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**Global Survey 2003**



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## Preface

Amphetamine-type stimulants (ATS) are simple to produce and easy to take. They are also (erroneously) perceived as less harmful than other illicit substances, like heroin and cocaine. Indeed the opposite is true: designer technology, which has produced and keeps refining these synthetic drugs, gives origin to several concerns.

First, ATS abuse risks becoming a culturally sanctioned occurrence, blurring the notion of drug addiction as parents and governments alike are confused about the severity of their impact. Not surprisingly, in the past few years the consumption of ATS substances has kept growing, with an increasing momentum.

Second, while societies' sufferings are similar, governments' responses differ. They range from benign neglect to robust intervention. The differences magnify the misunderstanding in society and facilitate the spreading of misinformation about which country is doing what about the synthetic drug problem - including the related costs and consequences.

Third, synthetic drug abuse is no longer limited to the young, or to single countries. Today, life-styles are shared instantly and internationally. Countries must therefore develop a shared understanding of what needs to be done.

The problem is not any more confined to a handful of rich countries (which are the origin of designer technology). ATS manufacturing and abuse are spreading. In South-East Asia, for example, the problem has turned into an alarming epidemic. Slowly, young people everywhere are catching up with the experience of their western peers.

At a time when religion is fading, family bonds are weakening and society is splintering, designer technology gives young people the false promise of becoming (briefly) "masters of the universe". Law enforcement alone cannot control this. Since these changes are global, society as a whole needs to share the responsibility of reducing both demand and supply.



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September 2003



## Explanatory notes

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. The names of territories and administrative areas are in italics.

The following abbreviations have been used in this report:

ARQ	Annual Reports Questionnaire
ATS	Amphetamine-type stimulants
BMK	Benzyl methyl ketone (P-2-P)
2C-B	4-Bromo-2,5-dimethoxyphenethylamine (Nexus)
1988 Convention	United Nations Convention Against Illicit Traffic in Narcotic Drugs and Psychotropic Substances, 1988
2C-T-2	4-Ethylthio-2,5-dimethoxyphenethylamine
DEA	Drug Enforcement Administration (United States of America)
EMCDDA	European Monitoring Centre for Drugs and Drug Addiction
ESPAD	European School Survey Project on Alcohol and Other Drugs
Europol	European Police Office
INCB	International Narcotics Control Board
Interpol/ICPO	International Criminal Police Organization
LSD	Lysergic acid diethylamide
MBDB	N-Methyl-1-(3,4-methylenedioxyphenyl)-2-butanamine
MDA	3,4-Methylenedioxyamphetamine (tenamfetamine)
MDE	3,4-Methylenedioxyethylamphetamine
MDMA	3,4-Methylenedioxymethamphetamine
3,4-MDP-2-P	3,4-Methylenedioxyphenyl-2-propanone (PMK)
4-MTA	4-Methylthioamphetamine
NIDA	National Institute of Drug Abuse (United States of America)
P-2-P	1-Phenyl-2-propanone (BMK)
PMK	Piperonyl methyl ketone (3,4-MDP-2-P)
SAMHSA	Substance Abuse and Mental Health Services Administration (United States of America)
UNODC	United Nations <i>Office on Drugs and Crime</i>
WCO	World Customs Organization
WHO	World Health Organization

### Amphetamine-type stimulants (ATS) – Basic information

ATS are a group of chemically related synthetic drugs. The two major sub-groups of ATS are:

- AMPHETAMINES (amphetamine and methamphetamine) and
- ECSTASY-TYPE SUBSTANCES ('ecstasy', MDMA, MDA, MDE).

The term ecstasy is often used to refer to any ATS (and even other synthetic drugs) marketed in tablet form. In reporting to UNODC, many countries refer to ATS, amphetamine or amphetamines, without specifying what exactly is meant by those terms. Frequently, even the specific term amphetamine is used to refer to methamphetamine, or even the broader category of ATS.

Especially for tablets sold as ecstasy, the situation is further complicated by their frequently complex composition, the many 'fake' or counterfeit products that are available, and the fact that often no distinction is made between products with different active ingredients.

All ATS are sold in powder or crystal form, or as tablets. Different forms frequently reflect different clandestine sources and purities, and different consumer groups.

With typical patterns of abuse, pharmacological effects of amphetamine and methamphetamine are different from ecstasy, as are the risks associated with abuse.



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Part 1 of the survey provides quantitative measures of the extent of ATS manufacture, trafficking and abuse on a global basis. It details the current situation and describes how it evolved over the past decade. The analysis is based on available information in, for example, UNODC's Annual Reports Questionnaires (ARQ), INCB data (especially for precursors) and other traditional (external) sources.

Part 2 provides more in-depth analyses of regional characteristics of the ATS phenomenon, especially of countries and regions most affected.

Part 3 summarizes some key issues of the ATS phenomenon, and briefly explores priority areas for action.





## EXECUTIVE SUMMARY

### Designer technology

Over the centuries humans have experimented with drugs: from alcohol to tobacco, from opium and coca to present day synthetics - and amphetamine-type stimulants (ATS).

In today's fast moving society, the pressure to perform and enjoy keeps growing. Not surprisingly, individuals, especially the young ones, take whatever is available to energize themselves, have some fun, or escape reality. Here is where designer technology enters with its chemical stimulants' promise of an artificial pick-me-up, and brand-names that promise it all: lightning, flying saucer, disco biscuits, fantasy, hug drug, yaba, ecstasy and speed. But these names, catchy as they may be, are dangerously deceptive. ATS may be popular - but they are illegal; they may create momentary masters of the universe - but over time, their harmful effects prevail. And at times, they are lethal.

The instinct of individual self-preservation, and the social conscience that motivates most people to protect society, run counter to the notion of individuals taking drugs mindless of the risks. The act of taking responsibility of oneself and of the community at large - and the attendant concept of *better safe than sorry* - cannot coexist with substance abuse.

The danger posed by synthetic drugs is already real - and is advancing relentlessly:

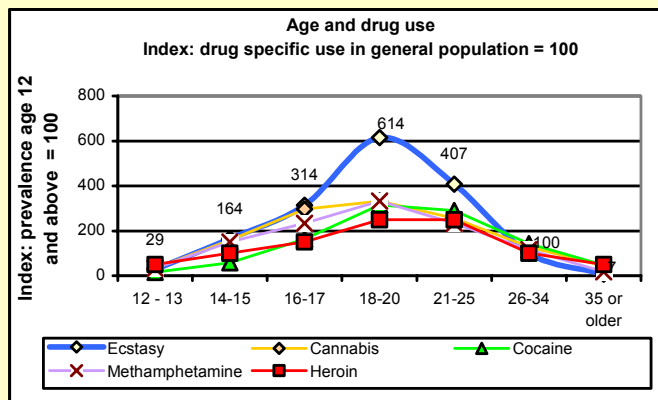
- (i) Cultural barriers against drug abuse have been weakened in family, work and leisure settings. Today, people take pills for, and against, almost anything and everything: to lose or gain weight, to stay awake or fall asleep, to control nervous tension, or to enhance performance at the work place, on the sports field and in the bedroom. A few more pills, illicit as they may be, in the weekly pill-box do not seem out of place - even if the side effects are so much more dangerous.
- (ii) Taking the drugs usually does not require needles, syringes or heating paraphernalia; in most cases, there is little risk of blood-borne diseases. Pill-popping is seen as efficient, with effects that can be calibrated to suit individual preferences. Low prices make the cost of a pill trip about the same as that of two or three pints of beer.
- (iii) Society is vulnerable. Convincing advocacy messages, especially for and by youth, still need to be devised. Prevention has become a more demanding task, given the immediacy and the severity of the threat.
- (iv) Targeted treatment programmes are limited because: the ATS problem is relatively new, and programmes are just not widely available; experiences with heroin and cocaine cannot easily be transferred; and it is not entirely clear how health hazards, especially the polydrug use problem, should be addressed.
- (v) Law enforcement is not adequately equipped to deal with the new challenges. Intelligence skills and tools developed to counteract cocaine and heroin trafficking are unsuitable, because ATS are mostly traded in the neighbourhood and do not cross oceans. Precursor controls are not yet all-encompassing.

The purpose of this Survey 2003 is to review the size and nature of the ATS threat, with the view of exploring what society can do to overcome the problem. Opting out is not an option.

### ATS abuse and young people

Almost all countries continue to report a strong concentration of ATS abuse among youth. This applies particularly to young people in dance and club settings, who show significantly higher lifetime prevalence for recreational use of ATS, ecstasy in particular, than general population surveys.

Data from the United States illustrate this higher prevalence among young people when compared to other drugs. Among 18-20 year olds, annual prevalence of ecstasy use is more than six times the general population average. For comparison, use of methamphetamine, cannabis and cocaine in the same age group is about three times the general population average. In all age groups from 12 to 25 years, ecstasy use is more widespread than use of cocaine.



**Figure 1**  
Source: SAMHSA, *National Household Survey on Drug Abuse*, 2001.

## PART 1. A MAJOR THREAT

- *All countries are part of the ATS problem, as producers and/or consumers.*
- *Abuse is spreading regardless of age, gender, nationality or income. 40 million people (1.0% of the world population) are affected.*
- *Abuse has increased most significantly where synthetic drugs are more easily obtained.*
- *Health hazards are major and cumulative.*
- *Amphetamines cause dependence and psychosis. Ecstasy may speed up the normal mental aging process, leading to Alzheimer-type symptoms.*
- *Who will assist, and pay for, a generation of abusers under-performing in school and at work, because of the impact of abuse?*

Unlike cocaine and heroin, whose production is limited by geography and climate, synthetic drugs can be produced anywhere. Seizures of laboratories, equipment, precursors and finished products, as well as reports on abuse, indicate that the amphetamine-type stimulants (ATS) market is changing in depth, breadth and shape.

Production of ATS is estimated at just over 500 tons a year, with more than 40 million people having used them in the past 12 months. (Note, therefore, that 99% of the world population, age 15 and above, is not affected). The prevalence of abuse among youth is significantly higher than that in the general population, and much higher than that for heroin and cocaine.

Clandestine manufacture is becoming more sophisticated. Over the last few years, more laboratories have been dismantled worldwide than ever before, mostly in North America, in

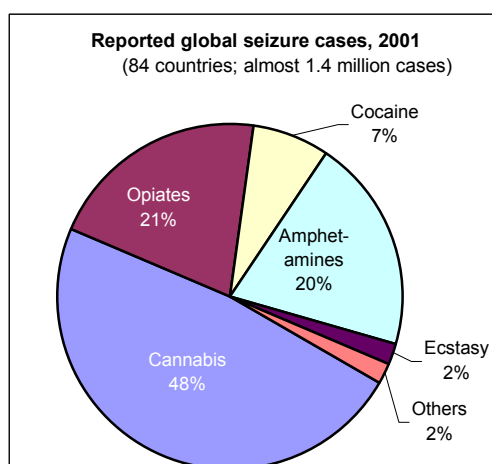
Europe and Asia. Trafficking is increasing, and often leads to the establishment of new production sites. But the market is also changing, partly in response to drug control efforts, and partly as a result of the dynamics of demand.

More and more people are placing themselves at risk. Health hazards are significant and increasing, because of the intrinsic nature of synthetic drugs, and because of the growing range and combinations of drugs sold. The cumulative nature of the mental deficits associated with MDMA (the drug behind much of what is sold as ecstasy) use has been confirmed in larger samples of users. The risk for ecstasy users suffering the effects of early decline in mental function and memory, or Alzheimer-type symptoms, is real.

## Chapter 1: A growing supply

- *ATS are the most often seized drugs worldwide, after cannabis.*
- *Seizures of ATS have risen from about 4 tons in 1990/91 to just less than 40 tons in 2000/01. The largest increases were in East and South-East Asia.*
- *Methamphetamine accounts for almost 3/4 of seized ATS, followed by ecstasy and amphetamine.*
- *Seizures of precursors in 2001 were 12 times higher than in 1991.*
- *The size and sophistication of clandestine laboratories is increasing.*
- *Ecstasy trafficking worldwide has increased most strongly over the last decade.*
- *Amphetamine is manufactured in Europe, methamphetamine in Asia and North America. Ecstasy is now produced everywhere.*

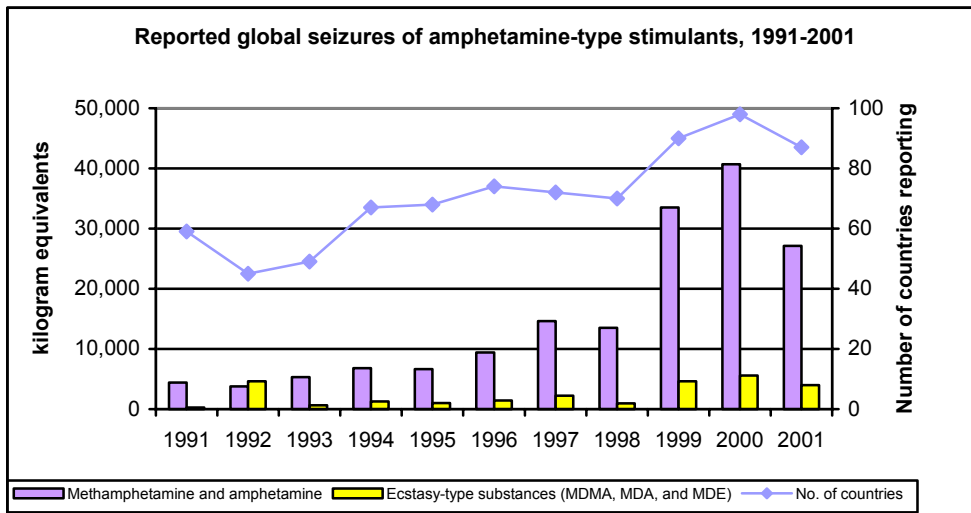
The upsurge in ATS seizures provides a frightening measure of a growing market. Seizures rose from about 4 tons in 1990/91 to just less than 40 tons in 2000/01, with major increases in East and South-East Asia in 1999 and 2000. Methamphetamine seizures (the bulk of trafficking) have declined in 2001, possibly as a result of better controls over ephedrine (a main precursor) and of successes in reducing manufacture in China.



**Figure 2**

Source: UNODC, Annual Reports Questionnaire

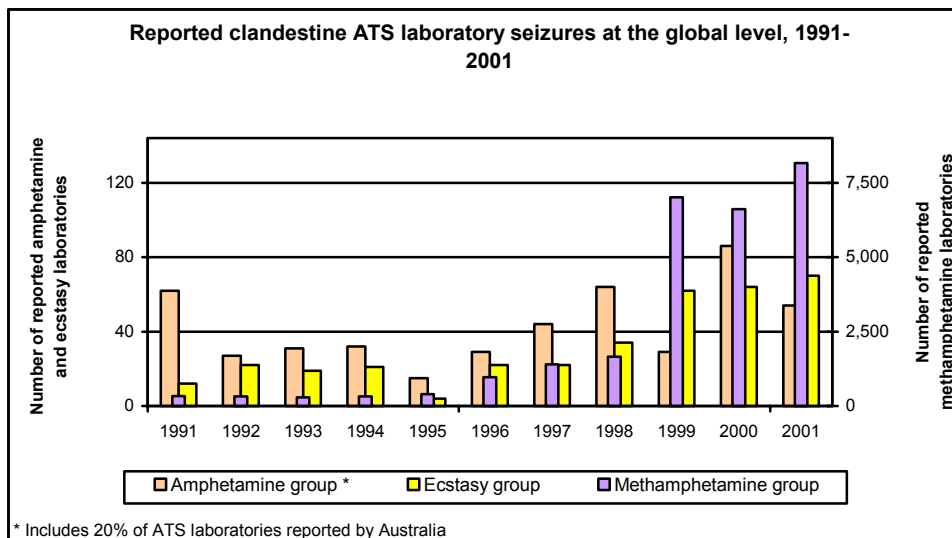
Global trafficking in ecstasy increased strongly throughout the 1990's, although in 2001 seizures declined 10% compared with 2000, mainly in major markets in Canada and the United States, and in Western Europe (especially The Netherlands, France and Italy). The largest ecstasy seizures were still reported by the Netherlands, followed by the United States.



**Figure 3**  
Source: UNODC, Annual Reports Questionnaire Data.

This expanding global market is fed by an increase in the number and size of manufacturing sites, in more countries. Law enforcement is reporting a record number of dismantled “kitchen labs”, but nowadays sophisticated clandestine operations with 100-kilogram capacities per week (equivalent to a million ecstasy pills, or 4% of the global weekly requirement) are also found.

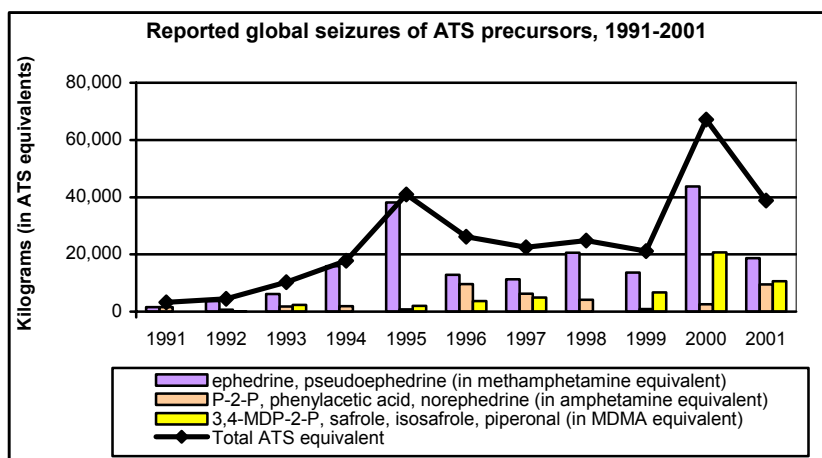
Increasingly, clandestine operators take advantage of technology transfer, including use of the Internet, in setting up labs where other “favourable” conditions are met: access to precursor chemicals, growing demand, corrupt officials, poor law enforcement, lack of extradition and/or light sentencing. This has led to a greater involvement of criminal groups with ruthless forms of marketing.



**Figure 4**  
Source: UNODC, Annual Reports Questionnaire Data.

Interdiction successes have not been limited only to drug seizures and the dismantling of clandestine laboratories. Seizures of the precursor chemicals essential for the manufacture of ATS have also increased in the 1990s. During the past ten years, more than 2/3 of seized precursors (in ATS equivalents) were ephedrine and pseudoephedrine, used for the

manufacture of methamphetamine; almost 1/5 of seizures were of precursors for ecstasy (i.e. 3,4-MDP-2-P, safrole, isosafrole and piperonal); and more than 1/10 concerned precursors for amphetamine (i.e. phenyl-2-propanone, norephedrine and phenylacetic acid).



**Figure 5**

Source: INCB, *Precursors and chemicals used in the illicit manufacture of narcotic drugs and psychotropic substances*, 2002 and previous years.

Seizures in 2001 (in ATS equivalents) were 12 times higher than those reported in 1991, and followed record seizures of methamphetamine and ecstasy precursors in 2000.

Although precursor seizures alone cannot stop this illicit business, new interdiction measures, complemented by regulatory efforts to prevent diversion of chemicals, are a reminder that precursor control is an effective means to limit ATS supply. But economics is a major factor behind this criminal activity. Let's look at it.

## Chapter 2: Profit as market-maker

- *Production of amphetamine and methamphetamine is estimated at 410 tons per year, plus 100-125 tons of ecstasy.*
- *The global ATS business is valued at about \$65 billion.*
- *ATS prices vary widely. They can be 12-15 times higher in the Americas and East Asia than in Europe, where they are the world's lowest (\$10-20/g).*
- *Retailers' mark-up can be as high as 300%.*
- *The clandestine price of chemical precursors is 20 to 50 times the cost of the (legitimate) chemicals themselves, with profit rates exceeding 3,000%.*
- *Low costs, high profits, easily camouflaged labs and manufacturing close to retailing are incentives for organized crime's involvement in ATS.*

Small capital investment, ease of manufacturing, low costs of precursors and equipment, and high volumes make the ATS business extremely lucrative, despite the low (unit) prices. Similar economic incentives are unavailable to the producers of cocaine and heroin, for example.

Competition is heavy, mimicking legitimate business. Retailing is moving up-market, practiced not in filthy alleys populated by emaciated addicts, but in middle-class neighbourhoods

and discos. As with Armani and Hermes products, “fake” and “counterfeits” of the better-known ATS brands are marketed.

In contrast to plant-based drugs, there are no practical means of surveying and assessing the extent of manufacture of synthetic drugs. Secondary methods have to be used, based on seizures of either the drugs themselves, or their chemical precursors. Results can be double-checked against estimates of the demand (number of abusers and quantities consumed). The two approaches generate similar figures.

### Production volumes

Based on:	Estimated annual production (tons)		
	Amphetamine and methamphetamine	Ecstasy	Total
Consumption	516 (weighted average)	100 to 125	616 to 641
Drug seizures	340 / 490	50 / 75	390 to 565
Precursor seizures	290 / 410	130 / 200	420 to 610
<b>Mean and Range:</b>	410 (290 to 516)	113 (50 to 200) [1.4 billion tablets]	523 (390 to 641)

At about 520 tons, annual production of ATS is thus slightly more than that of estimated global production of heroin (450 tons), and about two-thirds of that for cocaine (800 tons).

### Prices and market value

Drug	Prices					
	Wholesale			Retail		
	\$/kg	Purity (%)	\$/kg (corrected for purity)	\$/g	Purity (%)	\$/g (corrected for purity)
<b>Amphetamine</b>						
Americas *	19,640	30.0	65,467	86	22.0	390.9
East Asia						
South-East Asia	323.0	95.0	340	18.0	95.0	18.9
East Europe	4,627.7	28.6	16,181	12.1	25.4	47.6
West Europe	6,340.7	28.4	22,326	19.6	22.8	86.0
Oceania	19,020	7.0	271,714	66.8	7.0	954
Weighted mean:			21,097			78.3
<b>Value (146 tons)</b>			<b>3.08 billion</b>			<b>11.43 billion</b>
<b>Methamphetamine</b>						
Americas	19,640	34.5	56,928	86.0	38.0	226.0
East Asia	41,779	93.0	44,924	106.0	89.8	118.0
South-East Asia			(14,201)	37.3	100	37.3
East Europe	12,471	48.1	25,927	19.1	42.5	44.9
West Europe	11,357	31.0	36,635	17.9	27.4 **	65.3
Oceania				222.5	26.9	827.1
Weighted mean:			37,342			109.6
<b>Value (264 tons)</b>			<b>9.86 billion</b>			<b>28.93 billion</b>

Drug	Prices					
	Wholesale			Retail		
	\$/kg	Purity (%)	\$/kg (corrected for purity)	\$/g	Purity (%)	\$/g (corrected for purity)
<b>Ecstasy tablets</b>	(per 1000)					
Americas	7.2			20.9		
East Asia	7.1			29.7		
South-East Asia				10.6		
East Europe	2.9			8.2		
West Europe	6.0			12.4		
Oceania	17.4			31.7		
Weighted mean:	7.0			16.7		
<b>Value of ecstasy</b> (1.4 billion tablets)			<b>9.80 billion</b>			<b>23.38 billion</b>
<b>TOTAL VALUE:</b>			<b>22.74 billion</b>			<b>63.74 billion</b>

All data calculated as geometric means, weighted by percentage share based on seizure data.

\* price data for methamphetamine used

\*\* estimated

ATS prices are generally low, comparable to the price of two or three pints of beer:

Drug	Price per "retail unit" (US\$) *
Amphetamine	13 (per 130mg wrap)
Methamphetamine	3.20 (per 30mg)
Ecstasy	10 (per 100mg)
Cocaine	17 (per 100mg)
Crack	12 (per 20mg)
Heroin	18 (per 100mg)
Alcohol	4 1 large beer 5 1 glass wine

\* based on UK prices

Prices do vary widely. While heroin may be more valuable as a product at both retail and wholesale level, from the producers' point of view, the price mark-up can be much greater for ATS. For example, in Myanmar-Thailand, one of the world's largest ATS markets, lab-door prices (analogous to farm-gate prices for opium) are ten times higher than those for heroin. At each trafficking step the mark-up is still greater. Also, the closer the manufacturing site, the cheaper the product.

Comparison of mark-ups for methamphetamine tablets and heroin manufactured in the Golden Triangle and exported through Thailand		
Transition	Approximate mark-up	
	Methamphetamine tablets	Heroin
Conversion of raw materials at production site	2,000%	200% (assuming a 14% yield)
Thai/Myanmar border area to northern Thai regions	50%	30%
Thai/Myanmar border area to Bangkok region	100%	35%
Thai/Myanmar border area to southern Thai region	250%	70%

Calculated at Thai price data.

Source: Australian Federal Police, *Platypus Magazine*, No.72, Sept.2001

Profits of methamphetamine tablet manufacture in Myanmar / Thailand	
Transition	Per methamphetamine tablet (US\$)
Production costs at source / border areas	0.3 to 0.5
Mandalay	1 to 1.5
Yangon	2.5 to 3
Thailand	3 to 5
Source: Government of the Union of Myanmar, Ministry of Home Affairs, CCDAC: <i>Prevention of ATS in Myanmar</i> (2000)	

Australia reports a similar picture. 2001 prices in Queensland (a major source of methamphetamine) were 1/3 less than those in neighbouring New South Wales, and significantly less than in Victoria or Northern Territory.

### Profits

Almost all of the ATS market value is profit. Equipment and, in most locations, labour are inexpensive. Less than one kilogram of drug, sold on the illicit market, typically pays easily for the initial investment of setting-up a small-scale clandestine laboratory. The greatest running cost is that of the chemicals required in manufacturing, because they are obtained through diversion and smuggling. The mark-up, from legitimate sources to the clandestine site, is 20 to 50 times. Despite this, ATS profits are very large.

Drug	Precursor	Licit cost US\$ / kg	Illicit cost US\$ / kg	Quantity of drug manufactured (per kg precursor)	Retail value US\$	% Gain
Methamphetamine	Ephedrine	65 to 100	2,000 to 3,000	0.666	73,260	2,930
Ecstasy	3,4-MDP-2-P	100	2,000 to 6,000	0.800	133,600	3,340



### ATS and organized crime

Without question, the popularity of amphetamines and ecstasy amongst younger people has been exploited by organized groups of criminals.

Production and distribution of the drugs are increasingly becoming structured, and integrated into international organized crime syndicates with diverse interests. Driven by high profits, an illicit synthetic drug 'industry' characterized by large-scale manufacture and international distribution networks is evolving. More and more, operators are sharing technology and expertise, spread via the Internet, to set up laboratories and a more sophisticated "commercial" production capacity. The old loose network of independent laboratory operators working at the national level has been supplanted by larger organizations able to produce more and better quality drugs at lower costs. The larger groups are more flexible, and are able to identify and exploit any lucrative business opportunity, as well as any flaws in law enforcement efforts. They assist each other to more efficiently produce, market, transport and distribute their products.

The involvement of organized crime to any large extent is new to synthetic drugs. Because of the regional nature of illicit manufacture and trafficking, there has been no need previously to build complex international networks for smuggling across frontiers and continents. Traditionally, the requirements for manufacture, distribution and use have been available locally, and the market has been controlled by small self-contained groups, buying chemicals, setting up laboratories and selling products locally. Now, for example, drug trafficking groups based in Western Europe, supported by Israeli and Russian organized crime syndicates, have extended their exporting operations, arranging the supply of ecstasy produced in Europe to consumer markets in Eastern Europe, Asia, Australia and, most recently, North America. Criminal organizations in East and South-East Asia, including Japanese yakuza gangs, have forged new partnerships to facilitate regional trafficking of methamphetamine. Some criminal 'investors' exploit economic and employment situations by investing the necessary capital, delivering the precursor chemicals for manufacturing ATS, taking orders for markets abroad, and laundering profits through front companies.

At the same time, the search for new sources of chemicals, as precursor controls have tightened around the world, has also contributed to the formation of larger coalitions between international criminal groups.

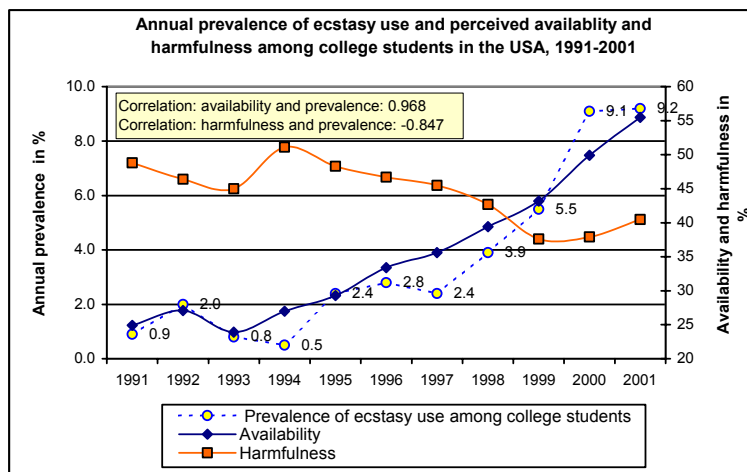
To a large part, the expansion of criminal groups engaged in the production and trafficking of plant-based drugs into synthetic drugs has frequently started with trafficking in precursor chemicals, an activity which, unlike the distribution of synthetic drugs, has always been international in character. If not involved directly with the trafficking of both ATS, and heroin or cocaine, crime groups involved with either are collaborating more. As an example, the international wholesale trafficking of ecstasy from Europe has become increasingly linked to cocaine and heroin destined for European markets, through barter exchange of the illicit products. Business, former colonial, and ethnic connections are being exploited ruthlessly by crime groups. For example, the large ports in Rotterdam and Antwerp provide business opportunities for the alternative routing of smuggled goods, including precursors, into the Netherlands and Belgium. Similarly, because of its historical and language links, highly effective partnerships exist between Spain and the South American cocaine trade. Ethnic criminal groups from Mexico, initially operating 'super labs' based in Mexico have, like any large multinational business, favoured offshore production, e.g., in California, in their search for efficiency.

Undoubtedly, the illegal profit which is a natural outcome of the operations of the criminal organizations supporting synthetic drug trafficking causes a great deal of harm to national and international economic structures by, amongst other things, hampering the development of legitimate business. Even more seriously, the growing involvement of organized crime in the ATS business, bringing with it a greater degree of violent crime, is also a critical risk for society, attacking as it does the inherent security built into society through the rule of law.

### Chapter 3: Abuse is spreading

- *ATS abuse continues to spread in geographical, age and income terms.*
- *In the past 12 months, 34 million people worldwide have abused amphetamine and methamphetamine, and 8 million abused ecstasy. This exceeds the number of cocaine and heroin abusers combined.*
- *Abuse is highest in East and South-East Asia, followed by Europe, Australia and the United States.*
- *Methamphetamine is the most widely available ATS, while ecstasy has shown the largest increases in abuse over the past 5 years.*

The pattern of ATS abuse mirrors closely that of supply: typically, where there is a high seizure rate, there are high levels of ATS abuse. Where the drugs are (considered) easy to obtain, abuse is increasing significantly. While the trend is clear, absolute numbers should be treated with caution, given the large gaps in the prevalence data available.



**Figure 6**  
Source: NIDA, *Monitoring the Future, Volume II, 2002.*

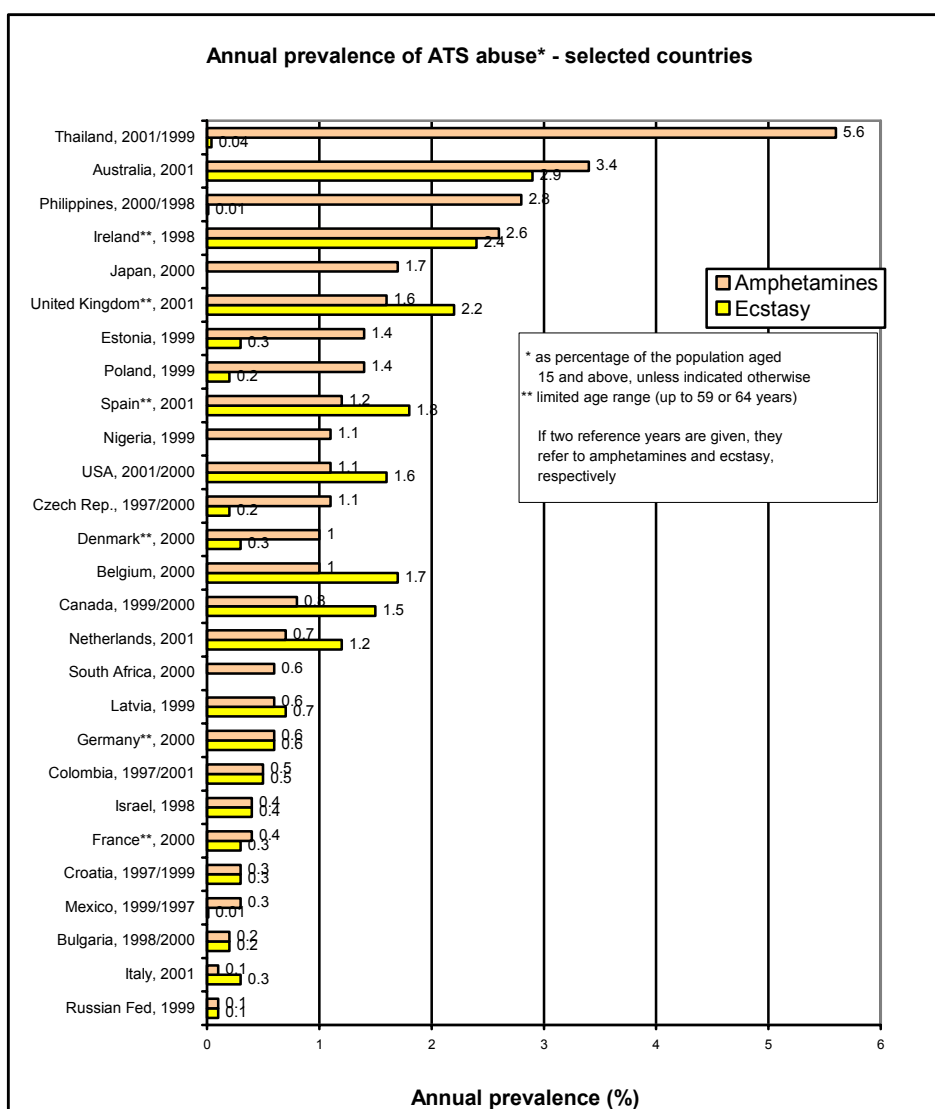
#### Forms and facets of ATS use

ATS use has many distinct faces, also reflected in distinct user populations. A typical "ATS abuser", therefore, does not exist. Experimental or infrequent use is most often associated with young people, using ATS tablets, typically containing MDMA, for recreational purposes. Increasingly, the tablet as a dosage unit is equated with ecstasy (or sometimes with "ATS"), even though those tablets frequently do not contain MDMA, but a combination of other controlled and/or non-controlled drugs. Use of tablets as part of recreational, leisure time activities has thus become part of the 'normal' lifestyle of certain groups of young people. Ecstasy use, at current patterns, is rarely associated with severe addiction, but today's ecstasy users are typically polydrug users.

By contrast, use of amphetamine and methamphetamine, including in its highly pure crystal form known as "ice" in the Western world, or as "shabu" in East Asia, is much more often associated with heavy abuse, severe psychological problems, and addiction. Both substances are typically injected or snorted, "ice" also being smoked. They are frequently not differentiated at street level. Methamphetamine tablets constitute a third group, because they are usually smoked, in a way similar to "chasing the dragon" (heating the crushed tablets on a foil and inhaling the fumes). Although marketed as a tablet, similar to ecstasy, the effects of such tablets are truly those of methamphetamine, or even crack cocaine, and not comparable to those associated with ecstasy.

Consumption of methamphetamine tablets by smoking is the norm, for example, in South-East Asia, with regular users of the drug smoking 2-3 times a day. The increase in smoking of methamphetamine in some countries has been accompanied by a notable shift away from injecting, although injection continues to occur among a small proportion of methamphetamine users in certain regions of South-East Asia. Also in Japan, a country that has faced several waves of methamphetamine abuse since the mid-1950s, the current third wave is characterized by smoking or oral ingestion of methamphetamine, typically in the form of "ice", rather than injection.

