is reportedly spreading. Given the existence of unregulated (parallel) markets throughout the region, much of the ATS use in Western Africa is assumed to be primarily linked to diverted medical preparations containing various types of ATS.

In Nigeria, methamphetamine (known locally as 'kwaya' or 'paya') was most commonly reported in the northern parts of the country, but recently has been identified as being also used by adolescent students (10-19 years old; 6.7% lifetime prevalence) and university medical students (2.1% lifetime prevalence) in the south-western city of Ilorin and its surrounding catchment area.<sup>11</sup> Considering the lack of infrastructure in most of the Central and Western African region, assessing the scope of the ATS problem is especially challenging.

### Burkina Faso

Among the countries in Western Africa, Burkina Faso has received significant attention in recent years, because of reports of significant seizures of (non-specified) ATS. For example, in 2003, Burkina Faso reported the seizure of 2.3 mt of synthetic drugs, including amphetamine, sourced from India, China, and other Asian countries, as well as methamphetamine, trafficked from Nigeria. In 2004, 343 kg of non-specified amphetamines were reported to have been seized, and in 2005, authorities reported the seizure of another 982 kg of non-specified amphetamines (initially reported as methamphetamine), which were believed to have been sourced from India and other Asian countries. There were also seizures in 2005 of a total of 14.7 mt of non-specified amphetamines, reported as '*médicaments de rue*'. They allegedly included combinations of amphetamine, sedatives and other drugs, and were seized from unregulated, parallel markets. A similar seizure of 6.3 mt of '*médicaments de rue*', believed to be sourced from Nigeria and Ghana, was reported in 2006. Due to the unavailability of forensic data and contextual information, the actual content, the source and the destination of these substances remain undetermined. However, if reported seizure data were even partly accurate, they would represent some of the largest seizures of ATS in Africa, highlighting the vulnerability of countries in Western Africa to large-scale ATS trafficking and use.

Although data on ATS use in Burkina Faso is extremely limited, as in other parts of Africa, authorities have indicated that the most significant drugs of abuse in 2005 were ATS and that their use was strongly increasing. According to 2006 treatment data from a psychiatric hospital in the capital Ouagadougou, 28% of all treatment episodes were for *amphetamines-group substances*.

The example of Burkina Faso highlights a problem faced by many other African countries, namely the supply of pharmaceuticals containing ATS via unregulated, parallel (or 'grey') distribution channels. Since interventions to halt this type of activity are different from those required to prevent and reduce illicit ATS manufacture, trafficking and use, the availability of more accurate and timely data is essential.

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11 Makanjuola A.B., Daramola T.O. & Obembe A.O., *Psychoactive substance use among medical students in a Nigerian university*, World Psychiatry (2007); Abdulkarim A.A., Mokuolu O.A. & Adeniji A, *Drug use among adolescents in Ilorin, Nigeria*, Tropical Doctor (2005).



# NORTH AMERICA

## Regional overview

North America continues to be one of the largest markets for ATS in the world with demand for mostly methamphetamine and *ecstasy-group substances*. Overall the region can best be described as in flux as a result of increased domestic precursor controls shifting significant manufacture from the USA to large production facilities operated by Mexico-based organized crime groups and to a lesser degree Asian organized crime based in Canada. Beginning in 2003, *ecstasy-group* manufacture increased in North America, due to enforcement efforts in West Europe which shifted some manufacture closer to consumer markets around the world. While most manufacture is destined for the regions' domestic markets, increases in manufacture and trafficking sophistication by Canadian-based Asian organized crime has led to a notable increase of methamphetamine and 'ecstasy' trafficking outside the region - notably into Asia. However, ATS prevalence rates since 2001 have overall remained relatively steady, with stabilization or slight decline in the USA and Canada, and some increases in Mexico.

### North America: ATS laboratories, seizures, and annual prevalence rates 2001-2006

MEASURE	DRUG GROUP	2001	2002	2003	2004	2005	2006
Laboratory (#)	Methamphetamine	8,022	9,048	10,238	17,256	12,207	6,878
	Amphetamine	52		11	124	9	29
	Other synthetic/ combined stimulants	4	9	33	28	36	12
	<i>Ecstasy-group substances</i>	19	18	25	41	37	35
	<b>Total</b>	<b>8,097</b>	<b>9,075</b>	<b>10,307</b>	<b>17,449</b>	<b>12,289</b>	<b>6,954</b>
Seizures (kg)	Methamphetamine	3,310.4	1,592.7	4,611.2	4,087.7	6,106.8	5,353.1
	Amphetamine	184.9	11.7	121.3	0.6	45.5	1.9
	Non-specified amphetamines	0.1	0.1	1.9	52.5	147.4	1,244.2
	<i>Ecstasy-group substances</i>	1,462.3	855.9	446.6	1,744.5	1,076.9	1,532.2
	<b>Total</b>	<b>4,957.6</b>	<b>2,460.4</b>	<b>5,181.0</b>	<b>5,885.2</b>	<b>7,376.7</b>	<b>8,131.5</b>
Annual Prevalence (15-64)*	<i>Amphetamines-group substances</i>	0.8%	1.3%	1.1%	1.1%	1.3%	1.3%
	<i>Ecstasy-group substances</i>	1.1%	1.3%	0.8%	0.8%	0.8%	0.8%

\* Prevalence estimates were standardized for population 15-64 years of age beginning 2004, thus prior years are only broadly comparable

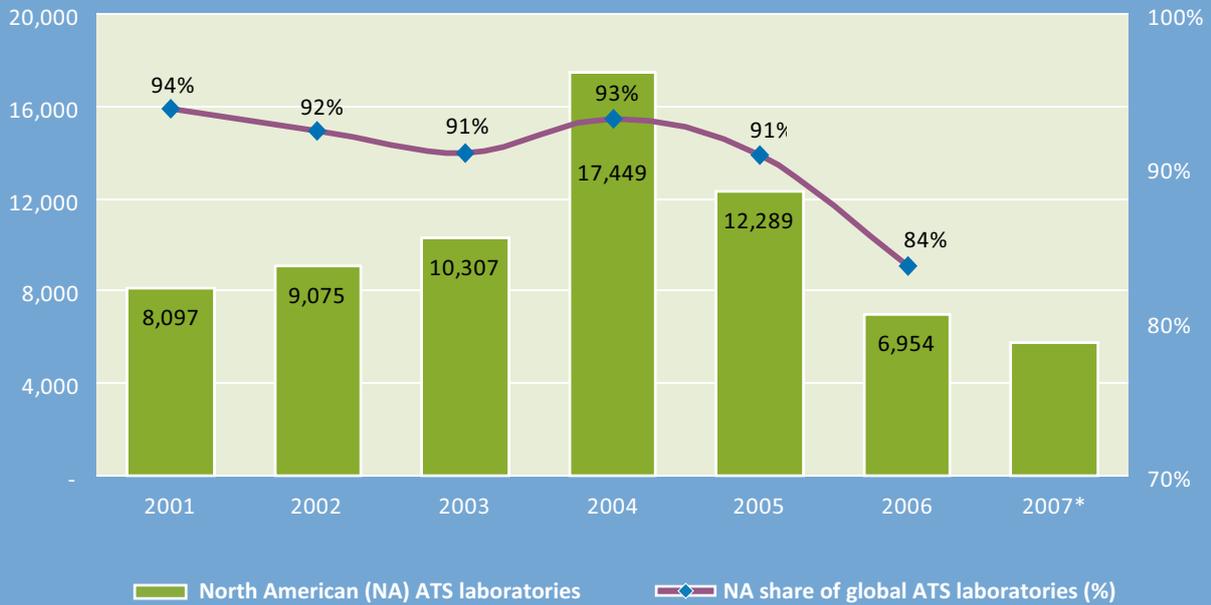
Source: UNODC ARQ/ DELTA; *World Drug Report 2004-2008*; *Global Illicit Drug Trends 2003*

The number of reported clandestine ATS laboratories (majority methamphetamine) in North America has been declining - from 2004 to 2006 there was a 60% drop - the result of fewer reported methamphetamine laboratories from the USA. Most of the methamphetamine consumed in the USA is now sourced from Mexico-based operations, which can be seen in increasing border seizures. The shift of significant manufacture into Mexico has increased both drug-related violence and drug use especially along the northern border regions. To combat domestic manufacture, Mexican authorities began restricting precursors chemical imports for pseudoephedrine and ephedrine in 2007, and by June 2008, Mexico took the unprecedented step of effectively banning all pseudoephedrine and ephedrine-containing products.<sup>1</sup> With increases in clandestine laboratories reported in other regions of the world, the decline in North American laboratories reduced their global proportion of total reported laboratories from 94% of all ATS reported in 2001 to 84% in 2006.

One of the biggest changes in global manufacture of ATS has been the increase of *ecstasy-group* manufacture in North America. Beginning around 2003, both Canada and USA began reporting increased *ecstasy-group* laboratories, which allowed for illicit manufacture closer to the user market thereby lowering the likelihood of interception. In 2007, Mexico

1 Diario Oficial de la Federación, México, D.F., Secretaría de Gobernación (June 16, 2008).

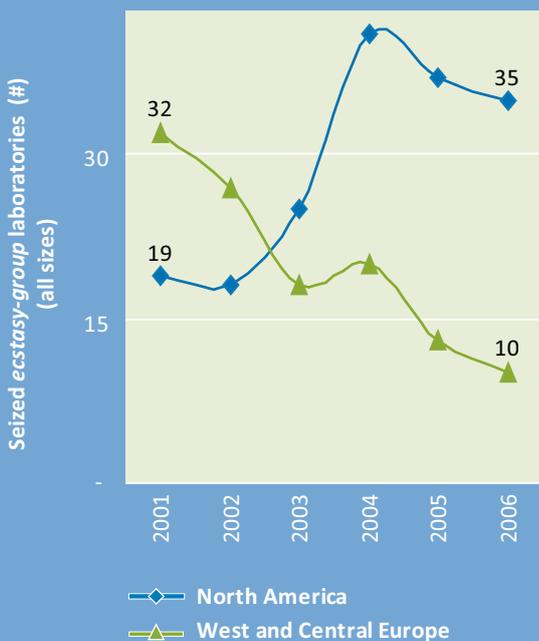
## North America: seized ATS laboratories (all sizes) and global proportion 2001-2007



\* Preliminary estimate

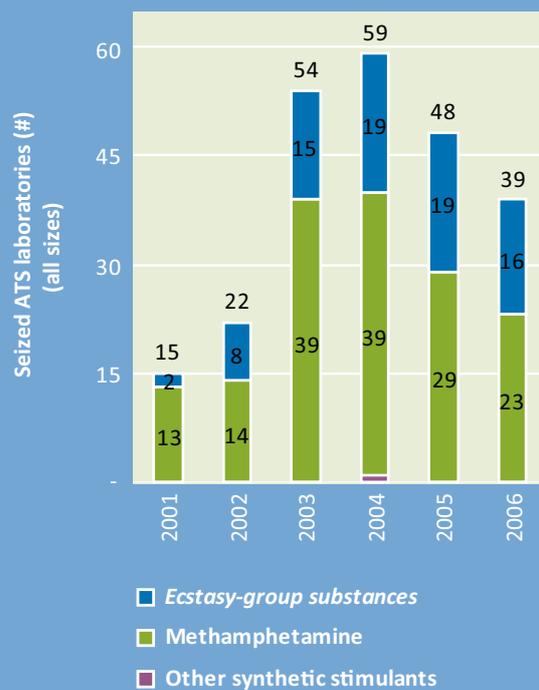
Source: UNODC ARQ/ DELTA

## North America and West and Central Europe: seized ecstasy-group laboratories 2001-2006



Source: UNODC ARQ/ DELTA

## Canada: seized ATS laboratories 2001-2006



Source: UNODC ARQ/ DELTA

reported seizing an *ecstasy-group* laboratory, its first since 2002. Unlike the USA, industrial-sized ATS laboratories account for a majority of laboratory seizures reported by Canada and Mexico.<sup>2</sup>

Most ATS trafficking is intra-regional and from 2001-2006, an average of 5.7 mt of ATS were seized annually. Methamphetamine accounted for an average of 74% and *ecstasy-group substances* accounted for 21% of seized amounts. Since 2002, the number of kilograms seized has steadily increased peaking at 8.1 mt in 2006, while the number of reported seizures declined, pointing to increases in the average amounts trafficked per incident. Canada has increased manufacture of ATS and has more recently become an exporter to regions outside North America.

While overall regional annual prevalence estimates remain roughly unchanged methamphetamine use among North American youth fell between 2001 and 2007; an average drop of 58% for students in the USA and 64% for students in Canada.<sup>3</sup> These declines reflect increased risk awareness, improved precursor controls, and continued law enforcement efforts. Increased use of methamphetamine in Mexico, particularly along border region in the north and west, were associated with increases in manufacture.

The information presented in this chapter begins with the changing situation in Canada and moves into the USA - the biggest overall consumer market in North America - and continues south through Mexico.

## Canada

Between 2003 and 2004, substantial changes began occurring in the Canadian ATS market, when the country emerged as a notable source for ATS manufacture and export - primarily *ecstasy-group substances* but increasingly methamphetamine. Canadian ATS is primarily for domestic consumption but is also trafficked to the USA, and increasingly to markets outside of North America, including Australia and Japan.<sup>4</sup> The increases in *ecstasy-group* manufacture in Canada partly represent shifts from other regions globally and may be related to decreases in reported 'ecstasy' laboratory seizures in West Europe, primarily in the Netherlands and Belgium. The number of reported *ecstasy-group* laboratories does not reflect the rapidly increasing size and sophistication of the operations. As of 2006, all *ecstasy-group* laboratories were large capacity facilities controlled by organized crime. Facilitating the increase have been various organized crime groups, which have rapidly increased from nearly 800 in 2006 to 950 in 2007 (representing an increase of 19%).<sup>5</sup>

In 2006, 65% of methamphetamine laboratories seized were reportedly large capacity, with precursors sourced primarily from Asia via various Asian-organized crime groups.<sup>6</sup> At the same time, methamphetamine is increasingly found in tablet form which is common to subregions in East and South-East Asia - another possible indication of increased Asian organized crime. The trend in tablets is likely to attract new user groups who often view them as "safer" drugs. In addition, clandestine Canadian laboratories are also producing methamphetamine in high purity crystalline form.<sup>7</sup> While the majority of laboratories are in the west, there has been a gradual eastward expansion of ATS manufacture since 2002, a trend similar to the USA years earlier. Involvement of domestic outlaw motorcycle gangs (principally the Hells Angels) have been identified.

Prior to 2004, importation of large shipments of West European powdered *ecstasy-group substances* occurred via Dutch and Israeli-based crime groups for tableting operations in Canada and subsequent distribution.<sup>8</sup> However, this declined as Asian organized crime groups in Canada replaced West Europe as the primary supplier of *ecstasy-group substances* destined for the USA. The amount of Canadian manufactured *ecstasy-group substances* seized by the USA authorities jumped from 1.1 million doses in 2004 to 5.5 million doses in 2006.<sup>9</sup> Increased exportation to the Australian market was also reported - in 2006 1.2 million 'ecstasy' tablets originating in Canada were seized in Melbourne.

Canadian-sourced methamphetamine has appeared increasingly trafficked overseas as organized crime networks of principally Asian origins, expand their operations. For example, Canadian methamphetamine has been expanding into the lucrative Japanese market, accounting for 7% of Japan's identified seizures in 2003 and rising to 21% in 2006. By 2007,

2 According to the USA Department of State, a mega-lab is defined as the capability to produce 1,000 kg or more per production cycle and a super-lab is defined as the capability to produce 10 lbs (4.5 kg) or more per production cycle. USA Department of State, *International Narcotics Control Strategy Report (INCSR) 2008*, Vol 1 (March 2008).

3 NIDA, *Monitoring the future, overview of key findings in 2007*, Bethesda Maryland, USA (April 2008); CAMH, *Drug Use among Ontario Students, 2001-2007*, Toronto, Canada (2007).

4 Royal Canadian Mounted Police (RCMP), *Drug Situation Report 2006* (2007); USA National Drug Intelligence Center, *National Drug Threat Assessment 2008* (Nov 2007).

5 USA Department of State, *International Narcotics Control Strategy Report (INCSR) 2008*, Vol 1 (March 2008).

6 USA National Drug Intelligence Center, *National Methamphetamine Threat Assessment 2008* (Dec 2007).

7 Royal Canadian Mounted Police (RCMP), *Drug Situation Report 2004* (Sept 2005); Royal Canadian Mounted Police (RCMP), *Drug Situation Report 2006* (2007).

8 Royal Canadian Mounted Police (RCMP), *Drug Situation Report 2001* (April 2002).

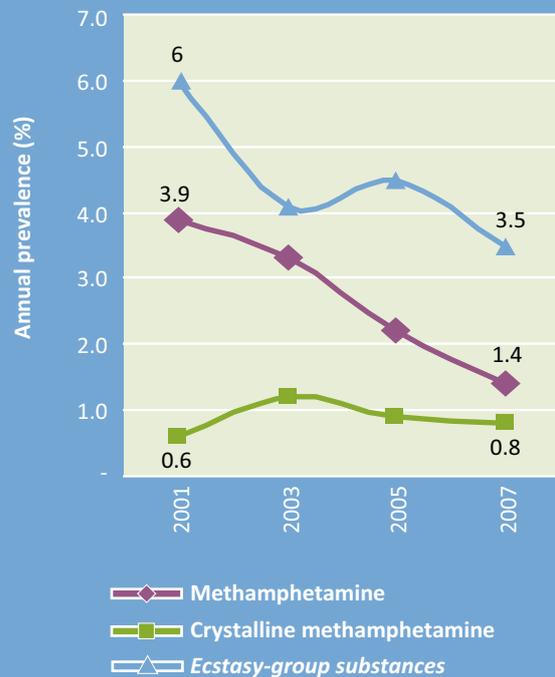
9 *Ecstasy-group substances* are seized as both powder and tablets and were reported in tablet equivalents.