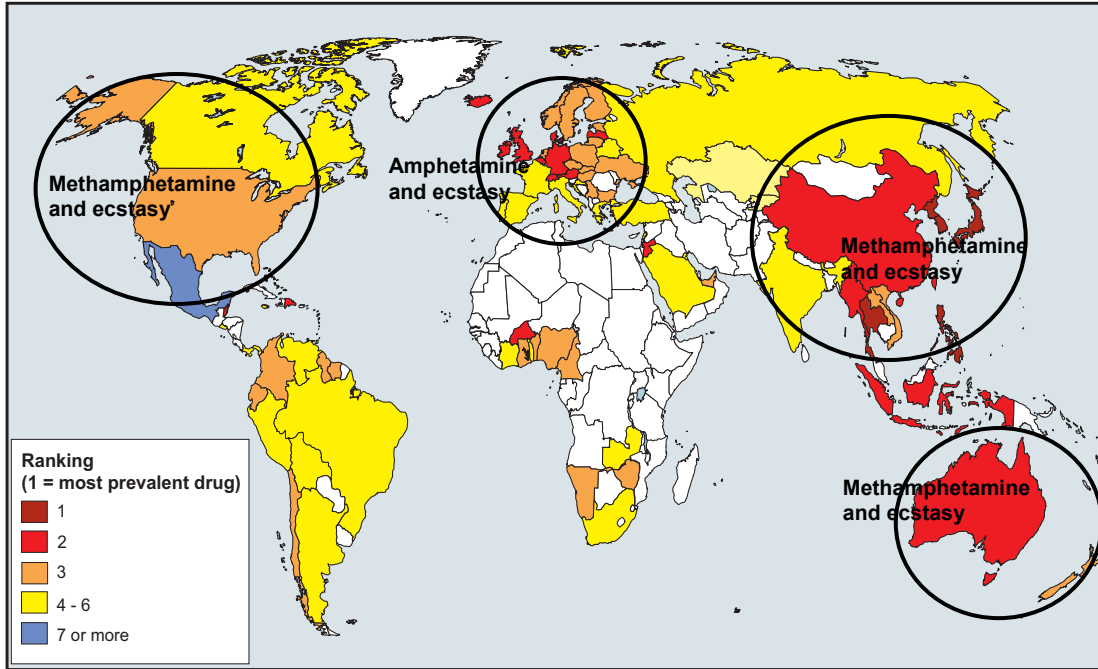
Abuse patterns and risks associated with the abuse of different ATS, or different forms, are not always directly comparable with one another, and the related interventions can be significantly different.

**Figure 7**

Sources: Annual Reports Questionnaires Data; Government Reports; US Department of State; EMCDDA; UNODC estimates.

Methamphetamine continues to be the ATS most widely available worldwide, although ecstasy is the substance with the largest increases over the past 5 years. In much of East and South-East Asia, ATS are the main problem drugs as reflected in demand for treatment.

Ranking of amphetamine-type stimulants in order of prevalence in 2001 (or latest year available)

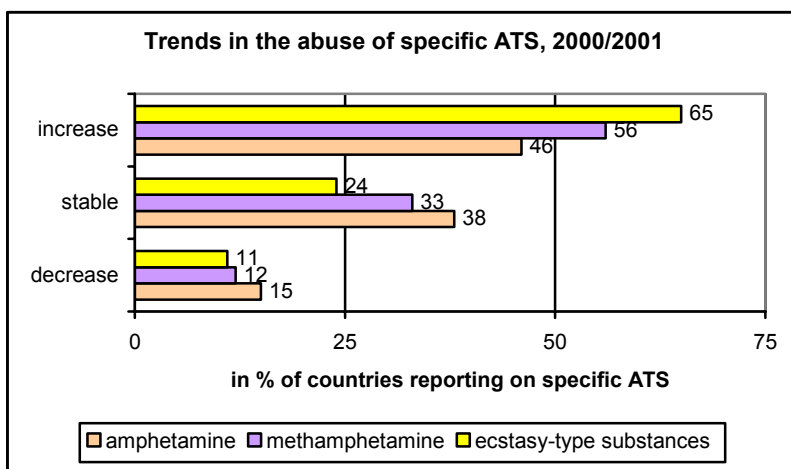


**Figure 8**

Sources: UNODC Annual Reports Questionnaire Data; national household surveys on drug abuse; UNODC Rapid Assessment Studies; Council of Europe, ESPAD.

In 2001, a majority (almost 60%) of all countries reporting to the United Nations *Office on Drugs and Crime* noted increasing ATS abuse. The market, second only to cannabis, continues to spread. Despite regional differences, the global trend is clear - ATS are here to stay. Actually:

- Ecstasy abuse is increasing overall, offsetting stable or declining abuse in youth, especially in established markets: young abusers are not abandoning the habit as they grow older, and/or older demographic cohorts are being initiated;
- Methamphetamine abuse is also increasing in the general population;
- Amphetamine abuse, by contrast, appears stable or is declining, with no signs of penetration into older generations.



**Figure 9**

Source: UNODC, Annual Reports Questionnaire Data

## Chapter 4. Health Hazards

- *Dependence and drug-related psychosis are the most serious health problems resulting from abuse of amphetamine and methamphetamine.*
- *The need for treatment of amphetamine and methamphetamine dependence is now generally recognized, but specific treatment programmes are limited or under-used.*
- *Neurotoxicity, and an early decline in mental function and memory, or the onset of Alzheimer-type symptoms, is the most worrying health implication associated with the use of MDMA. Young people are especially at risk.*
- *Currently, there are no specific treatment programmes for ecstasy, although users are indicating a need.*

Because ATS seemingly carry all the properties required to cope better with the burdens of modern society and conform with certain occupational and cultural norms, people tend to overlook the dark side of their use. More importantly, the strong increases in ATS manufacture and trafficking, observed over the past years, expose an increasing number of people to the risks of ATS use. Individual hazards are thus compounded by increasing risks to society as a whole.

The information base on the health hazards associated with ATS use is large, and continues to increase. However, there are still gaps and inadequacies in the knowledge and, as a result, the ultimate consequences of hazards and risks may not be immediately obvious. They are, however, real, serious and of increasing concern.

Health hazards associated with ATS use range from what might be considered mild negative effects, such as nausea, sweating or chills, to serious and potentially life-threatening conditions, such as convulsions, stroke and kidney failure.

The most serious health implications of **amphetamine** and **methamphetamine**, resulting from chronic use, are dependence, characterized by compulsive drug-seeking and drug use, and a phenomenon known as amphetamine or methamphetamine psychosis. It is characterized by symptoms such as confusion, delirium and panic as well as all kinds of hallucinations. It includes rather unpleasant sensations, which are usually accompanied by unrealistic suspiciousness. Intense paranoia subsequently may lead to aggressive behaviour or violence, including homicidal and suicidal tendencies.

While the need for treatment of dependence is now generally recognized, existing programmes have not been widely disseminated. As there is no readily available substitution drug, the detoxification phase may be particularly difficult, complicating the progress into subsequent treatment phases. Challenges to prevention and treatment are also presented by the availability of a range of different forms of amphetamine and methamphetamine, their different patterns of abuse, and their sometimes significantly different and specific user populations.

For **ecstasy-type substances**, the issue is even more complicated, because of the variety of drugs and combinations (mixtures) sold as ecstasy on the illicit market. Negative effects subsequent to the use of ecstasy are therefore not necessarily the side effects of one substance alone.

However, even pure MDMA is not an innocent. Short-term mood changes, including the “mid-week hang-over” following weekend use, and impairments in short-term memory function may be considered as some of the “milder” consequences of MDMA use. They are also believed to be an early expression of neurotoxic effects.

Other functional consequences of MDMA neurotoxicity, i.e., cognitive, behavioural and emotional changes in users, and their seriousness, especially in the longer term, are as yet not clear. What appears to be clear, however, is that the brain damage does not depend on an extensive history of MDMA use, that it is dose-dependent (cumulative), and that it may not be completely reversible. Will current consumption patterns by young people therefore lead to a generation of ecstasy users suffering the effects of a decline in mental function and memory, i.e., Alzheimer-type symptoms, earlier than would be expected with the normal aging process?

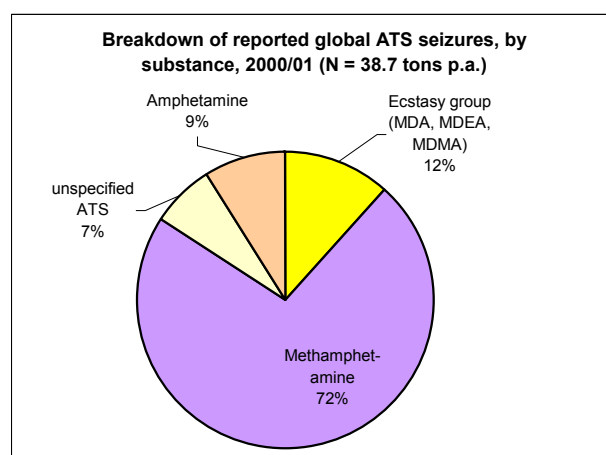
Overall, and especially because of the risk of mortality or substantial morbidity, including the potential for long-term mental disorders, the unpredictability of adverse effects with polydrug combinations, and the young age of those affected make health consequences of ecstasy use significant. This is compounded by the fact that treatment interventions designed specifically to address ecstasy users, be it MDMA or any of the drug combinations available on the illicit market, are currently limited.

Further work is required to understand and address the health hazards associated with amphetamine, methamphetamine and ecstasy. Further work is also required to raise awareness of the added risk associated with the drug combinations (mixtures) sold as “ecstasy” on the streets, or resulting from patterns of polydrug use, frequently encountered among ATS users. For ATS as a group, increasing numbers of users presenting for treatment in an increasing number of countries worldwide indicate an urgent need for action in these areas.

## PART 2. REGIONAL PATTERNS AND TRENDS

- *ATS supply and demand patterns reflect regional markets, going back to World War II:*
  - *Europe (amphetamine)*
  - *North America and East Asia (methamphetamine)*
- *In Africa and South America, ATS abuse is currently not high. Australia’s abuse is high, fed, in the main, by local manufacture.*

Availability and consumption of ATS follow distinct regional patterns. Almost 3/4 of reported global ATS seizures were methamphetamine, followed by ecstasy and amphetamine. Half of ecstasy seizures are from Europe. North America accounts for almost 40%, and only slightly more than 10% are reported from elsewhere. The methamphetamine problem prevails in North America, and East and South-East Asia. Europe’s ATS problem is amphetamine.



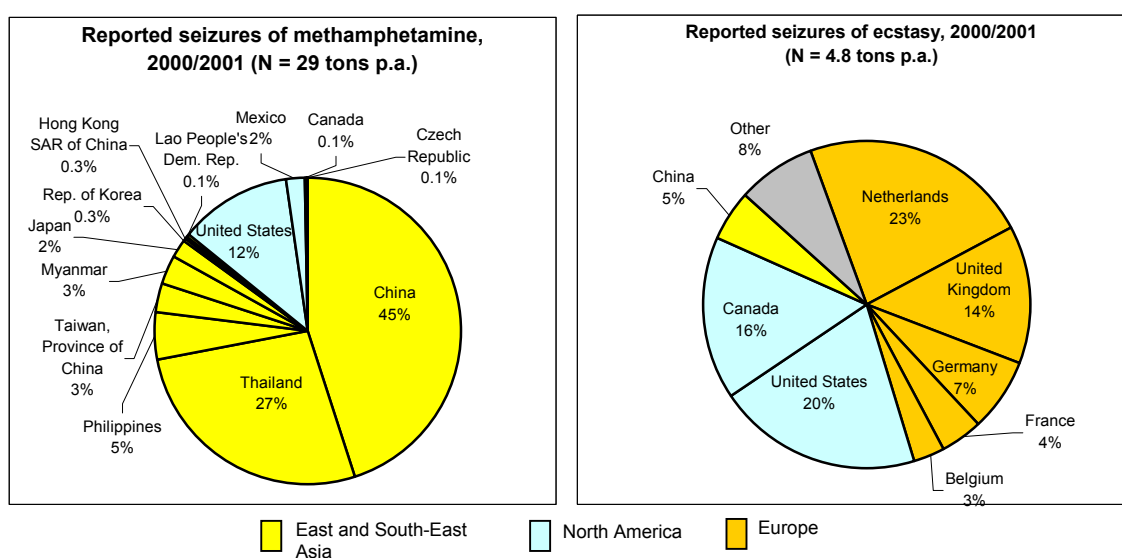
**Figure 10**

Source: UNODC Annual Reports Questionnaire Data.

Australia's ATS problem is now recognized to be mainly methamphetamine. Domestic manufacture, using domestically sourced precursors, largely feeds local demand, although there have been reports of imports of the drug from East and South-East Asia. The relatively closed market appears to have disguised the specific nature and extent of the problem for some time. Local manufacture of ecstasy is still limited.

In Africa and South America, the ATS phenomenon is still in an early stage. With licit oversupply and unregulated distribution channels continuing to feed the market, neither region has yet reached the point whereby local clandestine manufacture becomes the major source of supply. Yet, the threat is there. While each market has specific characteristics, in common is the lack of information on the products available, their sources and main uses. Both regions need outside assistance to develop appropriate analytical and policy instruments.

In the Middle East, in particular the Gulf States, historically a market for a specific ATS (fenetylline) has existed. At present, abuse continues, giving rise to increasing concerns. However, like ecstasy, there is much confusion over exactly what is sold as fenetylline and, in many cases, substitute drugs or counterfeit products are found.



**Figure 11**

Source: UNODC Annual Reports Questionnaire Data.

**Figure 12**

Source: UNODC, Annual Reports Questionnaire Data

Today's regional patterns of abuse reflect the early markets (availability of patents and chemicals), created when the ATS parent drugs were introduced into medical practice in the 1930s and 1940s: amphetamine in Europe, and methamphetamine in East Asia and North America.

From the very beginning, these drugs have created their own demand to enhance performance, increase concentration, or reduce weight. Large-scale non-medical use, and instrumental use amongst soldiers during the Second World War, contributed to a subsequent spread of abuse among the public. From a few core countries (Sweden, Japan and the United States) abuse gradually spread, including via colonial links, creating today's illicit markets.

Up to the early 1970's, abuse was supplied by pharmaceutical preparations, often facilitated by negligent prescribing practices. As potential health problems were recognized, and as regulatory controls gradually strengthened, theft and diversion from licit channels became a major source of supply. Ultimately, clandestine manufacture entered the market for amphetamine and methamphetamine, and later for the so-called designer ATS, ecstasy.



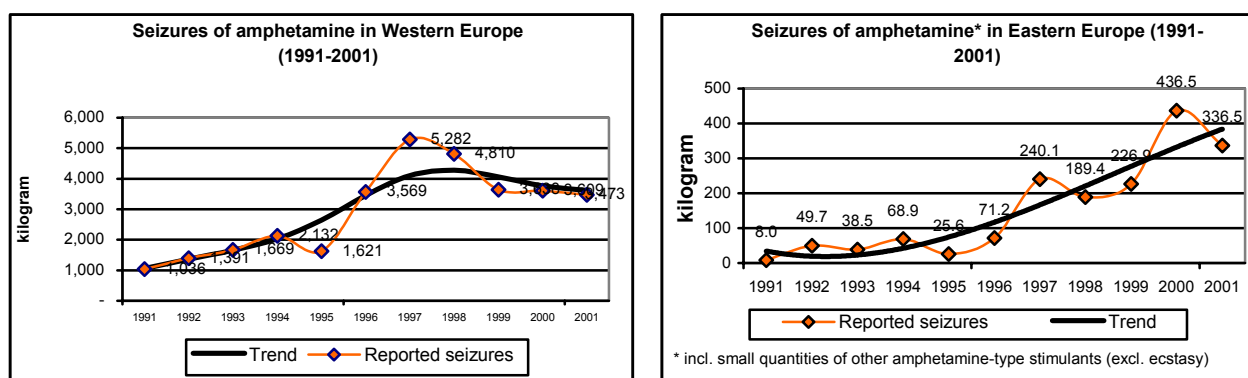
Only towards the end of the 1990's has ATS trafficking become global, with large-scale exports of ecstasy from Europe leading to increased availability and abuse of the drug worldwide. Production can now be found almost everywhere.

## Chapter 5: Europe

- *Until recently, Netherlands was the world's leader of illicit amphetamine and ecstasy manufacture and trade.*
- *More than half (down from 80% in the mid-1990s) of all ecstasy seizures are in Europe, with the Netherlands and the UK leading.*
- *90% of all seized ecstasy precursors are from Europe.*
- *In the 2000s, amphetamine manufacture, seizures and abuse stabilized in Western Europe, but rose in Eastern Europe and Russia.*

Today, there are significant levels of amphetamine manufacture in Europe: the Netherlands, Poland and Belgium continue to be the main centres of clandestine operations. Western Europe has accounted for about 80% of all reported seizures in 2000-2001, with almost half of those seizures reported by the UK, followed by the Netherlands, Germany and Sweden.

Significant changes are occurring. Seizures stabilized in Western Europe at the end of the 1990s, after a marked upward trend during the decade. Increased law enforcement efforts and strengthened regulatory controls of precursor chemicals have also limited supplies and forced drug purities down in 1999 and 2000. In contrast, manufacture and trafficking of amphetamine has continued to increase in Eastern Europe, especially in Poland, confirming an eastwards shift of operations that began a decade ago.



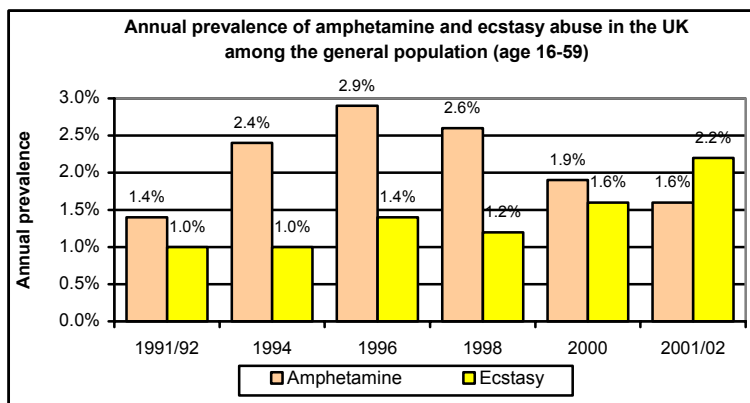
**Figure 13**

Source: UNODC, Annual Reports Questionnaire Data.

In Eastern Europe, there is also a small-scale manufacture of methamphetamine, namely in the Czech Republic, the Russian Federation, and, to a lesser extent, in Slovakia. (Minor levels of methamphetamine production are reported also from Belgium, UK, Germany and France.)

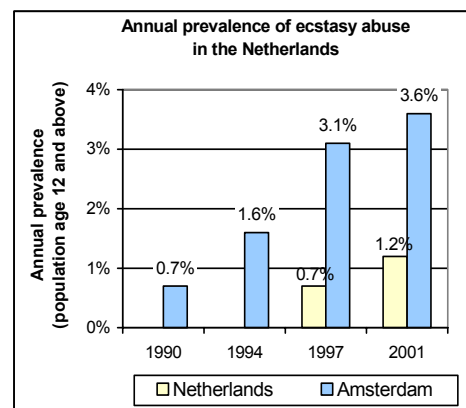
Of much greater significance is that Europe, particularly the Netherlands and Belgium, is considered to be the major global source of ecstasy. More than half of all ecstasy seizures, and almost 90% of ecstasy precursor seizures, are reported from the region, mostly from the Netherlands, United Kingdom and Germany.





**Figure 14**

Source: Home Office, *British Crime Surveys 2001/02*, and previous years



**Figure 15**

Source: *CEDRO, Licit and illicit drug abuse in the Netherlands, 2001, Amsterdam, 2002* and previous years

This widespread availability of ecstasy feeds large-scale and increasing abuse. It may account also for some of the decline in use of amphetamine in West Europe, as users transfer from one drug to the other.

The West-East changes in ecstasy abuse noted in Europe at large also took place more locally, for example, within Germany. Although the country as a whole saw a decline in past-year ecstasy abuse, it was only because dramatic increases in Eastern German provinces were offset by declines in West Germany. Noteworthy also is the case of the Netherlands, where ecstasy abuse continues to rise in the general population, with particularly large increases in major cities, and more moderate increases, at significantly lower levels, in other parts of the country.

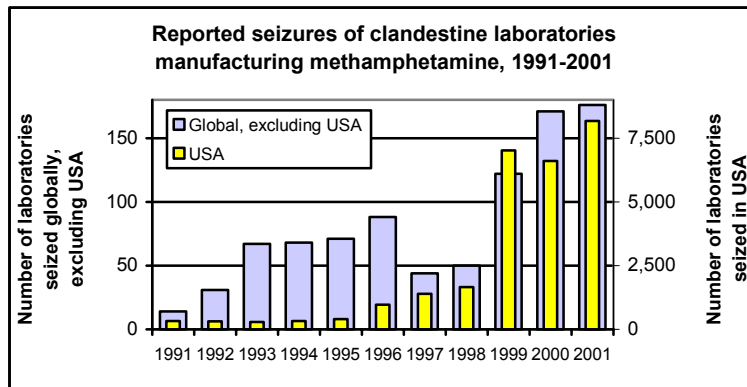
Changing patterns of ATS abuse are also reflected in changing patterns of clandestine manufacture. Today, about 45 to 60 large-scale clandestine ATS laboratories are seized in the European Union every year, mostly producing ecstasy. An eastward shift of ecstasy manufacture is now also under way. Wherever they are made, almost all ecstasy tablets sold in Europe now contain MDMA as the main drug, and there is no evidence of tablets containing the complex combinations of drug substances reported frequently from East and South-East Asia.

## Chapter 6: North America

- *Methamphetamine is the most widely abused ATS, supplied by a large number of small-scale laboratories, and only a few "super labs"*
- *ATS abuse and requirement for treatment continue to rise, but in 2002, for the first time, abuse has decreased in youth population in the US.*
- *Ecstasy availability is increasing, produced locally or imported from Europe.*

Clandestine methamphetamine manufacture in the USA is split. There are a large number of independent, small-scale operators ("mom & pop shops"), who manufacture the drug for private consumption and local retailing, using precursors diverted from local drug stores. Although the output of those laboratories is estimated to be only about 10% of the total, their large number (close to 8,000 in 2001) highlights a widespread problem. (New data collection methods, introduced during 1998, make numbers hard to compare.)

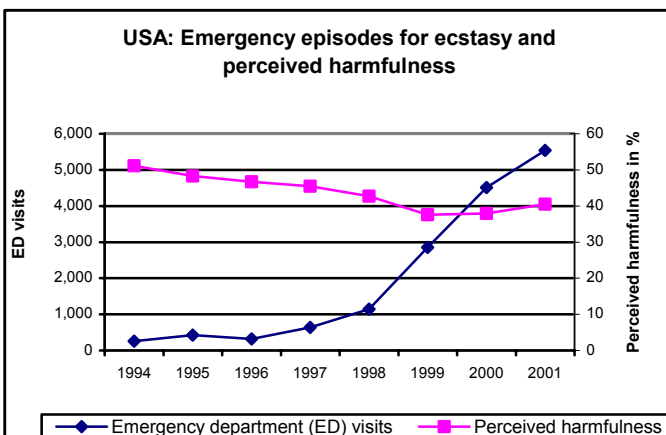
There are also a relatively smaller number of “super labs”, able to acquire precursors from international markets. To increase profits, the methamphetamine from these more business-oriented laboratories is typically diluted and sold at lower purity.



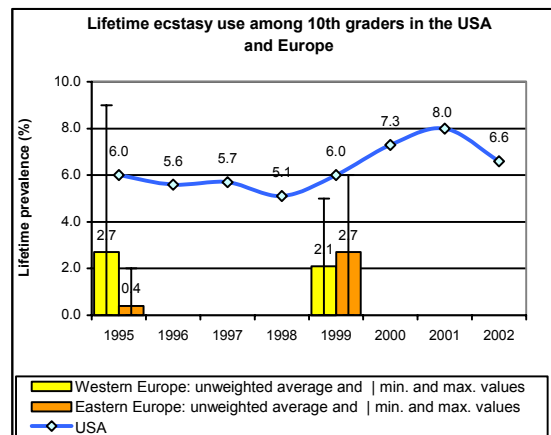
**Figure 16**  
Source: UNODC, Annual Reports Questionnaire Data.

As a consequence of much improved controls over ephedrine since the mid-1990s, criminal groups are using pseudoephedrine as a precursor. Pseudoephedrine is now most often smuggled into the USA from Canada, in the form of pharmaceutical preparations, in contrast to the earlier ephedrine, which was diverted as a raw chemical from international markets, and then smuggled into the US via Mexico. Earlier, in the 1980s, methamphetamine manufacture and distribution was almost exclusively in the hands of more mobile motorcycle gangs.

Despite increased law enforcement, methamphetamine is still very much available. Levels of abuse (lifetime prevalence), emergency episodes, and requirement for treatment, continue to rise, reflecting the broadening age and geographical base. Similarly, the number of first-time ecstasy users (aged 12 and above) has been rising steadily since 1992. Incidence has tripled between 1998 and 2000. Since 1998, the perceived harmfulness of ecstasy showed a small increase, after years of steady decline. The decrease in abuse in 2002 may partly be attributable to this higher risk perception by young abusers. Abuse rates remain, however, still much higher than in Europe for both methamphetamine and ecstasy.



**Figure 17**  
Sources: Drug Abuse Warning Network (DAWN), 2002; NIDA, *Monitoring the Future, Volume II, 2002*.



**Figure 18**  
Sources: NIDA, *Monitoring the Future 2002*; Council of Europe, *ESPAD Reports 1995 and 1999*

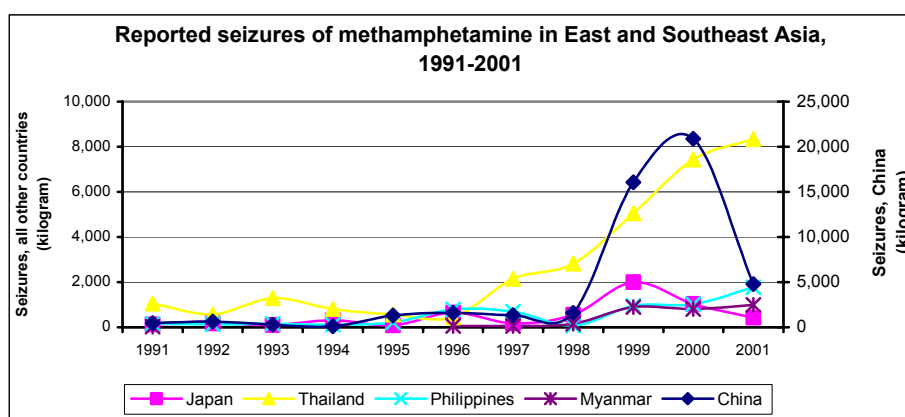
## Chapter 7: Asia

- *ATS production, seizures and abuse have increased significantly*
- *China and Thailand together accounted in 2000-2001 for 70% of global seizures.*
- *Currently, major sources are China and Myanmar; clandestine manufacture is emerging in Indonesia, Malaysia and the Philippines.*
- *Tighter controls in China have forced traffickers to seek new sources for precursors, or use different precursors and alternative methods of synthesis.*
- *Differences in ecstasy tablets sold in Asia (from those in Europe and the United States) indicate that they are not all imported from Europe.*

Methamphetamine is the traditional drug of choice in East and South-East Asia. The drug was initially given to pilots and soldiers during World War II. Military stocks dumped after the war, flooded the market.

In recent years, seizures of an unprecedented size have highlighted the potential for clandestine manufacture, trafficking and abuse in the region. Thailand is the country reporting the highest abuse levels for methamphetamine, worldwide (5.6%, about 10 times higher than a decade ago). Japan and the Philippines are other important markets for methamphetamine in the region.

Methamphetamine seizures have increased significantly in many countries, particularly since 1998 and the onset of large-scale manufacture in the region. This time-frame coincides with huge ATS seizures in China.



**Figure 19**

Source: UNODC, Annual Reports Questionnaire Data

China and Thailand together accounted in 2000-2001 for 70% of global methamphetamine seizures: seizures from other Asian countries added another 15% of the world total. Those few countries account for the eye-catching rise in ATS at the global level over recent years. Successes in reducing manufacture and trafficking in China have had their effect. Yet the problem continues to grow. Thailand, for example, affected by large-scale imports of methamphetamine from neighbouring Myanmar, seized the largest quantity of the drug worldwide in 2001.

In Japan, where methamphetamine is the most common drug of abuse, seizures have fallen since a record high (almost 2 tons) in 1999. Levels of abuse and drug law violations have remained stable.

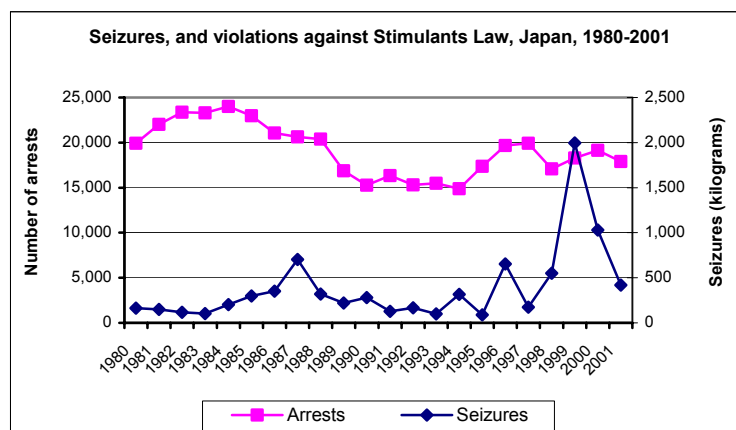


Figure 20

Source: UNODC, Annual Reports Questionnaire Data.

### ATS sources in South-East Asia: a continuously changing cycle

The history of clandestine production of ATS in East and South-East Asia is marked by dynamics unseen in other regions of the world. Long before the emergence of Myanmar and China as today's major regional sources of illicit methamphetamine, South Korea, the Philippines and Taiwan Province of China have, at different times, been recognized as the origin of much of the drug trafficked and abused in the region. Over time, with the introduction and strengthening of drug controls, traffickers have moved to set up laboratories in new countries. Inevitably, they have sometimes returned to locations favoured in the past.

Recent developments should, therefore, be seen as just another phase in the evolution of clandestine manufacture in the region. However, new features have emerged, and today's laboratory operations are characterized also by an international sharing of expertise to develop a more sophisticated "commercial" production capacity, and the wider involvement of criminal organizations with diverse interests.

Criminal organizations have forged partnerships to facilitate regional trafficking of methamphetamine, a cause of particular concern to Japanese law enforcement agencies. Even worse is the suspicion that some criminal organizations may also be linking up with rogue military units or Government agencies supporting the clandestine manufacture and trafficking of drugs.

Again, as part of the greater cycle, such suspicions are not new. Reports in the past have suggested that military elements in some countries of the region have protected production sites and trafficking routes, especially for heroin. Today, the Democratic People's Republic of Korea is the focus of much attention related to the alleged role of officials of that country in drug production and trafficking. Allegations are rife that the North Korean Government has boosted its arms spending by trafficking drugs to Japan, Taiwan Province of China, China and Australia.

North Korea is now reported also to be a significant supplier of illicit methamphetamine, and one of the main sources of the drug in Japan. Japanese authorities estimate that a third (1,286kg) of all methamphetamine seized in Japan from 1999 to 2002 either originated from, or transited the territorial waters of North Korea en route to Japan. This compared to 1,904kg (49%), believed to have originated from China, including Hong Kong SAR, reported as the main source of the drug in recent years. So far, however, there is no hard evidence to confirm that clandestine drug manufacture is actually taking place in North Korea. Circumstantial evidence is building, however, to support involvement in smuggling activities: numerous seizures of methamphetamine in Japan, Taiwan Province and the Philippines during the past five years have been traced back to North Korean sources.

Whatever the source of the illicit methamphetamine in South-East Asia, precursor chemicals are required. These are also sourced from the region. As with the relocation of laboratory sites, enforcement activities, particularly in China, have forced traffickers to change methods of manufacture and use different precursors. Laboratory analysis of seized drug samples has confirmed the trend. Further analyses may be able to identify how drugs are made, which precursors were used, and even which "pre-precursors", such as phenylacetic acid, may have been used. With that information, hard evidence may yet emerge of the true source of the drugs in the region.

Understanding the ATS problem in Asia is complicated by the co-existence of recreational use of methamphetamine for leisure purposes with its occupational use (e.g. by truck drivers), a business nourished by organized crime in combination with other lurid activities. (In 2001, Swiss authorities broke a crime syndicate smuggling methamphetamine tablets from Thailand, linked with trafficking in women).

In Asia, methamphetamine is sold in both tablets and crystal form, with distinct sub-regional manufacturing, marketing and abuse patterns. Tablets (locally known as "yaba") predominate in South and South-East Asia, while crystal methamphetamine ("ice" or "shabu") is the main form in East Asia. China is the only country from where significant clandestine manufacture of both forms is reported

Whatever the form, the most frequently used precursors for methamphetamine are ephedrine or pseudoephedrine. Successful controls have forced traffickers to seek new sources, and to use different precursors (e.g. phenyl-2-propanone) and alternative methods of synthesis.

The same pressures may have contributed also to the shift towards "designer" products, and ecstasy, whose abuse is accelerating in Asia.

Most worryingly from the health side, ecstasy tablets available in Asia contain mixtures of various substances, and sometimes no MDMA at all. This contrasts with the situation in Europe and the United States, where the trend over the past years has been towards high purity tablets, with MDMA as the single active ingredient. From the law enforcement side, this observation also raises doubts about the widely held belief that the majority of ecstasy tablets seen in East and South-East Asia, and in Australia, are imported from Europe. That ecstasy tablets are produced locally is confirmed by seizures in Thailand of punches with "logos" matching those of well-known European designs (e.g. Rolex, Maserati, Honda, etc.).

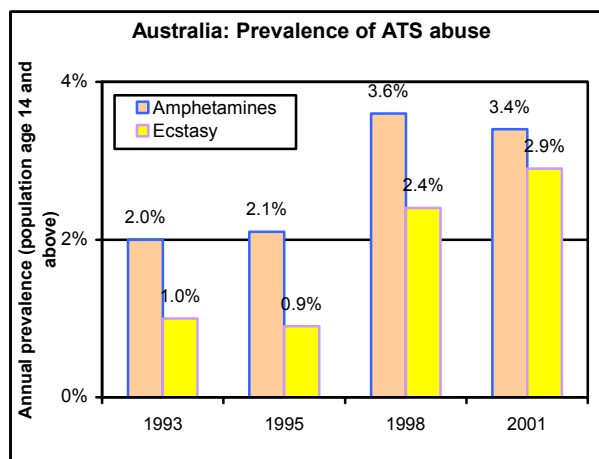
## **Chapter 8: Australia, Africa and South America**

- *Australia has the highest levels of ecstasy abuse worldwide, and ranks second for methamphetamine abuse.*
- *Clandestine manufacture is limited to small-scale laboratories and the production of 'fake' or 'mimic' products, often sold as ecstasy.*
- *The ATS phenomenon in Africa and South America is still at an early stage, characterized by oversupply and unregulated distribution of licit products.*

### **8.1. Australia**

The ATS phenomenon in Australia is serious and growing. Australia has the highest levels of ecstasy abuse worldwide, and ranks only second after Thailand in prevalence of methamphetamine abuse in 2001.

Domestic manufacturers supply the majority of methamphetamine available on the Australian market, typically from small-scale, often mobile clandestine laboratories. The chemical precursor, pseudoephedrine, is usually diverted domestically, or obtained through numerous, but small-scale purchases (or thefts) from retail outlets. The production of methamphetamine tablets is increasing.



**Figure 21**

Source: UNODC, Annual Reports Questionnaire Data; Australian Institute of Health and Welfare, *National Drug Strategy Household Survey 2001*, and previous years.

Ecstasy manufacture is limited. Europe is most frequently associated with ATS ‘imports’ into Australia, but South-East Asia, especially China, is also a source.

Ecstasy tablets imported from Europe are reported to be ground up again, diluted and re-tabletting. Fake MDMA (typically methamphetamine-based and containing various adulterants, such as ketamine, paracetamol and caffeine) is also produced domestically to meet demand, and as a response to the limited availability of ecstasy precursors. The same logos are used to make the tablet look “authentic”.

## 8.2. Africa and South America

The ATS phenomenon in Africa and South America is still at an early stage. Licit oversupply and parallel distribution are the main sources for these unregulated markets.

For years, African countries have reported high or increasing levels of abuse of ATS. However, the extent and specific nature of abuse is poorly understood, and resources are needed to fund research, data gathering and prevention programmes.

Several markets appear to co-exist: a parallel (or grey) and an as yet negligible clandestine market. ATS manufacture is limited to a few cases in a few countries, especially Egypt and South Africa. Across Africa, unregulated use of pharmaceuticals containing ATS, supplied via parallel distribution systems, appears to account for the major market share. ATS are reported to have also played a major role in the many armed conflicts across the continent, in particular the civil war in Sierra Leone. The role of organized crime in supplying ATS to combatants, while benefiting from the economic opportunities emerging in conditions of lawless, needs to be addressed.

In South America, until very recently, oversupply of ATS from legitimate sources fed a market, especially for purposes of weight loss (due to the anorectic effects of many ATS). Abundant supply of another stimulant, cocaine, may have long delayed the development of an illicit ATS market. However, there are now indications that the market is moving into the next phase: only recently have clandestine ecstasy laboratories been identified in Colombia, following an isolated case earlier in Brazil.

### PART 3. FACING THE THREAT

- *Current lifestyles, with emphasis on performance and leisure, are likely to result in high ATS demand for the foreseeable future.*
- *Market opportunities continue to shape regional trends in ATS manufacture. Designer ATS have not materialized, but the trend is towards tailored drug products and combinations.*
- *Monitoring systems for ATS trends are currently not adequate to measure the problem at the necessary level of detail. Perception is too often understood to be fact.*
- *Tackling the ATS problem needs strong political commitment, better data, improved and targeted demand reduction efforts, including treatment, and innovative approaches to enforcement and control, especially for clandestine manufacture.*
- *Over 99% of humanity has no ATS abuse problem. Based on their experience, credible arguments and the right responses can be developed to meet the new challenges.*

Market pressures, high profits and law enforcement focus will continue to determine specific ATS trends in an expanding market. New users, in previously unaffected countries, and new products, in existing markets, are a reflection of the flexibility of the ATS phenomenon.

Demand will remain a major market determinant. Current lifestyles and cultural pressures considered, the luring promises of ATS, deceptive as they may be, will continue to attract a range of different consumers, young people included, regardless of age, gender, nationality or income.

User demand, together with the strong increases in manufacture and trafficking over the past few years, expose an increasing number of people to the risks of ATS use. Individual hazards are compounded by increasing risks to society as a whole. The ultimate consequences of hazards and risks may not be immediately obvious.

With that understanding, tackling the ATS problem needs strong political commitment. First and foremost, more information on the nature of the problem is required: the data on manufacture, trafficking and abuse of ATS is still full of gaps, especially for countries in Africa and Latin America. Systematic investigation of the complex interplay between demand for, and supply of, ATS and how that relates to different cultural contexts, is also needed.

More comprehensive data will contribute to improving the design of targeted health education and prevention programmes, as well as treatment services. Such data are also crucial for an assessment of the wider health and social implications of specific consumption patterns of ATS.

At the same time, new anti-trafficking strategies and intelligence skills and tools need to be designed and tailored to the specifics of ATS manufacture and trade. As precursor control remains one of the most effective means of tackling ATS manufacture, international initiatives such as Project Prism need full and active global support.

The hazards of ATS, in particular those associated with ecstasy use, are often denied by users, and by those convinced that, for a number of reasons, legalization or decriminalization is the way ahead – not only for ATS, but also for other narcotics. Consequently, it is important to match progress in the understanding of the hazards, with credible arguments to forestall them. In view of the widespread availability of ATS and the integration of their abuse into certain youth cultures, intervention programmes need to be integrated into the wider concept of healthier life styles.

By strengthening and linking up existing efforts, and sharing the responsibility, society can put in place the systems and procedures to move forward in tackling the problem, and will overcome the threat of ATS.

United Nations *Office on Drugs and Crime*  
Vienna, September 2003



## **PART 1: A MAJOR THREAT**

### **Chapter 1 A GROWING SUPPLY**



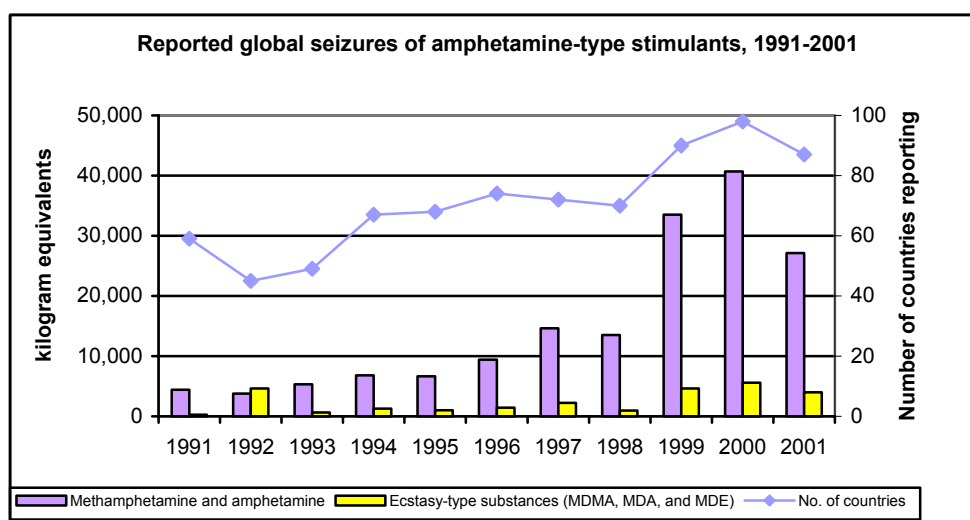
## 1. A growing supply

### 1.1. Seizures

A number of indicators, available to UNODC, show a rising trend in clandestine manufacture, trafficking and abuse of ATS over the last decade. To a greater or lesser extent, all countries are affected by the ATS phenomenon. Unlike cocaine and heroin, all countries have the potential also to contribute to the problem as a source of, and destination for, illicit ATS. Today, ATS are more available than ever, both in terms of quantity and geographic spread.

However, again unlike cocaine and heroin, the global availability of ATS is a reflection of a number of very specific (sub)regional trends for different substances of the ATS family (methamphetamine, amphetamine, ecstasy), and sometimes even different forms of the same substance, e.g., methamphetamine tablets and crystal methamphetamine (typically known as 'ice' or 'shabu').

Global seizure data (i.e., the indicator for which the most systematic data are available) for ATS indicate a steadily rising trend, with some strong upward fluctuations in the late 1990s, in both reported seizures and the number of countries reporting such seizures.<sup>1</sup>



**Figure 22**

Source: UNODC, Annual Reports Questionnaire Data.

Note: data on 'Ecstasy-type substances' also contains statistics on other hallucinogens (excluding LSD); data on amphetamine and methamphetamine also contains statistics on methcathinone and other synthetic stimulants.

ATS are the second most seized drugs worldwide after cannabis (herb and resin). Global seizures of ATS (about 39 tons in 2000/01) compare with figures of about 350 tons of cocaine, 54 tons of heroin and 5,600 tons of cannabis. Compared, therefore, with estimates of some 34 million users of amphetamines (methamphetamine and amphetamine) and 8 million users of ecstasy, ATS seizures are relatively modest. Interception rates (seizures as a proportion of drug manufactured) are understood to be lower than for heroin and cocaine. This may reflect the difficulties faced by law enforcement agencies in seizing ATS, which - to a large extent - are produced and consumed within the same region. In contrast, heroin, cocaine and, to a lesser extent cannabis, are trafficked 'inter-regionally', offering law enforcement agencies more possibilities to intercept shipments.

<sup>1</sup> The decline in 2001 is mainly due to a smaller quantity of methamphetamine seizures reported from the People's Republic of China, following major seizures in 1999 and 2000.

Seizures of amphetamine-type stimulants, 1991 - 1995

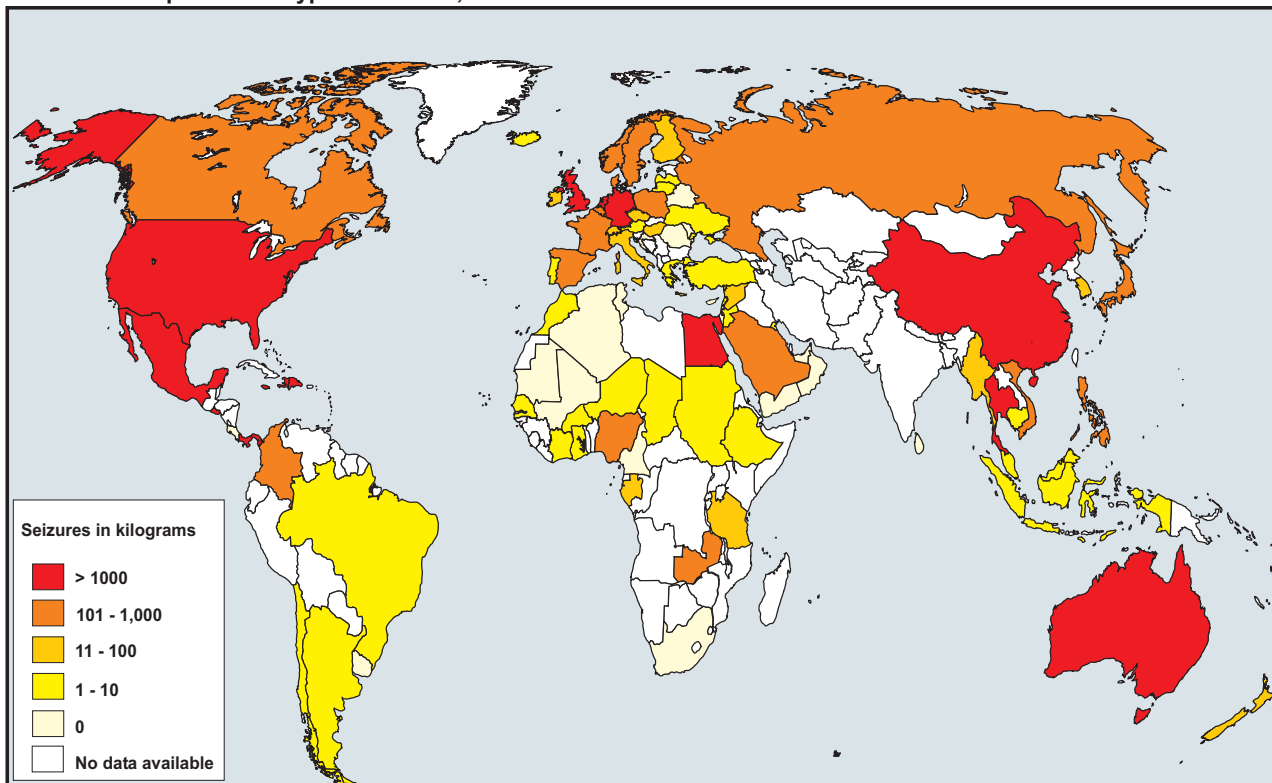


Figure 23  
Source: UNODC, Annual Reports Questionnaire Data.

Seizures of amphetamine-type stimulants, 1996 - 2001

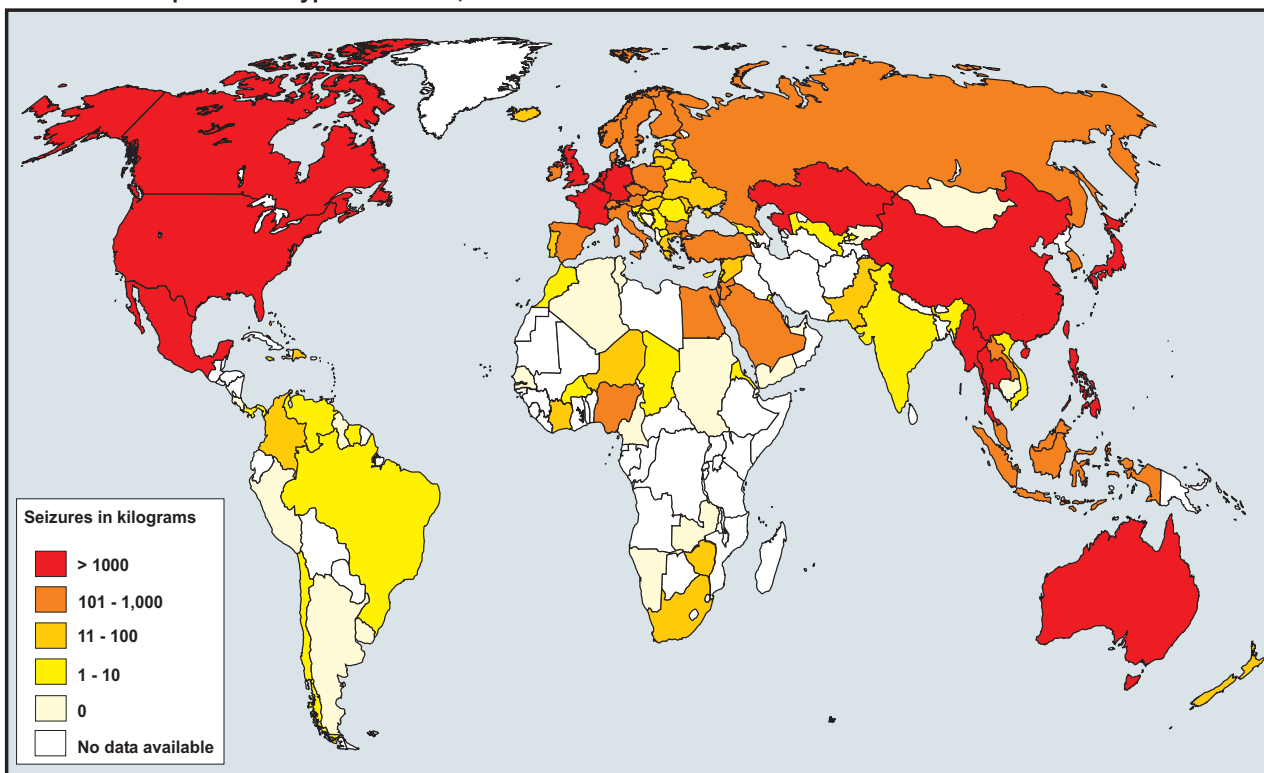
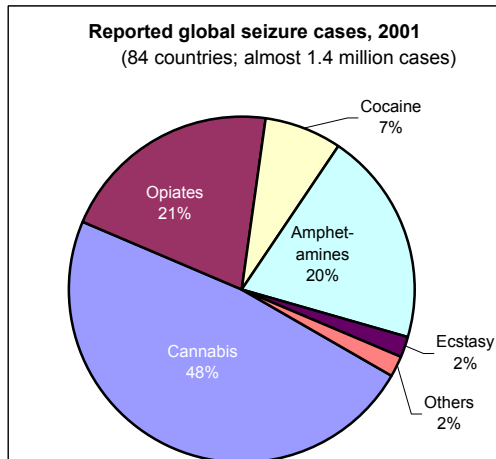
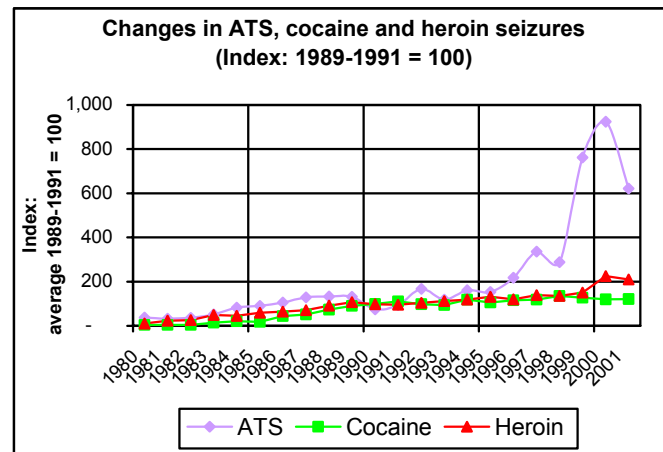


Figure 24  
Source: UNODC, Annual Reports Questionnaire Data.

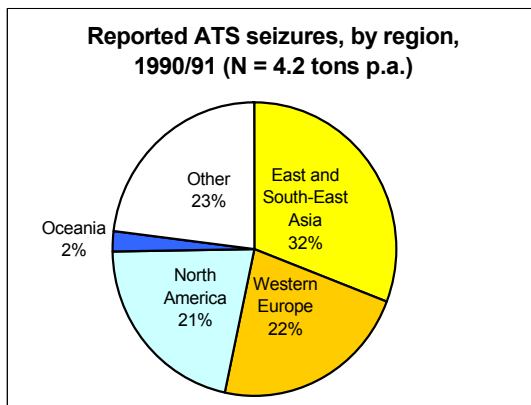


**Figure 25**  
Source: UNODC, Annual Reports Questionnaire Data

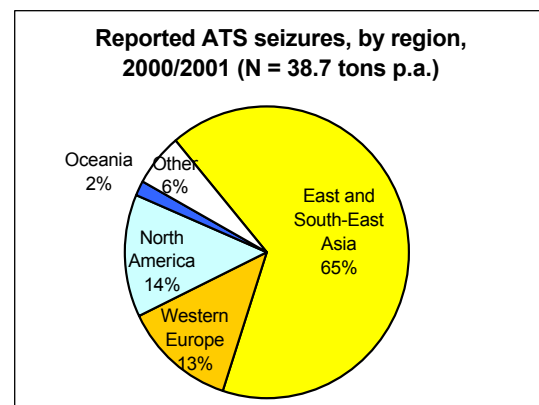


**Figure 26**  
Source: UNODC, Annual Reports Questionnaire Data

Nevertheless, growth rates of ATS seizures have been higher than those of heroin and cocaine, throughout the 1980s, and particularly at the end of the 1990s. At the global level, ATS seizures have increased almost ten-fold over the 1990/91 to 2000/01 decade. The increase has been particularly significant in East and South-East Asia, whose relative share has more than doubled over the period.

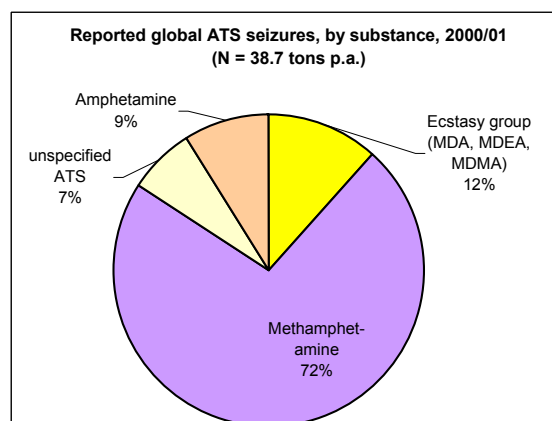


**Figure 27**  
Source: UNODC, Annual Reports Questionnaire Data.



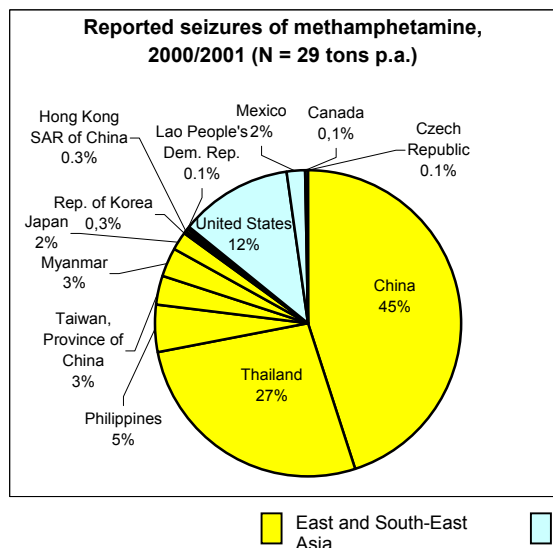
**Figure 28**  
Source: UNODC, Annual Reports Questionnaire Data.

In terms of specific substances involved, almost three-quarters of reported global ATS seizures concerned methamphetamine, followed by substances of the ecstasy group, and amphetamine.

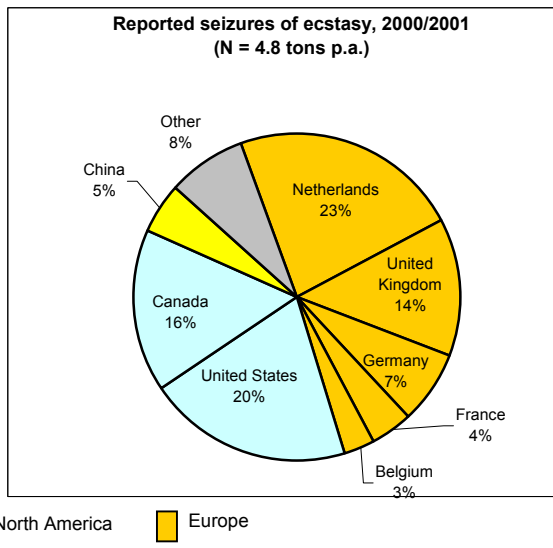


**Figure 29**  
Source: UNODC, Annual Reports Questionnaire Data.

Similar to previous years, the vast majority of **methamphetamine** seizures in 2000/2001 were reported from countries in East and South-East Asia, in particular People's Republic of China and Thailand, which account together for 70% of global methamphetamine seizures. Reported seizures from other East and South-East Asian countries amount to almost another 15% of global seizures. The only country outside the region reporting significant levels of methamphetamine seizures in 2000/2001 was the United States.



**Figure 30**  
Source: UNODC Annual Reports Questionnaire Data.

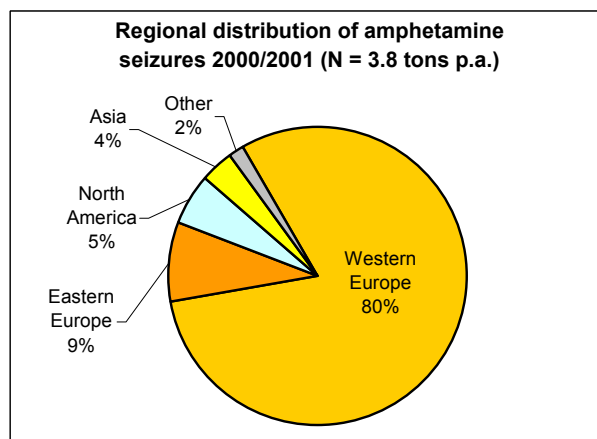


**Figure 31**  
Source: UNODC, Annual Reports Questionnaire Data.

For **ecstasy-type substances**, half of all reported seizures are from Europe. North America accounts for almost 40%, and only slightly more than 10% are reported from other countries and regions. In Europe, almost all seizures were reported from Western Europe, namely the Netherlands, United Kingdom and Germany. The USA and Canada reported about equal shares of ecstasy seizures.

Similar to ecstasy, the majority of **amphetamine** seizures were reported from Europe, in particular Western Europe which accounted for about 80% of all reported seizures in 2000-2001. Almost half of those seizures were reported by the UK (47%), followed by the Netherlands (15%), Germany (7%) and Sweden (5%).

The total share of amphetamine seizures in Eastern Europe is only about 10%. Most seizures in this (sub)region were reported from Poland and from Bulgaria, which together accounted for about 80% of all Eastern European amphetamine seizures in 2000/01.

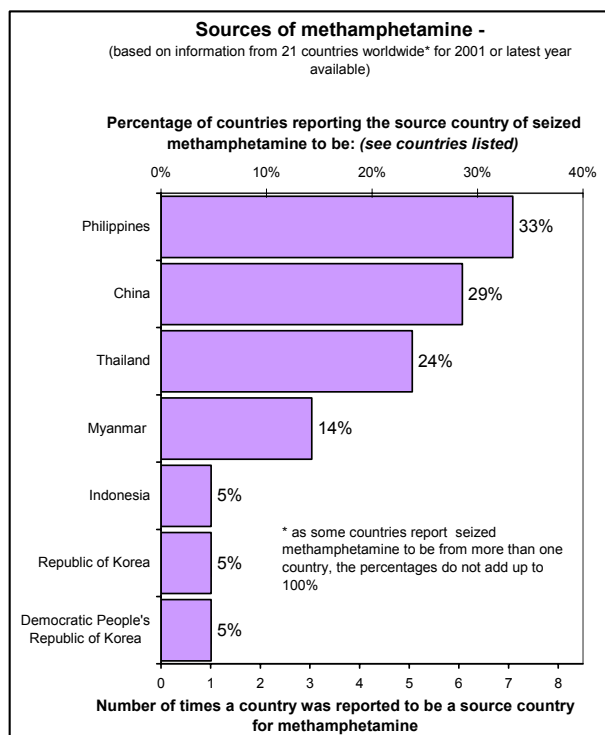


**Figure 32**  
Source: UNODC, Annual Reports Questionnaire Data.

While seizure data can illustrate the availability of a substance, both in a source and a destination country, specific indicators for clandestine drug manufacture include the reported source of ATS seized by the authorities, the number of laboratories detected, and the amounts of precursors seized. These indicators are discussed below.

## 1.2. Sources

While the main countries manufacturing methamphetamine in South-East Asia are understood to be Myanmar and China, more than one third of countries reporting origins of seized methamphetamine indicate Philippines as the source.<sup>2</sup> This does not give an indication of the quantitative level of the actual seizures made, but clearly reflects the importance of the Philippines as an emerging source of the drug.

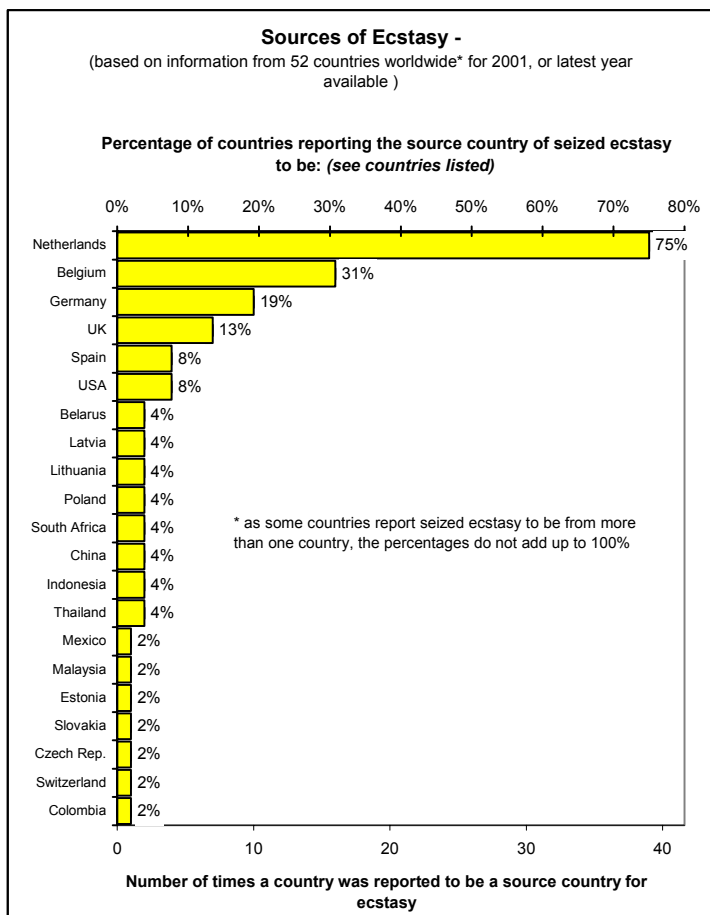


**Figure 33**  
Source: UNODC, Annual Reports Questionnaire Data

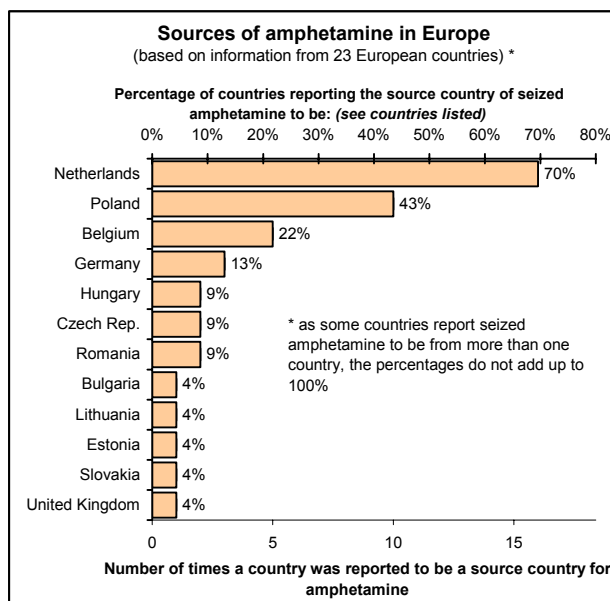
With regard to the origin of ecstasy and amphetamine, three quarters of the countries reported that their imported ecstasy originated in the Netherlands. If only the responses of the countries within Europe are looked at, the proportion of the Netherlands as a source country rises to almost 90%. It is higher for ecstasy than for amphetamine.

For ecstasy, the next most frequently mentioned country of origin was Belgium, possibly reflecting a spread of criminal groups from the Netherlands in recent years to use Belgian territory also as a site for ecstasy manufacture. Other frequently mentioned source countries included Germany, the UK, Spain and the USA. The most frequently mentioned source countries located in Eastern Europe were the Baltic countries, Poland and Belarus. China, Indonesia and Thailand were the most frequently reported source countries located in Asia. In Africa, the Republic of South Africa, and in South America, Colombia, were identified as source countries for ecstasy. Although it is generally believed that Western Europe is the source of much of the ecstasy available around the world, laboratory results indicate clear differences between the drug seized in South-East Asia and that in Western Europe. This observation is detailed further in Part 2, Chapter 7.

<sup>2</sup> The more often a country is mentioned, the more likely it is that the country is indeed an important source country.



**Figure 34**  
Source: UNODC, Annual Reports Questionnaire Data; UNODC/INTERPOL/WCO Individual Seizures Database.



**Figure 35**  
Source: UNODC, Annual Reports Questionnaire Data, EMCDDA.

### 1.3. Laboratory seizures

The expanding global market is fed by an increase in clandestine manufacture. Not only are there more laboratories in more countries, but their size and sophistication is also increasing. So-called “kitchen” laboratories are still detected, but nowadays clandestine laboratories with hundred-kilogram capacities per week (equivalent to a million ecstasy pills, or 4% of the global weekly requirement) are also found.



### Clandestine ATS laboratories

#### Types

Information on clandestine ATS laboratories is sparse, and little is known about the different types of manufacturing facilities in terms of stage of the production process. At least the following types of laboratories can be distinguished:

- 'powder laboratories' producing the ATS drug powder,
- 'tablet laboratories', where the drug powder is pressed into tablets,
- 'cutting laboratories', where drug powders are diluted ("cut") to increase bulk and maximize profits, and there may also be
- 'refining laboratories', where, for example, powder methamphetamine is refined into the crystal form of that drug, or drug materials temporarily disguised for trafficking purposes are recovered.

None of the different types of laboratories is usually separately reported; reported numbers may be double counts of the different types of laboratories.

#### Capacity

Clandestine laboratories vary significantly in terms of size or manufacturing capacity, ranging from small-scale facilities, frequently referred to as 'kitchen' laboratories, which produce for personal or local supply, to large, industrial scale facilities with an output of several hundreds of kilograms per week. Information on the size of clandestine laboratories is not available on a systematic basis.

Clandestine laboratory seizures therefore can only give a broad picture of the trends in clandestine ATS manufacture. Unless separately reported, which is rare, they do not give any indication of the clandestine laboratory capacity. In addition, comparative information on the capacity of the different types of ATS laboratories (amphetamine, methamphetamine and ecstasy) is also not available. However, some of the largest laboratories seized, throughout the years, have been amphetamine laboratories.

Information on clandestine laboratory capacity of the different ATS reported to UNODC in 2001 includes:

#### Amphetamine

##### *'Powder laboratories':*

Bulgaria:	1.5kg to 70kg per month
Poland:	86kg (in a total of 12 laboratories)

##### *'Tablet laboratories':*

Bulgaria:	2kg to 30kg tablets per month
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#### Methamphetamine

##### *'Powder laboratories':*

Philippines:	200-300kg per manufacturing batch
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#### MDMA (ecstasy)

##### *'Powder laboratories':*

Germany:	2-4 tons (2 laboratories)
South Africa:	20kg

##### *'Tablet laboratories':*

Indonesia:	150,000 tablets per day
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Anecdotal information from other sources suggests capacities of five kilograms per day (methamphetamine "super labs" in the USA); 20kg-30kg, or up to 100kg, per day (high-capacity ecstasy laboratories in the Netherlands and Belgium); 20kg per day to 60kg, and up to 400kg, per week (methamphetamine laboratories in the Philippines, 2000-2001); 600kg per week (amphetamine laboratory in the UK, 1996); and 1.3 tons per month (methamphetamine laboratory in Mexico, 1995).

It is important to note however, that most laboratories do not produce seven days per week and 52 weeks per year, primarily because of difficulties of ensuring continuous supply of precursor chemicals. Daily, weekly or monthly capacities can therefore not simply be extrapolated.

With this understanding, UNODC estimates that the majority of clandestine laboratories detected worldwide - several thousand laboratories - produce less than 100 grams per year for personal use or local supply, and that there are only a few hundred high-capacity laboratories producing up to five tons per year.

Based on data provided by member states to UNODC in reply to the Annual Reports Questionnaire (ARQ), reported detections of **ATS laboratories** increased steadily over the last two decades. In 2001, three quarters of all reported clandestine laboratory seizures were ATS laboratories. Although directly comparable data are not available, it is estimated that this ratio stood only at around one fifth in the early 1990s.

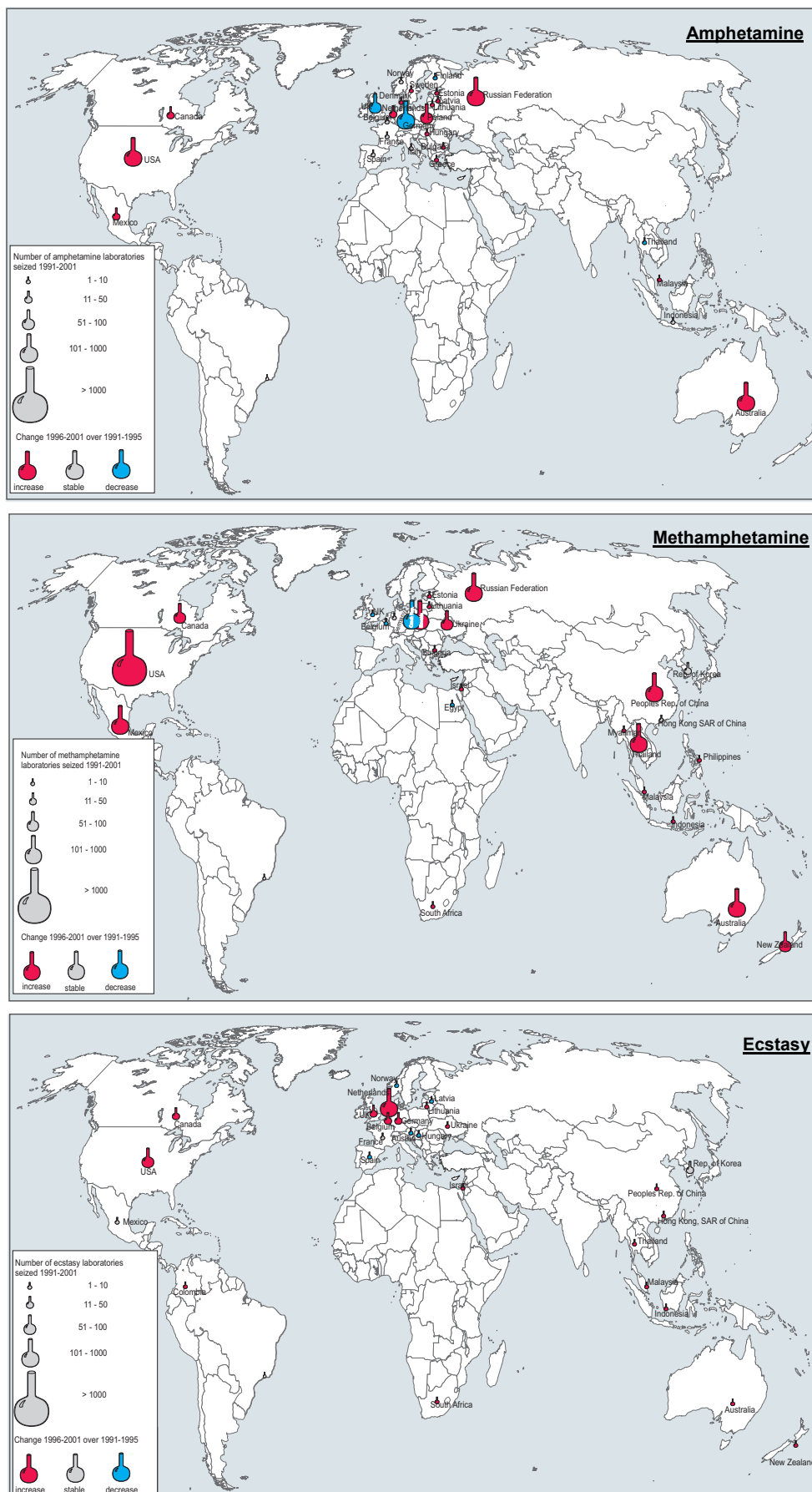


Figure 36: Amphetamine-type stimulants: clandestine manufacture (laboratories)

Source: UNODC, Annual Reports Questionnaire Data.