Canada: positive seized ATS drug tests 2001-2006



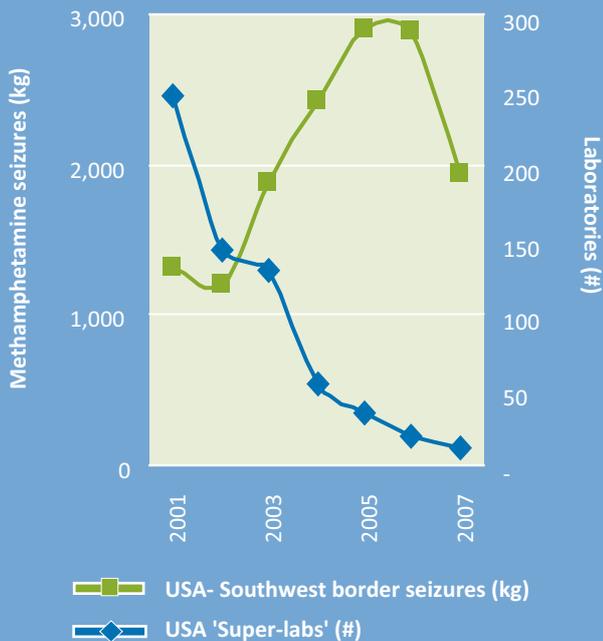
Source: Illicit Drug Surveillance, Health Canada Drug Analysis Service (2008)

Canada: annual prevalence of ATS among Ontario students (grade 7-12) 2001-2007



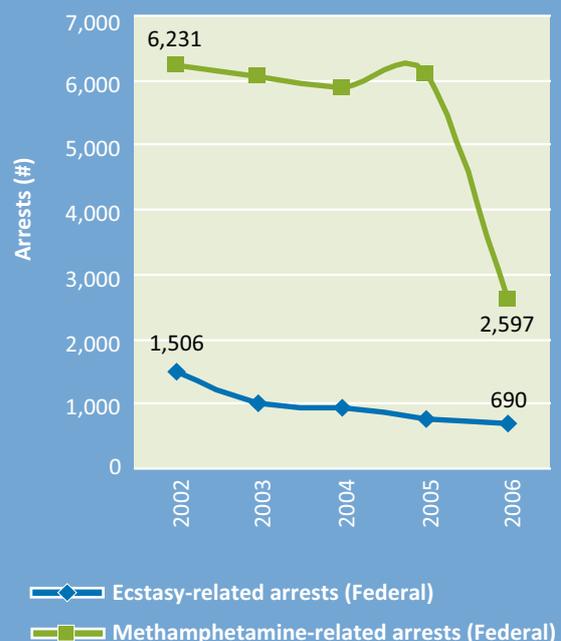
Source: CAMH, *Drug Use among Ontario Students, 2001-2007*, Toronto, Canada (2007)

USA: seizures of methamphetamine laboratories \* and methamphetamine seizures at the US-Mexico border 2001-2007



\*Refers to what is defined in the USA as 'super-lab' with the capability to produce 10 lbs (4.5 kg) or more per production cycle.  
Source: USA National Drug Intelligence Center, *National Methamphetamine Threat Assessment 2008*; USA Drug Enforcement Administration, Office of Diversion Control

USA: federal ATS-related arrests 2002-2006



Source: USA National Drug Intelligence Center, *National Methamphetamine Threat Assessment 2008*

Canada was identified as the primary supplier of methamphetamine to Japan, accounting for 66% of seizures. Exports of Canadian methamphetamine were also reported from Australia, New Zealand and the UK, and in 2007 the World Customs Organization stated that Canada was becoming a primary source for methamphetamine.<sup>10</sup>

Substantial changes have also been noted in the composition of seized drugs, with the number of tested seizures returning positive for ATS having increased dramatically for both methamphetamine (beginning 2003) and 'ecstasy' (beginning 2004). In 2001, positive methamphetamine tests (1,898) accounted for only 3% of all drugs tested by authorities but this increased to 11% by 2006. Increases in test positives were driven by large increases in eastern Canada and specifically Quebec. Similar trends were also noted for 'ecstasy' seizures which rose from 3% to 9% in Canada, driven by increases in Quebec as manufacture moved east.

Forensic testing of seized ATS has demonstrated that adulteration of methamphetamine and 'ecstasy' occurred with greater frequency beginning around 2003.<sup>11</sup> In 2001, 71% of tested methamphetamine was positive for only that substance, but by 2007 it had declined to 15%.<sup>12</sup> A similar pattern was also noted in 'ecstasy' samples tested: tablet composition with only MDMA as the active drug decreased from 69% in 2001 to just 3% in 2007. Thus, users (and law enforcement) who came in contact with the drugs were likely under mistaken assumptions about their actual content. The change occurred around the same period of time that saw increased domestic manufacture of 'ecstasy' and less importation of possibly higher purity 'ecstasy' from West Europe.

Examination of the changes in ATS consumption for Ontario students at grades 7-12 shows that between 2001 and 2007, there were strong declines in the annual prevalence of both methamphetamine (a reduction of 64%) and 'ecstasy' (a reduction of 42%).<sup>13</sup> Continued risk awareness in combination with efforts to reduce supply (e.g. improved precursor controls) is believed to have contributed to these declines. However, the same positive trend was not seen in the prevalence of crystalline methamphetamine, a form associated with higher levels of purity which is commonly smoked or administered intravenously.

## United States of America

The USA is the largest ATS market in the western hemisphere and one of the most significant markets in the world. The country consistently reports the most cases of ATS manufacture globally, of which nearly all are for methamphetamine.<sup>14</sup> In 2001, 94% of detected global ATS laboratories were in the USA, but by 2006 that figure had dropped to 84%. The decline has been attributed to a number of events including improved precursor chemical controls that reduced the diversion of over-the-counter (OTC) pharmaceutical preparations containing pseudoephedrine/ephedrine (i.e. cold medicines), increased awareness, and sustained law enforcement, all of which contributed to shifts in regional manufacturing. While there was a shift eastward the bulk of domestic methamphetamine manufacture continues to occur in the west of the country (west coast, south-west, and mid-west regions).

Success in domestic drug control efforts within the USA may have led to a shift in supply by organized crime groups primarily to Mexico and to a lesser degree to Canada.<sup>15</sup> For example, while the number of large capacity laboratories discovered in the USA has declined - a 92% decline between 2001 and 2007 - there has been a dramatic increase in the amount of methamphetamine seized along the southwest border with Mexico.<sup>16</sup> Between 2001 and 2006, the amount of methamphetamine seized by the USA authorities along the shared south-west border with Mexico increased from 1.3 mt to 2.8 mt, with a decline in 2007 to 1.9 mt.<sup>17</sup> This drop may be the result of Mexico's increased chemical import restrictions to control domestic production. This coupled with the declining number of USA 'super-labs' has subsequently impacted on price and purity of methamphetamine in the USA market.<sup>18</sup> According to figures released by the Drug Enforcement Administration (DEA), there was an 84% increase in price per gram of pure methamphetamine from January to December of 2007, from US\$152 to US\$280, an increase that may be related to diminishing supply.

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10 World Customs Organization (WCO), *Customs and Drugs Report 2007* (June 2008).

11 Laboratory analysis is typically not performed on all seizures and therefore may not accurately represent the drugs available on the market.

12 Health Canada, *Illicit Synthetic Drugs Surveillance in Canada*, presented at the Expert Meeting for Global Illicit Synthetic Drug Monitoring Programme, Tokyo, Japan (Feb 2008).

13 Ontario accounts for more than a third of the population of Canada.

14 Note, laboratories incidents do not indicate operational laboratories or the size of said laboratories.

15 USA National Drug Intelligence Center, *National Methamphetamine Threat Assessment 2008* (Dec 2007).

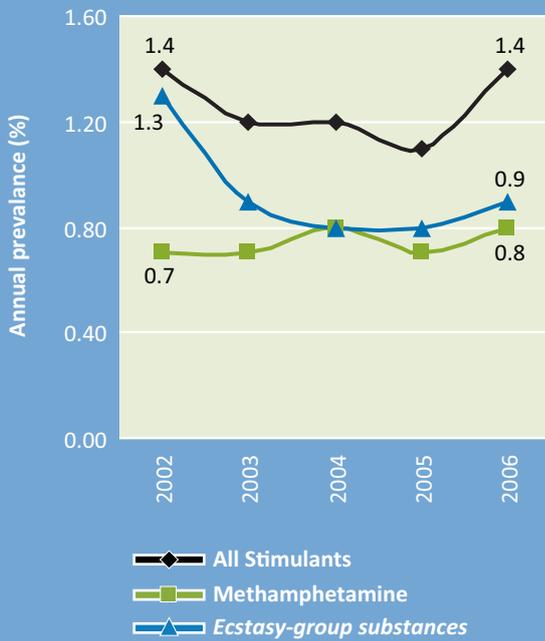
16 Border seizures are defined as seizure at either the US-Mexico border with Mexico or within 150 miles of the US border with Mexico.

17 USA National Drug Intelligence Center, *National Methamphetamine Threat Assessment 2008*, data (Nov 27, 2007).

18 Office of National Drug Control Policy, *Methamphetamine, cocaine use plummet; new workplace drug testing data show effects of supply crunch*, Press Release (March 12, 2008).

# 2008 GLOBAL ATS ASSESSMENT

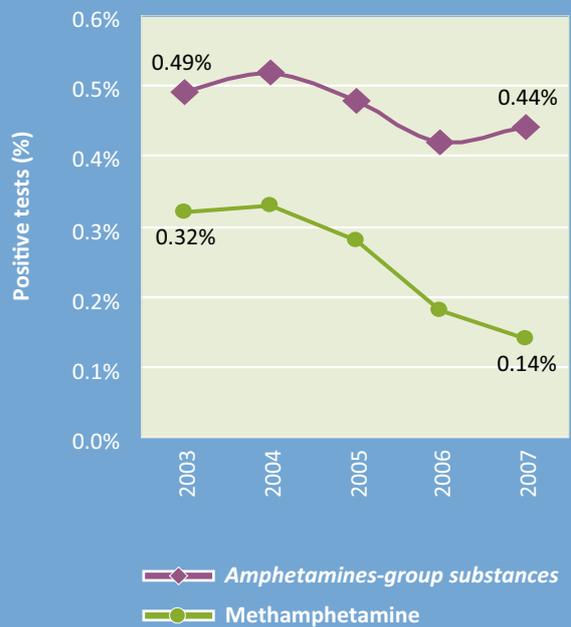
**USA: annual prevalence of ATS among the general population 2002-2006**



\* Aged 12 years and older

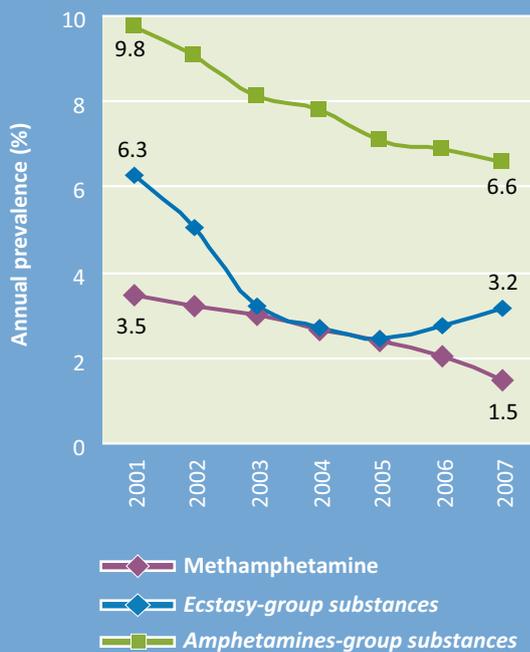
Source: SAMHSA (2007), Office of Applied Studies, *National Survey on Drug Use and Health, 2006*

**USA: positive workplace drug tests for ATS 2003-2007**



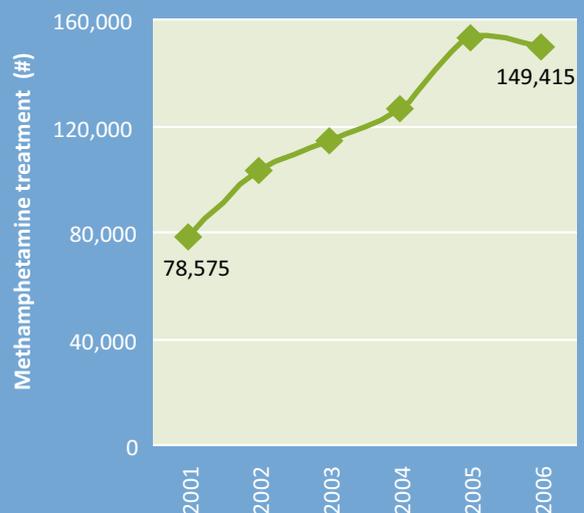
Source: Quest Diagnostics, *Drug Testing Index (March 2008)*

**USA: annual prevalence of ATS among students (grades 8-12) 2001-2007**



Sources: NIDA, *Monitoring the future, overview of key findings in 2007*, Bethesda Maryland, USA (2008)

**USA: methamphetamine treatment episodes 2001-2006**



Sources: Substance use and Mental Health Services Administration, *Treatment Episode Data Set (TEDS)*

Domestic manufacture of *ecstasy-group substances* remains at limited levels. The US authorities dismantled 85 'ecstasy' laboratories over the 2000-2006 period of which only six were considered large capacity. The majority were small-scale operations; 53% of the dismantled laboratories produced less than 2 ounces of MDMA per production cycle.<sup>19</sup> The US market thus relies on imports from other countries. Western Europe historically filled that demand. However, in recent years the demand has been met by mostly Canadian imports.<sup>20</sup> Since 2001, *ecstasy-group* manufacture in Canada and traffic into the USA has increased dramatically. States bordering Canada seized 753,000 doses of *ecstasy-group substances* in 2001, but by 2006, that number increased 7-fold to 5.5 million doses.<sup>21</sup> Increases were noted in six of 10 border states, but the bulk of seizures occurred in the states of Michigan, New York, and Washington. Asian transnational organized crime groups based in Canada are believed to be responsible for the expansion of trafficking into the USA in recent years.

Overall, the annual ATS prevalence rate in the USA amongst the general population (12+) showed a decline between 2002 and 2005, particularly with regards to 'ecstasy'. However, 2006 national household survey data reported a marked increase in the stimulants category, reflecting the possibility that consumers are switching to other more readily available licit and illicit stimulants in response to a tightening market. This can also be seen in work-place drug testing data, which after declines in the *amphetamines-group substances* beginning mid-2004, began to increase in 2007. By contrast, methamphetamine positive tests have declined by 56% since 2004, a trend that continued through to 2007.

The general decrease in ATS use is significantly more pronounced when examining students in the USA. The average annual prevalence rate of *amphetamines-group substances* among students (8th-12th grade) declined from 9.8% in 2001 to 6.6% in 2007. Methamphetamine use declined from 3.5% to 1.5% in the same period. However, 'ecstasy' use began to rebound starting in 2005, particularly among the 10th and 12th graders. To some extent this increase is associated with a declining perception of risk associated with the use of 'ecstasy' and attitudes of disapproval of its use.<sup>22</sup>

Government funded treatment showed that 87% of all stimulant treatment in the USA was for methamphetamine, which doubled between 2001 and 2006.<sup>23</sup> In 2001, there were nearly 79,000 persons treated for methamphetamine.<sup>24</sup> By 2006, that number had increased to 149,000. Three west coast states (California, Oregon, and Washington) accounted for 54% of all treatment provided in the USA, which is consistent with manufacture statistics, and methamphetamine use prevalence data which continue to be higher in the west of the country (rates are from 2-5 times higher than in other regions).<sup>25</sup> These data in combination with other indicators show that the USA has been able to stabilize and in some populations decrease the use of ATS.

19 USA National Drug Intelligence Center, *National Methamphetamine Threat Assessment 2008*, data (Nov 27, 2007).

20 Authorities reported that 53% 'ecstasy' laboratories seized since 2000 manufactured 2 ounces (57 grams) or less per cycle and only six considered large capacity have been noted since 2000. USA National Drug Intelligence Center, *National Drug Threat Assessment 2008* (Oct 2007).

21 Ibid.; USA National Drug Intelligence Center, *National Drug Threat Assessment 2007* (Oct 2006).

22 NIDA, *Monitoring the future, overview of key findings in 2007*, Bethesda Maryland, USA (April 2008).

23 TEDS counts treatment admissions not individuals (i.e. a person could be enrolled more than once in a year), and represents those treatments facilities that, in general, receive government funding to provide alcohol and/or drug treatment services.

24 Office of Applied Studies, Substance Abuse and Mental Health Services Administration, Treatment Episode Data Set (TEDS). Data received (Oct 9, 2007). Note: this excludes counts of persons receiving treatment where synthetic stimulants might be the secondary or tertiary drug of abuse (e.g. a primarily diagnosed heroin user who also uses methamphetamine).