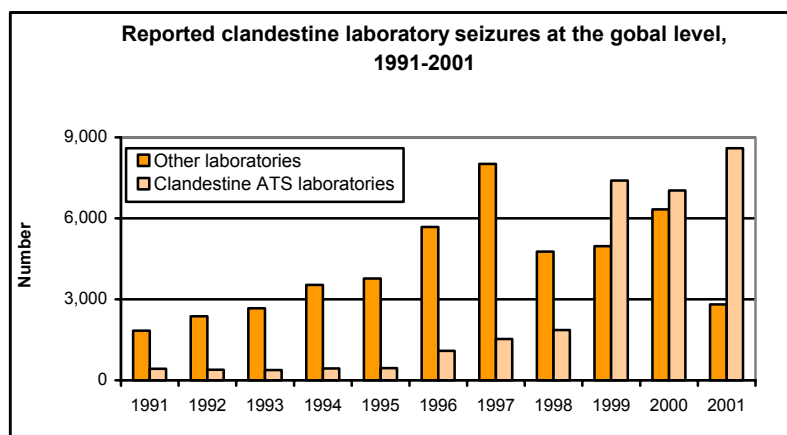
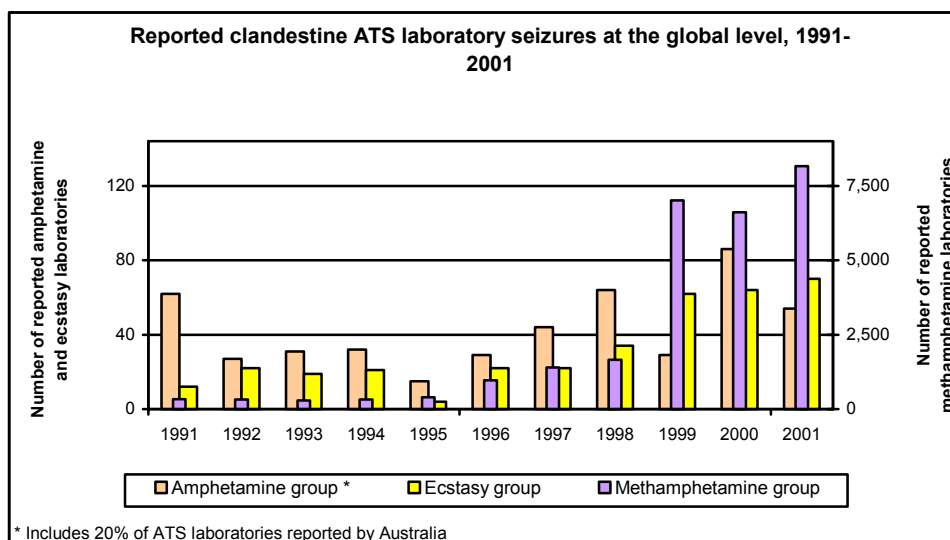


Figure 37

Source: UNODC, Annual Reports Questionnaire Data.

On a global scale, and in terms of numbers of reported laboratory seizures, ecstasy laboratories rank third behind methamphetamine and amphetamine laboratories. Amongst ecstasy laboratories, those manufacturing MDMA accounted for the major share in 2001. This is not surprising, considering the prevalence of that drug amongst the ecstasy group. There are other reports of “ATS laboratories”, where different ATS are manufactured at the same location; the share of those laboratories is increasing. There is supporting evidence that this is a real trend in manufacture because the number of reports of samples which contain mixtures of ATS is also increasing. However, it may also be a reporting problem, because the true nature of the laboratories has not been established.



\* Includes 20% of ATS laboratories reported by Australia

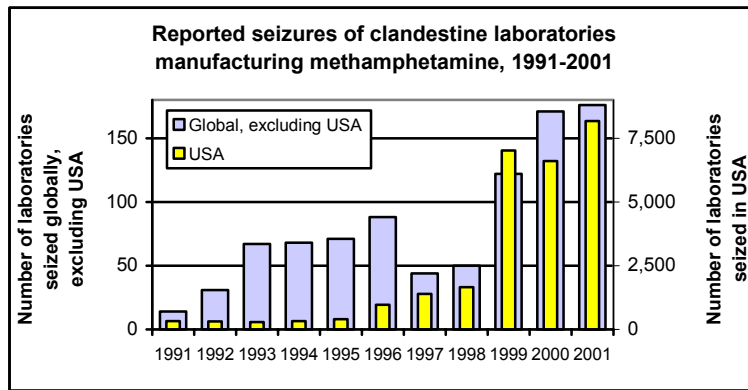
Figure 38

Source: UNODC, Annual Reports Questionnaire Data.

Within the ATS group, methamphetamine accounts for the largest increase. However, the strong increase in methamphetamine laboratory seizures between 1998 and 1999, where reported numbers more than quadrupled, is largely due to a change of the reporting system in the United States.<sup>3</sup>

Comparison of data in a regional breakdown of clandestine **methamphetamine laboratory seizures** suffers from the same change in reporting system. Based on the *number* of laboratory seizures, the United States accounted for almost 100% (close to 8,000) of all reported detections of methamphetamine laboratories worldwide in 2001. Clearly this does not, or should not, reflect reality.

<sup>3</sup> Most recent data are collected from many more sources than those prior to 1999, resulting in higher numbers.

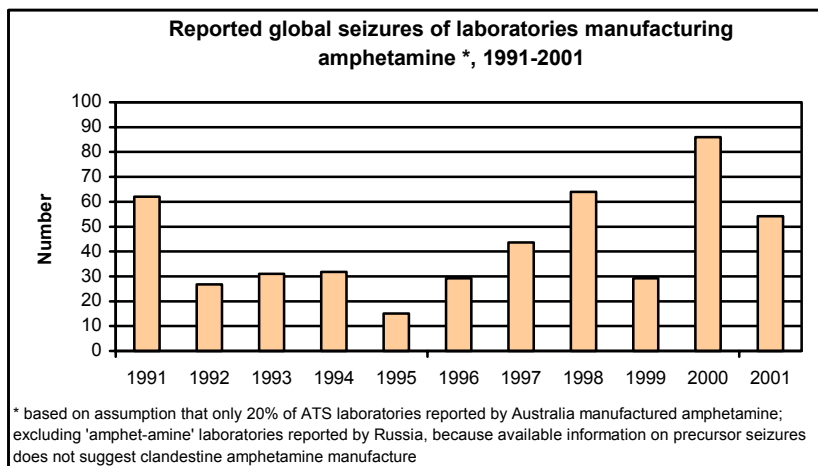


**Figure 39**  
Source: UNODC, Annual Reports Questionnaire Data.

Although US figures may not be comparable, in absolute terms, with figures from other countries, an overall upward trend in clandestine methamphetamine manufacture in North America was also confirmed by figures reported from Mexico and Canada. By contrast, and reflected in a mere 2% of all clandestine laboratories seized globally over the 2000-2001 period, methamphetamine manufacture does not play a significant role in Europe.

In South/East/South-East Asia, the reported number of clandestine methamphetamine laboratory seizures more than quadrupled over the 1996-2001 period, as compared to 1991-1995. However, in absolute terms, this number is still low and cannot alone explain the massive availability of ATS in South/East/South-East Asian ATS markets; East and South-East Asian manufacturing capacity may be significantly higher than previously recognized.

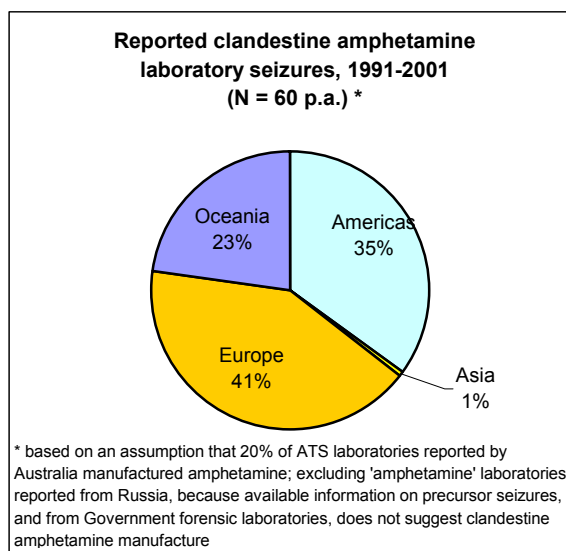
**Clandestine amphetamine manufacture** showed some fluctuation over the 1991-2001 period. Despite an overall upward trend, the number of reported amphetamine laboratory seizures in 2001 still remains below numbers reported in the late 1980s, when approximately more than twice the number of amphetamine laboratories were being reported. A drop occurred at the beginning of the 1990s. Much of this is related to the predominance of amphetamine laboratories in Western Europe, and the rapid and conclusive action taken by countries of the region to strengthen precursor controls following introduction of the 1988 Convention, and put those laboratories out of business. In absolute terms, global amphetamine laboratory seizures represent only a small fraction of methamphetamine laboratory seizures.



**Figure 40**  
Source: UNODC, Annual Reports Questionnaire Data.

In geographic terms, clandestine manufacture of amphetamine is mainly concentrated in Europe, clearly exceeding manufacture of methamphetamine in that region. Slightly more than 40% of all amphetamine laboratory seizures over the 1991-2001 period were reported from Europe. About one third of all amphetamine laboratory seizures were reported from North America, a region that is not traditionally

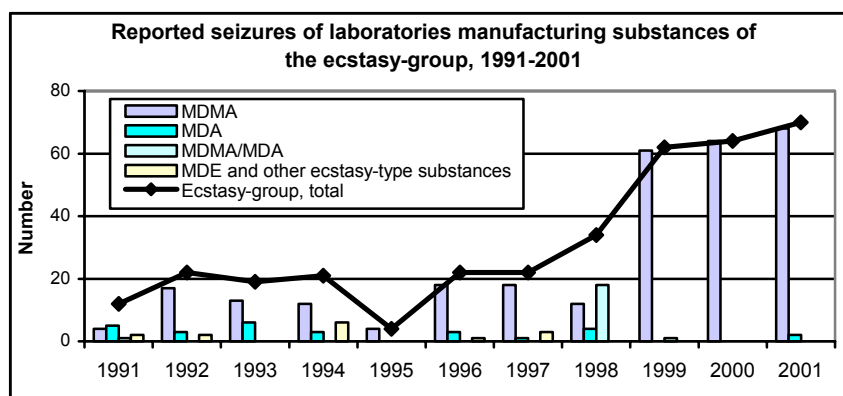
known for manufacture of that substance. The relative large share over the last decade could be a reflection of a (short term) interest, from 1996 to 1998, in norephedrine, a precursor that allows the manufacture of amphetamine in an analogous way to the manufacture of methamphetamine using ephedrine or pseudoephedrine. This may have been deliberate, but is more likely to be a result of use of norephedrine during a period of shortage of ephedrine/pseudoephedrine. Laboratory chemists may not have known that they were using norephedrine and, in fact, manufacturing amphetamine. The relatively large share of amphetamine laboratory seizures in Oceania may be the result of a reporting problem rather than a true reflection of the situation (understood to be methamphetamine).



**Figure 41**

Source: UNODC, Annual Reports Questionnaire Data.

The number of reported **ecstasy laboratory seizures** rose more than 6-fold over the 1991-2001 period. While in the early 1990s, ecstasy laboratories were reported to manufacture a number of different ecstasy-type substances, including MDA and MDE, almost all laboratories seized since the late 1990s manufactured MDMA.<sup>4</sup>

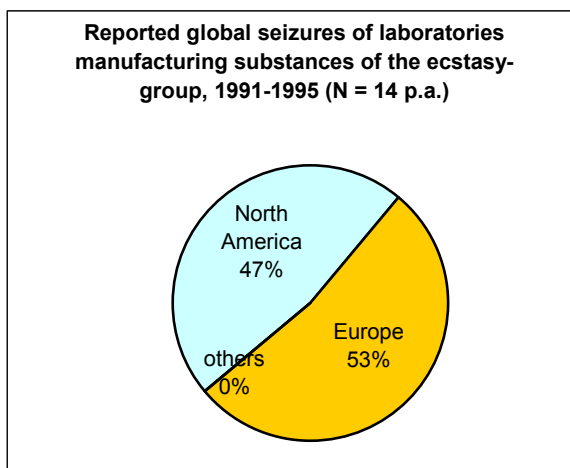


**Figure 42**

Source: UNODC, Annual Reports Questionnaire Data.

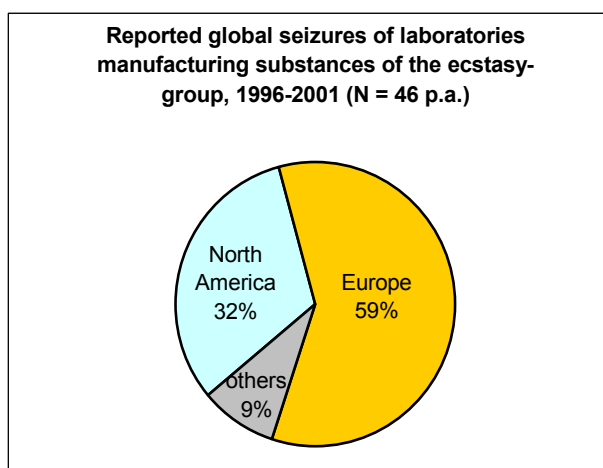
Seizures of ecstasy laboratories, as reported to UNODC, are mainly concentrated in Europe, and North America. However, over the 1996-2001 period, ecstasy laboratory seizures have also been from other regions as well, including South America, Asia and (South) Africa, as the problem has spread.

<sup>4</sup> Note: A more detailed analysis of substance-specific trends is provided in Part 2, using data from the United Kingdom as an example.



**Figure 43**

Source: INCB, *Precursors and chemicals used in the illicit manufacture of narcotic drugs and psychotropic substances*, 1996 and previous years.



**Figure 44**

Source: INCB, *Precursors and chemicals used in the illicit manufacture of narcotic drugs and psychotropic substances*, 2002 and previous years.

Whatever is manufactured, it appears that clandestine operators are increasingly taking advantage of technology transfer, and the utilization of available expertise to set up clandestine ATS laboratories where other 'favourable' conditions are met. Such conditions include, for example, easy access to precursor chemicals, the availability of a developing consumer market, or inadequate law enforcement capacity, or focus, to tackle the problem. This has led, not surprisingly, to a greater involvement and interaction between criminal groups based in source, transit and user countries.

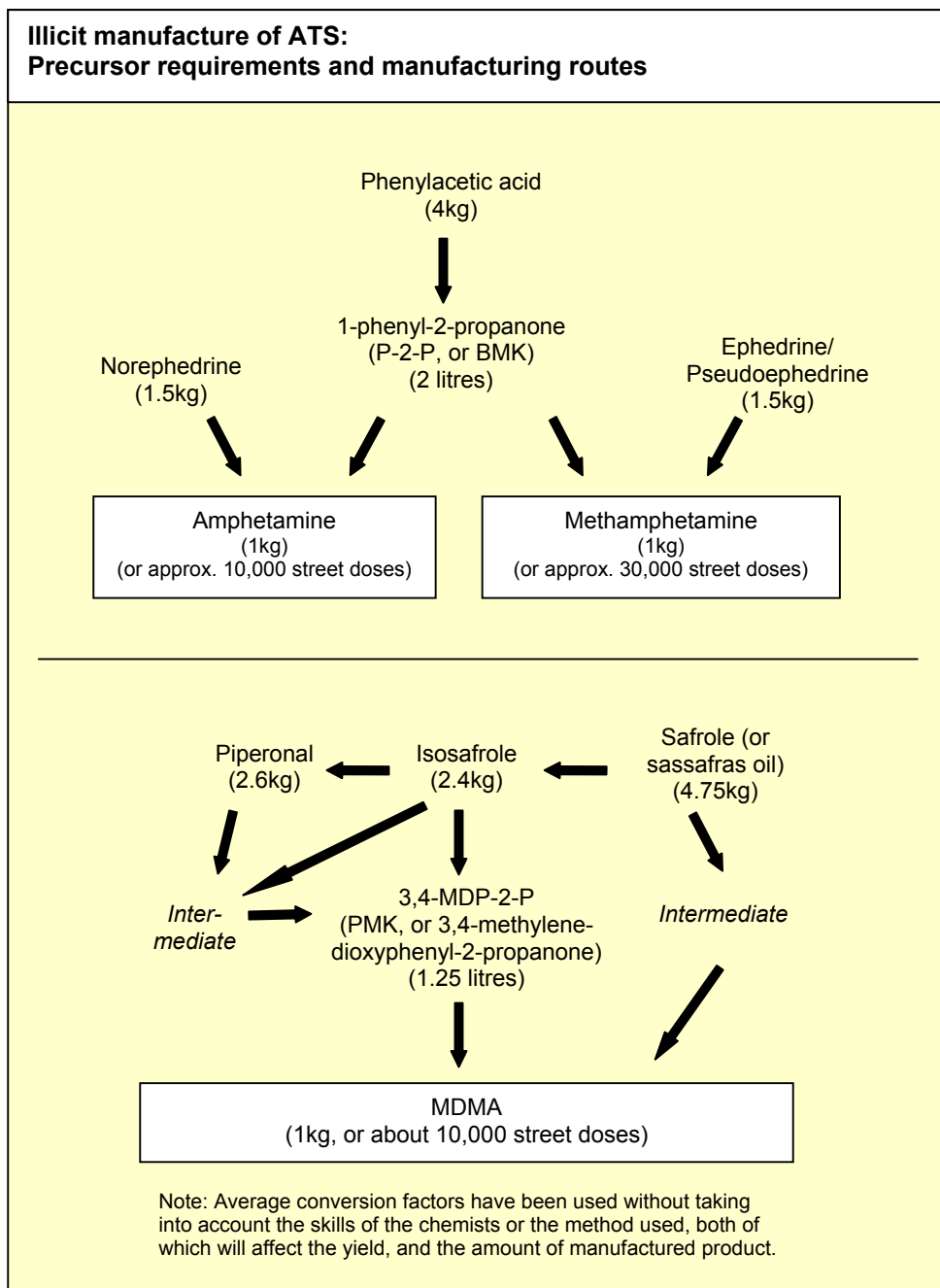
#### 1.4. Precursor seizures

Similar to increases in ATS laboratory seizures, there was also a general upward trend in precursor seizures, the 'raw material' for ATS manufacture, in the 1990s. ATS precursor seizures in 2001, expressed in ATS equivalents, were 12 times higher than in 1991.<sup>5</sup> Over the previous ten year period, with ephedrine and pseudoephedrine accounting for 67% of the seizures of precursor chemicals, expressed in ATS equivalents, a clear majority of seizures concerned precursors used in the manufacture of methamphetamine.<sup>6</sup> Precursor chemicals typically used for ecstasy manufacture (i.e., 3,4-MDP-2-P, safrole, safrole in the form of sassafras oil, isosafrole and piperonal) accounted for 19% of all ATS precursor seizures, expressed in ATS equivalents. Finally, P-2-P, norephedrine and phenylacetic acid, typically used in the manufacture of amphetamine, accounted for about 14% of all ATS precursor seizures, expressed in ATS equivalents.

Diversion of, and trafficking in, precursors occurs on a global scale, with new and complex routes of diversion continuously emerging, involving many countries as sources, transit points or destinations. From available information it is not easy to say whether this has always been the case or, more likely, whether it has developed from the more fragmented regionalized problem recognized in the mid-1990's. The observed increased complexity in sourcing of, and international trafficking in, precursors is true for all ATS that still remain, in the main, manufactured and distributed on a regional basis. Nevertheless, seizure data do highlight also a regional movement of precursors, for example between Western European countries (especially precursors for amphetamine), and within East and South-East Asia (precursors used in the illicit manufacture of methamphetamine).

<sup>5</sup> The absolute increase may be unimportant, as it is clear that at the beginning of the decade, shortly after introduction of the 1988 Convention, few countries had established systems to identify suspicious shipments of precursors, and seize them.

<sup>6</sup> While the bulk of ephedrine and pseudoephedrine is used for clandestine manufacture of methamphetamine, it may also be used for the manufacture of methcathinone (and misuse of ephedrine itself).

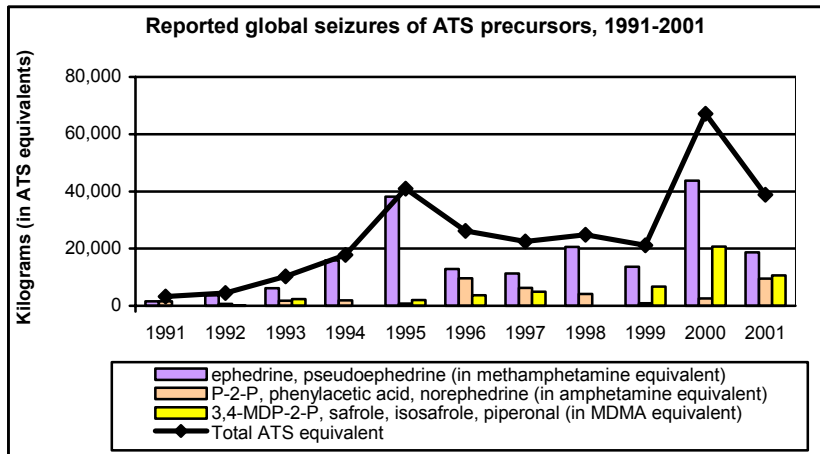


It is true also that precursor seizure statistics tend also to show more the impact of national and regional initiatives, individual major seizures, and the qualitative development of local drug markets, if any. Some examples of this include: the identification of new sources of ephedrine (a precursor for methamphetamine) opening up in East and South-East Asia, including China (by 1994 China was increasingly recognized as a major source of ephedrine (and illicitly manufacture methamphetamine)); the more frequent use of phenylacetic acid, and even benzaldehyde, instead of P-2-P as a precursor in clandestine manufacture of amphetamine during the mid- to late 1990s; the impact of strong chemical controls in Western Europe contributing to the spread of illicit drug manufacture to countries in Central and Eastern Europe, particularly after 1996, evidenced by increasing reports of diversion and smuggling in countries of those sub-regions.

It is important therefore to recognize that ATS precursor seizure data alone can only provide a partial (and more qualitative) picture of precursor availability. Uncovered diversions, and stopped shipments following regulatory interventions, are not always included in traditional seizure statistics. As a consequence, for example, also the numerous small-scale diversions or purchases of over-the-counter



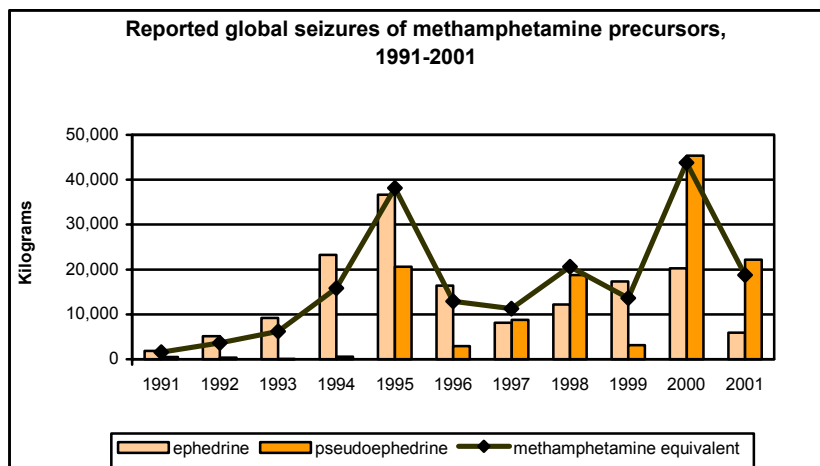
preparations which provide the raw material for the thousands of clandestine methamphetamine laboratories seized in the United States, are not comprehensively reflected in precursor statistics.



**Figure 45**  
Source: INCB, *Precursors and chemicals used in the illicit manufacture of narcotic drugs and psychotropic substances*, 2002 and previous years.

Seizures of **methamphetamine precursors** were some 12 times larger in 2001 than in 1991. Reported seizure amounts fluctuated over this period, with two peaks of close to 40 tons in the mid-1990s and in 2000. Both peaks were due to exceptionally large seizures in the USA, following specific regulatory and law enforcement interventions. In both cases, seizure levels afterwards reverted back to about 10 to 20 tons annually.

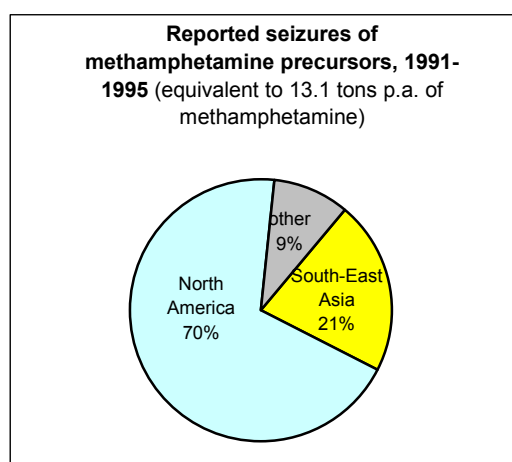
Reported global seizures of methamphetamine precursors also indicate a partial shift from ephedrine to pseudoephedrine in recent years, possibly a consequence of improved controls of ephedrine. This was notably the case in North America. Methamphetamine manufactured in South/East/South-East Asia has continued to be based largely on ephedrine, and in Australia, pseudoephedrine has always been the precursor of choice.



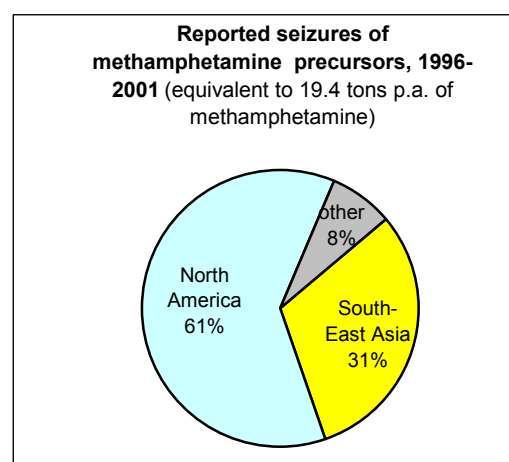
**Figure 46**  
Source: INCB, *Precursors and chemicals used in the illicit manufacture of narcotic drugs and psychotropic substances*, 2002 and previous years.

The largest methamphetamine precursors seizures are reported by countries in North America, followed by South/East/South-East Asia. There is virtually no clandestine methamphetamine manufacture in Europe as reflected by only about 3% of global ephedrine and pseudoephedrine seizures over the 2000-2001 period reported from that region.





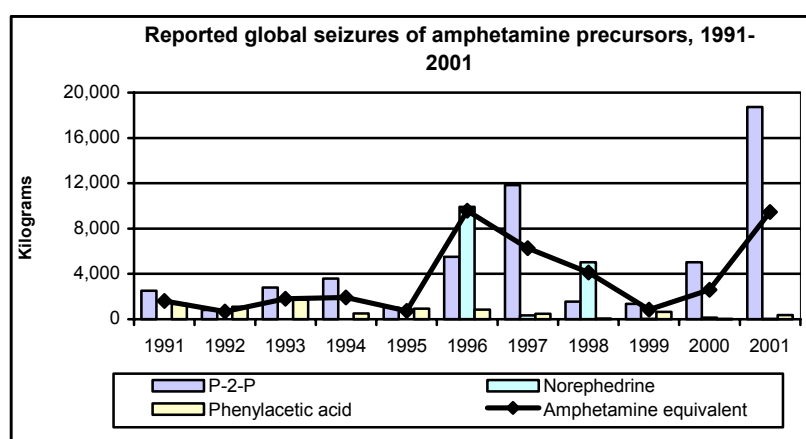
**Figure 47**  
Source: INCB, *Precursors and chemicals used in the illicit manufacture of narcotic drugs and psychotropic substances*, 1996 and previous years.



**Figure 48**  
Source: INCB, *Precursors and chemicals used in the illicit manufacture of narcotic drugs and psychotropic substances*, 2002 and previous years.

Over the 1991-2001 period, North America maintained its share of methamphetamine precursor seizures at about two-thirds of all reported seizures. By contrast, the share of South/East/South-East Asia, relative to North America, increased strongly over that period, from about one fifth in 1991-1995, to more than one third in 1996-2001. Reported seizures also increased in absolute numbers. Within South/East/South-East Asia, the People's Republic of China, Thailand and Myanmar are the main sources of illicit methamphetamine.

For **amphetamine precursors**, there was also an overall increase in reported seizures over the 1991-2001 period, although, again, with strong variation for individual years. For P-2-P, the main precursor for amphetamine manufacture<sup>7</sup>, the two peaks in 1997 and 2001 are due to exceptionally large seizures in the Netherlands, again as a consequence of specifically targeted regulatory and law enforcement activities. Significant seizures of norephedrine were made in the United States and in Mexico in 1996 and 1998, respectively, i.e., before that substance was included in Table I of the 1988 Convention in 1999.

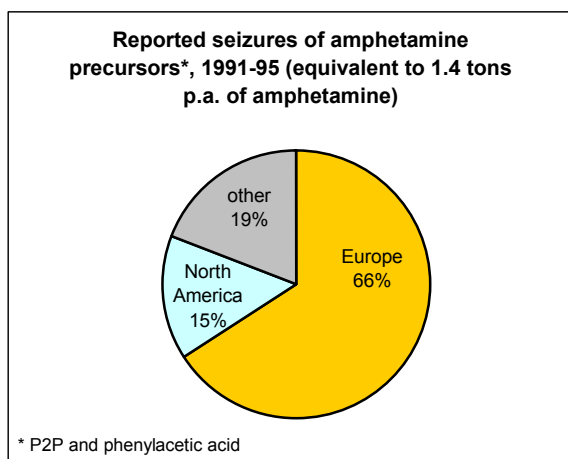


**Figure 49**  
Source: INCB, *Precursors and chemicals used in the illicit manufacture of narcotic drugs and psychotropic substances*, 2002 and previous years.

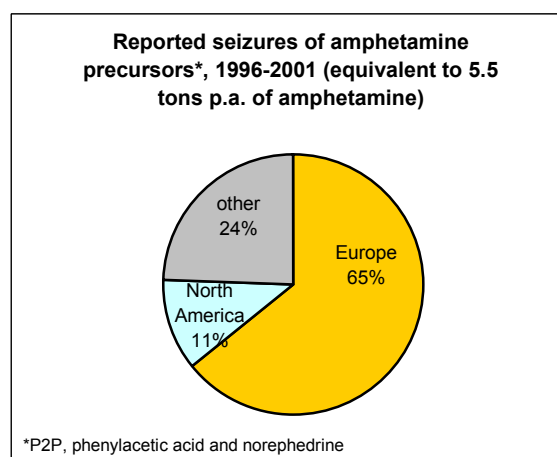
Although the quantities seized more than tripled, there was no significant change in the regional distribution of reported amphetamine precursor seizures for the periods 1991-1995 and 1996-2001. About

<sup>7</sup> P-2-P can be also used for the manufacture of methamphetamine. The regional patterns of P-2-P seizures suggest, however, that it is mainly being used for the manufacture of amphetamine.

two thirds of all seizures were made in Europe, thus reflecting that region's position as the world's key source for illicit amphetamine.



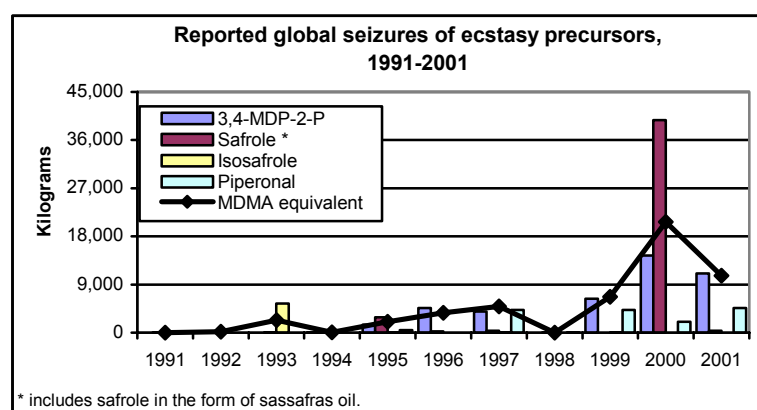
**Figure 50**  
Source: INCB, *Precursors and chemicals used in the illicit manufacture of narcotic drugs and psychotropic substances*, 1996 and previous years.



**Figure 51**  
Source: INCB, *Precursors and chemicals used in the illicit manufacture of narcotic drugs and psychotropic substances*, 2002 and previous years.

Regular seizures of P-2-P outside Europe are limited to North America and Australia. In addition, in recent years, seizures of P-2-P were also reported from New Zealand (1996) and *Hong Kong SAR* (1997). Seizures of phenylacetic acid, were reported from Australia (1996 and 2000), New Zealand (1996), and South Africa (2001), and also in South-East Asia, including Myanmar (1999 and 2001). Seizures in Asia are almost certainly related to clandestine methamphetamine manufacture, a significant change as controls over ephedrine, especially in China, have become more effective.

Reported global seizures of **ecstasy precursors** also showed strong variation over the 1991-2001 period. In addition to fluctuations in amounts, ecstasy precursor also varied in terms of specific substance, as well as the country reporting. If analyzed in more detail, it becomes clear that seizure data typically reflect individual large seizures, or a small number of related cases. In terms of specific precursors, seizures concerned mainly 3,4-MDP-2-P followed by safrole, often in the form of sassafras oil. The peak in seizures of those two substances in 2000 is due to large seizures in just two countries. Belgium and the Netherlands, respectively.



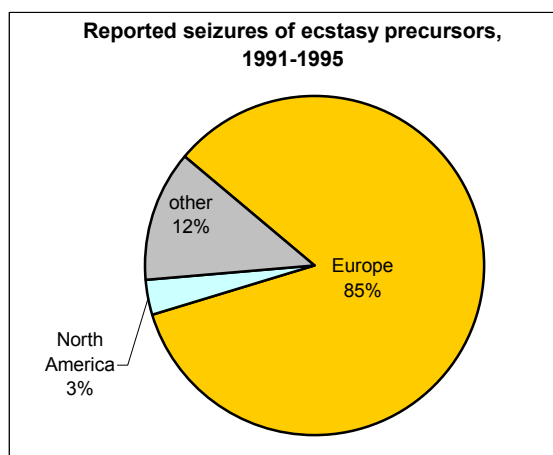
**Figure 52**  
Source: INCB, *Precursors and chemicals used in the illicit manufacture of narcotic drugs and psychotropic substances*, 2002 and previous years.

The global situation with regard to reported ecstasy precursor seizures reflects the fluidity of the market, where individual large seizures have a significant impact on total seizure statistics. However, with available data it is not possible to discern a clear trend. In general, larger seizures in more recent years

appear to reflect an increased awareness for the complexity of the family of ecstasy precursors and the need for a comprehensive approach, encompassing all members of that group. At the same time, larger seizures possibly also reflect an increased interdiction capacity and capability.

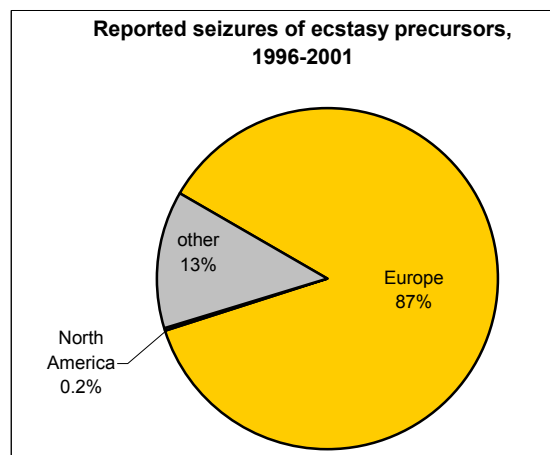
In geographic terms, reported data on precursor seizures indicate that ecstasy manufacture continues to be concentrated in Europe. Close to 90% of all ecstasy precursors – sufficient for the manufacture of 4.7 tons of MDMA annually - were seized in Europe over the 1991-2001 period.

Within Europe, almost two thirds of ecstasy precursor seizures have been reported in recent years from the Netherlands, followed by Belgium with about one fifth. Other countries reporting seizures of ecstasy precursors include Slovakia, which made significant seizures of 3,4-MDP-2-P in 1999, Germany, Spain and Lithuania.<sup>8</sup>



**Figure 53**

Source: INCB, *Precursors and chemicals used in the illicit manufacture of narcotic drugs and psychotropic substances*, 1996 and previous years.



**Figure 54**

Source: INCB, *Precursors and chemicals used in the illicit manufacture of narcotic drugs and psychotropic substances*, 2002 and previous years.

While not reflected in available precursor seizure statistics, reports on clandestine laboratory seizures suggest that there has been a spread of clandestine manufacture of ecstasy-type substances in recent years outside of Europe, namely to South-East and East Asia. Small seizures of piperonal and safrole confirm that ecstasy is manufactured in that region, although currently at very limited scale.

The specific precursor chemicals used in clandestine ecstasy laboratories differ in different regions: While the main precursor for the manufacture of ecstasy in Europe - expressed in MDMA equivalents - is 3,4-MDP-2-P, safrole mostly in the form of sassafras oil is the main precursor encountered in North America. Reports from Australia, where clandestine ecstasy manufacture is at much lower levels, indicate use of a variety of precursors. It is clear therefore that, depending on location and availability, traffickers can and do easily substitute precursors in ecstasy manufacture. The four most frequently encountered substances are all manufactured from sassafras oil and can all be used, with differing degrees of difficulty, in such manufacture.

Finally, while different precursor requirements are identified for different regions of the world, the global requirement for larger quantities of all types of ATS precursors, related to increasing drug demand, is clear. The tightening of chemical controls over the last ten years or so has had a significant impact on trafficking trends during that period: smuggling is increasingly the method preferred by traffickers for transporting chemicals across international borders to areas of illicit manufacture. Much of the reported diversions and attempted diversions of chemicals appear to be from domestic distribution channels rather than from international trade, although this still continues.

At the same time, reported theft of chemicals, and armed robberies have increased. Diversions themselves have become more sophisticated, with traffickers monitoring licit markets and using well-known company names with legitimate chemical requirements. In addition, unauthorized chemical

<sup>8</sup> Note that the UK did not report ecstasy precursor seizures to the INCB after 1997. UK authorities continued, however, to report the dismantling of ecstasy laboratories in subsequent years.

companies are being recruited to illegally manufacture precursors, with subsequent smuggling to those countries where clandestine drug manufacture occurs. Finally, corruption continues to be a major factor, with traffickers infiltrating the staff or corrupting employees of transport and shipping companies to ensure that consignments are moved through international ports without problem.

Despite this escalation of criminal involvement and the raising of the stakes of drug manufacture, there are viable options for controlling the situation. Seizure of precursors, although the quantities seized are generally considered to be relatively modest, has still resulted in recent years in stopping the clandestine production of more than US\$ 5 billion worth of drugs. Further, involvement of law enforcement agencies in operations such as Project Prism has opened new avenues for tackling the problem of smuggled chemicals. Project Prism is a voluntary international project aimed at preventing diversion of ATS precursors, back-tracking seizures to identify their sources.

#### ATS and organized crime

Without question, the popularity of amphetamines and ecstasy amongst younger people has been exploited by organised groups of criminals.

Production and distribution of the drugs are increasingly becoming structured, and integrated into international organized crime syndicates with diverse interests. Driven by high profits, an illicit synthetic drug 'industry' characterized by large-scale manufacture and international distribution networks is evolving. More and more, operators are sharing technology and expertise, spread via the Internet, to set up laboratories and a more sophisticated "commercial" production capacity. The old loose network of independent laboratory operators working at the national level has been supplanted by larger organizations able to produce more and better quality drugs at lower costs. The larger groups are more flexible, and are able to identify and exploit any lucrative business opportunity, as well as any flaws in law enforcement efforts. They assist each other to more efficiently produce, market, transport and distribute their products.

The involvement of organized crime to any large extent is new to synthetic drugs. Because of the regional nature of illicit manufacture and trafficking, there has been no need previously to build complex international networks for smuggling across frontiers and continents. Traditionally, the requirements for manufacture, distribution and use have been available locally, and the market has been controlled by small self-contained groups, buying chemicals, setting up laboratories and selling products locally. Now, for example, drug trafficking groups based in Western Europe, supported by Israeli and Russian organized crime syndicates, have extended their exporting operations, arranging the supply of ecstasy produced in Europe to consumer markets in Eastern Europe, Asia, Australia and, most recently, North America. Criminal organizations in East and South-East Asia, including Japanese yakuza gangs, have forged new partnerships to facilitate regional trafficking of methamphetamine. Some criminal 'investors' exploit economic and employment situations by investing the necessary capital, delivering the precursor chemicals for manufacturing ATS, taking orders for markets abroad, and laundering profits through front companies.

At the same time, the search for new sources of chemicals, as precursor controls have tightened around the world, has also contributed to the formation of larger coalitions between international criminal groups.

To a large part, the expansion of criminal groups engaged in the production and trafficking of plant-based drugs into synthetic drugs has frequently started with trafficking in precursor chemicals, an activity which, unlike the distribution of synthetic drugs, has always been international in character. If not involved directly with the trafficking of both ATS, and heroin or cocaine, crime groups involved with either are collaborating more. As an example, the international wholesale trafficking of ecstasy from Europe has become increasingly linked to cocaine and heroin destined for European markets, through barter exchange of the illicit products. Business, former colonial, and ethnic connections are being exploited ruthlessly by crime groups. For example, the large ports in Rotterdam and Antwerp provide business opportunities for the alternative routing of smuggled goods, including precursors, into the Netherlands and Belgium. Similarly, because of its historical and language links, highly effective partnerships exist between Spain and the South American cocaine trade. Ethnic criminal groups from Mexico, initially operating 'super labs' based in Mexico have, like any large multinational business, favoured offshore production, e.g., in California, in their search for efficiency.

Undoubtedly, the illegal profit which is a natural outcome of the operations of the criminal organizations supporting synthetic drug trafficking causes a great deal of harm to national and international economic structures by, amongst other things, hampering the development of legitimate business. Even more seriously, the growing involvement of organized crime in the ATS business, bringing with it a greater degree of violent crime, is also a critical risk for society, attacking as it does the inherent security built into society through the rule of law.

## **Chapter 2**

# **PROFIT AS MARKET-MAKER**



## 2. Profit as market-maker

The relative ease by which many ATS can be manufactured, the flexibility inherent to methods of manufacture, the low cost and ready availability of precursors, chemicals and production equipment, and the opportunity to manufacture close to consumer markets, offer incentives for the involvement in and expansion of clandestine supply unavailable to the producers of plant-based drugs such as cocaine and heroin. Risks are significantly lower: laboratory sites are difficult to identify, related to both the time required for manufacture and the ease by which laboratories can be hidden or disguised; and interdiction is problematic because production sites are often close to the retail market.

An even more enticing prospect for the clandestine manufacturer is that, with little initial capital investment, hugely profitable quantities of drugs can be manufactured. Even with relatively low, and falling, unit prices for the drugs themselves, the regular, high and growing demand for ATS sustains and drives profits higher. Production and marketing is little different from legitimate business of selling luxury accessories. In that sense too, retailing is moving up-market, practiced not in filthy alleys populated by emaciated addicts, but in middle-class neighbourhoods and discos. As with Armani and Hermes products, “fake” and “counterfeits” of the better-known ATS brands are marketed.

The mechanics of estimating the value of the ATS market are, in principle, simple, based either on the drug production volume or the volume of consumer demand, and the retail price. In this way, the retail market is valued at about **\$65 billion**, based on 42 million ATS users worldwide, and average retail prices. The mark-up between wholesale and retail value of the overall market can be as high as 300%.

### Prices and market value

Drug	Prices					
	Wholesale			Retail		
	\$/kg	Purity (%)	\$/kg (corrected for purity)	\$/g	Purity (%)	\$/g (corrected)
<b>Amphetamine</b>						
Americas *	19,640	30.0	65,467	86	22.0	390.9
East Asia						
South-East Asia	323.0	95.0	340	18.0	95.0	18.9
East Europe	4,627.7	28.6	16,181	12.1	25.4	47.6
West Europe	6,340.7	28.4	22,326	19.6	22.8	86.0
Oceania	19,020	7.0	271,714	66.8	7.0	954
Weighted mean:			21,097			78.3
<b>Value (146 tons)</b>			<b>3.08 billion</b>			<b>11.43 billion</b>
<b>Methamphetamine</b>						
Americas	19,640	34.5	56,928	86.0	38.0	226.0
East Asia	41,779	93.0	44,924	106.0	89.8	118.0
South-East Asia			(14,201)	37.3	100	37.3
East Europe	12,471	48.1	25,927	19.1	42.5	44.9
West Europe	11,357	31.0	36,635	17.9	27.4 **	65.3
Oceania				222.5	26.9	827.1
Weighted mean:			37,342			109.6
<b>Value (264 tons)</b>			<b>9.86 billion</b>			<b>28.93 billion</b>
<b>Ecstasy tablets</b>	(per 1000)					
Americas	7.2			20.9		
East Asia	7.1			29.7		
South-East Asia				10.6		
East Europe	2.9			8.2		
West Europe	6.0			12.4		
Oceania	17.4			31.7		
Weighted mean:	7.0			16.7		
<b>Value (1.4 billion tablets)</b>			<b>9.80 billion</b>			<b>23.38 billion</b>
<b>TOTAL VALUE:</b>			<b>22.74 billion</b>			<b>63.74 billion</b>

All data calculated as geometric means, weighted by percentage share based on seizure data.

\* price data for methamphetamine used; \*\* estimated

Prices do vary widely, and while heroin may be more valuable as a product, at both retail and wholesale levels, from the producers' point of view, the price mark-up can be considerably greater for ATS. The mark-up for methamphetamine tablets in Myanmar / Thailand, for example, is particularly significant at the laboratory-door ("farm-gate"), being ten times higher than for heroin. At each successive step, it is still greater, but less: the closer the manufacturing site, the cheaper the product.

<b>Comparison of mark-ups for methamphetamine tablets and heroin manufactured in the Golden Triangle and exported through Thailand</b>		
Transition	Approximate mark-up	
	Methamphetamine tablets	Heroin
Conversion of raw materials at production site	2,000%	200% (assuming a 14% yield from opium)
Thai/Myanmar border area to northern Thai regions	50%	30%
Thai/Myanmar border area to Bangkok region	100%	35%
Thai/Myanmar border area to southern Thai region	250%	70%

Calculated at Thai price data.  
Source: Australian Federal Police, *Platypus Magazine*, No.72, Sept.2001

<b>Profits of methamphetamine tablet manufacture in Myanmar / Thailand</b>	
Transition	Per methamphetamine tablet (US\$)
Production costs at source / border areas	0.3 to 0.5
Mandalay	1 to 1.5
Yangon	2.5 to 3
Thailand	3 to 5

Source: Government of the Union of Myanmar, Ministry of Home Affairs, CCDAC: *Prevention of ATS in Myanmar* (2000)

Australia reports a similar picture, with prices in Queensland, a major source of illicit methamphetamine in the country, being less (US\$36 to US\$47 per gram in 2001) than those in the neighbouring state of New South Wales (US\$47 to US\$62), and significantly less than in Victoria or Northern Territory (US\$155).

ATS prices are generally low, comparable to the price of two or three pints of beer. As an example, the following table highlights price differentials at the UK retail level between ATS, plant-based drugs, and beer and wine:

<b>Drug</b>	<b>Price per "retail unit" (US\$) *</b>	
Amphetamine	13	(per 130mg wrap)
Methamphetamine	3.20	(per 30mg)
Ecstasy	10	(per 100mg)
Cocaine	17	(per 100mg)
Crack	12	(per 20mg)
Heroin	18	(per 100mg)
Alcohol	4	1 large beer
	5	1 glass wine

\* based on UK prices

### **Production volumes**

In contrast to the plant-based drugs, there are no practical means of surveying and assessing the extent of manufacture of synthetic drugs. Secondary methods have to be used, based on seizures of



either the drugs themselves, or the precursors required for manufacture, or estimates of consumer demand.

Based on:	Estimated annual production (tons)		
	Amphetamine and methamphetamine	Ecstasy	Total
Consumption *	516 (weighted average)	100 to 125	616 to 641
Drug seizures **	340 / 490	50 / 75	390 to 565
Precursor seizures ***	290 / 410	130 / 200	420 to 610
<b>Mean and Range:</b>	410 (290 to 516)	113 (50 to 200) [1.4 billion tablets]	523 (390 to 641)

Annual production of ATS is thus slightly more than that of estimated global production of heroin, and about two-thirds of that for cocaine:

Estimated potential annual production (tons)		
ATS combined	Heroin	Cocaine
523	449	800

\* Number of users and quantities consumed

In general, consumption volumes are not easy to estimate. Doses vary widely, and the frequency of dosing is not clear.

*Amphetamine and methamphetamine:* Based on an average dose of 30mg every day (the content of an average methamphetamine tablet; and twice the defined daily dose of amphetamines), and an estimated number of 34 million users worldwide, there would be an annual requirement for about **375 tons of drug**.

*Amphetamine:* The estimate is somewhat higher if the wrap size for amphetamine is used as a measure of dose. A "wrap" in this context is understood to be a quantity of drug packaged for distribution at street level: from data available from the UK, the majority of wraps (80%) contain not more than 1g of powder with an average purity of about 13% (i.e. a wrap contains about 130 mg pure amphetamine). Other estimated average doses are similar (INCB). Again based on one dose per day, the annual requirement is about **1600 tons of drug**. Weighted for the estimated number of users of amphetamine and the number of methamphetamine users worldwide, the requirement for amphetamines is estimated at some **516 tons** (184 tons of amphetamine, and 332 tons of methamphetamine) [users in Europe (3.3 million) vs. users in North America and Asia (2.9 million + 22.5 million)]. Breakdown of overall mean (amphetamine and methamphetamine) of 410 tons used on a pro rata basis.

*Ecstasy:* Taking into account occasional, moderate and heavy use, studies show that, on average, the eight million ecstasy users consume about three tablets per week. This amounts to an annual requirement for up to 1250 million tablets, or **100 tons to 125 tons of drug** (each tablet contains 80mg to 100mg).

\*\* Drug seizures

*Amphetamine and methamphetamine:* Law enforcement officials estimate that seizures generally account for some 10% of the drugs available. Based on that estimate, and average global seizures over the last three years where data are available, about 34 tons, the clandestine market would be **340 tons**. Other more specific estimates have been made of interdiction successes, suggesting that only about 7% of the drug is actually seized. Using that information, the estimated market is **about 490 tons**.

*Ecstasy:* Similarly, based on average global seizures over the last three years of about 5 tons, the clandestine ecstasy market would be **50 tons**, rising to **about 75 tons** using the lower estimate of interdiction rate.

\*\*\* Precursor seizures

Using a similar approach to that for drug seizures, estimates of the market for *amphetamine and methamphetamine* based on precursor seizures range **from 290 tons to 410 tons**; and for *ecstasy* from **130 tons to 200 tons**.

## Profits

Almost all of the ATS market value is profit: the cost of precursor chemicals, equipment and labour is small in comparison. Less than one kilogram of drug, sold on the illicit market, typically pays easily for the initial investment of setting-up a small-scale clandestine laboratory. As a practical consideration, therefore, the greatest ongoing operating cost is not that invested in the "laboratory" or manufacturing site itself, but that of the chemicals required for drug manufacture. From legitimate business, through diversion and smuggling to clandestine site, there is a mark up of some 20 to 50 times in cost of chemicals. Despite that, profits, even those derived from the manufacture of small quantities of drug, are significant:

Drug	Precursor	Licit cost US\$ / kg	Illicit cost US\$ / kg	Quantity of drug manufactured (per kg precursor)	Retail value US\$	% Gain
Methamphetamine	Ephedrine	65 to 100	2,000 to 3,000	0.666	73,260	2,930
Ecstasy	3,4-MDP-2-P	100	2,000 to 6,000	0.800	133,600	3,340

### Conversion ratios / yields

Depending on the actual synthesis route used, yields of ATS can vary quite significantly, e.g.:

<u>ATS end-product</u>	<u>Precursor</u>	<u>Yield</u>
<i>Amphetamine</i>	P-2-P	23% (Leuckart route)
<i>Methamphetamine</i>	P-2-P	80% (Leuckart route, reductive amination)
	Ephedrine	50-75% (hydriodic acid/red phosphorous) *
	Ephedrine	90% (Emde route) *
<i>MDMA</i>	3,4-MDP-2-P	80% (reductive amination)
	Piperonal	45% (nitrostyrene/3,4-MDP-2-P)
	Isosafrole	50% (via 3,4-MDP-2-P)
	Safrole	40-45% (bromosafrole route)

\* Note that, according to the results of scientific drug impurity profiling studies, the Emde route is believed to be the predominant route for methamphetamine manufacture in South-East Asia (methamphetamine tablets), while the hydriodic acid/red phosphorous route is used in East Asia (crystal methamphetamine / "ice"). The latter is also believed to be used by US/Mexican clandestine operators.

### Conversion ratios reported to UNODC, 2001

For the manufacture of 1kg of ATS end-product, the following precursor requirements are reported:

<u>ATS end-product (1kg)</u>	<u>Precursor:</u>	<u>Quantity required</u>	<u>Yield</u>	<u>Country reporting</u>
<i>Methamphetamine</i>	Ephedrine	1 kg	100%	Czech Republic, Philippines
	Ephedrine	1.5-2 kg	50-67%	Republic of Korea
	Ephedrine/Pseudoephedrine	1.6 kg	62%	People's Republic of China
	Ephedrine/Pseudoephedrine	1.4-1.7kg	60-70%	United States
	Pseudoephedrine	2 kg	50%	Canada
	Pseudoephedrine	1.5 kg	67%	New Zealand
<i>MDMA</i>	Sassafras oil	3 litres	38%	Canada
	Sassafras oil	2 liters	57%	South Africa
	Sassafras oil	1.5 liters	76%	New Zealand
	3,4-MDP-2-P	1.25 kg	80%	Belgium
<i>MDA</i>	Piperonal:	2.5 kg	40%	Canada

## **Chapter 3**

# **ABUSE IS SPREADING**

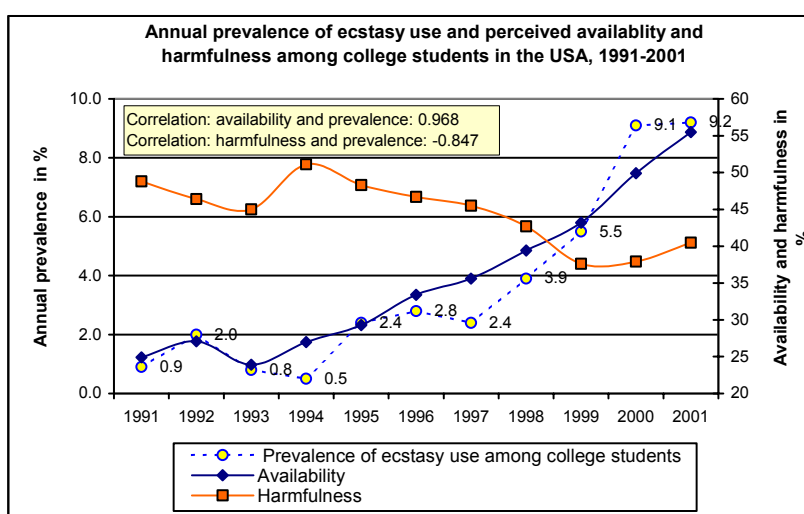


### 3. Abuse is spreading

#### 3.1. Introduction

Abuse of ATS continues to spread worldwide, with few regions being spared, as the drugs become more available. Typically, countries reporting high levels of ATS seizures are also those reporting high levels of ATS use.

A close link between availability and level of abuse is also suggested by data from the United States. Over the 1991-2001 period, the number of college students, who considered it “fairly easy or very easy” to get ecstasy more than doubled, while the annual prevalence of ecstasy use rose about ten-fold over the same period. In parallel, the perceived harmfulness of experimenting with ecstasy declined. Although the decline was halted in 1999, available data suggest that such minor changes in the perception of the harmfulness of a substance, when availability continues to rise, have only limited impact on consumption levels.

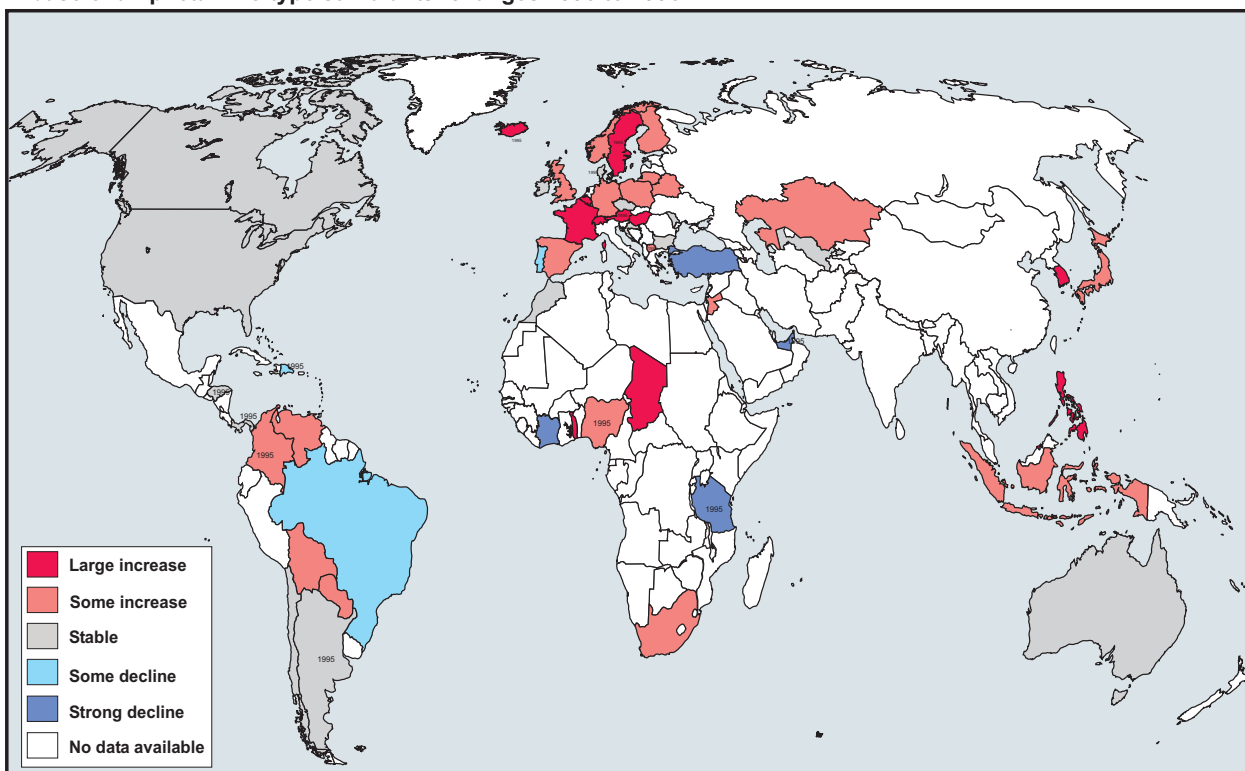


**Figure 55**  
Source: NIDA, *Monitoring the Future, Volume II, 2002*.

As with other types of drugs, patterns of ATS use are frequently cyclic, with specific drugs appearing and disappearing from the illicit market in more or less regular intervals. Use of different members of the ATS family increased from the 1960s to the early 1980s, and declined thereafter, before re-emerging in the mid-1990s at unprecedented growth rates, especially for ecstasy-type substances. It is, however, important to note that, over the same period, the main source of supply of ATS also changed from licit oversupply and diversion to clandestine manufacture. In addition, inconsistencies in reporting, between countries, and over time, contribute to a lack of comparability of available data.

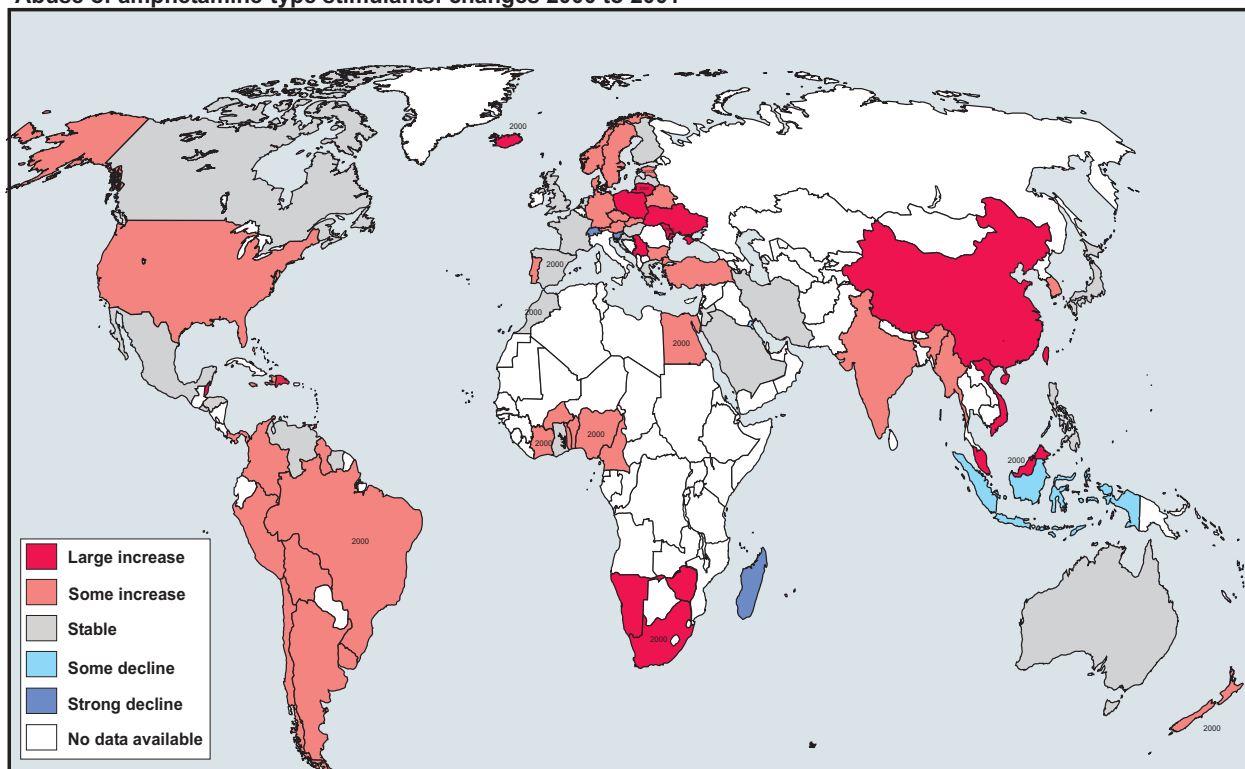
While, historically, amphetamine is the ATS of choice in Europe, it is methamphetamine in Asia and North America. Both substances, thus, have historic roots and distinct user populations in different regions, sometimes even for different forms of the same substance, e.g., methamphetamine tablets compared with crystal methamphetamine. Both substances have also only spread marginally geographically within a region over the 1991-2001 period, although in individual countries, use has increased considerably. By contrast, ecstasy has spread from a regional problem only in Europe, to many other parts of the world.

Abuse of amphetamine-type stimulants: changes 1995 to 1996



**Figure 56**  
Source: UNODC, Annual Reports Questionnaire Data.

Abuse of amphetamine-type stimulants: changes 2000 to 2001



**Figure 57**  
Source: UNODC, Annual Reports Questionnaire Data.

Ecstasy, methamphetamine and methcathinone are the main ATS abused in Southern Africa. In South America, the reported increases in abuse over the 2000-2001 period may still be related to overuse of ATS from legitimate sources, although the extent of the problem has declined significantly since the mid-1990s, and clandestinely manufactured ATS, mainly ecstasy, appear to increasingly fill the gap.

### Forms and facets of ATS use

ATS use has many distinct faces, also reflected in distinct user populations. A typical "ATS abuser", therefore, does not exist. Experimental or infrequent use is most often associated with young people, using ATS tablets, typically containing MDMA, for recreational purposes. Increasingly, the tablet as a dosage unit is equated with ecstasy (or sometimes with "ATS"), even though those tablets frequently do not contain MDMA, but a combination of other controlled and/or non-controlled drugs. Use of tablets as part of recreational, leisure time activities has thus become part of the 'normal' lifestyle of certain groups of young people. Ecstasy use, at current patterns, is rarely associated with severe addiction, but today's ecstasy users are typically polydrug users.

By contrast, use of amphetamine and methamphetamine, including in its highly pure crystal form known as "ice" in the Western world, or as "shabu" in East Asia, is much more often associated with heavy abuse, severe psychological problems, and addiction. Both substances are typically injected or snorted, "ice" also being smoked. They are frequently not differentiated at street level. Methamphetamine tablets constitute a third group, because they are usually smoked, in a way similar to "chasing the dragon" (heating the crushed tablets on a foil and inhaling the fumes). Although marketed as a tablet, similar to ecstasy, the effects of such tablets are truly those of methamphetamine, or even crack cocaine, and not comparable to those associated with ecstasy.

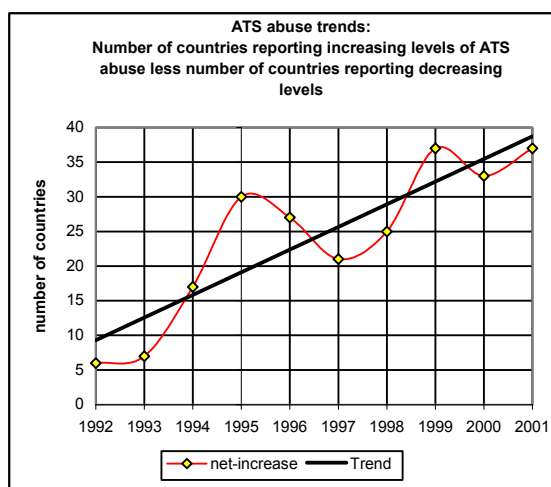
Consumption of methamphetamine tablets by smoking is the norm, for example, in South-East Asia, with regular users of the drug smoking 2-3 times a day. The increase in smoking of methamphetamine in some countries has been accompanied by a notable shift away from injecting, although injection continues to occur among a small proportion of methamphetamine users in certain regions of South-East Asia. Also in Japan, a country that has faced several waves of methamphetamine abuse since the mid-1950s, the current third wave is characterized by smoking or oral ingestion of methamphetamine, typically in the form of "ice", rather than injection.

Abuse patterns and risks associated with the abuse of different ATS, or different forms, are not always directly comparable with one another, and the related interventions can be significantly different.

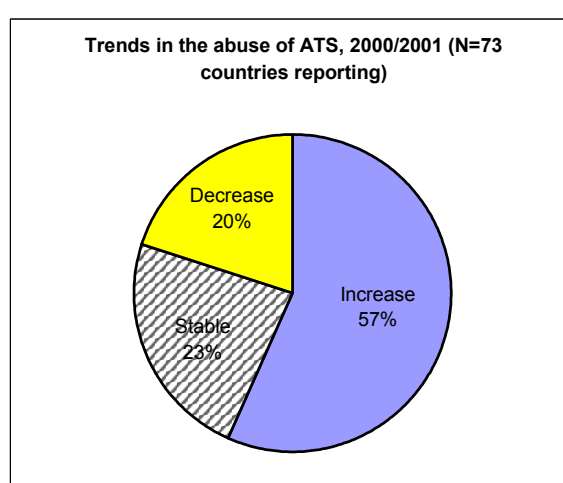
For the purposes of this report, data on abuse are used to complement and substantiate data on manufacture. As with data on supply, a main source of information is UNODC's Annual Reports Questionnaires (ARQ).<sup>9</sup> In addition, prevalence estimates, where available, are provided to reflect levels of abuse of ATS (current use, last year's use and ever used, reflecting monthly, annual and lifetime prevalence, respectively).

## 3.2. Reported trends

Using the number of government reports on trends in ATS abuse as an indicator, abuse increased at the global level over the 1992-2001 period. Although the net increase shows a cyclic pattern, possibly due to inconsistent reporting, the overall trend shows an increase.



**Figure 58**  
Source: UNODC, Annual Reports Questionnaire Data



**Figure 59**  
Source: UNODC, Annual Reports Questionnaire Data.

<sup>9</sup> Ecstasy was for the first time explicitly mentioned in the revised ARQ for the reporting year 2001. It is therefore not possible to compare data on ecstasy abuse with previous periods.

In 2001, a majority of close to 60% of all countries reporting on trends in ATS abuse reported increasing levels of abuse. About the same proportions (20%, each) of countries reported stable and decreasing ATS abuse trends.

Most reports on increases in ATS use were received from countries in Europe, followed by the Americas and Africa. In relative terms, of the countries reporting within a region, the largest share of reports of increases were received from African countries (77%), followed by countries in the Americas (67%) and Europe (60%). The large number of countries in Africa reporting increases in ATS abuse, and the low number of Asian countries may, however, not be a true reflection of the situation, but more due to data collection and reporting problems. However, it may also be a reflection of differences in the underlying ATS problems, i.e., licit oversupply and diversion in large parts of Africa and South America, compared to a clandestine ATS problem in most other parts of the world.

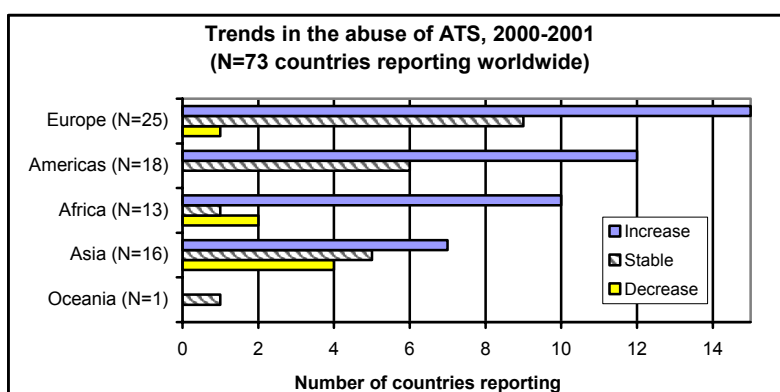


Figure 60  
Source: UNODC, Annual Reports Questionnaire Data.

Globally, the experimental or infrequent use of amphetamine-type stimulants, notably **ecstasy-type substances**, is on the rise in many regions of the world, with almost two-thirds of countries reporting increased levels of ecstasy use in 2001, compared to 2000.