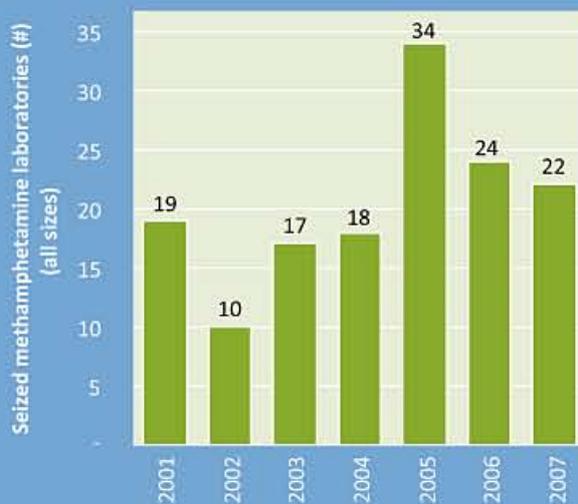
25 SAMHSA, *National Survey on Drug Use and Health, 2006* (2007).

**Mexico: NGO\* treatment admissions for methamphetamine, nationally and along northern border states 2001-2007**



\* Non-governmental organization  
 Source: El Sistema de Vigilancia Epidemiológica de las Adicciones (SISVEA), Mexico General Directorate of Epidemiology, National Center of Epidemiology Surveillance and Disease Control

**Mexico: seized methamphetamine laboratories 2001-2007**



Source: UNODC ARQ/ DELTA

**Mexico: states with notable clandestine methamphetamine manufacture**



Source: Drug Enforcement Administration, Office of Diversion Control (2008)

## Mexico

Mexico has emerged as the primary supplier of methamphetamine to the USA in recent years following a substantial increase in manufacture after increased enforcement and domestic precursor controls took effect in the USA. While only slight increases have been reported in the number of clandestine laboratories detected, they are often of industrial scale capacity.<sup>26</sup> The Mexican authorities had taken steps to eliminate licit bulk imports of precursors into the country to reduce clandestine manufacture. But criminal organizations off-set this by primarily utilizing pharmaceutical preparations containing ephedrine not under international control.<sup>27</sup> In response Mexican authorities in mid-2008 enacted unprecedented legislation that *inter alia*, provided for a nationwide ban on preparations containing ephedrine and pseudoephedrine in nearly every form.<sup>28</sup>

Authorities note that the number of clandestine methamphetamine laboratories reported seized in Mexico is small when compared with the amount of manufacturing that is occurring. This assessment is based on the number of border seizures and that most laboratories are discovered simply because they explode or catch fire.<sup>29</sup> Estimating the actual number of methamphetamine laboratories operating in the country is further complicated by data relating to seizures not being reported uniformly.

The capacity for methamphetamine production is increasing and expanding southward into the central regions, spreading from the border with the USA where enforcement efforts have increased. Nearly a third of states (9) have reported clandestine methamphetamine manufacture and the five most commonly reported include Sinaloa, Sonora, Northern Baja California, Jalisco, and Michoacán.<sup>30</sup> Mexican organized crime groups are also believed to manufacture approximately two-thirds of the crystalline methamphetamine identified in the USA, with California being the primary entry point.<sup>31</sup> Between 2004 and 2006, the amount of methamphetamine seized in California increased nearly 200% to 1,736 kg.

As a result of increased methamphetamine manufacture, the Mexican authorities reevaluated their legitimate national needs for pseudoephedrine and ephedrine, resulting in a reduction of import quotas for both substances in 2006 (70 mt) and 2007 (40 mt).<sup>32</sup> In 2008, the quota for licit imports was set to zero and in June 2008 the Mexican government outlawed all pseudoephedrine and ephedrine in the country. The ban, an unprecedented step in the enhancement of precursor controls, may bring decreases in manufacture. But it also brings the possibility of shifts further south to Central America.

Trafficking of *ecstasy-group substances* from West Europe, primarily from the Netherlands and Belgium continues, albeit at a greatly reduced rate. Historically shipments arrived at Mexico City via air for both domestic markets and, more importantly, for transit on to the USA. With increased *ecstasy-group* manufacture in Canada, trafficking from Europe has all but ceased with the exception of small quantities authorities believed to be coming from new trafficking routes through Central America.

Treatment admissions in Mexico for methamphetamine (known locally as '*crystal*') steadily increased between 2001-2005 reflecting larger domestic supply.<sup>33</sup> Since 2004, methamphetamine remained the top illicit substance for which NGO treatment centres were admitting nationally, overtaking heroin. In 2001, NGO treatment centres nationally identified an average of 11% of new admissions with a primary drug problem related to methamphetamine, peaking in 2005 with a national average of 21%.<sup>34</sup> By 2007, the proportion of new admissions for methamphetamine dropped to 16%. When regionally disaggregated, figures are substantially higher for those states which border the USA and which also have significant manufacture and trafficking, in particular Northern Baja California and Sonora. In 2001, 17% of northern border state treatment admissions were for methamphetamine, peaking in 2005 at 30%, before dropping to 22% in 2007.<sup>35</sup>

26 The DEA reported 9 large capacity laboratories identified in 2007, see USA Department of State, *International Narcotics Control Strategy Report (INCSR) 2008*, Vol 1 (March 2008).

27 To a much lesser degree attempts to utilize derivatives of ephedrine were also reported. USA Department of State, *International Narcotics Control Strategy Report (INCSR) 2008*, Vol 1 (March 2008).

28 Diario Oficial de la Federación, México, D.F., Secretaría de Gobernación (June 16, 2008).

29 Drug Enforcement Administration, Office of Diversion Control at the 4<sup>th</sup> International Forum on the Control of Precursors for ATS, Tokyo, Japan (Feb 2008).

30 Ibid.

31 USA National Drug Intelligence Center, *National Methamphetamine Threat Assessment 2008* (Dec 2007).

32 Actual imports as of August 30, 2007 were 12 mt with 5 additional mt pending.

33 University of Texas Center for Social Work Research & General Directorate of Epidemiology, Maxwell J., Cravioto P. and Galvan M. Cortes, *Patterns of Drug Use on the U.S.-Mexico Border*, Mexico (2005).

34 Percent calculations include alcohol use in primary admissions totals (averaged 14% in border states and 22% nationally) - if alcohol admissions were removed from the calculations for illicit drugs, methamphetamine percentages would be significantly higher.

35 National Center of Epidemiology Surveillance and Disease Control, *El Sistema de Vigilancia Epidemiológica de las Adicciones (SISVEA)*, at NIDA's June 2008 Community Epidemiology Work Group.



# SOUTH AMERICA, CENTRAL AMERICA AND THE CARIBBEAN



Countries in South America, Central America and the Caribbean have traditionally focused their control efforts - for obvious reasons - on cocaine, while manufacturing, trafficking, and consumption of ATS have not been perceived as a significant threat. Historically, ATS use in these subregions has been linked to the over-prescription and diversion of legally manufactured stimulants. New data indicate that illicit clandestine manufacture of ATS may be increasingly occurring in these subregions as well. Many of these countries may be unaware of an ATS problem due to incomplete and limited reporting, a general lack of awareness as to the speed in which ATS markets can emerge and a lack of forensic infrastructure to detect ATS trends.<sup>1</sup> Thus the risk is significant given the further tightening of controls in North America, which may well shift some manufacture south.

## South, Central America and Caribbean: ATS laboratories, seizures, and annual prevalence rates 2001-2006

MEASURE	DRUG GROUP	2001	2002	2003	2004	2005	2006
Laboratory (#)	Methamphetamine						
	Amphetamine		1				
	Other synthetic/ combined stimulants	1	1				
	Ecstasy-group substances			1			
	<b>Total</b>	<b>1</b>	<b>2</b>	<b>1</b>	<b>-</b>	<b>-</b>	<b>-</b>
Seizures (kg)	Methamphetamine	0.0	0.0	0.0		0.0	
	Amphetamine	0.2	0.0	0.1	0.4	4.3	56.2
	Non-specified amphetamines	0.6	0.1	0.5			3.2
	Ecstasy-group substances	0.5	20.8	19.8	22.2	15.0	7.1
	<b>Total</b>	<b>1.3</b>	<b>20.9</b>	<b>20.4</b>	<b>22.6</b>	<b>19.2</b>	<b>66.5</b>
Annual Prevalence (15-64)*	Amphetamines-group substances	1.0%	0.5%	0.5%	0.4%	0.7%	0.7%
	Ecstasy-group substances	0.1%	0.2%	0.2%	0.2%	0.2%	0.3%

\* Prevalence estimates were standardized for population 15-64 years of age beginning 2004, thus prior years are only broadly comparable.

Source: UNODC ARQ/ DELTA; World Drug Report 2004-2008; Global Illicit Drug Trends 2003

Between 2001 and 2006, four ATS laboratories were detected in South America, including an 'ecstasy' laboratory in Argentina (2003), an amphetamine laboratory in Chile (2002), and two synthetic stimulants laboratories (type of substance not defined) in Colombia (2001 and 2002).<sup>2</sup> However, several new indicators of ATS manufacture and trafficking are beginning to appear in the countries of the South American, Central American and the Caribbean subregions. In 2005, Colombia reported its first amphetamine seizure (4.2 kg) which increased to 56 kg of seized amphetamine in a single incident in 2006 - representing the largest seizure of ATS in South America or Central America reported to UNODC to date.

1 Organization of American States (OAS), *The Inter-American Drug Abuse Control Commission (CICAD)*, presented at UNODC Global ISDMP Meeting, Tokyo, Japan (Feb 2008).

2 Note: due to limited reporting of forensic information, the type of laboratory, precursors used, end product, and production cycle were unknown.

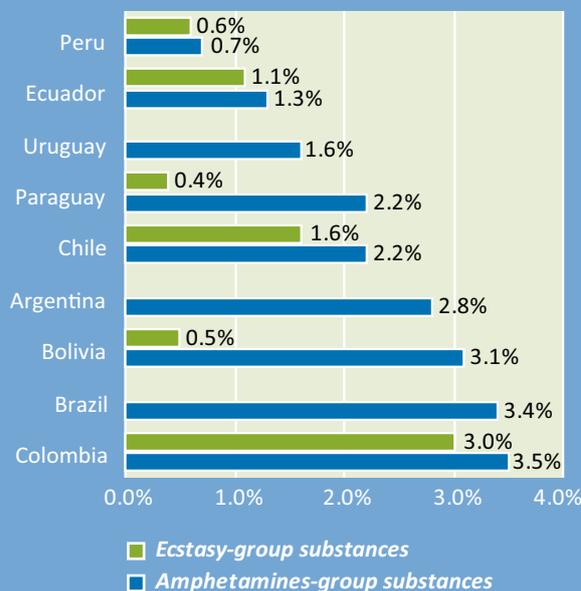
## Peru: lifetime prevalence for 'ecstasy' use\* 2001-2007



\* Urban populations aged 12-64

Source: CEDRO, Epidemiología de drogas en la población urbana peruana 2008 encuesta de hogares: monografía de investigación 25, Lima, Peru (2008) and previous years

## South America: annual prevalence of ATS among secondary students 2004-2005



Source: CICAD & UNODC (2006), *Youth and Drugs in South American Countries: A public policy challenge. First Comparative Study of Drug Use in the Secondary School Student Population in Argentina, Bolivia, Brazil, Colombia, Chile, Ecuador, Paraguay, Peru and Uruguay (Sept 2006)*

Only two significant attempts to divert ATS precursors in South America, Central America and the Caribbean were reported in 2001.<sup>3</sup> By 2006, the number of countries reporting significant diversions and/or attempts had increased to ten. These included instances of attempted diversion of pseudoephedrine to Bolivia, Chile, Colombia, Ecuador, El Salvador, Guatemala, Guyana and Peru. In addition, modest amounts of ATS precursors were also reportedly seized by the authorities of Argentina and Costa Rica. Initially these diversions were typically in bulk form. However, increasing incidents of diverted pharmaceutical preparations are now being reported. For instance, in 2008 a significant seizure of pharmaceutical preparations (pseudoephedrine tablets) was reported by the authorities in Guatemala in a maritime shipment from Hong Kong (SAR of China).

In Peru, the National Drug Control Commission (DEVIDA) recently warned that the legal importation of tableted cold medicines containing pseudoephedrine was increasing despite the fact that reported cases of the common cold had declined in recent years. This raised concerns of possible diversion into illicit channels. Additionally, there were a number of significant and unprecedented cases of precursor and synthetic drugs trafficking providing indirect indications of likely ATS manufacture in Peru in 2007. These included: 1) the first recorded case of a domestic organized crime in Lima engaged in trafficking synthetic drugs. This involved the development of a highly sophisticated clandestine factory for the production of plastic containers intended for the storing and international shipping of undefined synthetic drug materials; 2) the arrest of five individuals (nationals and foreigners) in possession of, *inter alia*, 20,700 pseudoephedrine tablets and 248 kg of unknown chemicals; 3) the arrest of a criminal group of nine persons of various nationalities who had trafficked cocaine and undefined synthetic drugs into Europe and who were in possession of 99,000 pseudoephedrine tablets; and 4) the detection of an international criminal network of drug traffickers, comprised of various South American and European nationals, who were found to have trafficked cocaine and non-defined synthetic drugs into France and Italy from Peru.<sup>4</sup> These latter cases are illustrative of increased use of multi-tiered and multi-national supply and transit partnerships, and the increasingly common poly-drug trafficking which has been reported in other regions as well (e.g. North America, East and South-East Asia, and Oceania).

<sup>3</sup> One ton of piperonal to Brazil from the UK and 1.5 mt of ephedrine from China to Guatemala.

<sup>4</sup> UNODC, *Drogas y Delitos en el Perú. Situación Actual y Evolución, Informe 2007.*

Several recent reports suggest that, in addition, *ecstasy-group* trafficking is emerging throughout the regions. As previously noted, Mexican authorities believe that *ecstasy-group substances* are being re-routed from Europe through undisclosed Central American States (see Mexico). Costa Rican authorities have echoed this concern as they contend with increased 'ecstasy' trafficking.<sup>5</sup> 'Ecstasy' tablets seized numbered 557 in 2001, rising to more than 19,000 tablets by 2007; a 34-fold increase.

Additional concern has been raised related to transnational 'ecstasy' shipments. Since 2003, law enforcement authorities in Ecuador have noted that their territory has been used for the international trafficking of 'ecstasy' believed bound for the USA. 'Ecstasy' has also served in barter trade activities, carried from the Netherlands to countries in South America where it is exchanged for cocaine bound for Europe.<sup>6</sup> Peru's urban household survey data from 2001 to 2007 showed rapid increases in 'ecstasy' use in the general population.<sup>7</sup> Increased use is related to the spread of all night dance events ("raves") and noted cases of supply via home delivery through phone and Internet-based operations. Additionally, survey researchers highlighted the rapid increase in the likelihood of being offered 'ecstasy'.<sup>8</sup> These indicators also align with expert perceptions related to increased use.

Member State experts' perception of drug use indicate that there are rising concerns related to ATS in the South American, Central American and Caribbean subregions. Nearly half of the experts who responded in 2006 to UNODC's ARQ, reported increased concerns in ATS use. These have been identified in Argentina, the Dominican Republic, El Salvador, Guatemala and Peru. Additionally, the perception of increased 'ecstasy' use was noted in Argentina, Chile, El Salvador, Guatemala, and Peru. No experts reported decreases in 'ecstasy' use in any country of the region in 2006.

Much of the concern related to the increase in ATS use is linked to the fact that these substances tend to be used by a younger, more vulnerable strata of the population, as reflected in higher prevalence rates for this age group. For example, the annual prevalence rates for the *amphetamines-group substances* for Colombian high-school students was 3.5% in 2005, 7-times higher than the 2005 general population (15-64 years) estimates of 0.5%.<sup>9</sup>

Overall, ATS prevalence has remained slightly higher than the global average in South American, Central American and Caribbean subregions in 2006, primarily the result of above average availability and overuse of ATS from licit sources. Between the 2000/02 period and the 2004/06 period, legally manufactured synthetic stimulants (mainly those in Schedule IV of the 1971 Convention) increased from 7 defined daily doses (DDD) per 1,000 population to 11 DDDs in the Americas, an increase of 57%.<sup>10</sup> Argentina and Brazil were first and third highest in the world with 17 and 10 DDDs per 1,000 individuals, respectively.<sup>11</sup> This increase represents a disturbing pattern indicating rising over-prescription, which has been associated in the past also with an increased likelihood of ATS misuse.

5 For instant Costa Rican authorities in 2006 arrested a Venezuelan national caught body-packing 3.7 kg of pseudoephedrine destined for Mexico via air.

6 Crisis Group Latin America Report N°25, *Latin American Drugs I: Losing the Fight* (March 2008).

7 CEDRO, *El problema de las drogas en el Perú* (June 2007).

8 CEDRO, *Epidemiología de drogas en la población urbana peruana 2008 encuesta de hogares: monografía de investigación 25*, Lima, Peru (2008) and previous years.

9 CICAD & UNODC (2006), *Youth and Drugs in South American Countries: A public policy challenge. First Comparative Study of Drug Use in the Secondary School Student Population in Argentina, Bolivia, Brazil, Colombia, Chile, Ecuador, Paraguay, Peru and Uruguay* (Sept 2006).

10 Includes all subregions of North and South America.

11 Standard defined daily dose (S-DDD) is a standardised statistical measure of illicit drug consumption.





# **ATS MARKETS: PRECURSORS, PRODUCTION AND PROFITS**





# PRECURSOR TRENDS

Like markets for legal goods, illicit drug markets are profit-driven. Supply side changes such as the availability of essential raw materials (precursors) are reflected in changes to how products are made and what drugs are ultimately available for the illicit consumer market. This chapter outlines and contrasts the changing ATS trends from precursors and production to the products and their profits. It does so by examining the key starting materials, followed by manufacture methods, the available end-products and their value on the wholesale and retail markets.

## Precursor trends

Precursor chemicals are the essential raw materials for the manufacture of ATS. Without precursor chemicals there would not be any ATS.

However, ATS manufacture is highly flexible - which is to say that the synthesis of ATS can be accomplished with a variety of different precursors for a given ATS end-product. Similarly, one particular precursor may be converted into any one of a variety of related ATS end-products. Further to this, there are usually several methods by which the precursor may be chemically altered to produce the desired ATS end-product.

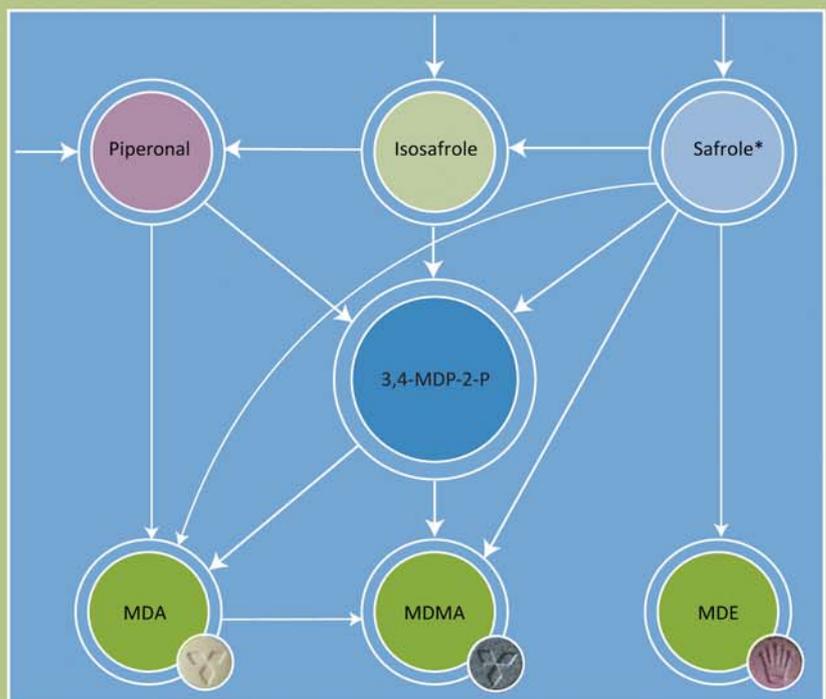
Market changes such as the unavailability of one precursor from one source can be compensated by a shift either to another precursor or to another source. There are examples of historical shifts in response to regulatory and/or law enforcement efforts from one precursor to another, from one source to another or even from one geographical location to another. Precursor seizures provide some insight into these trends.

Over the 2001-2006 period, global ATS precursor seizures fluctuated significantly. The quantities of ATS precursors seized in 2006 were the lowest in five years, amounting to just 29 mt of ATS weight equivalent. Methamphetamine precursors

### The flexibility of ATS manufacture, example: 'ecstasy' (MDMA, MDA, MDE) - schematic representation

Note: approximately 250 lt. of 3,4-methylenedioxyphenyl-2-propane (3,4-MDP-2-P) are required to manufacture 100 kg of 3,4-methylenedioxyamphetamine (MDA) hydrochloride; and 125 lt. of 3,4-MDP-2-P are required to manufacture 100 kg of methylenedioxymethamphetamine (MDMA) or 3,4-methylenedioxyethylamphetamine (MDE).

\*Including safrole in the form of safrole-rich oils.



## Precursor seizures

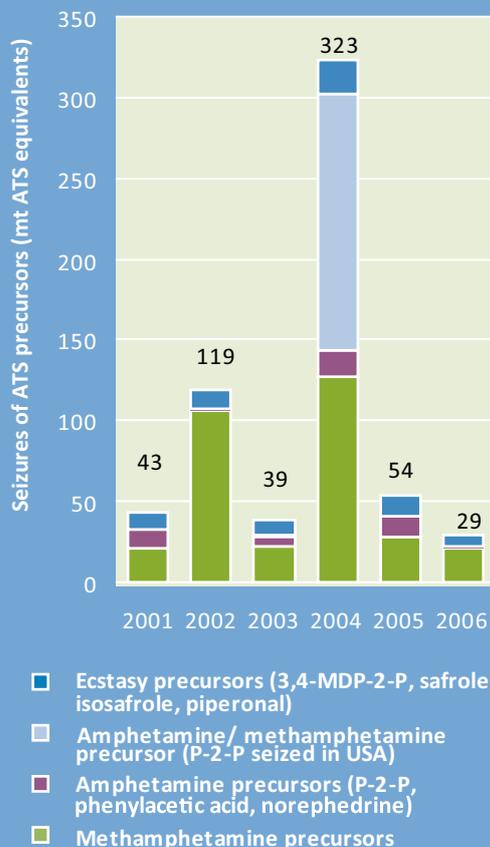
Precursor seizure data are typically used to illustrate that clandestine manufacture is taking place in a given country or region. It is, however, important to recognize that seizure data can only provide a partial (and qualitative) picture of precursor availability. Diversions and stopped shipments following regulatory interventions are not included in the traditional seizure statistics; neither are domestic diversions, followed by onward smuggling. This applies also to diversions of pharmaceutical preparations containing controlled precursors (e.g. ephedrine and pseudoephedrine), including the numerous small-scale diversions or purchases of over-the-counter preparations which provide the raw material for the thousands of clandestine methamphetamine laboratories seized in the USA and Oceania. Finally, substitute chemicals and pre-precursors not under international control are also not recorded.

In general, precursor seizure successes may be accounted for by better focus and/or capacity of law enforcement authorities and better regulatory control, possibly related to greater awareness of the ATS problem as a whole. Different law enforcement strategies in different countries may also account for differences in reported precursor seizures and the extent of clandestine activity.

Precursor seizure statistics therefore tend to show more the impact from national and regional initiatives, major seizures, and the qualitative development of local drug markets, versus providing a quantitative measure of precursor availability. Some recent examples of qualitative changes include:

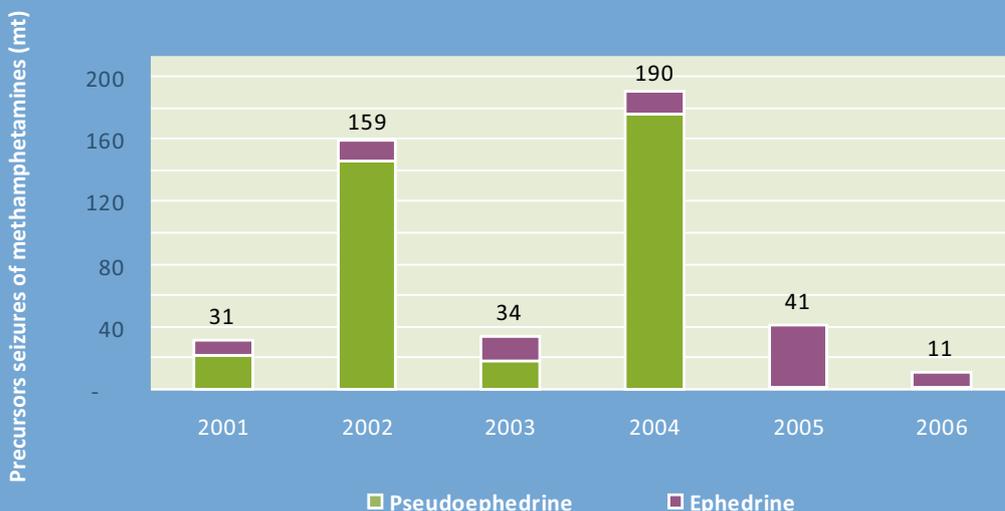
- the more frequent use of different forms and products containing controlled precursors in clandestine ATS manufacture, including
  - pharmaceutical preparations containing pseudoephedrine;
  - natural raw materials such as safrole-rich oils (containing *ecstasy-group* precursors) and *Ephedra* extracts (containing methamphetamine precursors)
- the appearance of a number of substitute chemicals of controlled precursors, such as  $\alpha$ -phenylacetoacetonitrile (instead of P-2-P) or N-acetylpseudoephedrine acetate (instead of pseudoephedrine) in the clandestine manufacture of methamphetamine;
- the impact of chemical controls in an increasing number of traditional transit countries forcing the establishment of new trafficking routes through regions that are less well prepared (e.g. Africa), evidenced by increasing reports of diversion and smuggling in countries of those regions.

## Global seizures of ATS precursors 2001-2006



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, 2007* (March 2008) and previous years; UNODC ARQ/ DELTA

## Global seizures of methamphetamine precursors 2001-2006



Source: INCB, *Precursors and chemicals frequently used in the illicit manufacture of narcotic drugs and psychotropic substances, 2007* (March 2008)

(ephedrine and pseudoephedrine) accounted for the majority of ATS precursors seized between 2001 and 2006.<sup>1</sup>

Over the same period, shipments of significant amounts of ATS precursors were stopped before they could be diverted and were thus not susceptible to seizure. This success is attributable to effective precursor control measures, such as increased use of *Pre-Export Notifications* (PEN), which alert authorities of importing countries in advance of precursor shipments, allowing them to verify their legitimacy.

The generally low seizure rates of ATS precursors contrast with global ATS manufacturing trends, which have remained largely unchanged over the 2001-2006 period. This suggests that there have been changes in manufacturing methods and/or in trafficking patterns. There is evidence for both the increasing use of products or precursor chemicals not under international control as well as the emergence of new trafficking routes particularly to countries and regions previously unaffected and therefore less aware and/or less well equipped to detect and stop suspicious precursor shipments.

### Methamphetamine precursors

Ephedrine and pseudoephedrine are the main precursors for methamphetamine<sup>2</sup> and can be converted into the drug by a variety of simple synthetic routes.<sup>3</sup> While both are under international control in bulk form, the same controls do not apply to shipments of these substances in the form of pharmaceutical preparations (typically tablets).

Over the 2001-2006 period, the most significant trend for methamphetamine precursors has been a shift from bulk ephedrine and pseudoephedrine to increasing use of their tablet form in illicit ATS manufacture, thus avoiding international controls.

Seizures of ephedrine and pseudoephedrine, typically sourced from factories in India and China, fluctuated strongly between 2001 and 2006, with annual totals ranging between a peak of 190 mt in 2004 and 11 mt in 2006. Seizures of pseudoephedrine increased significantly between 2001 and 2004, mainly due to massive seizures in the USA in both 2002 and 2004. In those years, the quantities of pseudoephedrine seized exceeded those of ephedrine ten times. Since 2005, pseudoephedrine seizures have declined to almost insignificant levels (around 800 kg annually). Fifteen countries reported seizures of pseudoephedrine between 2001 and 2006, including the USA (accounting for 95% due to significant seizures in 2002 and 2004), Canada and Mexico. During the same period, 38 countries reported seizures of ephedrine, of which four countries, including China (58%), Philippines (11%), the USA (10%), and Myanmar (8%) accounted for 87% of global ephedrine seizures. Seizures of norephedrine (phenylpropanolamine), a less commonly encountered precursor that can be used for the manufacture of amphetamine, totalled only 63 kg between 2001 and 2006, with only six countries reporting such seizures.

The decline in seizures of bulk methamphetamine precursors, especially pseudoephedrine, was accompanied by an increase in reports about large-scale trafficking of pharmaceutical preparations containing pseudoephedrine. In recognition of this development, the INCB began in 2006 to request Member States to voluntarily provide information on the seizure of pharmaceutical preparations. In the first reporting year, 13 Member States<sup>4</sup> identified seizures of ephedrine and pseudoephedrine in the form of pharmaceutical preparations; seizures of tableted pharmaceutical preparations accounted for 28% of pseudoephedrine seized in that year.

Another trend that has been observed over the past five years is the increasing use of a variety of substitute chemicals that are currently not under international control.<sup>5</sup> These chemicals are usually closely related to precursors currently under international control and can be easily converted into one of them. Sometimes, these so-called 'pre-precursors' are chemical modifications of controlled precursors that are produced specifically for international trafficking purposes to circumvent controls but that can be converted back easily into the desired precursor.

Finally, as of 2005, reports began surfacing that traffickers were turning to *Ephedra* (in the form of both *Ephedra* extracts and plants) as a source for ephedrine. *Ephedra* (also known as '*Ma Huang*') is a shrub that grows wild in a number of regions and is the natural source of ephedrine and pseudoephedrine. Although currently not under international control, several countries control imports of *Ephedra*. In 2005/06, significant quantities of *Ephedra* extracts were encountered, for example, 800 mt in an attempted diversion in Germany, and 94 mt in a seizure in the Netherlands. The extracts seized in the Netherlands were shown to contain more than 20% ephedrine.

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1 Expressed in ATS weight equivalents.

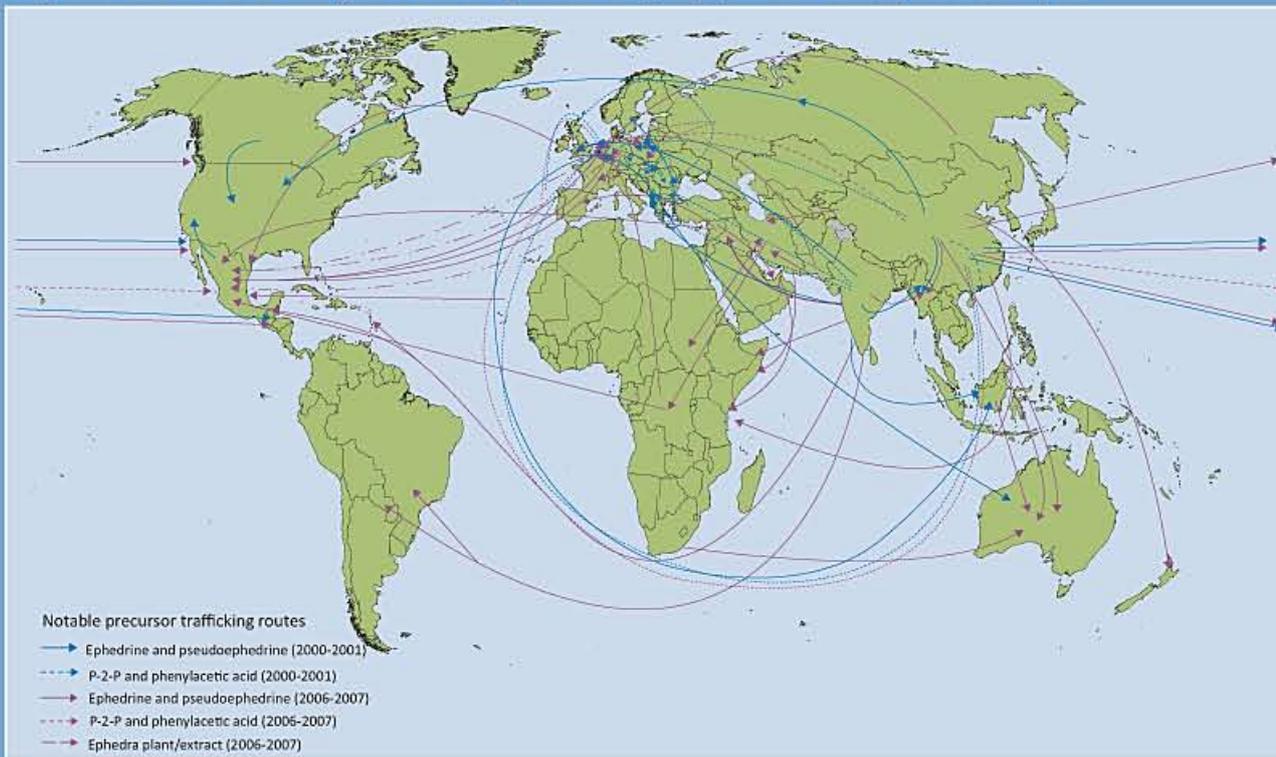
2 P-2-P is another precursor that can be used to manufacture methamphetamine, but it yields the less potent *d,l*-methamphetamine.

3 It should be noted that ephedrine and pseudoephedrine can also be used to produce methcathinone, a less common ATS (manufacturing reports are limited to Canada, Lithuania, Kyrgyzstan, Russia, South Africa and the USA).

4 These included Argentina, Belarus, Bulgaria, Canada, Finland, Hungary, New Zealand, Norway, Romania, Russia, Slovakia, UK and the USA.