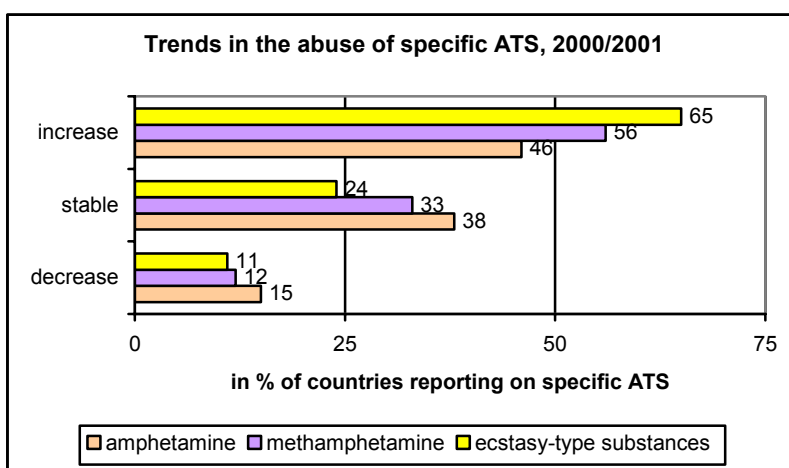
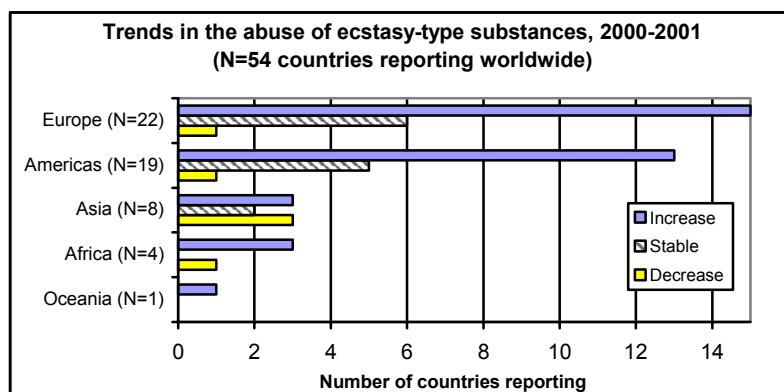


Figure 61  
Source: UNODC, Annual Reports Questionnaire Data.

Reported increases for **methamphetamine and amphetamine** are less pronounced but still around half of all countries reporting on specific ATS trends reported increases for those two drugs. However, with close to 40% of countries reporting a stable situation as regards amphetamine abuse, the market for that substance appears to be the least dynamic in 2001, with only limited levels of expansion in that year.



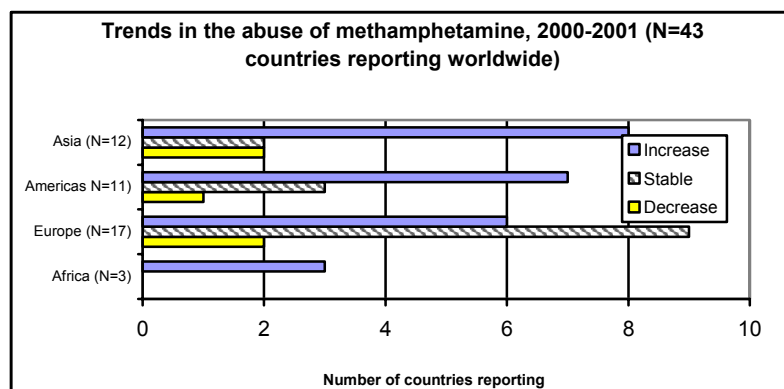
The increase in the abuse of ecstasy-type substances is most noticeable across Europe, especially Central and Eastern Europe, and in the Americas, where increased exposure to ecstasy use, especially among young people, has been documented. Increases in ecstasy use are also noted in Australia and in some countries in Asia. In South-East Asia, consumption of methamphetamine tablets features also as a recreational form of drug use, although often among different population groups than those that use ecstasy.



**Figure 62**

Source: UNODC, Annual Reports Questionnaire Data.

**Methamphetamine** use and its spread continue to be of great concern in several countries, particularly in Asia and in North America. In Europe, by contrast, the majority of countries reported stable trends in 2001 compared to 2000.



**Figure 63** (no reports were received from Oceania)

Source: UNODC, Annual Reports Questionnaire Data.

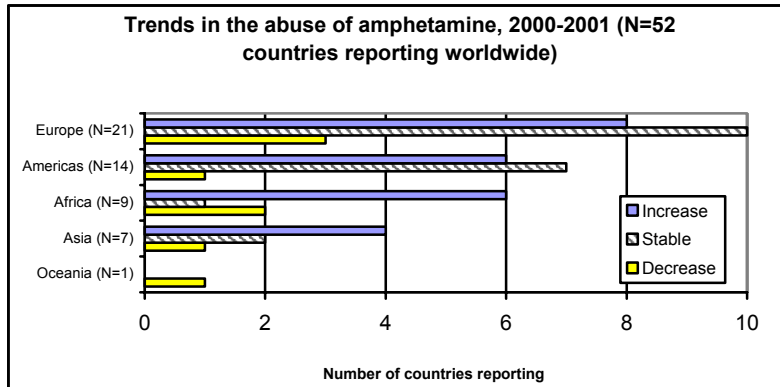
More than 80% of the countries in Asia reporting on methamphetamine abuse trends in 2001 are located in East and South-East Asia. Formerly, methamphetamine use was largely restricted to a few countries in this sub-region, but now appears to be affecting most countries to a greater or lesser extent. In 2001, rapid increases in methamphetamine abuse are reported from countries such as China, Myanmar, Philippines, the Republic of Korea, Singapore and Viet Nam.

Not only are more countries in East and South-East Asia noting an increase in methamphetamine use, but also local studies suggest that use has spread into broader population groups in selected countries. However, few countries in the region have estimates of methamphetamine use among the general population.

In terms of treatment demand, in a number of countries in East and South-East Asia, particularly Thailand, the Philippines, Japan, the Republic of Korea (and to a lesser extent in Taiwan Province of China), ATS, notably methamphetamine, are already the main problem drugs and play a similar role as

opiates in Europe, or cocaine in the Americas. In parallel, a strong spread of recreational use has taken place in a number of countries in the 1990s.

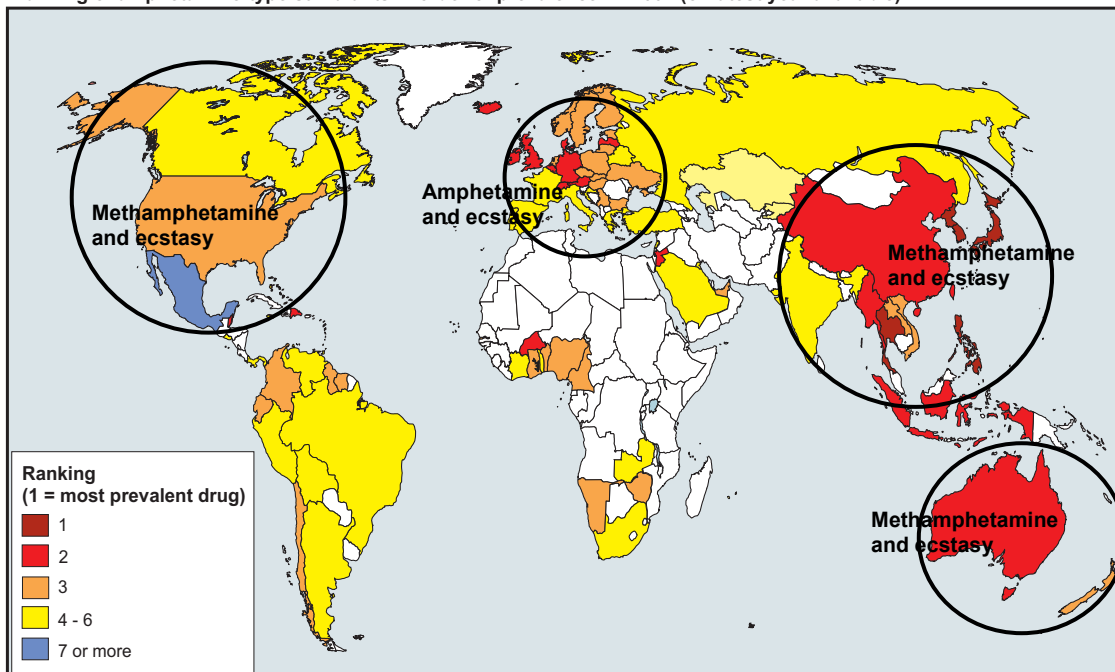
Reported increases in **amphetamine** use are much less pronounced. Use of that drug has stabilized in half of the European countries reporting to UNODC, while increases in abuse are still reported from a majority of countries in Africa and Asia. Again, in addition to reporting problems (the specific substance 'amphetamine' versus the group of amphetamines), increases in some of the countries, especially in Africa, are more likely to be due to misuse or non-medical use of amphetamine-type substances and their preparations from unregulated channels, than clandestinely manufactured amphetamine. The same may apply to reported increases from some countries in South America. At the same time, much of what is reported as amphetamine use in Asia may, in fact, be methamphetamine (this may apply, for example, to China, India, and Viet Nam).



**Figure 64**  
Source: UNODC, Annual Reports Questionnaire Data.

Perceived ATS problems, as reported to UNODC, are highest in East and South-East Asia, in Europe, Australia and the United States. Methamphetamine continues to be the ATS most widely available worldwide, although ecstasy is the substance with the largest increases over the past 5 years.

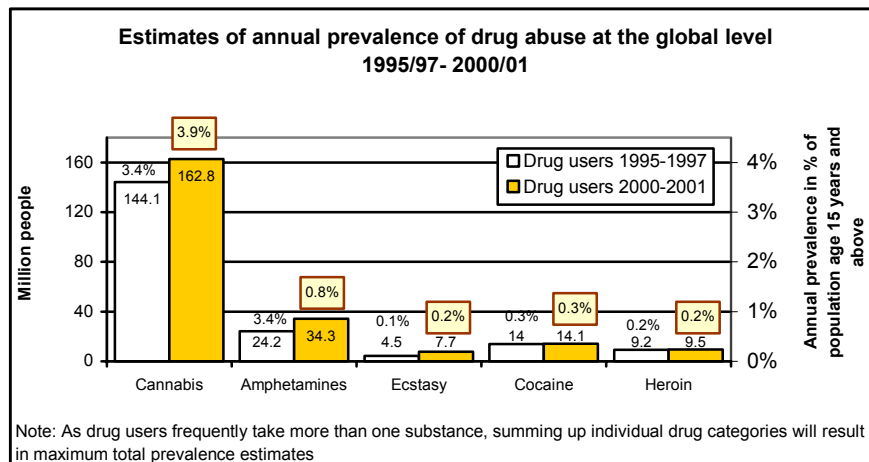
Ranking of amphetamine-type stimulants in order of prevalence in 2001 (or latest year available)



**Figure 65**  
Sources: UNODC Annual Reports Questionnaire Data; national household surveys on drug abuse; UNODC Rapid Assessment Studies; Council of Europe, ESPAD.

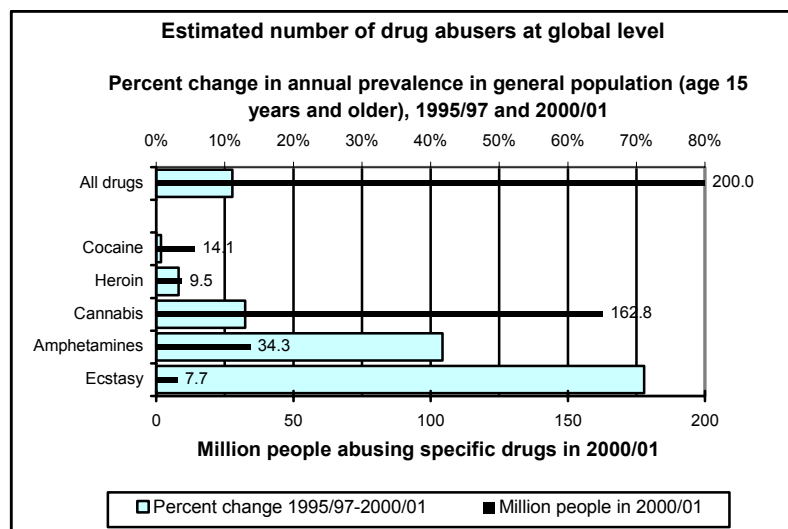
### 3.3. Prevalence estimates

Globally, over the 2000-2001 period, abuse of amphetamine and methamphetamine ('amphetamines') is estimated to have affected more than 30 million people, or 0.8% of the population age 15 and above. In addition, some 8 million people (or about 0.2%) are estimated to take ecstasy. Abuse of amphetamine-type stimulants is thus at a higher level than abuse of opiates or cocaine, though less than consumption of cannabis, over the same period.



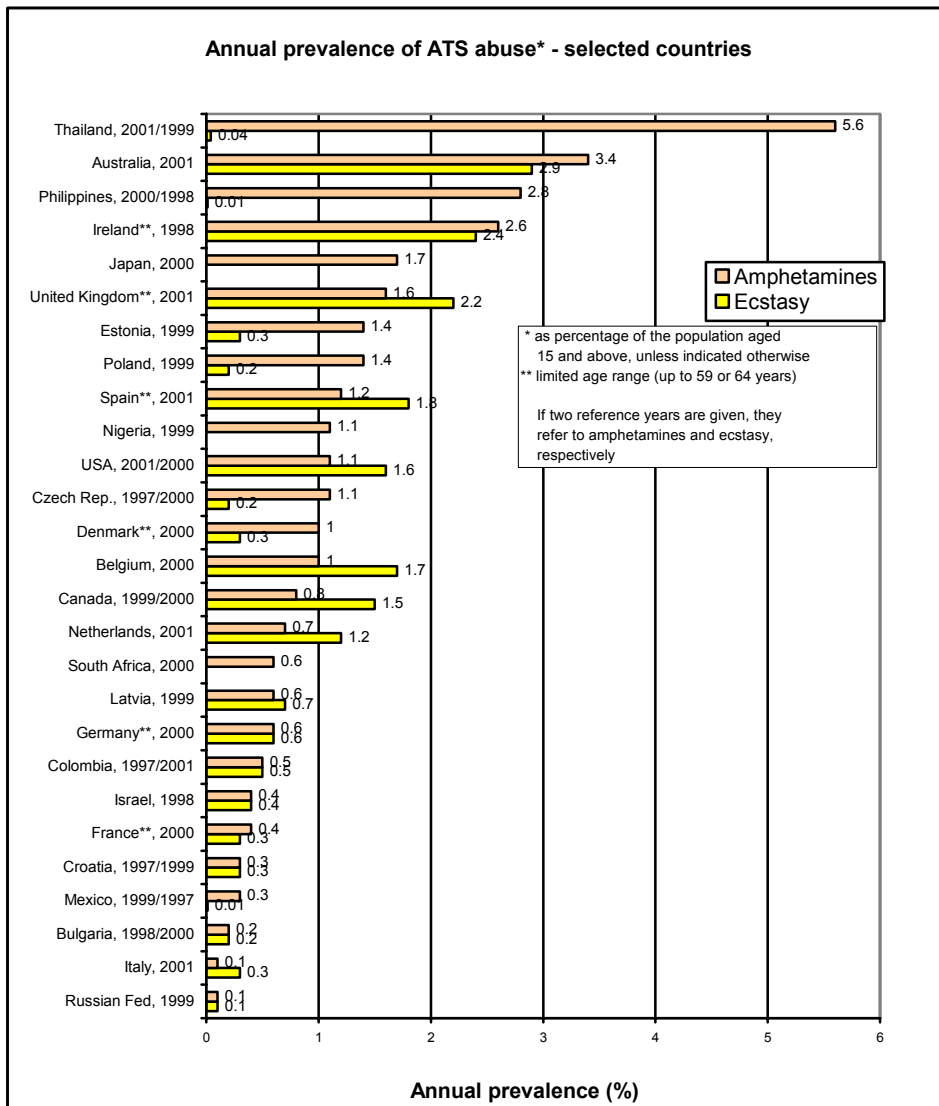
**Figure 66**  
Source: UNODC, 2003 *Global Illicit Drug Trends* and UNODCCP, *World Drug Report 2000*.

Compared to a previous UNODC estimate for the 1995-1997 period, the number of ATS users has increased strongly by 2000-2001. For amphetamine and methamphetamine, the increase was 40% (to 34.3 million); for ecstasy it was even 70% (to 7.7 million). The rise in ATS consumption was thus the strongest such increase among all major drug categories. The estimated number of cannabis and heroin abusers increased by about 15% and 5% over the same period, while the number of cocaine abusers has remained basically stable.



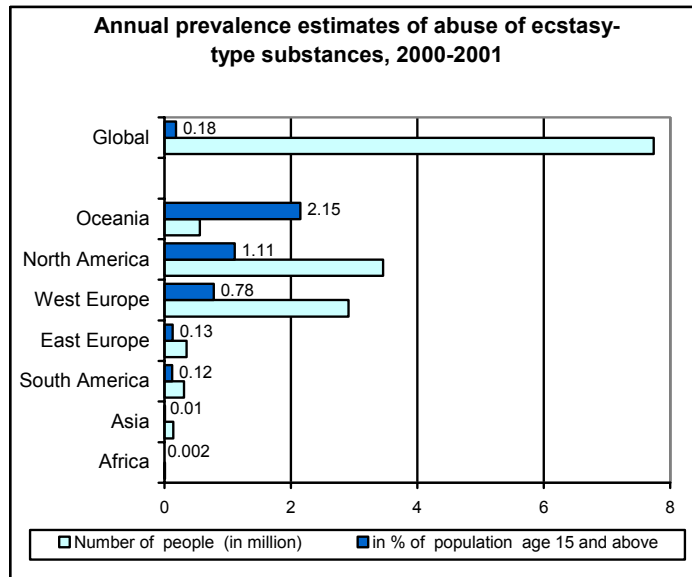
**Figure 67**  
Source: UNODC, 2003 *Global Illicit Drug Trends* and UNODCCP *World Drug Report 2000*

The huge increase in **ecstasy** consumption has continued globally over the past years, and certainly up until 2001. However, as for ATS in general, prevalence differs significantly from one country to another, and even for different population groups. There is no good reason why this should be the case, and it is more likely that different data collection methods have contributed to the disparity in findings. There does, however, appear to have been a spread over the past few years into the general population, where abuse levels of ecstasy continue to increase, despite a trend towards stabilization, or some decline, among youth, especially in established markets.



**Figure 68**  
 Sources: Annual Reports Questionnaires Data; Government Reports; US Department of State; European Monitoring Center for Drugs and Drug Abuse; UNODC estimates based on local studies, special population group studies, and/or law enforcement assessments.

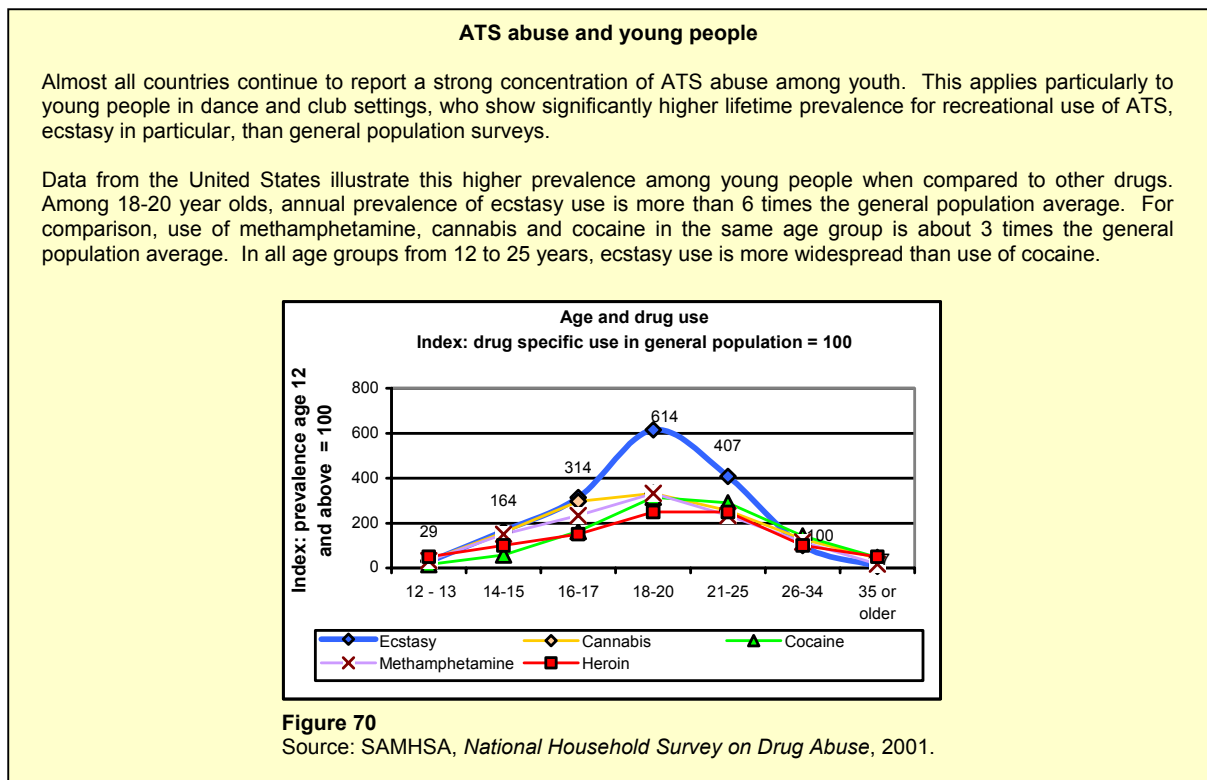
On the basis of regional averages, ecstasy use is significantly more prevalent in (North) America, (Western) Europe and Oceania than in Asia and Africa, where available data suggest negligible levels of ecstasy consumption. This may, again, not be a true reflection of the situation in those regions, especially in Asia. At this stage, it is not clear whether this is the result of a lack of awareness of the problem, or a reporting problem, or both.



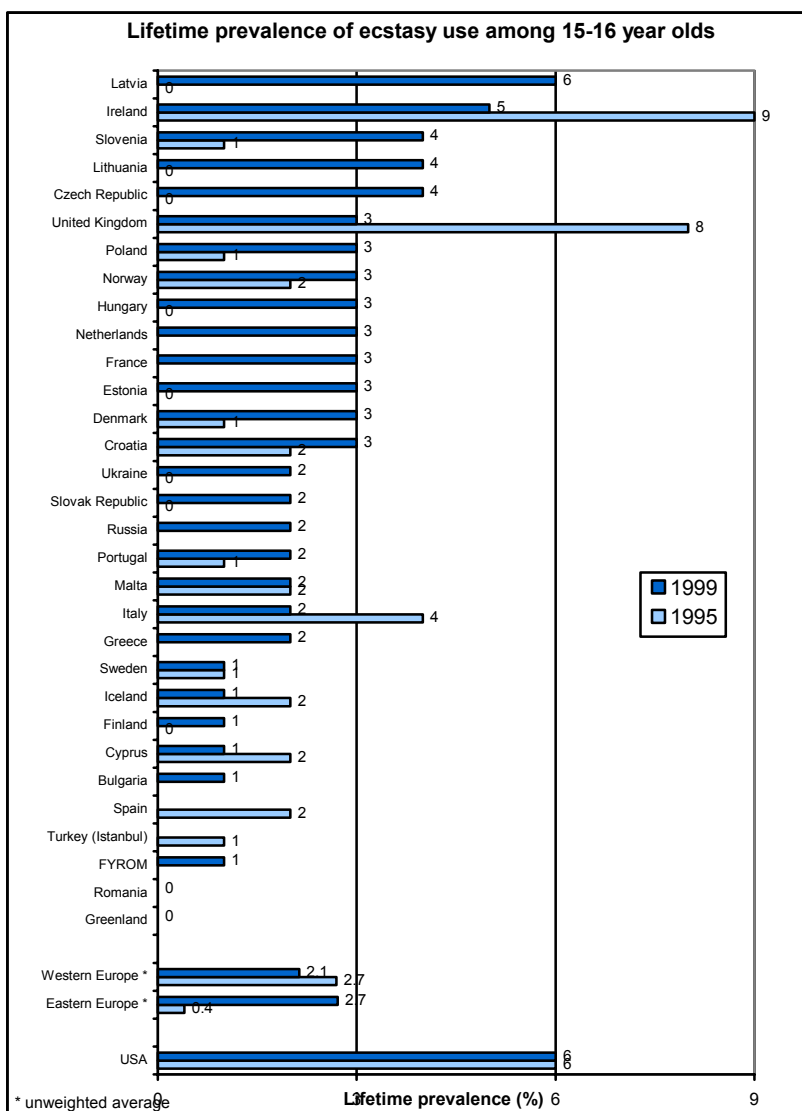
**Figure 69**  
 Source: UNODC, Annual Reports Questionnaire Data; various Govt. reports; reports of regional bodies; UNODC estimates.

In absolute numbers of abusers, almost 50% of global ecstasy consumption is concentrated in North America, and close to 40% in Western Europe. Those two regions thus account together for around 90% of global ecstasy abusers. However, abuse of that drug is spreading to Eastern Europe, as well as to countries in the Caribbean, in Central and South America, Southern Africa, the Near and Middle East, and South-East Asia. A number of school surveys in countries outside West Europe, North America and Oceania seem to confirm the increasing importance of ecstasy as a drug of choice among young people.

However, the full extent and nature of ecstasy and, more generally, ATS problems worldwide cannot easily be captured, because current data systems do not allow it. The knowledge gap is particularly acute for countries in South-East Asia.



For Europe, where some standardized results are available, ESPAD (European School Survey Project on Alcohol and Other Drugs) school surveys indicate that over the 1995-1999 period ecstasy consumption increased among 15-16 year olds in several countries in Europe, especially in Eastern Europe, where experimental use of ecstasy is on the rise among young people in general, and recreational use is spreading, particularly in urban areas.



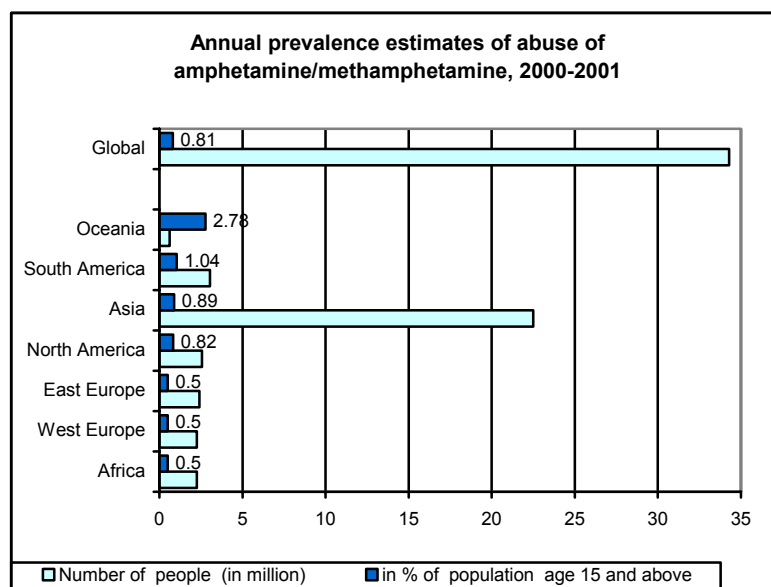
**Figure 71**  
Sources: Council of Europe, *The 1995 ESPAD Report – the European School Survey Project on Alcohol and Other Drugs - Alcohol and other Drug Use Among Students in 26 European countries*, Stockholm 1997, and *The 1999 ESPAD Report – the European School Survey Project on Alcohol and Other Drugs – Alcohol and other Drug Use Among Students in 30 European countries*, Stockholm, December 2000.

Lifetime prevalence levels increased, however, also in several Western European countries. Significant declines, from very high prevalence levels in 1995, were reported from Ireland, the United Kingdom, and Italy. Using the continuation rate as an indicator of recent expansion, ecstasy abuse is expanding among the whole adult population in most Western European countries at a rate higher than those estimated for cannabis and cocaine.<sup>10</sup> Overall, for Europe as a whole, the range of typical prevalence levels in 1999 was about 2%-3%. In 1995, it was typically 0%-2%, with the three exceptions of significantly higher prevalence in Ireland, the United Kingdom, and Italy.

<sup>10</sup> Continuation rates are a basic indicator of continuity of use. They are expressed as the ratio of recent (last 12 months) to lifetime use, and include incidence. The concept of continuation rates does not imply regular or problematic use. Also, high continuation rates do not mean high prevalence of use. However, substances with more recent expansion tend to have higher continuation rates.

Lifetime prevalence for ecstasy in the United States, which was not included in the ESPAD study, was 6% for both years, i.e., it was at the upper end of the European levels. Only in 1995, did Ireland (at 9%) and the UK (8%) report still higher lifetime prevalence levels for ecstasy use among 15-16 year olds than the USA has in recent years.

Available prevalence levels for **amphetamine and methamphetamine** also differ quite substantially from one country to another. Nevertheless, regional averages - except for Oceania - are quite close to the global average of 0.8%. About two thirds of the abusers of the two substances are found in Asia, mostly in the countries of East and South-East Asia, where ATS are now the main problem drugs as reflected in demand for treatment. The Americas and Europe together account for a quarter of global abuse.



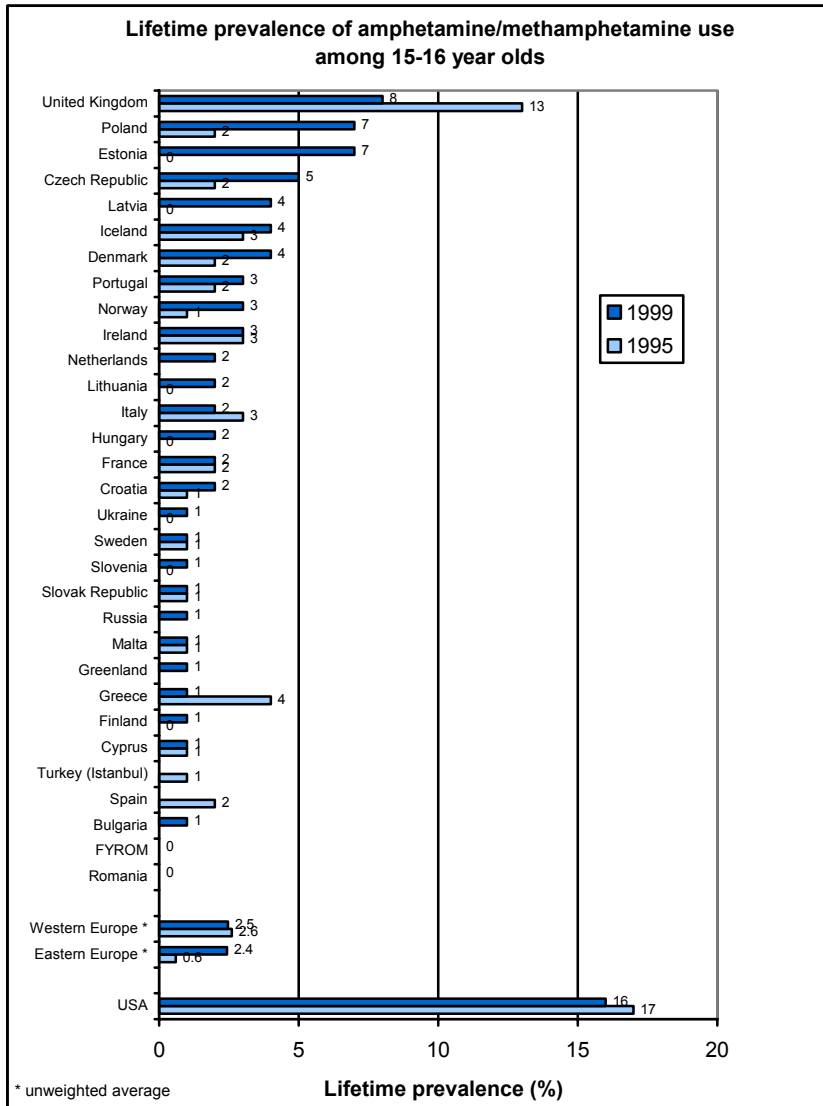
**Figure 72**

Source: UNODC, Annual Reports Questionnaire Data; various Govt. reports; reports of regional bodies; UNODC estimates.

Relatively high levels of amphetamine and methamphetamine consumption continue to be reported from countries in South America and in Africa. However, as pointed out earlier, unregulated channels of supply, rather than clandestine manufacture may be responsible for this. With continuing efforts to curtail these supply sources, there is some concern that illicit manufacture could increasingly fill the gap.

As for ecstasy, for amphetamine and methamphetamine reliable prevalence data are scarce at the global level and frequently not directly comparable for representative population groups. For Europe, available data suggest that, in 2001, lifetime prevalence of ATS ranged in Western European countries between 1%-5%. Within the European Union, annual (last 12 months) prevalence of ATS use ranged between 0.1%-2.6%. Levels of abuse are highest in the United Kingdom and Ireland.

The standardized ESPAD school survey results show generally stable or increasing trends in lifetime experience with amphetamine and methamphetamine ("amphetamines") among European 15-16 year olds over the 1995-1999 period. Significant declines from very high prevalence levels in 1995 were only reported from the United Kingdom, and Greece. By contrast, over the same period, lifetime experience with amphetamines increased quite significantly in a number of countries, especially Eastern European countries, with prevalence levels increasing from 0%-2%, to levels of up to 5%-7% in many Central and Eastern European countries. Prevalence levels in 1999 approached (and partly exceeded) those reported from Western European countries. Overall, for Europe as a whole, the range of typical prevalence levels increased and broadened from 0%-3% in 1995, to 1%-5% (even up to 7%) in 1999.



**Figure 73**  
 Sources: Council of Europe, The 1995 ESPAD Report – the European School Survey Project on Alcohol and Other Drugs - Alcohol and other Drug Use Among Students in 26 European countries, *Stockholm 1997*, and The 1999 ESPAD Report – the European School Survey Project on Alcohol and Other Drugs – Alcohol and other Drug Use Among Students in 30 European countries, *Stockholm, December 2000*.

Lifetime prevalence for amphetamines in the United States, which was not included in the ESPAD study, was significantly higher, at 17% and 16% in 1995 and 1999, respectively. As with ecstasy, it thus exceeded even levels in the UK, i.e., the country with the highest prevalence level for those drugs in Europe.



# Chapter 4

## HEALTH HAZARDS



## 4. Health hazards

Because ATS seemingly carry all the properties required to cope better with the burdens of modern society and conform with certain occupational and cultural norms, people tend to overlook the dark side of their use.

This chapter examines these broader questions by addressing some of the key hazards associated with ATS use and their potential implications, not only for the individual user, but also for society at large.

Generally, amongst users, there is a perception of attractiveness associated with ATS because they artificially increase alertness and concentration, induce feelings of well-being, energy and peace, and reduce the need for food and sleep. But, ATS also damage users' health, and impair the body's normal warning mechanisms.

In addition, and perhaps even more importantly, the strong increases in ATS manufacture and trafficking, observed over the past years, expose an increasing number of people to the risks of ATS use. Individual hazards are thus compounded by increasing risks to society as a whole. The ultimate consequences of hazards and risks may not be immediately obvious.

Health hazards associated with ATS use range from what might be considered mild negative effects, such as nausea, sweating or chills, to serious and potentially life-threatening conditions, such as convulsions, stroke and kidney failure, and dependence. Long-term neurological consequences of ATS use are not yet fully understood. They are, however, real, serious and of increasing concern.

Worldwide, numerous research groups are investigating the pharmacology and toxicology, including neurotoxicity, of ATS, their health hazards, mechanisms of action, compounding risk factors, and potential for interaction with other drugs or medicines. Basic research on individual ATS substances is complemented by research on prevention and treatment interventions. Limited research appears, however, to be carried out currently on health implications arising from impurities and other poor quality products related to the illicit nature of manufacture.

The information base on the health hazards associated with ATS use is large, and continues to increase. Sources for reference include traditional textbooks, the primary scientific literature, and broader reviews, such as the extensive review of health effects of ecstasy, published by the World Health Organization in 2001<sup>11</sup>. However, there are still gaps and inadequacies in the knowledge of the health effects of ATS, including, for example, the degree of reversibility of ATS-induced brain damage, and the capacity of ecstasy to produce dependence, in the same way as amphetamine and methamphetamine. Gaps in knowledge also exist in relation to the assessment of the nature and severity of "visual" (functional) consequences of observed biochemical and morphological changes, and their wider implications. For example, little is known about how ATS users may change in their cognitive, emotional and behavioural fabric, and what impact any change may have on their social environment, now and in the future.