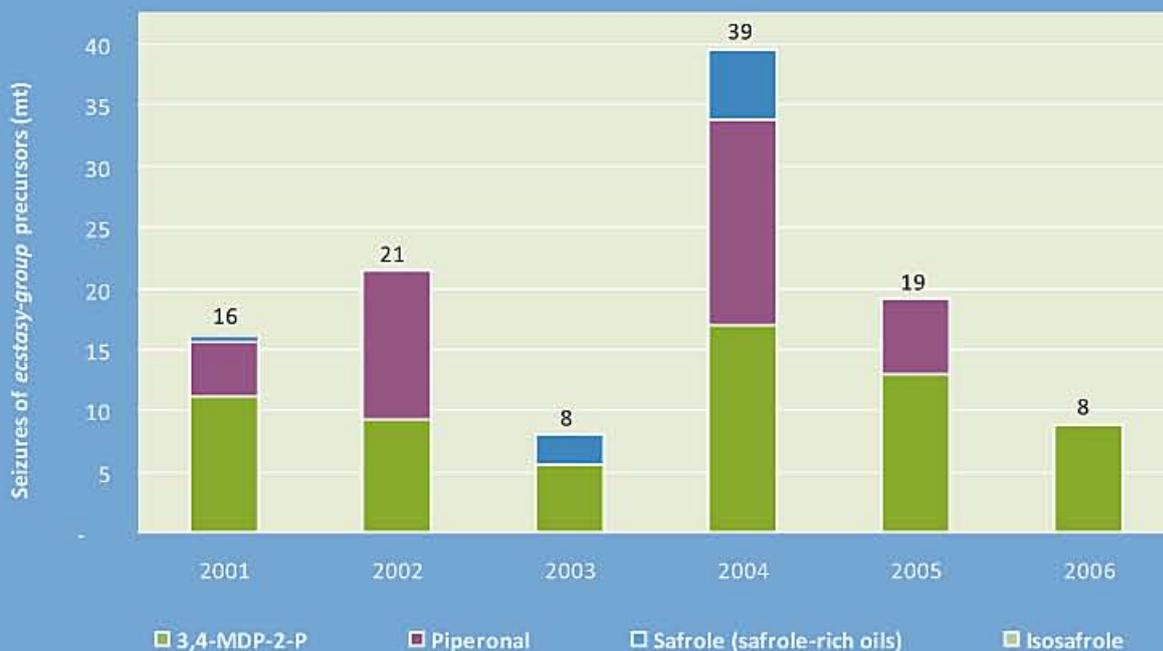
5 An example of a substitute chemical is N-acetylpseudoephedrine acetate; 19.8 mt of N-acetylpseudoephedrine acetate were reported seized in Mexico in December 2006, shipped from Asia.

## Snapshot of notable trafficking routes for *amphetamines-group* precursors 2000/01 and 2006/07



Note: The boundaries and names shown and the designations used on this map do not imply official endorsement of acceptance by the United Nations. Lines represent origin and intended destination, not necessarily the exact route used, and may include completed or stopped trafficking attempts. Sources: INCB, *Precursors and chemicals frequently used in the illicit manufacture of narcotic drugs and psychotropic substances, 2007* (March 2008) and previous years; EUROPOL, *Production and Trafficking of Synthetic Drugs and Precursors*, The Hague, Netherlands (March 2007); DEA, Office of Diversion Control, presentation at the Global ISDMP expert meeting, Tokyo, Japan (Feb 2008)

## Global seizures of *ecstasy-group* precursors 2001-2006



Source: INCB, *Precursors and chemicals frequently used in the illicit manufacture of narcotic drugs and psychotropic substances, 2007* (March 2008) and previous years

Changes in precursors of choice - to avoid international controls - are also reflected in trafficking patterns. There have been several recent reports of criminal organizations exploiting weak links in the global precursor control system to establish new trafficking corridors, especially through Africa, the Near and Middle East, and West Asia with many destined for North America. For example, 2.8 mt pseudoephedrine were seized in the Democratic Republic of Congo, *en route* from Iran and destined for Mexico.<sup>6</sup> Also natural *Ephedra* from China is reportedly trafficked through Africa, West Asia, Europe and Canada. In January 2007, authorities in Luxembourg seized 2 mt of *Ephedra en route* from Germany to Mexico.<sup>7</sup> Finally, in 2008, Guatemalan authorities reported the seizure of more than 5 million pseudoephedrine tablets allegedly shipped from Hong Kong (SAR of China) - the first report of that type to UNODC.

### Amphetamine / methamphetamine precursors

P-2-P (1-phenyl-2-propanone) and phenylacetic acid can be used for the manufacture of both amphetamine and methamphetamine and are both under international control.<sup>8</sup>

As with ephedrine and pseudoephedrine, annual seizures of P-2-P fluctuated significantly over the 2001-2006 period, with peaks in 2001 and 2004 (about ten times the annual average of other years, related to large-scale seizures in the USA). Seizures in 2006 amounted to 2,600 lt., the second lowest quantity seized in the five-year period. Twenty countries reported seizures between 2001 and 2006, of which 70% were European countries. The USA (82%, due to massive seizures in 2004), China (6%), Netherlands (8%), and Poland (2%) accounted for 98% of the global total. Denmark (590 lt.), Russia (402 lt.), and Canada (1.2 lt.) each reported their first P-2-P seizures in 2006.

Reported annual seizures of phenylacetic acid were typically below or around 300 kg, with the exception of 2005, when 47.7 mt were seized. Fifteen countries reported seizures between 2001 and 2006, of which China accounted for 65% and Mexico for 31% of global totals.

Since the early 1980s when ephedrine began to replace P-2-P as a starting material for methamphetamine, P-2-P has mainly been associated with the manufacture of amphetamine in the European markets. However, incidents of seizures of P-2-P and/ or its clandestine manufacture outside Europe are increasing. For example, the USA reported large-scale P-2-P seizures in 2004, which accounted for more than 90% of global P-2-P seizures in that year. In 2006, a clandestine laboratory seized in Malaysia was reported to have produced P-2-P from non-controlled chemicals. In both cases, it remained unclear whether the intended ATS end-product was amphetamine or methamphetamine. Increases in P-2-P-based manufacturing methods were also seen in Australia.<sup>9</sup>

Until mid-2004, P-2-P for the European market was almost entirely sourced from China, but effective law enforcement targeting Asian precursor trafficking groups<sup>10</sup> left a gap subsequently filled by chemicals sourced from Russia. By 2007 P-2-P trafficked from China began to re-appear. In addition, P-2-P trafficking to North America also began to emerge in 2006/07.

### Precursors for ecstasy-group substances

Precursors for *ecstasy-group substances* include safrole (including in the form of safrole-rich oils), isosafrole, piperonal, and 3,4-methylenedioxyphenyl-2-propanone (3,4-MDP-2-P), which are all under international control.

Similar to other ATS precursors, reported global seizures of *ecstasy-group* precursors showed strong variation over the 2001-2006 period, with regard to fluctuations in both the specific substance and the quantities seized. It is clear that *ecstasy-group* precursor seizures in most instances reflect individual large seizures. For example, in May 2008, a single shipment of 3.7 mt of 3,4-MDP-2-P was seized by Canadian authorities.<sup>11</sup>

In terms of quantity, most *ecstasy-group* seizures between 2001 and 2006 were for 3,4-MDP-2-P, fluctuating around an average of 10,500 lt. a year. The Netherlands (47%), Canada (20%), China (8%), France (6%), and Belgium (6%) accounted for 87% of the global total seized. Piperonal was second in overall seizure statistics, although annual global piperonal seizures decreased from around 5 mt in 2001 to less than 1 kg in 2006 - no seizures were reported in 2003. Fourteen countries reported seizures of piperonal between 2001 and 2006, of which 88% were accounted for by just four countries: Mexico (35%), China (33%), Germany (12%) and Australia (8%).

6 EUROPOL, *Amphetamine-type Stimulants in the European Union 1998-2007. EUROPOL contribution to the Expert Consultations for the UNGASS assessment*, The Hague, Netherlands (July 2007). Note: as of 2008, Mexico no longer permits imports of ephedrine, pseudoephedrine and *Ephedra*.

7 EUROPOL, *Production and Trafficking of Synthetic Drugs and Precursors*, The Hague, Netherlands (March 2007).

8 Use of P-2-P will result in the less potent form of amphetamine and methamphetamine (*d,l*-amphetamine and *d,l*-methamphetamine)

9 Australia Crime Commission, *Illicit Drug Data Report (2003-04) and (2006-07); Precursor Detections at the Australian Border*, Australian Customs and Australian Federal Police, presentation at the *Global ISDMP experts' meeting*, Tokyo, Japan (Feb 2008).

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

11 Canadian Border Service Agency, *Pacific Regional Intelligence Bulletin*.

Snapshot of notable trafficking routes for *ecstasy-group* precursors 2000/01 and 2006/07

Note: there were no notable mentions of piperonal in 2006/07.

Note: the boundaries and names shown and the designations used on this map do not imply official endorsement of acceptance by the United Nations. Lines represent origin and intended destination, not necessarily the exact route used, and may include completed or stopped trafficking attempts.

Sources: INCB, *Precursors and chemicals frequently used in the illicit manufacture of narcotic drugs and psychotropic substances, 2007* (March 2008) and previous years; EUROPOL, *Production and Trafficking of Synthetic Drugs and Precursors*, The Hague, Netherlands (March 2007)

Seizures of safrole increased strongly from 344 lt. in 2001 to more than 5,500 lt. in 2004, before dropping to about 60 lt. in 2006. Thirteen countries accounted for these seizures during the 2001–2006 period, with China accounting for 64% and the remainder largely reported by Romania. There were very few reports of nominal seizures of isosafrole.

The amounts of *ecstasy-group* precursors reported seized clearly do not accurately represent the amounts trafficked and used in illicit manufacture of 'ecstasy'. One possible loophole was closed over the past years, by giving increasing attention to safrole trafficked in the form of safrole-rich oils. However, to-date, the incidence of reported seizures of safrole-rich oils still remains low, with only few countries reporting such seizures during 2001–2006, and in very small amounts. A notable exception was Australia with 600 lt. seized in 2002. Another significant seizure of more than 50 mt of safrole-rich oils was made in Thailand in October 2007. The oil was allegedly sourced from Cambodia and destined for China and the USA.

The global picture of trafficking of *ecstasy-group* precursors continues to be dominated by trafficking into Europe, mainly from China. While notable trafficking routes to Europe may appear to be fewer over the 2006/07 period, continuing significant manufacturing levels and effective law enforcement efforts suggest they instead reflect new routes and increased sophistication by traffickers. New routes in 2006/07 include routes for 3,4-MDP-2-P from China to Europe via locations in the Near and Middle East and Africa, and to North America.<sup>12</sup> They also include routes for safrole and safrole-rich oils to Australia. The emergence of trafficking routes with destination North America and Australia reflects the growth in manufacture of *ecstasy-group* substances in regions of the world other than Europe.

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

**Safrole-rich oils\***

Safrole-rich oils are the main raw materials for the manufacture of safrole for commercial purposes. They are marketed worldwide in large quantities (annual legitimate requirements are estimated at 3,500 mt) as starting materials for the fragrance and pesticide industries.

There are number of safrole-rich plant species that constitute the starting materials for the extraction of safrole; they are found in North America, South America, East Asia and South-East Asia. Safrole can be present in their essential oils at concentration levels of more than 90%.

Safrole-rich oil tree species grow naturally and/or are cultivated for commercial purposes. To produce the oil, the trees are typically felled and the oil distilled from the timber, the root and stump. Oil yields from the distillation process typically range between 1% and 3.5%. However, many of these operations remain unregulated and as a consequence, there are not only concerns from the point of view of diversion into illicit drug manufacture, but also concerning environmental aspects, ecology systems and forestry.

A recent survey in six countries in East and South-East Asia found 361 plants that contain essential oils rich in safrole, most of which were of the *Cinnamomum* species. Other plant species rich in safrole include the North American *Sassafras albidum* (~80% safrole) and the Brazilian *Ocotea pretiosa* (~80% safrole) and *Piper hispidinervum* (~90% safrole).

The annual production of safrole-rich oils in South-East Asia is estimated at 1,360-1,620 mt.



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\* Safrole-rich oils are defined as "any mixtures or natural products containing safrole present in such a way that it can be used or recovered by readily applicable means" (INCB, *Precursors and chemicals frequently used in the illicit manufacture of narcotic drugs and psychotropic substances, 2007* (March 2008)).



# MANUFACTURING METHODS AND PRODUCTS



## Manufacturing methods

Different manufacturing methods vary in the efficiency with which a given amount of precursor can be converted into ATS end-product. Average practical conversion ratios ('yields') show large variation due to a variety of influences including differing methods and levels of expertise of clandestine operators. However, irrespective of variables being optimised/standardised, some methods will, in every instance, be more efficient at converting precursor to end-product than others.

### Typical ATS clandestine manufacturing yields

End	Precursor (1 kg or 1 lt.)	Synthesis Method (Method)	Practical Yield
Amphetamine	P-2-P (lt.)	Ammonium formate (Leuckart)	55%
Amphetamine	P-2-P (lt.)	Formamide (Leuckart)	67%
d,l-Methamphetamine	P-2-P (lt.)	Formic acid (Leuckart)	60%
d-Methamphetamine	Pseudo/ ephedrine (kg)	Red phosphorus/ iodine	47%
d-Methamphetamine	Pseudo/ ephedrine (kg)	Red phosphorus / hydriodic acid	54%
d-Methamphetamine	Pseudo/ ephedrine (kg)	Lithium/ ammonia ('Birch')	55%
d-Methamphetamine	Pseudo/ ephedrine (kg)	Hypophosphorous acid/ iodine	76%
d-Methamphetamine	Pseudo/ ephedrine (kg)	Thionyl chloride (Emde)	70%
Methcathinone	Pseudo/ ephedrine (kg)	Potassium permanganate	50%
MDA	Sassafras oil* (lt.)	Hydrogen peroxide/ sodium cyanoborohydride	12%
MDA	3,4-MDP-2-P (lt.)	Sodium cyanoborohydride	37%
MDA	Piperonal	Nitroethane	41%
MDMA	Sassafras oil* (lt.)	Hydrogen peroxide/ aluminium amalgam	31%
MDMA	Sassafras oil* (lt.)	Hydrobromic acid	48%
MDMA	3,4-MDP-2-P (lt.)	Formic acid (Leuckart)	66%
MDMA	Sassafras oil* (lt.)	Methyl nitrite/ aluminium amalgam (Wacker)	68%
MDMA	3,4-MDP-2-P (lt.)	Aluminium amalgam (reductive amination)	95%

\* at 75% safrole.

Source: Drug Yield Calculator (V5.0), Royal Canadian Mounted Police and Health Canada; Suravina L. G. and Voronenko L. A., *Forensics Investigation of Narcotic and Drastic Substances Obtained from Ephedra Grass Using Home Production Methods*, Ministry of Justice of the Republic of Kazakhstan, Kazakh Scientific Research Institute(1994) ; DEA, *Methamphetamine Synthesis #7* (1997)

Information about the manufacturing methods that are commonly encountered in clandestine laboratories, the precursors used and average yields is also requested in UNODC's ARQ. From the limited information provided it is clear that average yields show large variation. For example, the average yield of methamphetamine manufactured in laboratories in Moldova and the Czech Republic using the same precursor differs by 30%. Reported yields also change over time, likely due to changes in manufacturing methods and laboratory sophistication. For instance, Canada reported a yield of 50% and 71% in 2001 and 2006, respectively, for pseudoephedrine-based methamphetamine manufacture, suggesting a 42% increased efficiency.

Unfortunately, such data are not systematically available as many countries and regions do not report forensic details related to clandestine manufacture.

## ATS conversion ratios (yields) reported to UNODC in 2006

ATS end-product (1 kg)	Precursor used	Quantity of precursor required (kg)	Average yield	Country reporting
Amphetamine	P-2-P	2	50%	Poland
Amphetamine	P-2-P	1.4	71%	Netherlands
<i>d,l</i> -Methamphetamine	P-2-P	2	50%	Lithuania
<i>d</i> -Methamphetamine	Ephedrine	2	50%	Moldova
<i>d</i> -Methamphetamine	Ephedrine	1.5	67%	Slovakia
<i>d</i> -Methamphetamine	Pseudoephedrine	1.4	71%	New Zealand
<i>d</i> -Methamphetamine	Pseudoephedrine	1.4	71%	Canada
<i>d</i> -Methamphetamine	Pseudoephedrine	1.25	80%	Czech Republic
<i>d</i> -Methamphetamine	Ephedrine	1.25	80%	Czech Republic
MDA	Piperonal	2.5	40%	Canada
MDMA	Sassafras oil or 3,4-MDP-2-P	1.25	80%	Canada
MDMA	3,4-MDP-2-P	0.8	125%	Netherlands

Source: UNODC ARQ (2006)

The flexibility in ATS manufacture is reflected in the variety of methods by which a given precursor can be converted into ATS end-product using different reagents and chemicals (see scheme on the flexibility of ATS manufacture above). There are typically a number of modifications to each of the main manufacturing methods. The method of choice represents the lowest cost - in terms of risk and financial cost - to operators for a given product.

Examination of ATS manufacturing trends shows that there are several commonly encountered methods used in clandestine manufacture of ATS. It also shows that methods have regional variations and that preferences for one or another method may change over time.

While the choice of the method is largely determined by the availability of precursors and other reagents and chemicals, the size of illicit manufacture may also limit the use of certain methods or modifications thereof. For example, it is known that very large industrial-scale operations (i.e. 'mega-labs' by USA definition, with the capability to produce 1,000 kg or more per production cycle) do not commonly use the hydriodic acid/red phosphorous method because of a perceived lower yield of methamphetamine. Small-scale 'kitchen' laboratories, by contrast, such as those in the USA are often associated with a method known as 'Birch method'. Both the hydriodic acid/red phosphorous and the 'Birch method' use ephedrine or pseudoephedrine as the starting material.

There are also some distinct regional trends, such as the preference for the 'Emde method' (using ephedrine or pseudoephedrine and thionyl chloride) in operations that produce methamphetamine tablets, whereas hydriodic acid/red phosphorous methods are more commonly associated with the manufacture of crystalline methamphetamine. More recently, however, ephedrine/thionyl chloride method has also been associated with the manufacture of crystalline methamphetamine, e.g. in the Philippines.<sup>1</sup>

Regional differences are also seen, for example, within regions of the USA: the 'Birch method' is more common in the midwest and southeast regions, while the red phosphorus/hydriodic acid method predominates in the Pacific and southwest regions.<sup>2</sup> The same red phosphorus/hydriodic acid method is also associated with methamphetamine manufacture in Mexico, probably owing to some degree to their proximity and the fact that Mexican-based organized crime groups in the past also operated many of the laboratories found in the southwest of the USA.<sup>3</sup>

The rapid shifts in geographical location of clandestine laboratories, in methods and precursors used and in sophistication are illustrated by the evolution of ATS manufacture in East and South-East Asia. Malaysia is a case in point, where ATS manufacture - and trafficking - appears to be rapidly increasing in both size and sophistication as syndicates appear to be shifting operations south of the Greater Mekong Subregion. In 2001, a small unsophisticated outdoor laboratory was discovered in Sabah that utilized P-2-P to manufacture limited amounts of methamphetamine. Three years later (2004), a pseudoephedrine/ thionyl chloride industrial-scale laboratory with an estimated output of 1 mt of methamphetamine was reported in Semenyih. In 2006, one of the largest ATS laboratories ever seized anywhere in the world was found in

1 *Philippines Country Report*, presented at the 4<sup>th</sup> International Forum on the Control of Precursors for ATS, Tokyo, Japan (Feb 2008).

2 USA National Drug Intelligence Center, *Marijuana and Methamphetamine Trafficking on Federal Lands Threat Assessment* (Feb 2005).

3 USA National Drug Intelligence Center, *National Drug Threat Assessment 2003* (Jan 2003).



Sabah, Malaysia (2001)



Kulim, Malaysia (2006)

Kulim, in northern Malaysia. At the Kulim laboratory, P-2-P is believed to have been manufactured from a pre-precursor chemical ( $\alpha$ -phenylacetoacetonitrile) not under international control. The facility also had thousands of litres of chemicals that could have been used to manufacture other ATS. While not operating at full capacity, the facility was estimated to have a possible production cycle of 1.4 mt - 1.7 mt.<sup>4</sup> An additional industrial methamphetamine laboratory was reportedly discovered in March 2008, in an industrial park in the very south of the country.

## ATS products

Although commonly referred to as 'global ATS market', there are in fact distinct regional patterns for the main ATS products, with amphetamine being the ATS of choice in Europe, methamphetamine in East Asia and North America, and 'ecstasy' being a truly global phenomenon (although to different extents in different regions). The overall trends for the main ATS are complemented by distinct subregional patterns and trends in specific ATS products and forms.

Changes in available products are currently occurring and the ATS market appears to diversify in several regions. Changes relate specifically to changes in the composition of ATS tablets and the appearance of new forms of existing drugs (e.g. crystalline methamphetamine) in regions where they had not been seen before. Examples include the recent appearance of methamphetamine tablets in Canada and in the Netherlands in 2006, or of crystalline methamphetamine in countries of Asia such as Cambodia and, in Nepal (in 2008). Changes may be lasting, or they may be temporary diversifications in response to supply shortages.

Unfortunately, information is not systematically available on the various ATS products, their forms, patterns and trends. In addition, data from countries where forensic analyses are performed and recorded indicate that what users believe to be a specific ATS (e.g. 'ecstasy' containing MDMA) is often a variety of substances, including other ATS and also substances not currently under international control, such as ketamine.

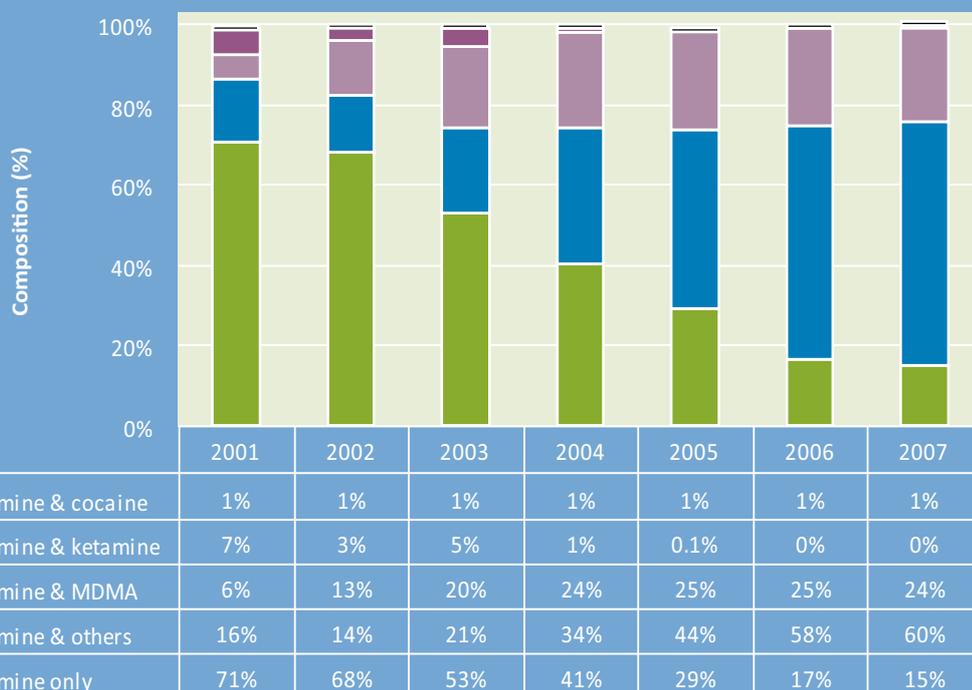
The mismatch between marketed and actual content has implications for users and associated interventions. It also has implications for prevalence estimates of 'ecstasy' use, which may reflect very different markets in different regions. Finally, it may mask a persistent ATS problem that is not recognized due to lack of awareness of the new products.

An added difficulty for seizure statistics is that seized materials often are not the ATS for which they are initially suspected (i.e. a tablet referred to a laboratory by a law enforcement authority as 'ecstasy' may be analyzed and confirmed to be something else and the initial report for seizure statistics may, however, not be subsequently corrected). The extent to which ATS seizures are reported on the basis of forensic analyses rather than suspicion at the point of seizure is not known.

Forensic data are most scarce in the countries and regions where the ATS problem has shown recent signs of expansion, while the level of information is better in developed countries with stronger infrastructure and resources. The following examples illustrate some of the changes since 2001 in selected countries where data were available.

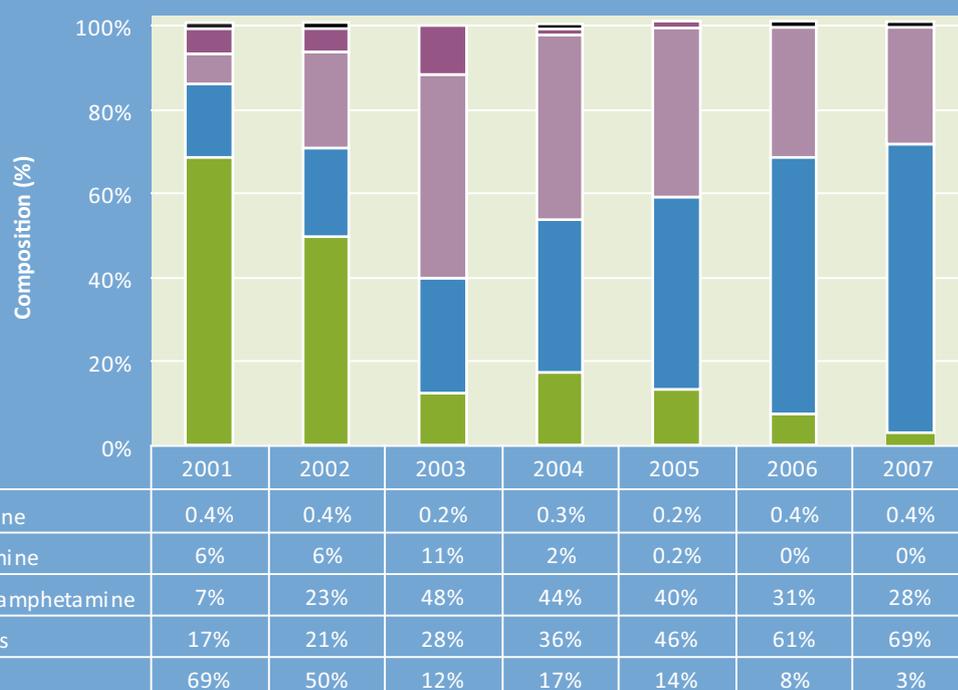
.....  
 4 National Project Workplan for National Narcotics Board Indonesia: *Improving ATS data and information systems*, presented at the Regional ATS forum (August 2007).

## Canada: methamphetamine composition 2001-2007



Note: results of forensic tests of substances submitted by law enforcement initially "believed" to be methamphetamine.  
 Source: Health Canada Drug Analysis Service, *Illicit Drug Surveillance (2008)*; *Illicit Synthetic Drugs Surveillance in Canada*, presentation at the Expert Meeting for Global Illicit Synthetic Drug Monitoring Programme, Tokyo, Japan (Feb 2008)

## Canada: 'ecstasy' composition 2001-2007



Note: results of forensic tests of substances submitted by law enforcement initially "believed" to be 'ecstasy'.  
 Source: Health Canada Drug Analysis Service, *Illicit Drug Surveillance, (2008)*; *Illicit Synthetic Drugs Surveillance in Canada*, presentation at the Expert Meeting for Global Illicit Synthetic Drug Monitoring Programme, Tokyo, Japan (Feb 2008)

**North America**

Forensic testing of seized ATS in Canada showed increased incidence of mixing other drugs with methamphetamine and MDMA. In 2001, 71% of what was submitted as ‘methamphetamine’ for laboratory analysis contained only that substance. By 2007, that proportion had dropped to a mere 15% of tested samples. Over the same period, the incidence of MDMA in suspected ‘methamphetamine’ samples increased from 6% to 24%. The incidence of ketamine in ‘methamphetamine’ samples dropped from about 6% of samples in 2001 to nearly zero by 2005, where it has remained since.

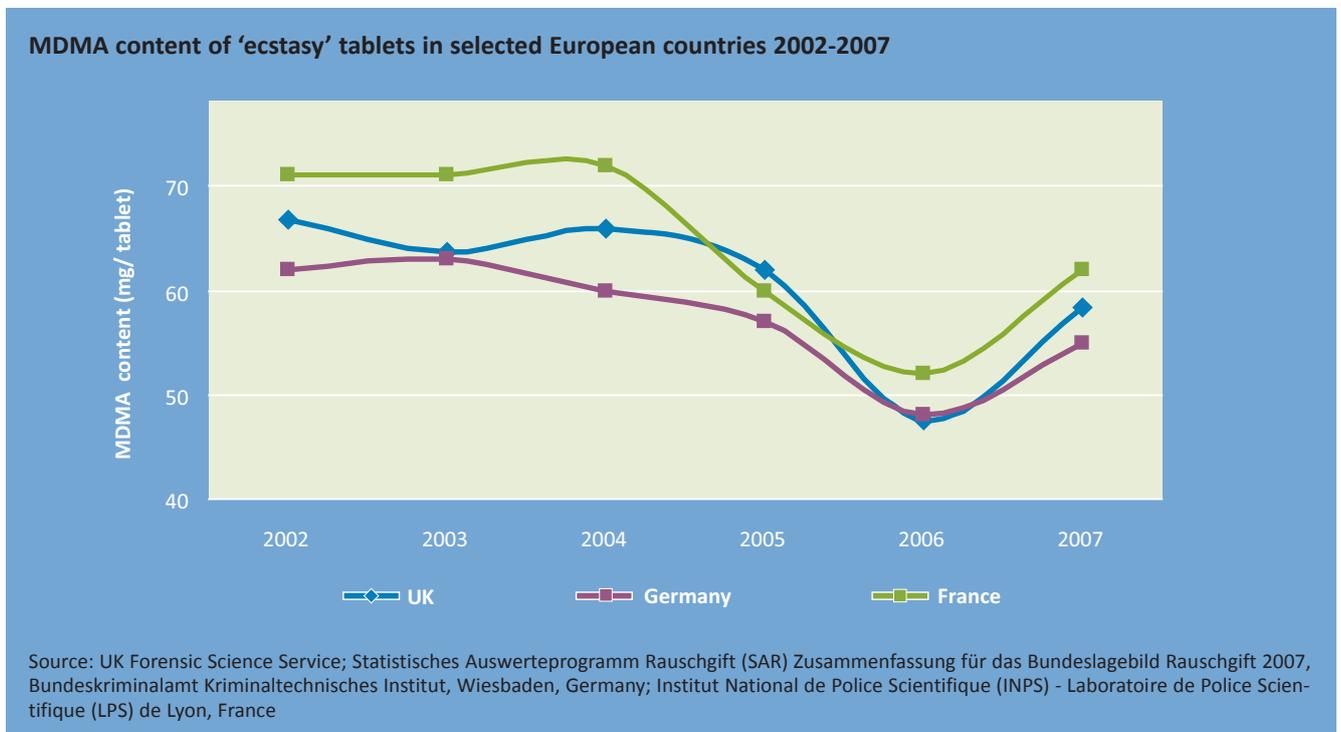
A similar pattern was also noted in ‘ecstasy’ tablets tested, with a decrease of the share of MDMA tablets from 69% in 2001 to just 3% in 2007. At the same time, the composition of ‘ecstasy’ tablets diversified to include other substances such as caffeine and methamphetamine. The change was most notable around 2002-2003; around the same time Canada saw increased domestic manufacture of ‘ecstasy’ and less importation from West Europe.

**Europe**

The European ‘ecstasy’ market is a mature market that has been characterized by a high proportion of tablets containing only MDMA. However, available time series of laboratory data from several European countries reflect how rapidly adaptable even that market is to supply shortages. In 2005, law enforcement authorities in the Netherlands dismantled one of the largest illicit MDMA laboratory ever discovered there. The resulting temporary shortage of MDMA across Europe is reflected in two developments; a decrease in the MDMA content per tablet and/or a decrease in the percentage of ‘ecstasy’ tablets containing MDMA as the single active ingredient.

During the period of the shortage, it was not uncommon to find ‘ecstasy’ tablets sold with other ingredients such as caffeine, ketamine, mCPP or methamphetamine, often in combinations that aimed at mimicking the effects of MDMA.<sup>5</sup> However, data also suggest that the supply shortage did not last, as the MDMA content of ‘ecstasy’ tablets began recovering to previous levels in 2007.

Systematic forensic information to illustrate the supply shortage is available from France, Germany and the UK, however, similar decreases were also noted in the available data from the Netherlands and Austria.



5 Serious Organized Crime Agency (SOCA), *The United Kingdom Threat Assessment of Serious Organised Crime (2006/07)*.

## East and South-East Asia

Results of limited forensic analysis in Viet Nam in 2006 indicate that what was available as 'ATS' tablets contained a range of different substances in varying concentrations. These included methamphetamine (0% to around 30%), MDMA (0% to about 80%) and in most cases ketamine (not quantified). Of note is the fact that although no 'ecstasy' seizures were ever reported by Viet Nam, many of the tablets contained relatively high MDMA levels. This, together with an average tablet weight of almost 300 mg (a typical methamphetamine tablet in South-East Asia would be about 90 mg) suggests that the ATS tablets tested are probably more appropriately classified as 'ecstasy' tablets.

### Viet Nam: seized ATS tablet composition 2006

Tablet	Size (cm)	Weight (g)	Methamphetamine content (%)	MDMA content (%)	Adulterants
	0.8 x 0.5	0.358	0.52	0	paracetamol, caffeine, and ketamine
	0.9 x 0.5	0.325	0.62	0	paracetamol, caffeine, and ketamine
	0.9 x 0.4	0.320	0.87	0	paracetamol, caffeine, and ketamine
	0.8 x 0.4	0.342	33.18	0	ketamine
	-	0.283	0.03	21.15	ketamine
	0.7 x 0.4	0.299	0.05	25.18	ketamine
	0.7 x 0.4	0.263	1.68	66.86	ketamine
	0.8 x 0.4	0.365	0	36.69	ketamine
	0.6 x 0.5	0.191	0	81.96	ketamine

Source: UNODC Regional Centre for East Asia and the Pacific, *Patterns and Trends of Amphetamine-type Stimulants (ATS) and Other Drugs of Use in East Asia and the Pacific 2006* (June 2007)

Data from the analysis of a random selection of 420 tablets seized in Japan over the 2003-2006 period are also available.<sup>6</sup> Results indicate that more than two-thirds of tablets contained only MDMA, with an additional 8% containing other *ecstasy-group substances*. Ketamine was present in 8% of 'ecstasy' tablets tested and amphetamine and/or methamphetamine sometimes with ketamine and other substances in 12%. Rather unusual when compared to typical tablets seized in Europe was the high MDMA content, which could be as high as 199 mg per tablet.

## Near and Middle East

The situation in the Near and Middle East is characterized by a lack of information on the nature of the ATS available. While seizures and abuse are reported for *Captagon*, the composition of this product remains unclear. What is clear is that currently encountered *Captagon* is no longer fenetylline (an ATS that was marketed legitimately under the trade name *Captagon* and that has shaped the ATS market in the region). Available laboratory data suggests that *Captagon* today is amphetamine, typically in combination with caffeine and other substances, such as ephedrine and quinine. Given the enormous increase in ATS trafficked in and through the region, clarification of what is available as *Captagon* is important.