The most serious health implications of **amphetamine** and **methamphetamine**, resulting from chronic use, are dependence, characterized by compulsive drug-seeking and drug use, and a phenomenon known as amphetamine or methamphetamine psychosis. The latter is a mental condition similar to the psychotic episodes of schizophrenia. It is characterized by symptoms such as confusion, delirium and panic as well as all kinds of hallucinations (visual, tactile, auditory or olfactory). It includes rather unpleasant sensations (e.g., feeling of insects crawling on the skin), which are usually accompanied by unrealistic suspiciousness and paranoid delusions. Intense paranoia subsequently may lead to aggressive behaviour or violence, including homicidal and suicidal tendencies.

However, as with other dependence-producing drugs, not only use of amphetamine and methamphetamine, but also attempts to stop habitual, long-term, use, can cause very unpleasant and, at times, life-threatening conditions characterized by extreme fatigue, depression, anxiety, or sometimes severe agitation or even paranoia with aggression, as well as an intense craving for the drugs. While the need for treatment of dependence is now generally recognized, existing programmes have not been widely disseminated. As there is no readily available substitution drug, the detoxification phase may be

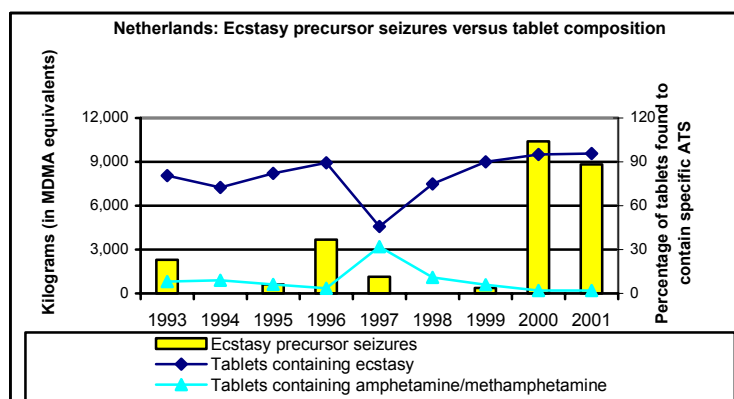
<sup>11</sup> World Health Organization, *Ecstasy, MDMA and other ring-substituted amphetamines: A global review*, Geneva, 2001 (executive summary also available electronically under: [http://whqlibdoc.who.int/hq/2001/WHO\\_MSD\\_MSB\\_01.3\\_summary.pdf](http://whqlibdoc.who.int/hq/2001/WHO_MSD_MSB_01.3_summary.pdf)).

particularly difficult, complicating the progress into subsequent treatment phases. Challenges to prevention and treatment are also presented by the availability of a range of different forms of amphetamine and methamphetamine, their different patterns of abuse, and their sometimes significantly different and specific user populations.

For **ecstasy-type substances**, the issue is even more complicated, because of the variety of drugs and combinations (mixtures) sold as ecstasy on the illicit market. Negative effects subsequent to the use of ecstasy are therefore not necessarily the side effects of one substance alone.

Drug combinations and “fake” ecstasy may be a consequence of increased law enforcement and regulatory efforts, and reduced availability of precursor chemicals. More clandestine chemists synthesize their own starting materials or use less well described synthesis routes, leading to the presence of more by-products of unknown toxicity in the end-product.

As a specific example, seizures of ecstasy precursors in the Netherlands during 1996 led to severe shortages of chemicals, prompting their clandestine manufacture. In the immediate subsequent year clandestine manufacturers also sought alternatives for MDMA, the main active ingredient in ecstasy tablets sold nowadays on the streets in Europe, as well as the United States. They found them in other ATS, namely amphetamine and methamphetamine, and the manufacture of a wider variety of drug combinations.



**Figure 74**

Source: UNODC Annual Reports Questionnaire Data; Trimbos-instituut, Netherlands, *National Drug Monitor*, 2002 Annual Report, and previous years

However, even pure MDMA is not an innocent. Short-term mood changes, including the “mid-week hang-over” following weekend use, and impairments in short-term memory function may be considered as some of the “milder” consequences of MDMA use. However, they are also believed to be an early expression of neurotoxic effects of the drug.

Other functional consequences of MDMA neurotoxicity, i.e., cognitive, behavioural and emotional alterations in users, and their seriousness, especially in the longer term, are as yet not clear. What appears to be clear, however, is that the brain damage does not depend on an extensive history of MDMA use, that it is dose-dependent (cumulative), and that it may not be completely reversible.

Worries therefore centre around the question of whether current consumption patterns by young people will lead to a whole generation of elderly, former ecstasy users suffering from a decline in mental function and memory, or the onset of Alzheimer-type symptoms, much earlier, or in a much more pronounced way, than would be expected with the normal aging process.

Overall, and notwithstanding the fact that the prevalence of serious acute adverse effects from ecstasy use is low, the unpredictability of adverse effects, especially with polydrug combinations, the risk of mortality or substantial morbidity, including the potential for long-term mental disorders, and the young age of those affected make health consequences of ecstasy use significant. This is compounded by the fact that treatment interventions designed specifically to address ecstasy users, be it MDMA or any of the drug combinations available on the illicit market, are currently limited.

Further work is required to understand and address the health hazards associated with amphetamine, methamphetamine and ecstasy. Further work is also required to raise awareness of the added risk associated with the drug combinations (mixtures) sold as “ecstasy” on the streets, or resulting from patterns of polydrug use, frequently encountered among ATS users. For ATS as a group, increasing numbers of users presenting for treatment in an increasing number of countries worldwide indicate an urgent need for action in these areas.



## **PART 2: REGIONAL PATTERNS AND TRENDS**





## Background and overview

The regional patterns of ATS abuse seen today reflect the early market created when the parent drugs were introduced into medical practice in the 1930s and 1940s. At that time, availability of patents and chemical starting materials for specific ATS led to amphetamine becoming the drug of choice in Europe, and methamphetamine in East Asia and North America.

From the very beginning amphetamine and methamphetamine have created their own markets: as performance enhancers; to increase concentration; and as slimming pills. Immediately after their introduction, the drugs were used also for non-medical purposes, initially to improve performance. Large-scale overuse, and instrumental use amongst soldiers during the Second World War, contributed to a subsequent spread of abuse among the general public. From a few 'core' countries, including Sweden, Japan and the United States, abuse gradually spread.

Before the early 1970's, demand was satisfied by overuse of pharmaceutical preparations, often promoted, or at least facilitated, by negligent prescribing practices. As potential health problems were recognized, and as regulatory controls gradually strengthened, theft and diversion from licit channels became a major source of supply. Ultimately, clandestine manufacture became the main source of supply, initially of amphetamine and methamphetamine, and later of ecstasy, and "designer" ATS.

Since illicit ATS supply feeds a predominantly regional market, to a large extent the original regional characteristics continue to exist. Only towards the end of the 1990's has global trafficking become a reality, with large-scale exports of ecstasy from Europe.

Today, almost three-quarters of reported global ATS seizures concern methamphetamine, followed by ecstasy and amphetamine. The problem of methamphetamine is not global, however. Users in North America, East and South-East Asia, and Australia favour the drug, in different ways, in different forms, and for different purposes. But the drug is not a major problem in most of Europe, where amphetamine is used.

The story is different again for ecstasy, where half of all reported seizures are from Europe; North America accounts for almost 40% of seizures, and only slightly more than 10% are reported from other countries and regions. In other parts of the world, such as Africa and South America, the ATS phenomenon is still in an early stage of historical evolution. With licit oversupply and unregulated distribution channels continuing to feed the market, neither region has yet reached the stage whereby clandestine manufacture has become the major source of supply. While there are some specific characteristics for each market, what is common is a lack of specific information on the different products available, their sources, and their main illicit uses.

This is also true for the Middle East, in particular the Gulf States, where, historically, a market for a specific ATS, fenetylline, has existed. Abuse continues, giving rise to on-going concerns. However, there is much confusion over exactly what is sold as fenetylline and, in many cases, substitute drugs or counterfeit products are found.

Based on available systematic data (ARQ, INCB Precursor Reports) and anecdotal information from other traditional sources, reflecting distinct regional and sub-regional characteristics of the global ATS phenomenon, three key areas, Europe, North America and Asia are identified. They are analyzed in the chapters below in more depth, with the following focuses:

1. **Europe:** Ecstasy and amphetamine: Shift in both production and use from amphetamine to ecstasy, and from Western to Eastern Europe
2. **North America:** Methamphetamine and ecstasy: Regional manufacture of both drugs, and the impact of precursor control
3. **Asia:** Methamphetamine and ecstasy: Distinct markets for different products, and changing sources for ATS and their precursors

The situation in Australia, Africa and South America is also briefly described. The regional surveys take as a starting point an increased availability based on increased production. Individual country data are used to highlight specific regional characteristics; the survey does not attempt to provide a comprehensive picture of individual country trends.



# Chapter 5

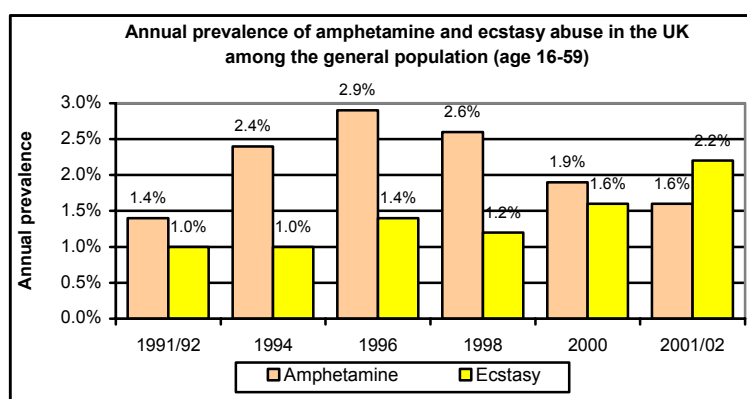
## EUROPE



## 5. Europe

The drug scene in Europe is characterized today by significant levels of amphetamine abuse, a historical legacy of early medical use of the drug. The region also continues to be the main centre of clandestine amphetamine manufacture and trafficking worldwide. Significant changes are occurring though within the region. Manufacture and trafficking of amphetamine has continued to increase in East Europe, especially in Poland, confirming an underlying shift of operations eastwards begun a decade ago.

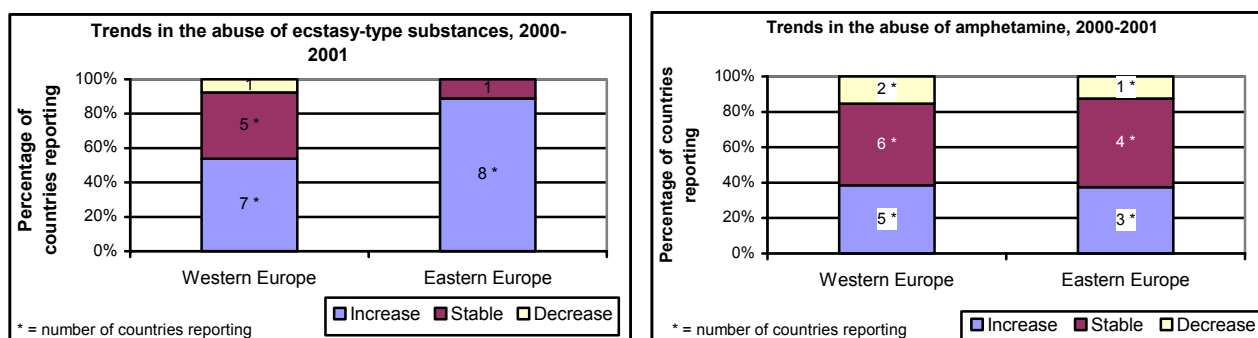
Of much greater significance is that Europe, particularly the Netherlands and Belgium, is considered to be the major global source of clandestinely manufactured ecstasy. Almost all seizures were reported from Western Europe, namely by the Netherlands, United Kingdom and Germany. The widespread availability of that drug feeds the large-scale, and increasing, abuse, and may account also for some of the fall off in use of amphetamine in West Europe, as users transfer from one drug to the other.



**Figure 75**

Source: Home Office, *British Crime Surveys 2001/02*, and previous years

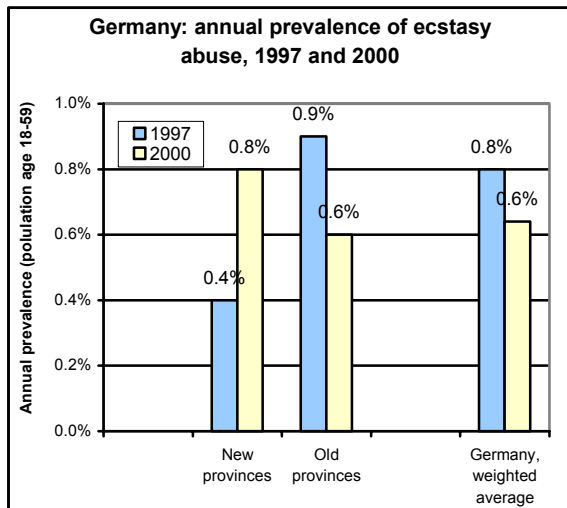
Increasing ecstasy abuse is seen not just in the west, but even more so in the east, and the ecstasy market there is still on the rise. Meanwhile, a decade after the start of its massive movement eastwards, the amphetamine market appears to also have matured in Eastern Europe, with similar abuse trends as in the west now reported from countries in the sub-region.



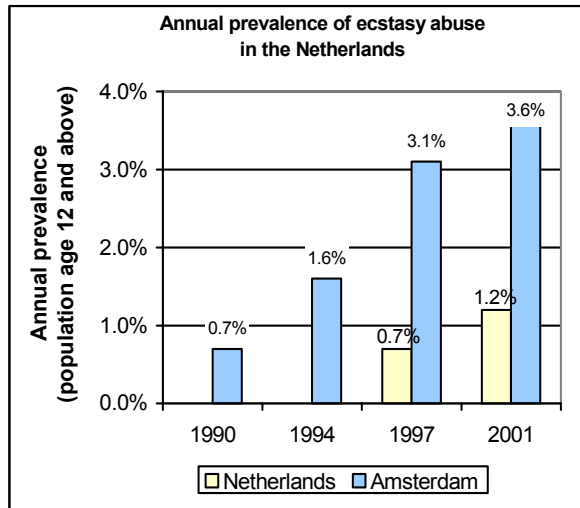
**Figure 76**

Source: UNODC Annual Reports Questionnaire Data

The West-East changes in ecstasy abuse noted in Europe at large also took place more locally, for example, within Germany. Although the country as a whole, contrary to most other countries from which specific prevalence data for ecstasy are available, saw a decline in past-year ecstasy abuse over the 1997 to 2000 period, it was only because dramatic increases in Germany's "new" provinces (former East Germany) were offset by declines in the "old" provinces (former West Germany).



**Figure 77**  
Source: Bundesministerium für Gesundheit, Repräsentativerhebung 1997 und 2000



**Figure 78**  
Source: CEDRO, Licit and illicit drug abuse in the Netherlands 2001, Amsterdam, 2002 and previous years

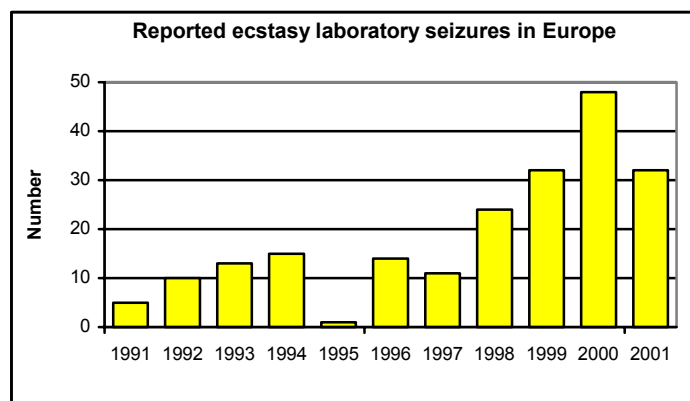
In the Netherlands, ecstasy abuse continues to rise in the general population, with particularly large increases in major cities, and more moderate increases, at significantly lower levels, in other parts of the country. Such very specific “sub-national”, or sub-regional, trends are indicative of the abuse situation worldwide, where large differences in prevalence are observable not only between but also within countries. The two graphs clearly demonstrate that situation, even taking into account the different age groups.

Most disturbingly, the geographic spread of ecstasy is matched also by a broadening of the drug-user group: while the rate of increase in consumption is slowing down, especially among young people, use of the drug is spreading into the general population.

**Ecstasy manufacture**

Unlike most other drug trends, the ecstasy phenomenon has its origin in Europe, and Europe continues to be a key player in clandestine manufacture and trafficking. In 2000-2001, more than half of all ecstasy end-product seizures and ecstasy laboratory seizures, and almost 90% of all ecstasy precursor seizures are reported from Europe.

The number of reported *ecstasy laboratories* in Europe fluctuated around ten during most of the 1990s, and showed a significant upward trend only in the late 1990s, peaking in 2000. The strong increase in the late 1990s was largely due to improved reporting, as countries, which previously only reported the detection of ‘clandestine’ laboratories, specified that seized laboratories were manufacturing ecstasy (i.e., numbers for most of the previous years may actually be underreported).



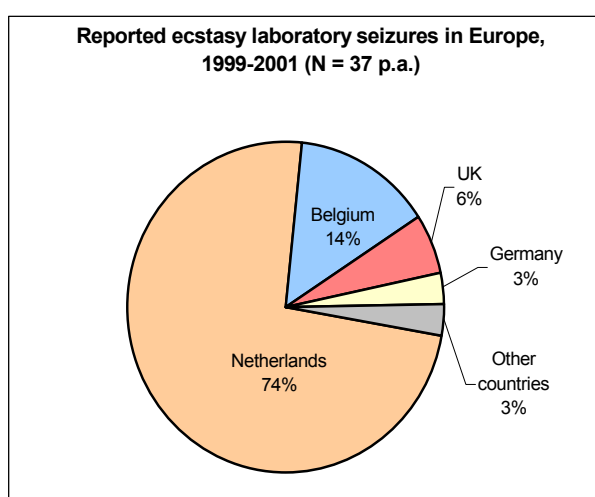
**Figure 79**  
Source: UNODC, Annual Reports Questionnaire Data.

Within Europe, a number of indicators suggest that ecstasy manufacture is concentrated in the Netherlands, and in Belgium. Over the 1999-2001 period, about three-quarters of all reported clandestine ecstasy laboratory seizures were reported from the Netherlands, and 14% from Belgium. The two next prominent sources of ecstasy were the UK (6%) and Germany (3%). Over the 1991-2001 period, seizures of ecstasy laboratories and/or "ATS laboratories including ecstasy laboratories" were also reported to UNODC from Spain, Norway, Lithuania, Latvia, Estonia, Poland, Hungary and the Ukraine.

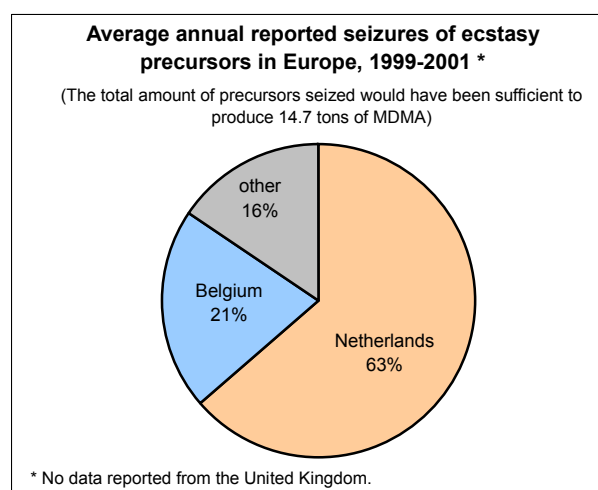
Ecstasy laboratories constitute most of the 45 to 60 of what are considered 'commercial' large-scale clandestine ATS laboratories that are seized in the European Union every year. But, similar to the spread of clandestine amphetamine manufacture a decade ago, an eastward shift of clandestine ecstasy manufacture is now under way also. For the past few years, on average, one or two laboratories have been seized in Eastern Europe.

Wherever they may be made, almost all the tablets now sold in Europe contain MDMA as the main drug. After a period of experimentation in the 1990's, other related drugs such as MDA and MDEA have almost completely disappeared from the scene. It is significant also that analytical reports from drug testing laboratories in Europe indicate differences between the ecstasy seized in the region and that seized in East and South-East Asia. There is little or no evidence that tablets in Europe contain the complex combinations of drug substances that are reported frequently from Asia.

Other major sources have appeared, and while it is true that ecstasy has been manufactured and exported worldwide in large quantities, the relative importance of Europe may be declining. In the mid-1990's West European countries reported around 80% of all ecstasy seizures; today that proportion is around 50%.



**Figure 80**  
Source: UNODC, Annual Reports Questionnaire Data.



**Figure 81**  
Source: INCB, *Precursors and chemicals used in the illicit manufacture of narcotic drugs and psychotropic substances*, 2002 and previous years.

The important role of the Netherlands and Belgium is also confirmed by ecstasy precursor seizure statistics, with more than 60% and 20%, respectively, over the 1999-2001 period. Other countries reporting seizures of ecstasy precursors include Slovakia, which made significant seizures of 3,4-MDP-2-P in 1999, Germany, Spain and Lithuania.<sup>12</sup>

Clandestine ecstasy manufacture in Europe is characterized by a high level of organization, sophistication and professionalism. Ecstasy laboratories in Europe, namely in the Netherlands and Belgium, are generally considered to be high-capacity laboratories, with an output of some 20kg to 30kg, and up to 100kg, per day. There are also indications that the manufacturing process is frequently split into

<sup>12</sup> Note that the UK did not report ecstasy precursor seizures to the INCB after 1997. UK authorities continued, however, to report the dismantling of ecstasy laboratories in subsequent years.

distinct operations, such as acquisition of precursors (through diversion or clandestine manufacture), manufacture of the drug powder, tableting, and even chemical waste removal. The different manufacturing and tableting operations usually occur in different locations, sometimes even in different countries.

Increasingly, clandestine operators are adapting manufacturing methods to suit circumstances, in particular to practicalities of large-scale manufacture, by switching, for example, to synthetic routes that produce less chemical waste, thus reducing the risk of detection.

Ecstasy as both tablets and powder is a marketable commodity and trafficked within Europe, and globally. Ecstasy manufactured in the Netherlands has been sold as a powder for tableting elsewhere. A tableting laboratory was dismantled in Lisbon, Portugal, in 2002, and approximately 80,000 ecstasy tablets, laboratory equipment and chemicals seized. It is believed that the ecstasy was obtained in powder form from the Netherlands, and that it was only tableted in Portugal. Similarly, there is some evidence that ecstasy powder from Europe may be trafficked to South-East Asia for local tableting.

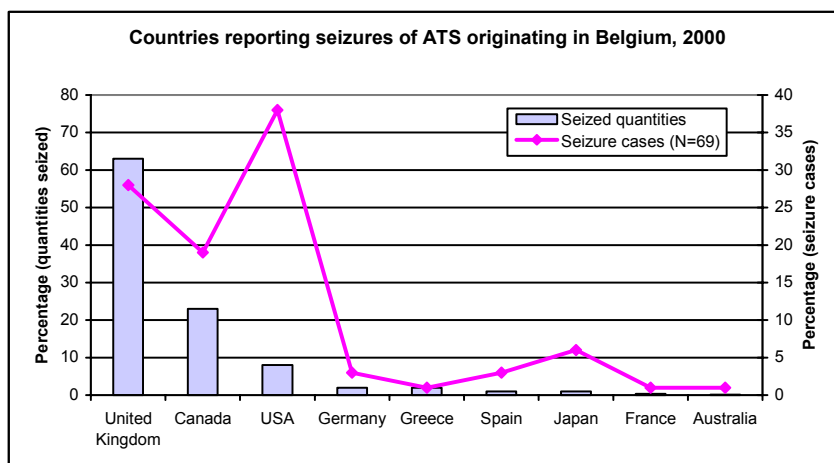
A trend of concern, observed not only in Europe, is the utilization of available expertise<sup>13</sup> to set up clandestine laboratories. In the European context, this trend has been observed, in a number of cases, where Dutch nationals were involved in setting up and/or running clandestine ecstasy laboratories abroad, both inside and outside of Europe.

In addition, attempted diversions of precursors to former Dutch territories such as Suriname (1996), with the intention of re-export to Europe have been uncovered in the past. These, and arrests of Dutch nationals in connection with clandestine laboratory seizures, for example, in Indonesia (2002), provide supporting evidence for the role of historical (colonial) ties in the development of the ecstasy market.

Examples from a few countries illustrate specific trends and characteristics of the ecstasy market in Europe:

**Belgium**

Information from Belgium suggests that the country is indeed an important source for illicit ecstasy worldwide. However, while almost two-thirds of ecstasy seizure cases that could be traced back to Belgium were seized in the United Kingdom, the United States, with a share of 40%, is the most important destination of Belgium ecstasy. There are thus considerable differences in the size of individual shipments between intra-European trafficking and trafficking outside the region.



**Figure 82**  
Source: UNODC, Annual Reports Questionnaire Data.

<sup>13</sup> Whether considered 'export' of knowledge to avoid domestic enforcement or legislation, or 'import' of knowledge to establish new markets, is open to question.



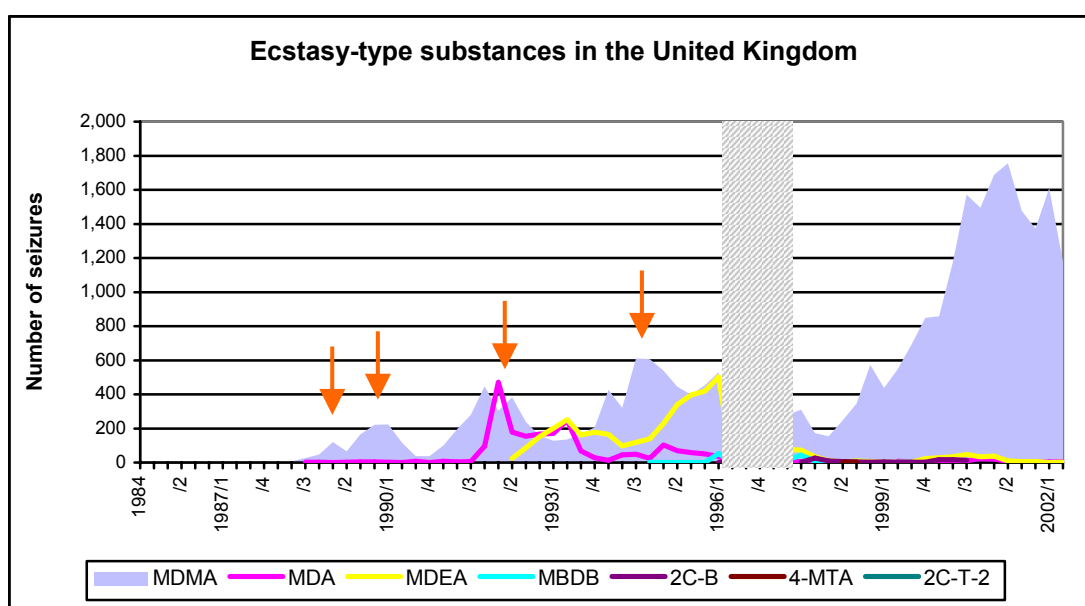
### Germany

Laboratories in Germany are typically 'kitchen laboratories', where ecstasy is manufactured at small scale for personal consumption or distribution to a limited number of local customers. It is suggested that the vicinity of the Netherlands with large industrial-scale laboratories may be the reason for the limited number of large-scale laboratory seizures in Germany. Indeed, two of the largest ecstasy laboratories seized in Germany in recent years had direct links to the Netherlands. They were equipped with custom-made machinery, and capable of manufacturing more than 100kg ecstasy powder per day. Both laboratories were reportedly run by the same Dutch national, and the powdered drug was to be smuggled to the Netherlands for tableting. In this context, German authorities noted that while 2000 saw almost a halving of laboratory seizures compared to the previous year (from 13 to 7), the absolute amounts of drug manufactured in the two years were comparable because of the two high-capacity production units in operation.

### United Kingdom

Throughout Europe, there has been a trend in recent years towards single-entity ecstasy tablets with MDMA as the active ingredient; earlier tablets contained mixtures of ATS. The United Kingdom is one of the few countries where systematic records on the active ingredients in ecstasy tablets are available from as early as the mid-1980s, thus allowing a more in-depth trend analysis. While detailing the specific situation in the UK, these trends may reflect also the overall development of the situation in Western Europe, and even the world as a whole.

Towards the end of 1988, MDMA surfaced for the first time as a possible new drug trend in the UK. At the time, however, the view prevailed that MDMA may be a fairly short-lived phenomenon only highlighted because of extensive media coverage given to the drug.



➔ Dismantling of clandestine laboratory sites in the United Kingdom:  
 1989: 2 laboratories; 1990: 2 MDMA laboratories; 1992: 3 MDMA laboratories; 1995: 1 large-scale  
 MDMA laboratory and 1 attempted manufacture  
 No data are available for one year from 1996/2 to 1997/1

**Figure 83**

Source: United Kingdom, *Drug Abuse Trends*, 2002 and previous years

Nevertheless, the number of reported seizures of MDMA continued to increase during the late 1980s and into the early 1990s. At that time seizures peaked, and the drug was replaced, first with MDA, and then by MDEA, during a short period of market experimentation with different ecstasy-type drugs. Shortly after, by the mid-1990s, MDMA had regained its predominance on the market, and it has stayed there ever since. Although other related substances have also appeared, MDMA now accounts for almost 100% of all reported seizures.

Information from other sources in the UK (for example, primary data from forensic science laboratories) may help to explain the specific profile of seizures of ecstasy-type substances in the country. What emerges is that, particularly in a developing market, the market is affected following the dismantling of clandestine laboratory sites, or major seizures of precursors. For example, in the early 1990s, the seizure of two laboratories manufacturing MDMA might explain the unavailability of the drug during that year. An increase, at about the same time, in the number of fake tablets and mixtures on the illicit market provides further support for a shortage of MDMA during that period. Similarly, the seizure of three MDMA laboratories in 1992 may explain the drop in related seizures thereafter, until about mid-1993.

In addition, the decline in MDMA seizures during 1997 and into 1998, a trend that was also noted in the Netherlands, is considered to be a consequence of unavailability of the main precursor 3,4-MDP-2-P, following the uncovering of a series of cases of diversion and attempted diversion of that substance. The quantities involved would have been enough to manufacture almost 25 tons of MDMA per year (equivalent to approximately 250 million street doses), maybe half the annual requirement in Europe at that time.

### Netherlands

In the Netherlands, laboratory analyses of submitted ecstasy tablets have been carried out regularly since 1992. Overall, results substantiate that the composition of tablets sold as ecstasy, in fact, varies considerably over time and place. The percentage of samples containing MDMA increased slowly from 1993, reaching almost 75% in 1996, but then decreased sharply in 1997.

A shortage of 3,4-MDP-2-P as a result of significant seizures in 1996 apparently prompted clandestine manufacturers to seek alternatives for MDMA. As a result, the composition of ecstasy tablets became much more varied, increasing the health hazards associated with their consumption. Timeline data on a monthly basis for 1997, the year of the ecstasy precursor shortage, show a remarkable inverse relationship between MDMA and amphetamine / methamphetamine, which also emerged among the replacement products for ecstasy.

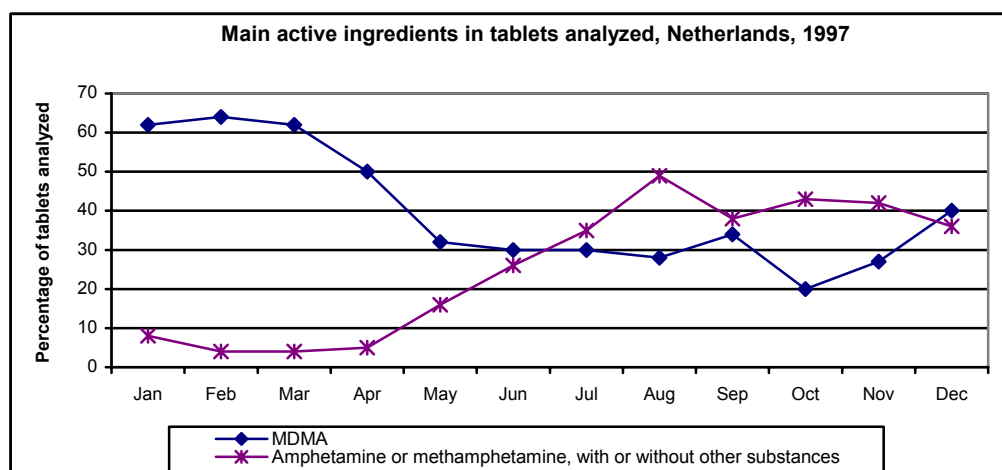
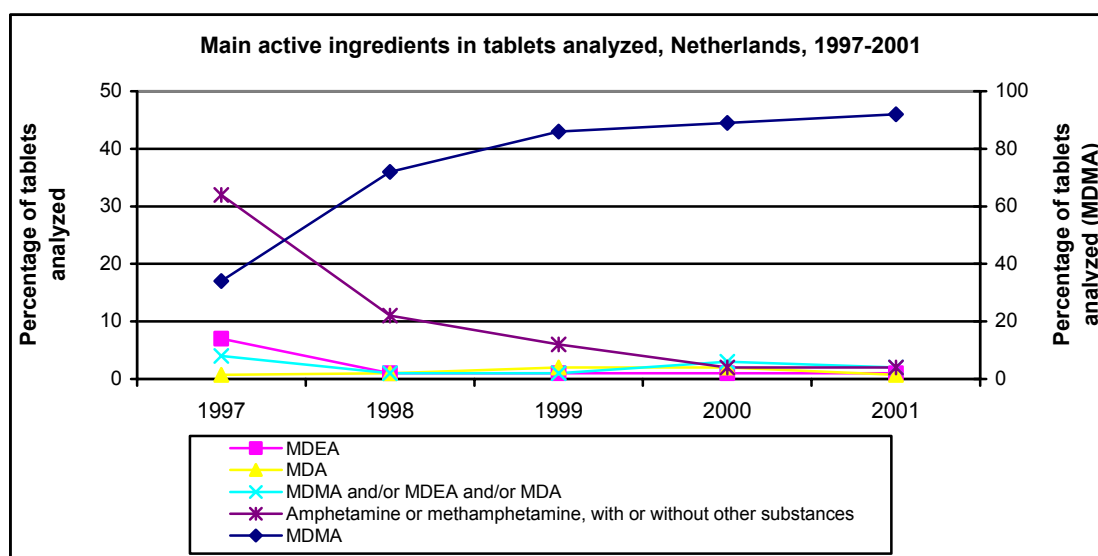


Figure 84

Source: Drugs Information and Monitoring System (DIMS), Netherlands

By the following year, the market had become more stable. The percentage of amphetamine, methamphetamine, and other replacement tablets marketed as ecstasy decreased, while the share of MDMA-containing tablets increased, reaching 90% in 1999. Since then, and similar to the situation in the UK and elsewhere in Europe, MDMA has been the main active ingredient identified in seized ecstasy tablets. Other ecstasy-type substances never comprised more than 10%.

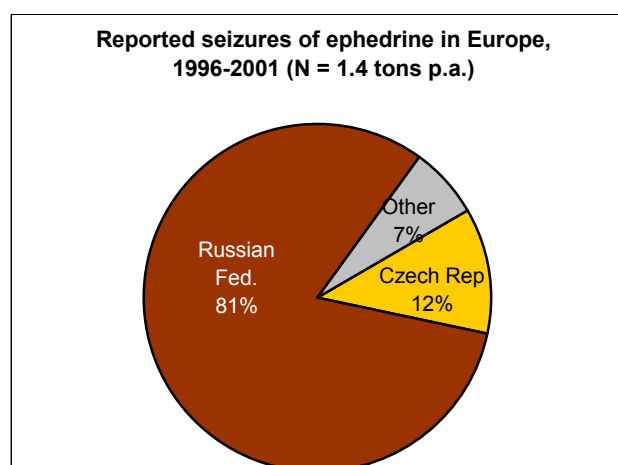


**Figure 85**  
Source: Trimbos-instituut, Netherlands, *National Drug Monitor, 2002 Annual Report*

#### Methamphetamine manufacture

Europe only plays an insignificant role as a source for clandestinely manufactured methamphetamine; less than 1% of global methamphetamine seizures are reported from the region. Minor levels of methamphetamine manufacture are reported from a few European countries, primarily the Czech Republic and the Russian Federation, but also, for example, Slovakia, Germany and the Baltic countries.