A recent study on the composition of 'ecstasy' samples in Turkey's Bursa region found a mean MDMA concentration of 35.1%. Other reported ingredients included other ATS (dexamphetamine, N-formylamphetamine, amphetamine, methamphetamine), barbiturates and benzodiazepines (barbital, phenobarbital, bromazepam), methaqualone, caffeine, theophylline, quinine, yohimbine, and various excipients and tablet fillers.<sup>7</sup>

Forensic data and qualitative information are essential to the understanding of the nature and extent of the worldwide illicit drug problem. This applies particularly to ATS, where tablets are often encountered which cannot be properly identified without chemical testing, and where assumptions are typically made based on similarities of external characteristics, irrespective of their chemical composition. In addition, the identity of a seized drug, its purity, its manufacture process and conversion ratios (yields) are central to establishing manufacture and market value estimates.

<sup>6</sup> Kanto Ecstasy Project, Japan (Jan 2007).

<sup>7</sup> S. Nerkis, H.H. Oruç, *Purity and composition of cannabis, heroin and ecstasy samples used in Bursa region*, Bagimlilik Dergisi (2006).

## MARKET VALUE

There are significant incentives to initiate or expand clandestine ATS manufacture, including the ease and flexibility with which it can be done, the generally low start-up and operational costs, substantial profit margins and low risks. Because profit motivates the expansion of the market into new areas and new products, understanding the size of the market is critical to measuring and addressing the efficacy of programme and policy responses.

Not only do significant profits come from the sale of ATS end-products at both the wholesale and retail markets, but also from the trafficking of precursor chemicals, with increasing profits as precursors are moved closer to manufacturing areas. For example, black market P-2-P prices are approximately €190 (US\$240) per lt. in Russia and €600-800 (US\$750-US\$1,000) in the Netherlands; a Mexican chemical trafficker will pay US\$250,000 for a 25 kg drum of pseudoephedrine which costs only US\$1,700 in Asia. However, partnerships between organized crime groups which allow for the bartering of precursor chemicals for ATS end-products, to some extent, result in fewer cash movements and obscure true market values.

One of the most challenging tasks - given current data availability (or lack thereof) is to arrive at estimates on the size of the ATS market in economic terms. A fundamental problem is that many Member States do not yet have reliable monitoring systems to register price and purity data from which to assess market performance.

The approach used by UNODC to deal with price-related data deficiencies in the short-run has been to establish average prices and purities at the regional level, based on the assumption that any systematic reporting bias is unlikely (i.e. over-estimates in some countries should be offset by under-estimates in other countries at the regional level). The analysis in this report has been based on prices reported for 2006 and, if not available, for prices reported for 2005.

The overall calculations reveal a size of the ATS retail market of around US\$63 billion (or US\$65 billion if rounded), which is practically unchanged from five years ago. The new estimates based on average retail prices for 2006 (or latest year available) show a retail value of:

- US\$28 billion for the methamphetamine market (de-facto unchanged from the previous estimate of US\$29 billion)
- US\$15 billion for the amphetamine market (slightly higher than the previous estimate of US\$11 billion)
- US\$20 billion for the 'ecstasy' market (which is slightly lower than previous estimate of US\$24 billion).

The wholesale value of the ATS market amounts to US\$24 billion which is also de-facto the same as estimated five years ago (US\$23 billion).

Estimates of the value of the ATS market at the wholesale and the retail level (in billion US\$) for 2001 and for 2006



Source: UNODC, *Ecstasy and Amphetamines - Global Survey 2003*; UNODC, *World Drug Report 2008*; UNODC ARQ/ DELTA

## 2008 GLOBAL ATS ASSESSMENT

### ATS prices as reported in the ARQ

ATS	PRICES					
	WHOLESALE			RETAIL		
	US\$/g	Purity (%)	US\$/g (corrected for purity)	US\$/g	Purity (%)	US\$/g (corrected for purity)
<b>Amphetamine</b>						
West and Central Europe	7.3	38%	19.4	21.3	38%	74.0
South-East Europe	7.7	45%	17.2	9.22	45%	36.9
East Europe	28.5	80%	35.6	33.8	63%	54.1
Near and Middle East	11.5	72%	15.9	15.9	72%	27.7
North America	21.3	30%	71.1	100.1	30%	455.0
Oceania	4.0	33%	12.1	207	33%	912.4
South-East Asia	31.9	95%	33.5	42.4	95%	44.7
Africa	10.8	100%	10.8	29.4	100%	29.4
Other	10.8	49%	22.2	29.4	49%	67.2
<b>Weighted mean</b>			<b>30.0</b>			<b>142.1</b>
<b>Value (106.8 mt*)</b>			<b>US\$3.2 billion</b>			<b>US\$15.2 billion</b>
<b>Methamphetamine</b>						
South-East Asia	26.6	72%	37.1	44.7	68%	65.8
East Asia**	103.2	79%	131.4	640.0	76%	846.6
North America	21.3	71%	29.9	100.1	52%	192.5
Oceania	169.1	44%	387.1	283.5	46%	620.6
East Europe	10.1	47%	21.7	19.0	46%	41.1
West and Central Europe	21.6	46%	47.2	44.2	44%	100.2
Africa	24.4	59%	41.6	48.8	56%	87.4
Other	56.5	59%	96.2	113.0	56%	202.3
<b>Weighted mean</b>			<b>46.7</b>			<b>113.0</b>
<b>Value (250.2 mt*)</b>			<b>US\$11.7 billion</b>			<b>US\$28.3 billion</b>
<b>'Ecstasy'</b>	<b>US\$/tablet***</b>			<b>US\$/tablet***</b>		
West and Central Europe	3.6			12.7		
South-East Europe	4.8			10.0		
East Europe	11.5			17.3		
North America	13.0			24.3		
Oceania	16.9			30.8		
South-East Asia	11.7			26.4		
Africa	7.5			10.6		
Other	8.6			17.3		
<b>Weighted mean</b>	<b>9.6</b>			<b>20.5</b>		
<b>Value (97.5 mt or 975 million tablets at 100mg/tablet*)</b>	<b>US\$9.3 billion</b>			<b>US\$20.0 billion</b>		

\* Amounts available for consumption in 2006 (i.e. 2006 manufacture estimates less seizures)

\*\* East Asia: Japan and Republic of Korea

\*\*\* Countries report 'ecstasy' prices per tablet and/or per gram but often fail to indicate what is actually being measured; information about the active ingredient MDMA content also is only rarely provided. The calculation therefore has two biases which should, however, largely offset each other. For the purposes of this calculation, a global average MDMA content of 100 mg was assumed. (Using a lower content of 60-70mg, as suggested by forensic analyses in some regions in recent years, would increase the number of 'ecstasy' tablets that could be produced out of any given amount of MDMA. The resulting estimate of the size of the ecstasy market could be thus an 'under-estimate'. However, there is an offsetting bias in the price calculation. The average 'ecstasy price' is most likely a significant 'over-estimate' as a number of countries seem to have reported the price of 'ecstasy' per gram and not per tablet. A comparison of both estimates confirmed that this is the case.)

Source: UNODC ARQ/ DELTA

A world map graphic composed of a grid of small white dots, set against a light green background. The map shows the outlines of continents and is positioned in the upper half of the slide.

# **METHODOLOGICAL CONSTRAINTS**







## METHODOLOGICAL CONSTRAINTS

Analyzing ATS markets and developing an evidence base for action against ATS requires accurate, comparable and timely data. Changes in ATS drug markets - the specific substance and form, their manufacture, trafficking and use - occur very rapidly, and there are clear indications that they are expanding in developing regions of the world, the same regions where data and understanding are most limited. The less data available, the greater the reliance upon assumptions and generalization which can lead to inaccurate estimates that allow the problem to proliferate. The lack of information on ATS constitutes a substantial challenge to Member States and the international community in designing effective policy and programme interventions.

This chapter outlines some of the methodological constraints that impact both the analysis of ATS market size - production and value - and the development of an evidence base of actionable information.<sup>1</sup> It begins with the limitation posed by the intrinsic characteristics of ATS markets in particular, reporting timeliness and quality by Member States, and subsequent modelling and underlying assumptions from which to derive estimates. While the description and examples focus specifically upon the manufacture model for ATS and its limitations, the issues are illustrative of trafficking, consumption, and market value information, which are all inter-related.

To develop an accurate and comprehensive picture of the global ATS situation requires data from Member States. Because the manufacture of ATS, like other synthetic drugs, is not limited by geography and cannot be sensed and monitored remotely, data are utilized from a variety of sources including: the UNODC Annual Reports Questionnaire (ARQ); technical reports from the INCB; government reports and inter-governmental organizations (e.g. Interpol/ICPO, World Customs Organizations, EUROPOL); UNODC field office reports; and regional data collection mechanisms such as the Drug Abuse Information Network for Asia and the Pacific (DAINAP).

The ARQ is sent out by the Commission on Narcotic Drugs (CND) Secretariat annually to all 192 Member States<sup>2</sup> to gather, *among other things*, standardized information about illicit drug supply and demand. The proportion of ARQs that were returned by region in 2007 and 2008 for the reporting year 2006 were: Europe (87% demand and 89% supply); the Americas (39% and 49%); Asia (58% and 71%); Africa (41% and 52%) and Oceania (21% respectively).<sup>3</sup> There are Member States and regions that consistently provide either no data or incomplete data (i.e. they provide less than 50% of the minimum critical data necessary in the ARQ)<sup>4</sup> largely as a result of a lack of infrastructure to generate, manage, analyse, and report drug information.

These are also regions with relatively limited resources and capacity and where there are concerns about expansion of the ATS problem. For example, there is irregular and/or incomplete reporting in East and South-East Asia, South Asia, the Near and Middle East, subregions within the Americas, much of Africa and most Pacific island states and territories of Oceania.<sup>5</sup>

1 Details of the analytical methodology itself can be found in the annual *World Drug Report*.

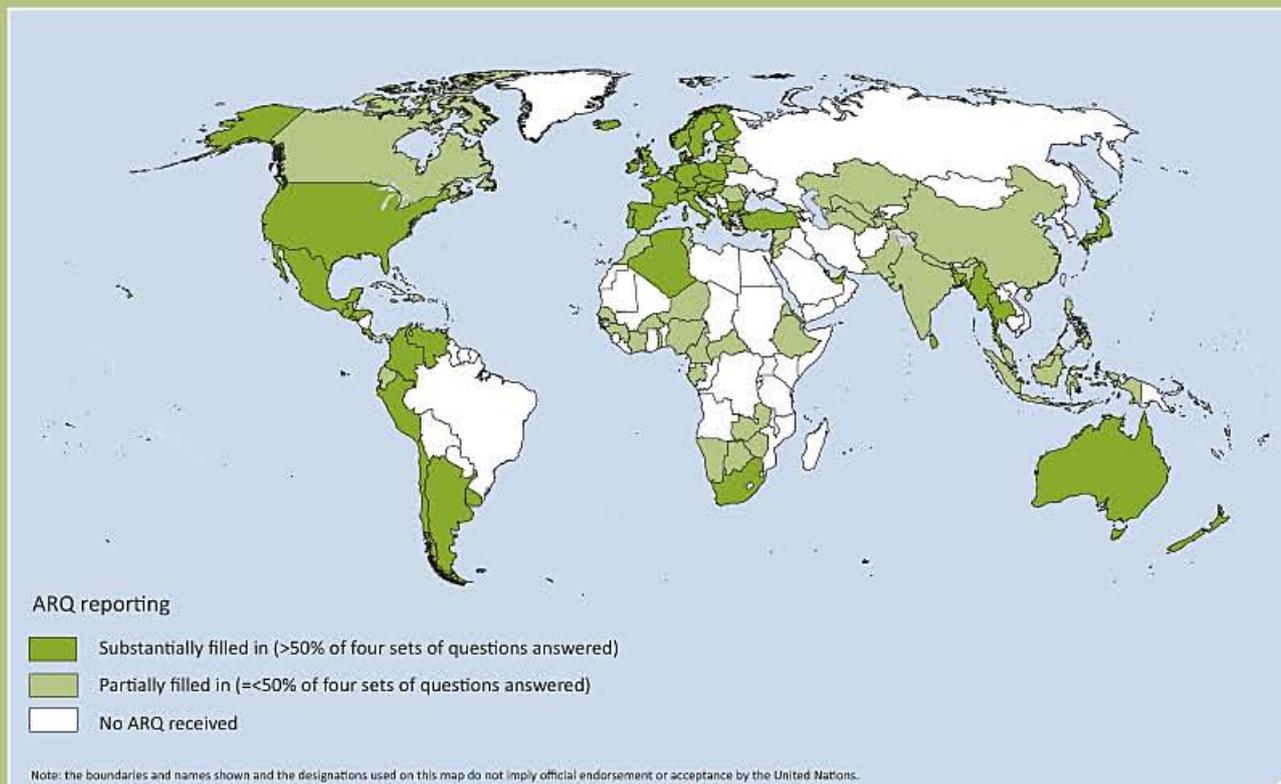
2 UNODC ARQs in some cases are also returned from some autonomous and semi-autonomous territories (e.g. Gibraltar, Macao (SAR of China), Hong Kong (SAR of China), and islands such as the Isle of Man and Niue, etc.).

3 More questionnaires are returned and data are more complete for the Part III (Drug Supply) of the UNODC ARQ, because data reflect law enforcement reporting which are generally more readily available.

4 In the ARQ Part II (Drug Demand) there are 61 numbered sets of questions, of which four sets are minimum critical data; in Part III (Drug Supply) there are 55 numbered sets of questions, of which five sets are minimum critical data.

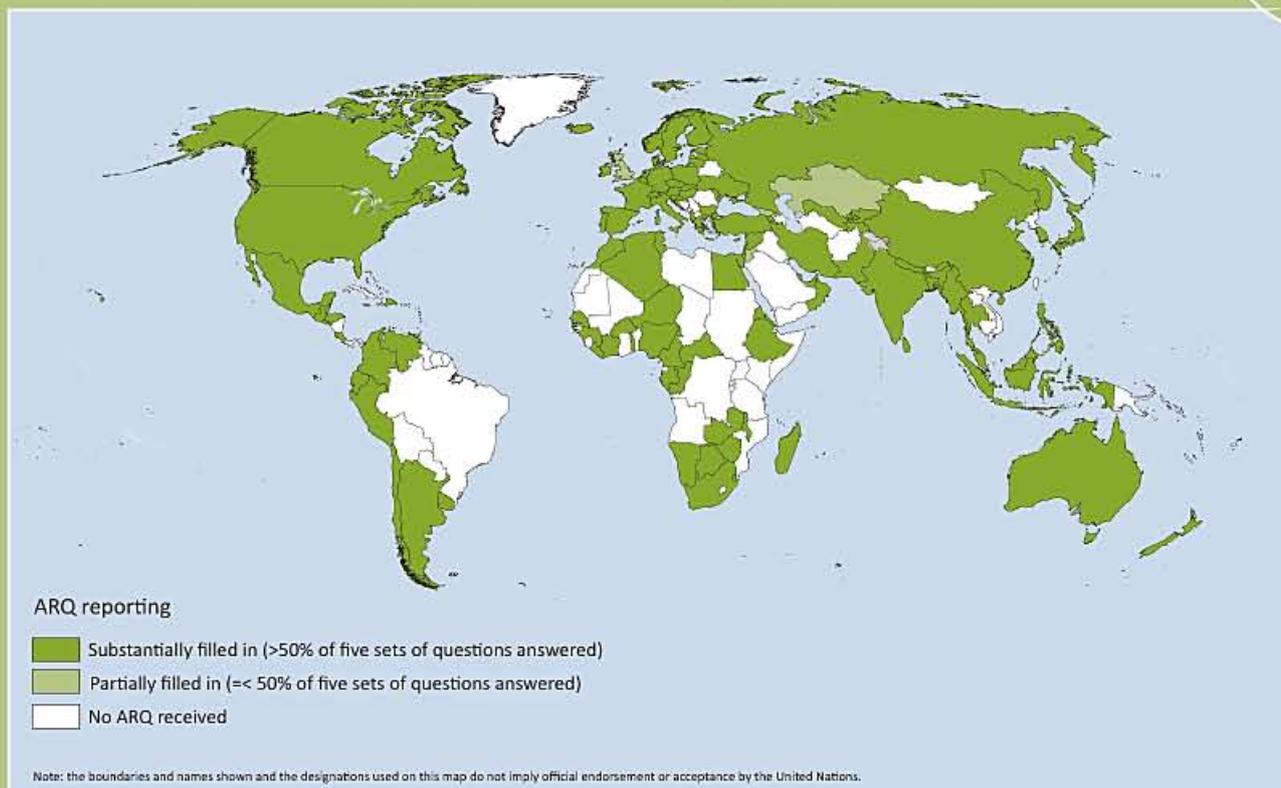
5 Excluding Australia and New Zealand.

## ARQ responses by Member State, by completeness: Part II- Drug Demand (data for 2006)



Source: UNODC ARQ

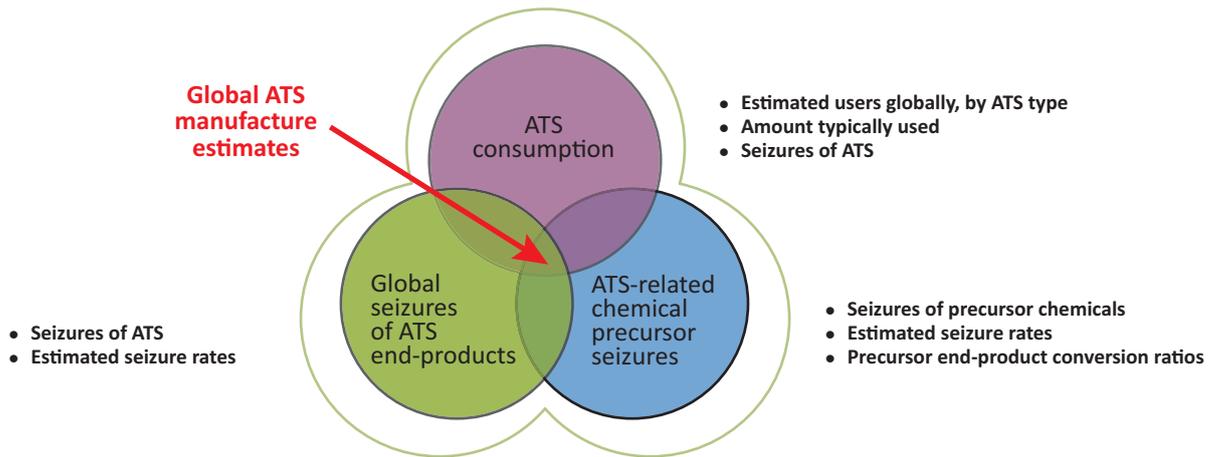
## ARQ responses by Member State, by completeness: Part III- Drug Supply (data for 2006)



Source: UNODC ARQ

UNODC utilizes reported data to estimate ATS manufacture,<sup>6</sup> but unlike geographically defined areas where illicit crops such as coca or opium poppy are produced, clandestine ATS manufacture can only be indirectly estimated. This estimate<sup>7</sup> is triangulated based on three sub-components estimates: (i) global seizures of ATS end-products (i.e. ATS seizures), (ii) ATS-related chemical precursor seizures, and (iii) ATS consumption (i.e. prevalence rates). A variety of assumptions are used to arrive at a manufacture estimate based on each sub-component. The unweighted overlapping average of each of these estimates provides the point-estimate for annual manufacture. Market value estimates for ATS are subsequently derived from the manufacture estimates in combination with drug prices and purity levels at the wholesale and retail markets.

## ATS manufacture model



### (i) ATS seizures

Global seizures of ATS end-products are based largely on available data from Member States. Seizure totals compile reported seizures weights in mass (gram or kilogram), volume (ml/ lt.) or “units” (e.g. tablets, ampoules, doses, etc.) and convert them into standardized kilogram equivalents for modelling.

Due to a lack of forensic information reported by Member States, the analysis of seizure data requires many assumptions to be made: 1) that seizures were in fact tested and properly identified —versus ‘assumed to be a certain substance’, as is often the case with law enforcement; 2) that ATS seizures are correctly reported with consistent standards to determine what the active ingredient is (e.g. ‘ecstasy’ tablets or ‘non-specified amphetamines’); 3) that dosage “units” reported contain, on average, the same amount of active ingredient regardless of market or geographical differences (e.g. amphetamine/ methamphetamine tablets are all assumed to have 30 mg of active ingredient and ‘ecstasy’ tablets are assumed to have 100 mg of MDMA or one of its analogues); and 4) that “rule-of-thumb” drug interception rates of 10% apply at the global level even though they may differ across regions due to law enforcement capacity, unique geographical characteristics (e.g. a remote island nation versus a country with porous borders), or awareness of ATS trafficking.<sup>8</sup>

These assumptions are static and do not account for significant market changes or wide regional variations. For example, laboratory analysis of seized ‘ecstasy’ tablets in Canada, a country with increasing ATS manufacture and trade, found that between 2001 and 2007 the MDMA content declined precipitously from 69% to only 3%, with concurrent increases in the proportion of methamphetamine and other active ingredients. Similar changes were also reported from other regions (e.g. Hong Kong (SAR of China)) and for different types of ATS (e.g. methamphetamine).

Few studies on interception rates for drugs or their precursor chemicals exist, thus substantially limiting understanding of the effectiveness of law enforcement by substance type and region. One study of New Zealand drug interception rates estimated that seizures in 2001 averaged 4% (between 2% and 7%) for *amphetamines-group substances* and 8% (5% and 17%) for *ecstasy-group substances*.<sup>9</sup> The different rate by substance type was believed to be related in part to the

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6 After quality assurance, standardization and assessment is performed.

7 The methodology to arrive at such estimates was first developed in UNODC’s report *Ecstasy and Amphetamines - Global Survey 2003*. It is discussed in more detail in the methodology section of the annual *World Drug Report*.

8 In addition, the model does not currently correct for the impact of an increase in the number of Member States that report to UNODC in successive years on the estimates, i.e. an increase in seizures in one year may simply be the result of more Member States reporting to UNODC.

9 Centre for Social and Health Outcomes Research and Evaluation, *The Socio-Economic Impact of Amphetamine Type Stimulants in New Zealand*, Auckland, New Zealand (2004).

fact that ecstasy was not typically manufactured domestically, thus having to undergo additional customs scrutiny when trafficked into the country. When compared with other regions, these rates might reflect a higher rate of interception due to well-resourced law enforcement, a heightened awareness of ATS trafficking, and the remoteness of the country without direct borders with other nations. If New Zealand's interception rates for *amphetamines-group substances* (4%) and *ecstasy-group substances* (8%) were applied globally, manufacture estimates would increase by 186 mt and 3 mt, respectively.

## (ii) Precursor seizures

Seized ATS precursors (e.g. ephedrine, P-2-P, and 3,4-MDP-2-P) are assumed to be for the illicit drug market and are thus converted into ATS end-product weight equivalents as part of the model. Calculations are made under the following assumptions: 1) "rule-of-thumb" interception rates of precursors are 10% regardless of geographical differences or law enforcement resources;<sup>10</sup> 2) modelling is limited to ATS precursors under international control (e.g. substances included in Table 1 and Table 2 of the 1988 Convention); other precursors or forms (e.g. pharmaceutical preparations) are not considered; and 3) that conversions into drug end-products are static over time (e.g. 4 kg of phenylacetic acid converts into 2 lt. of P-2-P before reduction into 1 kg of methamphetamine) and do not vary by region. Shipments that are stopped before they are seized (i.e. because of suspicion over their legitimacy) are not considered in the calculations.

As discussed previously, there is mounting evidence that ATS manufacture, specifically methamphetamine, is occurring via diverted pharmaceutical preparations and other chemicals not under international control. For example, based on an initial 2007 snapshot, pharmaceutical preparations accounted for at least 28% of pseudoephedrine reportedly seized. Additionally, increased utilization of *Pre-Export Notifications (PEN)* has quite probably stopped some diversions and suspected shipments from getting into the illicit market, thus contributing to lower total seizure amounts. Precursors that are diverted from national distribution channels (i.e. domestic diversions within a country) are also not reported. The lack of data on the extent of domestic diversions most likely results in underestimating precursors available for illicit manufacture.

The assumptions related to manufacture also do not account for improvements in manufacturing methods or regional variations in clandestine conversion ratios (yields). For example, in 2001, Canada reported an average clandestine laboratory yield for pseudoephedrine-based methamphetamine of 50%. By 2006, the reported yield had increased substantially to 71%. This increase was likely due to changes in manufacturing methods, greater operator skills and/or greater laboratory sophistication. Additionally, there are also wide regional and sub-regional variations; for instance, the difference between Moldova and the Czech Republic for reported yields for methamphetamine using the same precursors was 30% in 2006.

## (iii) Consumption estimates

ATS consumption estimates provide the last component of the ATS manufacture model. Calculations take the most recent national annual prevalence estimates for the general population and multiply them by the amount believed to have been consumed, to provide for an estimate of manufacture. The amount consumed is difficult to estimate globally or even regionally due to the fact that few studies exist that actually estimate what the "typical" ATS user consumes.

Additionally, resource and capacity-challenged countries and regions particularly vulnerable to ATS activity, comprising the vast majority of world population, have few if any national household survey estimates of annual drug use prevalence or other types of estimates (e.g. national school surveys) that can be extrapolated into national or regional estimates. Moreover, the surveys of countries that do exist often vary substantially in their quality and timeliness. For example, the *World Drug Report 2004* reported *amphetamines-group* prevalence estimates for 131 countries and regions<sup>11</sup> with an average estimate that was 3.1 years old at the time of publication. Four years later, the number of countries with *amphetamines-group* prevalence estimates had increased to 166, with data 3.3 years old on average. While improvements were seen, some regions still fall far behind. For instance, all of North American and most European countries have recent estimates (on average three years old), but only 47% of Asian, 23% of African, and 14% of Oceania countries have estimates in the *World Drug Report 2008*. Additionally, amphetamine prevalence estimates exist for 40% of the countries in the Near and Middle East but they represent some of the oldest estimates - the average estimate was 4.3 years old, with one estimate dating back to 1998.

10 In order to refine this, the *World Drug Report* in 2005 adjusted for regional variations in law enforcement effectiveness related to drug seizures when estimating the value of illicit drug markets.

11 For example, regions include Scotland, Northern Ireland, Gibraltar, Taiwan (Province of China) and Hong Kong (SAR of China).

Because of this lack of information the following methods and assumptions are applied: 1) in the case of a complete lack of data for an individual country, it is assumed that drug use was likely to be close to the respective sub-regional average (and adjusted if additional indicators suggested they were likely to be above or below such an average); 2) the average amphetamine or methamphetamine user (i.e. from experimental user to daily addict) consumes 30 mg daily of active ingredient while the average consumer of *ecstasy-group substances* uses three times per week and consumes an average of 90 mg of active ingredient per episode; and 3) that the users reported consumption accurately (e.g. assuming the absence of cultural barriers to disclosure of illicit drug use; and that users know what they are taking, for instance, that they know actual composition in the case of what may be presented to them as an 'ecstasy' tablet).

There are several subregions (e.g. East and South-East Asia, the Near and Middle East, etc.) which encompass multiple countries where household surveys or other prevalence estimates are outdated, lacking in completeness or quality, or simply do not exist. For example, experts from China reported a perception that ATS use strongly increased in 2006 and again in 2007. However, there are no known national household surveys which would provide an estimate on the number of drug users for this country of 1.3 billion people. Therefore, China's contribution to the global estimate of users is sub-regionally derived from reports of several other countries in the East and South-East Asian region for which some prevalence estimates exist.<sup>12</sup> These other countries, which account for about 36% of the sub-region's population, reported on average a slight decrease in ATS prevalence in 2006 over 2005, which subsequently reduced China's contribution to the global user base by about 180,000 users. This represents a decline and is in contrast to the increase as perceived by experts in China. For a subregion of this size, an error in prevalence of just +/-0.1% represents roughly one million users and 3 mt of estimated manufacture of *amphetamines-group substances* globally.

## Market value estimates

Estimation of the ATS market value relies on manufacture estimates obtained via the triangulation model, as well as drug prices and purity levels reported by Member States. However, reporting on these indicators is not consistent and there are several difficulties in calculating global average prices since ATS prices - like illicit drug prices in general - differ strongly within countries as well as across countries and regions. UNODC currently calculates regional averages using available price data for both 2005 and 2006, however, the paucity of purity data requires regional average purities to be calculated based on data reported over the last decade. Additionally, in only very few occasions are the corresponding price and purity data sets available. All of this is because many Member States do not have - as yet - reliable monitoring systems to register price and purity data that would be required for market value estimates as well for understanding the behaviour of drug markets and the impact of supply and demand interventions.



Given the absence of a direct estimate, such as the estimates for coca leaf and opium poppies which are derived from cultivated area and yield, the triangulation model despite its methodological limitations represents the best practice thus far for estimating global ATS manufacture and subsequent market value. However, it is precisely these limitations along with unique characteristics of the ATS market - the speed and flexibility with which manufacture, trafficking and use shift - coupled with the lack of data from significant geographic regions, which creates serious difficulties related to assessing the ATS situation. The absence of accurate and timely data in turn poses a direct challenge to Member States' law enforcement, judicial, prison and health care systems, which need information to respond adequately to the current ATS situation and prevent its future spread.



<sup>12</sup> These include Brunei Darussalam, Hong Kong (SAR of China), Taiwan (Province of China), Indonesia, Japan, Republic of Korea, Macau (SAR of China), Malaysia, Vietnam, Philippines, Lao PDR, Singapore, Cambodia, Myanmar, and Thailand. There were no prevalence studies provided by Mongolia or the Democratic People's Republic of Korea.





# CONCLUSION







## CONCLUSION

A lot of attention has been given to amphetamine-type stimulants (ATS) over the last few years, especially since the United Nations General Assembly's Special Session (UNGASS) and the *Action Plan against illicit manufacture, trafficking and abuse of amphetamine-type stimulants and their precursors* in 1998. At the global level, an initial review of ATS was carried out by UNODC in 1996; the first global survey was published in 2003 and the present report is an update of the 2003 survey.

This report has shown that the number of ATS users has stabilized at high levels and that ATS are a worldwide problem, although with significant regional differences. It is also clear that the ATS problem is not static but spreading rapidly to new markets. The dynamics of ATS are not only reflected by changes in regional trends in the levels of manufacture, trafficking and use, but are also inherent in the physical and chemical compositions of the substances themselves. Not only does the group of ATS encompass a range of distinct substances, such as amphetamine, methamphetamine and MDMA (the active ingredient in 'ecstasy'), but there are also different forms of these products, including tablets, powders and high purity crystals. Unfortunately, existing national and regional monitoring systems are often not capable of generating representative data. For example, neither India nor China - collectively accounting for 38% of the global population - has ever conducted a nationally representative survey on ATS consumption.

A central theme that emerges from the report is that the spread of ATS in recent years is highly correlated - within regions as well as within countries - with inadequate infrastructure, inadequate implementation of existing regulatory frameworks and/or the lack of resources - human and financial - to respond to the ATS phenomenon in a timely and strategic manner. Developed countries with adequate resources at their disposal generally show stabilization or even decrease of ATS manufacture, trafficking and/or use, while indicators in developing countries are still pointing upwards. Criminal organizations appear to drive this development by increasingly targeting vulnerable countries often close to developed markets for illicit manufacture and/or trafficking operations. The growth in illicit activity in these locations is reflected in increasing quantities seized as well as levels of use, the latter being a result of the spill-over of ATS to previously unaffected regions and countries.

However, the supply-push and demand-pull relationship remains unclear, and many of the recent trends are not understood well enough or quickly enough to enable the design of the required strategic interventions and responses by national law enforcement, judicial, regulatory and health care systems. Developing an evidence base of actionable information to counter the challenge of ATS relies on a variety of comparable and timely data. However, as this report has shown, there remain significant data gaps. Some gaps are global, such as the lack of systematic information on the size and sophistication of clandestine laboratories or the limitations related to prevalence estimates. Other gaps are specific to certain regions or countries.

Attention to the ATS problem remains uneven across the world:

- In East and South-East Asia - a region confronted for more than a decade with a significant methamphetamine problem (which is now diversifying into 'ecstasy', other ATS, and other synthetic drugs) - a monitoring system has been established with the assistance of UNODC;
- In Europe - a region which has had enduring amphetamine and 'ecstasy' problems and has supplied much of the world's 'ecstasy' for a long time - a system exists in EU Member States for monitoring the emergence of new psychoactive substances;
- In the USA, recent attention to methamphetamine use and its consequences has renewed interest in better monitoring the problem;
- In the Near and Middle East, despite significant seizures and increasing concern about growing ATS use, a sufficient information base has not been developed;
- In Oceania, Pacific island states and territories express concerns about growth of manufacture, trafficking and use, and yet infrastructure to provide information is virtually non-existent and few are signatories of the United Nations drug control conventions;

- In Latin America, other than sporadic reporting of illicit ATS manufacture and use emerging among urban youth, little attention is devoted to the ATS problem;
- In Africa, a region increasingly associated with the trafficking of ATS precursors and indications of growing use in some countries, only South Africa appears to be taking the threat of methamphetamine seriously.

Unfortunately, one pattern that appears to emerge is that data gaps are largest among countries and regions where available indicators point to the strongest increases in the ATS problem. In other words, a worsening ATS problem correlates with lack of infrastructure, resources and experience with ATS markets.

### Next steps

Addressing the problem requires, first and foremost, a better understanding of the ATS phenomenon. A set of targeted practical actions are required, ranging from measures to raise awareness of ATS among law enforcement and the general public, to addressing the proliferation of clandestine manufacture and the availability of ATS precursors (including the increasing use of non-controlled substitute chemicals and the health, safety and environmental implications related to illicit manufacture), and preventive measures to reduce demand and treatment services for ATS users.

In their broadest sense, these are the very areas that were addressed in the 1998 UNGASS *Action Plan on ATS* and concrete steps for further action by Member States will be outlined as part of the final UNGASS review. However, the new information presented in this report highlights a few salient points for action.

First, available information, while allowing some broad generalizations, is insufficient to serve as an evidence base for action. Improving understanding of the ATS problem and investing in ATS information systems that provide accurate, timely and actionable information with detail at the subregional or national level, remain among the highest priorities for action.

Secondly, emerging ATS markets need to be addressed proactively before they are established and become a significant added burden to national health and justice systems. However, awareness and understanding of the speed with which ATS can spread is frequently not available among enforcement agencies and relevant policy-makers. Focus therefore needs to be given to identifying and communicating information on emerging trends, especially in regions that have not paid sufficient attention to ATS.

Thirdly, clandestine manufacture needs to be targeted at the root by making precursor controls more effective. This includes reducing access to precursor materials for both the many small-scale 'kitchen' laboratories through retail pharmacy outlets, and the industrial-scale laboratories through diversions from international trade or domestic diversions which are subsequently trafficked internationally. It must also include efforts to prevent the use of preparations containing ATS precursors and of derivatives specially designed to circumvent existing controls.

Finally, it is evident from this report that a worsening ATS problem is correlated with a lack of infrastructure, experience and/or resources, and priority must therefore be given to those vulnerable countries and subregions where ATS are spreading most rapidly and where data are known to be lacking or insufficient.

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