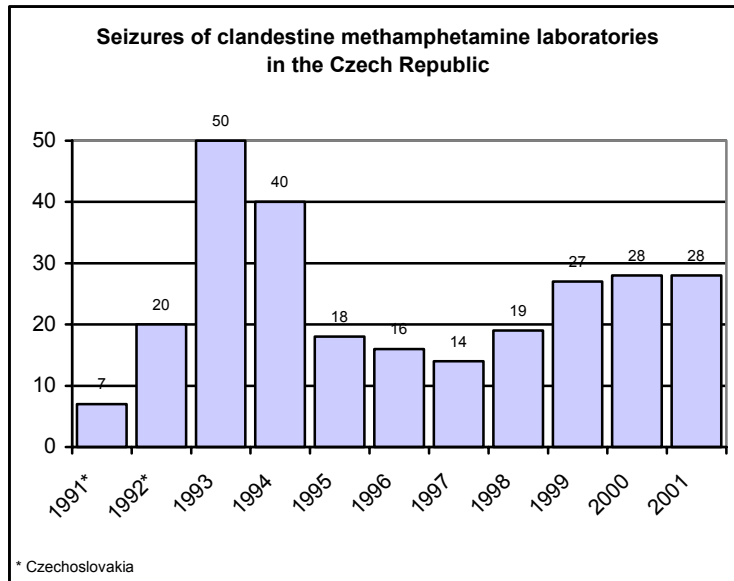
Not surprisingly, seizures of ephedrine in Czech Republic and Russia account for close to 95% of all such seizures in Europe over the 1996-2001 period. Despite that and although European seizures of ephedrine (and pseudoephedrine) are only about 3% of the global total, the region has in the past been a major point of diversion and transit point for ephedrine smuggled to North America.



**Figure 86**  
Source: INCB, *Precursors and chemicals used in the illicit manufacture of narcotic drugs and psychotropic substances*, 2002 and previous years.

Clandestine manufacture of methamphetamine, locally known as *Pervitin*, has a relatively long history in the Czech Republic, possibly linked to the availability of ephedrine as a starting material from the country's legitimate ephedrine industry. Following improvements in controls of ephedrine both diversions

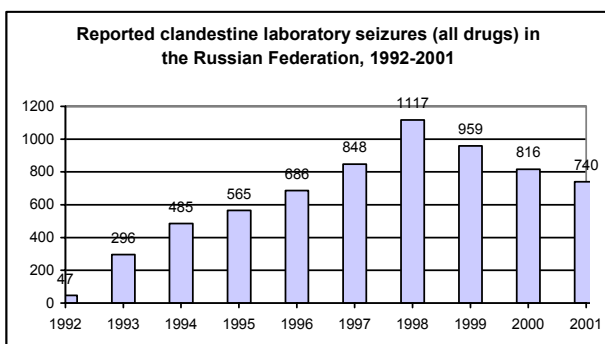
from international trade and levels of clandestine manufacture of methamphetamine have declined. While clandestine laboratory seizures peaked in 1993 at 50 laboratories, seizures have stabilized in recent years at slightly less than 30 laboratories every year, mostly so-called 'kitchen labs', over the 1999-2001 period.



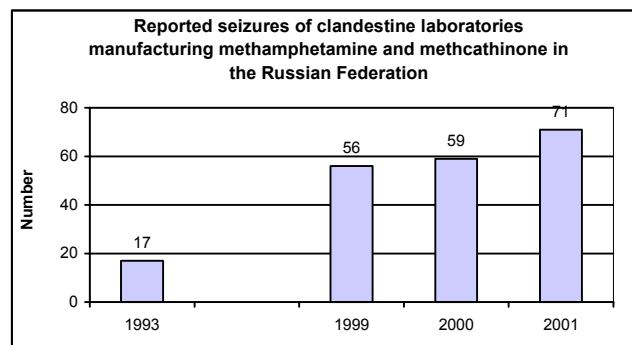
**Figure 87**  
Source: UNODC, Annual Reports Questionnaire Data.

In the Russian Federation the authorities have reported, since the 1980s, the seizure of laboratories, again mostly simple 'kitchen labs', manufacturing various kind of ATS. Most manufacture either methamphetamine or methcathinone (also known as ephedrone), both starting from ephedrine. St. Petersburg has emerged as one of the centres for the illegal manufacture of synthetic drugs in the Russian Federation.

The number of dismantled clandestine laboratories manufacturing methamphetamine and methcathinone (71 in 2001) accounted for about 10% of all clandestine laboratories detected in that year, up from 6% (or 17) in 1993. Available data thus suggest that the importance of illicit methamphetamine / methcathinone manufacture in the Russian Federation is rising, despite an overall downward trend for other drugs manufactured illicitly. Clearly, ATS are making inroads into a very traditional market of home-made opiate "soups".



**Figure 88**  
Source: UNODC, Russia Country Profile 2002.



**Figure 89**  
Source: UNODC, Russia Country Profile 2002.

### Amphetamine manufacture

Manufacture, trafficking and abuse of amphetamine have for long been, and continue to be, specific to Europe. Over the 1991-2001 period, the region accounts for:

- About 90% of all *amphetamine seizures*; with Western Europe accounting for 80% alone;
- About two-thirds of all amphetamine *precursor seizures*; and
- Almost 50% of global amphetamine *laboratory seizures*.

With the emergence of ecstasy, however, the relative importance of clandestine amphetamine manufacture in Europe appears to have declined, in particular in Western Europe. Reported data on amphetamine seizures also reflect changes at the sub-regional level. While seizures have stabilized in Western Europe at the end of the 1990s, after a marked upward trend during that decade, amphetamine seizures in Eastern Europe still continue to increase with no signs of stabilization. Throughout the 1990s, however, reported seizure data from Eastern Europe were only about one tenth of the number for Western Europe. They also showed significant fluctuation; whether this is a reporting problem (i.e., key countries not reporting on a regular basis) or reflects underlying trafficking trends and enforcement successes is not clear.

Increased availability of amphetamine in Eastern Europe, as measured by the increase in seizures, is reflected also in increased prevalence of abuse in the sub-region. Where data are available, an almost doubling of prevalence is reported.

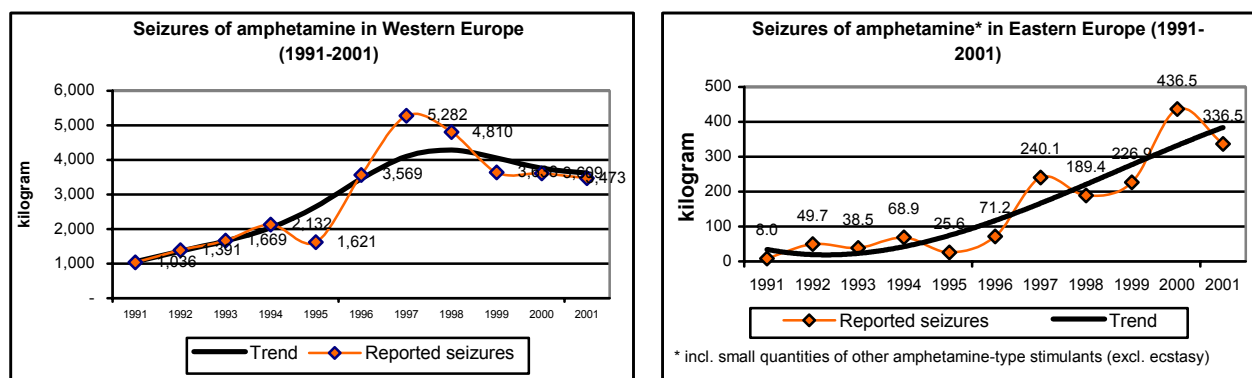


Figure 90

Source: UNODC, Annual Reports Questionnaire Data.

Over the 2000-2001 period, almost half of all amphetamine *seizures* in Europe continue to be reported from the United Kingdom, which constitutes the largest market for that substance, followed by the Nordic countries.

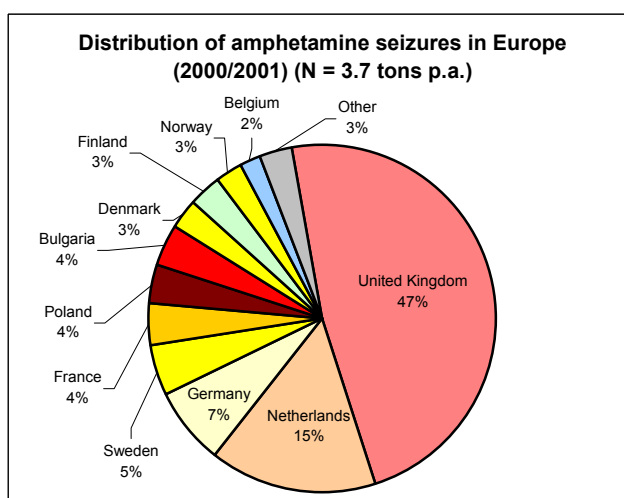
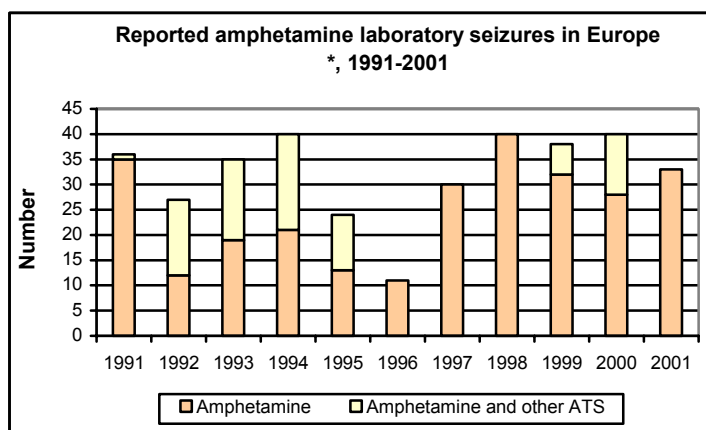


Figure 91

Source: UNODC Annual Reports Questionnaire Data.

The number of amphetamine *laboratory seizures* in Europe appears to be fairly stable at 30 to 40 laboratories per year. Analysis of available data is, however, complicated by the fact that countries sometimes do not specifically refer to 'amphetamine', but report it under the general category of 'ATS', and some countries even change on a year-by-year basis.



\* Note: Russia also reported the seizure of 'amphetamine' laboratories between 1999-2001. These data are not included because available information on precursor seizures does not suggest clandestine amphetamine manufacture.

**Figure 92**

Source: UNODC, Annual Reports Questionnaire Data.

Close to 85% of all amphetamine laboratory seizures over the 1991-2001 period in Europe were reported from the UK, Germany, Poland and the Netherlands. In 2001, the largest numbers of dismantled laboratories were reported from Poland (12) and the Netherlands (10) and the UK (5).

Information on the capacity of amphetamine laboratories is available from Poland, where the seizure of 12 laboratories in 2001 is believed to have prevented a total of 86 kilograms of amphetamine from entering the market. This figure corresponds to just less than half of the quantity reportedly seized by that country in 2001. Polish authorities estimate that 10%-20% of amphetamine seized in Central Europe, and about 60% of the substance seized in the Nordic countries, originates in Poland. About 35% of the amphetamine produced is estimated to be for the domestic market.

The move of amphetamine manufacture from Western to Eastern European countries, namely Poland, and later to the Baltic States, is well-documented, and a result of increased enforcement efforts in Western Europe. More recently, however, the first ever ATS laboratory seizure has been reported from Serbia and Montenegro. That laboratory, one of Europe's largest, was dismantled at numerous locations in and around Belgrade. Other Balkan countries may yet emerge as new sources for clandestine amphetamine and/or ecstasy manufacture; ATS precursors have been seized in, or smuggled through, the region in the past.

# Chapter 6

## NORTH AMERICA





## 6. North America

The most widely used ATS in North America is still methamphetamine, despite a constant and concerted battle to prevent precursor chemicals falling into the hands of clandestine manufacturers. However, the last decade has also seen a number of clear changes in terms of the approach to, and location of clandestine manufacture. Whether these are due to changes in the structure of the illicit market, regulatory and law enforcement initiatives, or other factors, is not known.

The availability of ecstasy has increased in North America in recent years, mainly due to large-scale imports from Europe, but also because of an increasing interest in local manufacture.

### *Methamphetamine*

Clandestine methamphetamine manufacture in the USA is a clearly divided market. On the one hand, there is a large number of independent, small-scale operators, who typically manufacture the drug for private consumption, using precursors obtained from domestic sources through diversion, typically from local drug stores. Although the output of those laboratories is estimated to be only about 10% of the total output, their large number (close to 8,000 in 2001) highlights a widespread readiness to manufacture illicit drugs, and the widespread need for regular supplies. This observation is not affected by the fact that new data collection methods introduced in the United States during 1998 have resulted in what appears to be a dramatic increase in clandestine manufacture in that country since then. Use of those numbers for comparison with other countries, which may have fewer, but, in some cases, larger clandestine laboratories, may therefore be misleading.<sup>14</sup>

On the other hand, there are a relatively smaller number of considerably larger laboratories (sometimes referred to as “super labs”, i.e., laboratories capable of manufacturing 5kg or more in one 24-hour manufacturing cycle). Typically, these “super labs” are operated by criminal groups, and it is these larger operations which obtain the necessary precursors from international markets, and then smuggle them frequently via Mexico, into the USA.

Since, in the mid-1990s, traffickers from Mexico began supplying powder methamphetamine to ethnic Asian criminal groups for conversion to crystal methamphetamine (‘ice’), complex manufacturing networks have emerged. They include, in recent years, the domestic manufacture of crystal methamphetamine from the powder form of that drug, supplied by Mexican criminal groups. Asian criminal groups are believed to be involved in these activities. By contrast, Japanese and Korean traffickers are believed to use precursor chemicals from China to produce crystal methamphetamine for distribution in the Los Angeles area as well as in Guam and Hawaii. Pure and potent Asian methamphetamine is being seized in large quantities on the west coast of the United States.

In terms of purity more generally, locally manufactured methamphetamine, which is typically sold by independent sellers, is purer than methamphetamine manufactured and distributed by organized groups, who dilute the drug in an attempt to increase profits.

According to the U.S. DEA, thanks to efforts to restrict precursor chemicals, the purity of Mexican “cartel methamphetamine” has fallen from 60% in 1995 to 29% in 2000. That has inspired users to make their own, for example, in small mom-and-pop laboratories, following recipes from the Internet or literature from underground sources. Overall, the average purity of all methamphetamine seized by DEA is now steadily rising again, to about 40% in 2001.

Also as a consequence of improved precursor controls, particularly of ephedrine, since the mid-1990s, many criminal groups in the USA have been forced to use pseudoephedrine as an alternative precursor. Nowadays, pseudoephedrine is most often smuggled into the USA via Canada, in the form of

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<sup>14</sup> Indeed, using methamphetamine precursor or methamphetamine end-product seizures as indicators, a different picture emerges to the overwhelming prevalence of methamphetamine manufacture, if based on laboratory seizures: Over the 1991-2001 period, 59% of all ephedrine and pseudoephedrine seizures took place in the USA. If seizures of neighbouring countries – Mexico and Canada – are added, the proportion rises to 67%, but remains clearly below the USA's proportion in dismantling clandestine methamphetamine laboratories. If seizures of methamphetamine end-product are analyzed, North America's share is even lower, with just 15% of global seizures in 2001.

pharmaceutical preparations, in contrast to the earlier ephedrine, which was diverted as a raw chemical from international markets, and then smuggled into the US via Mexico.<sup>15</sup>

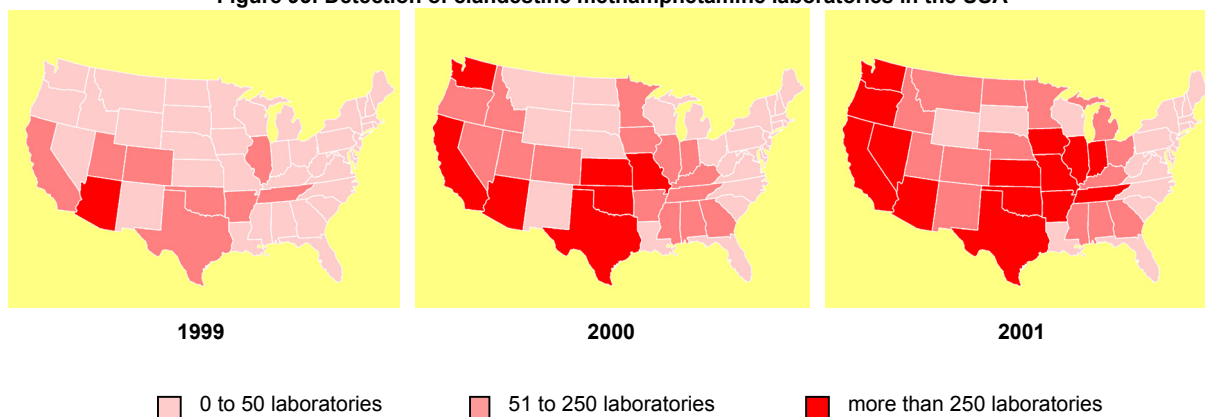
Long-term changes in the availability of precursors, whether ephedrine or pseudoephedrine, or whether as raw material, or pharmaceutical products, have also included innovative changes in manufacturing procedures. In the U.S., cartels have even introduced a related “cotton industry” aimed just at cutting the bottoms of bottles containing small numbers (24) of ephedrine or pseudoephedrine tablets, in order to improve the efficiency of their operations.

Several cases of pseudoephedrine diversions have involved criminal groups which traffic drugs (including heroin) to fund their activities. In the 1980s, before the introduction of any strict chemical controls, methamphetamine manufacture and distribution was almost exclusively in the hands of US motorcycle gangs.

Detections of clandestine methamphetamine laboratories within the USA have taken place in all of the country’s 50 states. There are, nonetheless, concentrations in states along the Western coast, notably in California as well as in a number of other southern states bordering Mexico. Levels of abuse (lifetime prevalence), emergency episodes, and requirement for treatment, continue to rise, reflecting a spread of methamphetamine availability across the whole of the United States, from west to east, and the broadening user base. The highest per capita levels of methamphetamine related emergency department mentions have been reported for years in California, notably from San Francisco and San Diego located close to the Mexican border, further supporting a close link between manufacture and abuse.

In addition, manufacture (and consumption) increased in recent years in some of the states bordering Canada, such as Washington, possibly reflecting illegal pseudoephedrine imports from Canada. By contrast, states along the East coast – so far - have been less affected by large-scale methamphetamine manufacture and abuse. Nevertheless, the spread of clandestine laboratories across the United States from west to east has been rapid.

Figure 93: Detection of clandestine methamphetamine laboratories in the USA



Although information is not available on a systematic basis, there are indications that laboratories along the West Coast of the USA are typically large and sophisticated operations, while those in rural areas of central and east USA are small and crude.

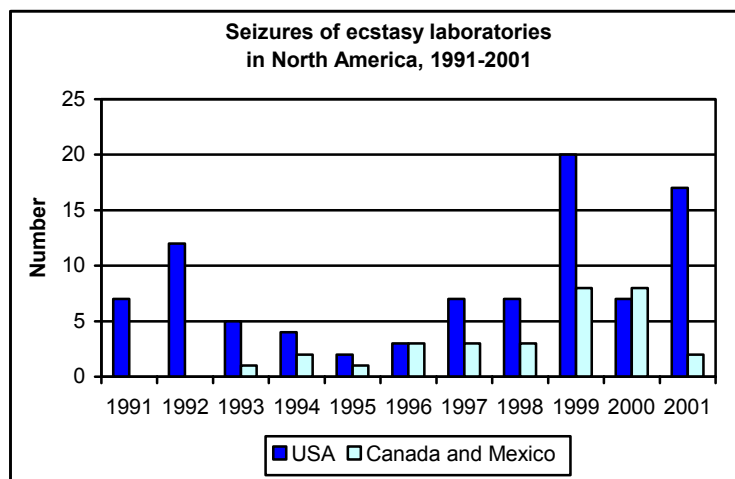
### Ecstasy

Until very recently, there has been little clandestine ecstasy manufacture in North America; very few laboratory seizures have been made during the 1990s. In recent years, however, following large-scale trafficking of ecstasy from Europe, in particular since 1998, and recognition of a growing market, increased clandestine ecstasy manufacture is also reported from the region. With a third of all clandestine

<sup>15</sup> A similar phenomenon occurred in Europe, namely the Czech Republic and neighbouring countries, which saw a shift from bulk ephedrine to pharmaceutical preparations containing ephedrine, in response to tightening of controls of the raw chemical. Further controls were then required to control the ephedrine preparations, as happened in the US.

ecstasy laboratory seizures reported from North America over the 1996-2001 period, that region ranks second in global statistics, after Europe. Clandestine laboratory seizures are reported from the USA and Canada. One ecstasy laboratory was also seized in Mexico (1995).

Regular surveys in 20 cities across the USA also indicate the continuing widespread availability of ecstasy, which, in some places now has become an established drug of abuse (i.e., no longer an 'emerging' trend).



**Figure 94**

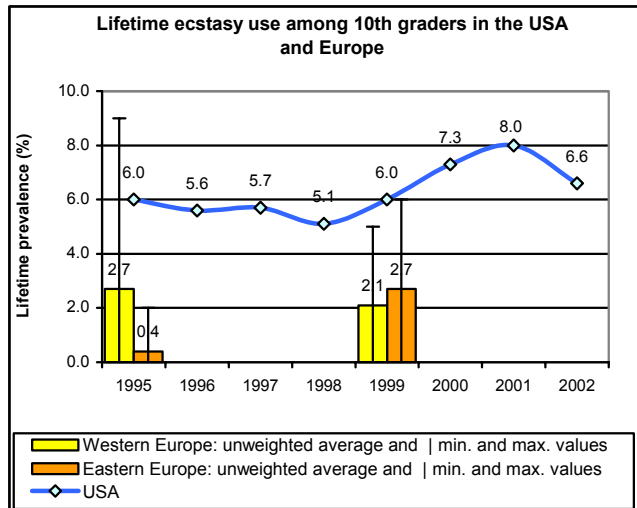
Source: UNODC, Annual Reports Questionnaire Data.

Increased interest in domestic ecstasy manufacture is also exemplified by increased levels of precursor seizures in 1998-2001.

In terms of ecstasy precursor seizures, most of the seizures in the USA concerned safrole, often in the form of sassafras oil. 3,4-MDP-2-P, the main precursor reported in Europe, and piperonal, were only seized in North America at far lower levels than in Europe. The spectrum of ecstasy precursors thus differs in different regions, which may indicate that a different range of precursors is available for diversion or that different criminal groups specifically target different precursor chemicals.

The increased interest in, and the increased number of, drug trafficking organizations involved in MDMA manufacture is likely also to have contributed to the growing number of tablets that are being sold as ecstasy but which contain varied substances, or combinations. These include phencyclidine, PMA, methamphetamine, ketamine, and ephedrine. It may also be that, with increased competition, drug trafficking organizations are also importing ecstasy tablets from South-East Asia, where tablets are more likely to be multi-drug combinations.

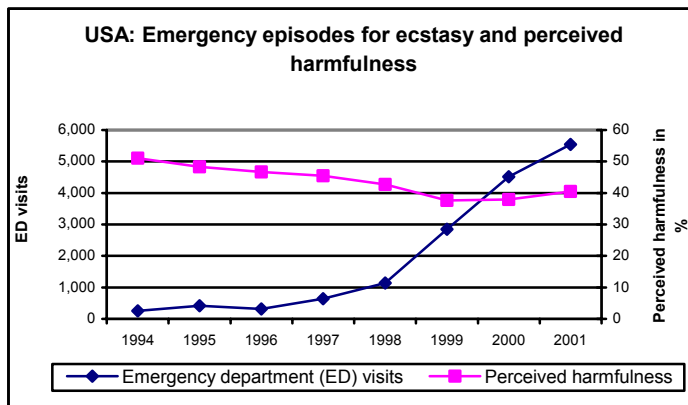
Again, availability of ecstasy is reflected completely in terms of abuse. The number of first-time ecstasy users (incidence; initiation of abuse) among the general population (aged 12 and above) has been rising steadily since 1992. Incidence has tripled within just two years, between 1998 and 2000. Only in 2002, for the first time in recent years, was there any sign of a decrease in ATS prevalence, though still at much higher levels than in Europe for both methamphetamine and ecstasy. However, as in Europe, abuse of ecstasy is moving from an exclusively youth environment into the broader population. This has undoubtedly been helped by large-scale imports of the drug from Europe, in particular since 1998, and the increase in local manufacture since around the same time.



**Figure 95**  
Sources: NIDA, *Monitoring the Future 2002*; and Council of Europe, *1995 ESPAD Report*, Stockholm 1997, and *1999 ESPAD Report*, Stockholm, December 2000

Also, particularly since 1998, there has been an increase in emergency episodes related to ecstasy. A particular concern is the emergence of crystal MDMA. Similar in appearance to crystal methamphetamine, it is believed to be the cause of several drug-induced seizures and overdoses, mainly because of its high purity (95%-100%).

At about the same time when emergency episodes associated with ecstasy use started to show a dramatic increase, the perceived harmfulness of that drug also showed the first signs of stabilization, and then increase, after years of steady decline. The decrease in abuse of ecstasy seen in 2002 may partly be attributable to these changes.



**Figure 96**  
Sources: Drug Abuse Warning Network (DAWN), 2002; NIDA, *Monitoring the Future, Volume II, 2002*

# CHAPTER 7

## ASIA



## 7. Asia

Methamphetamine is the traditional drug of choice in East and South-East Asia. The drug was initially popularized during the Second World War, when it was given to pilots and soldiers. Military stocks were dumped after the war, and the drug flooded the market. Ecstasy abuse, by contrast, is a very recent phenomenon in the region, but is rapidly gaining in popularity.

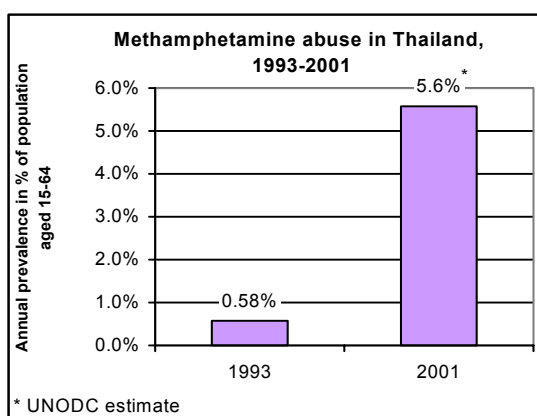
However, understanding the dynamics of today's ATS problem in East and South-East Asia is made more difficult than in other regions because occupational use of ATS, in particular methamphetamine (e.g. by truck drivers), co-exists with recreational use for leisure purposes. In addition, importantly, in the region there are also very specific trends with regard to the different forms of ATS available, particularly for methamphetamine. That drug is sold in two different forms, tablets and crystal methamphetamine, with distinct sub-regional distribution patterns and markets in terms of both clandestine manufacture and abuse: Tablets (locally known as "yaba"), which usually contain additional diluents and/or adulterants, predominate in South and South-East Asia, while high-purity crystal methamphetamine ("ice" or "shabu") is the main form available in East Asia. Law enforcement and regulatory approaches to counter clandestine manufacture of the two forms and, more importantly, implications for health and related interventions, can be significantly different.

The existence of different forms of methamphetamine has also implications for the assessment of the clandestine laboratory situation, and production capacity, in the region. Two types of laboratories have to be distinguished, which are usually not separately reported. The first type of laboratories manufactures the methamphetamine end-product ('powder laboratories'), while laboratories of the second type press the powder methamphetamine into tablets ('tablet laboratories'). It can not be excluded that available statistics on laboratory seizures do not double count to some extent.

The rapid increase in ATS manufacture, trafficking and abuse in East and South-East Asia in recent years has affected an increasing number of countries. This chapter examines the situation in the region by focusing on those countries that are most affected by, or exemplify the specifics of, manufacture, trafficking and/or abuse of methamphetamine and ecstasy. Those countries include Myanmar, Thailand, China, the Philippines, Japan, and Indonesia.

### *Methamphetamine*

In recent years, regional trafficking of clandestinely manufactured methamphetamine has expanded, and seizures of an unprecedented size highlight the capacity for clandestine manufacture and abuse in the region. Worldwide, Thailand is the country reporting the highest abuse levels for methamphetamine. Japan and the Philippines are other important consumer markets in the region.



**Figure 97**

Source: Thailand Development Research Institute, 1995, and ONCB, Thailand Narcotics Annual Report 2002

Methamphetamine seizures have increased significantly in many countries, particularly since 1998, a date that may represent the onset of large-scale, clandestine manufacturing operations in the region.

The time-frame certainly matches the same period during which huge seizures of ATS have been made in China.

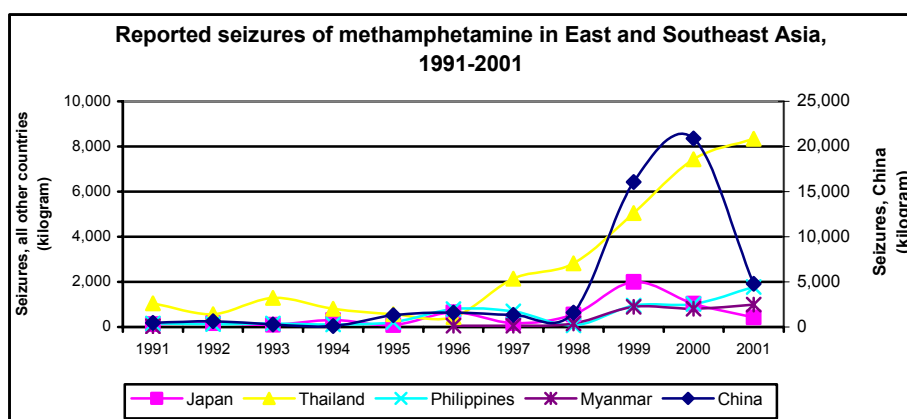


Figure 98

Source: UNODC, Annual Reports Questionnaire Data

China and Thailand, where methamphetamine seizures have risen dramatically in the last five years or so, accounted together in 2000/2001 for 70% of reported global methamphetamine seizures. Reported seizures from other East and South-East Asian countries account for almost a further 15% of global seizures, and in the global context, it is this region, and those few countries, that account for the eye-catching rise in ATS at the global level over recent years. Tighter controls over ephedrine, and successes in reducing illicit methamphetamine manufacture in China, have had their effect, but overall trends show that the problem continues to grow. Thailand, for example, affected by large-scale imports of methamphetamine from neighbouring Myanmar, seized the largest quantity of the drug worldwide in 2001.

Over the years, various countries have been recognized as major regional sources of methamphetamine, each taking its turn depending on the relative focus of regulatory and law enforcement activity, and the availability of precursors. Currently, clandestine methamphetamine manufacture appears to be concentrated in Myanmar and China, but it is also now emerging in the Philippines, Malaysia and Indonesia. Malaysia also appears to be used as transit point for methamphetamine and ecstasy destined for Oceania.

Within South/East/South-East Asia, the Golden Triangle is recognized as a major source of illicit methamphetamine. Law enforcement authorities believe that some 60 drug laboratories lie along the Thai-Myanmar and China-Myanmar borders inside the Golden Triangle. Most of the required precursors, other additives to clandestine tablets, such as caffeine, and the necessary equipment and machinery are also sourced from within the region.

Myanmar is the major source of methamphetamine *tablets* in the South/East/South-East Asian region. In particular the Thai market, the largest consumer market in that sub-region, is believed to be supplied to a large extent with methamphetamine tablets from Myanmar. It is estimated that each year about 700 million tablets (or more) are shipped across the border from Myanmar. Assuming an average of 30mg of methamphetamine in a tablet weighing approximately 90-100mg (including caffeine, binders, and other tableting materials), the 700 million tablets correspond to about 20 tons of methamphetamine powder, or 7.5% of global manufacture.

Most methamphetamine manufacture in Myanmar takes place in remote and inaccessible areas, typically in Eastern and Northern Shan State, i.e., in areas outside the control of the central government. It is now a generally accepted fact that believed that all laboratories are capable of manufacturing methamphetamine and heroin, and that many of the groups that used to be involved in illegal heroin manufacture and trafficking are also involved in the manufacture of methamphetamine. Early substantive evidence for the existence of a link between the two drugs at a criminal organizational level was provided by chemical analysis, which identified traces of opiates in tablets from that region.

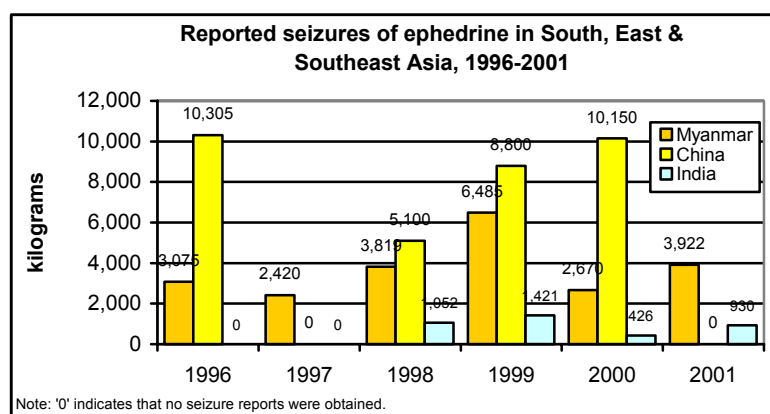


However, intelligence sources estimate that, of the approximately forty clandestine laboratories active on the Myanmar side of the border with Thailand, only a minority is nowadays refining heroin. Most are manufacturing methamphetamine and are responsible for the bulk of the illegal shipments of that drug to Thailand. However, only five laboratories were reported to UNODC in 2001, possibly a consequence of the remote location of most of those laboratories. All five were tableting laboratories.

The limited number of clandestine laboratories reported also has to be seen against potential manufacturing capacity. Although systematic data are not available, it is estimated that the majority of laboratories in Myanmar are high capacity laboratories. For some of the more recent 'tablet laboratories', capacities of up to 100,000 tablets per day are reported, representing a requirement for approximately three kilograms of methamphetamine per day. While this may seem only a relatively small quantity, it does represent a three-fold increase on known outputs in the past.

More recently, the seizure in Myanmar of tablets with different physical appearance, and of crystal methamphetamine, have given rise to the suspicion that clandestine laboratories may have emerged in new areas, e.g., on the Indian side of the Indo-Myanmar border. This may be a response by traffickers eager to move into a lucrative market and, more practically, to gain access to precursors diverted from the Indian market without the risk of smuggling across the border.

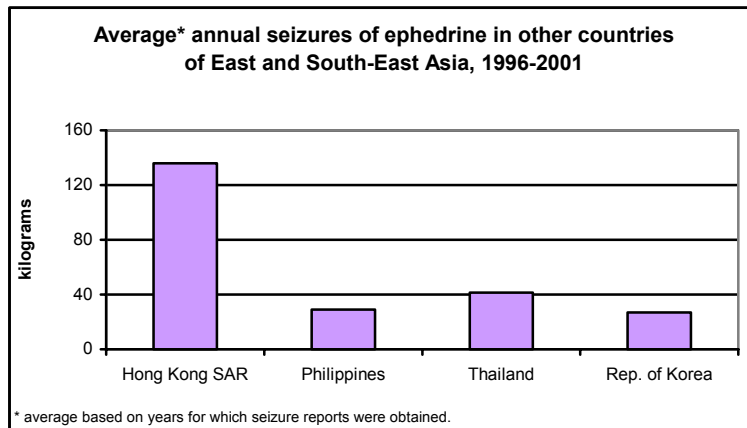
In contrast to the limited number of reported clandestine methamphetamine laboratory seizures, authorities in Myanmar have regularly reported seizures of important quantities of the precursor ephedrine since 1996. With the exception of 1999, amounts of ephedrine seized in recent years fluctuated around 2.5 and 4 tons annually. Reported ephedrine seizures in Myanmar in 2001 were equivalent to 14% of global ephedrine and pseudoephedrine seizures in that year. This percentage figure may be higher than would normally be expected because China, the only country which has reported larger seizures in the past, did not report in 2001. Nevertheless, it does highlight the extent of manufacture in the country.



**Figure 99**

Source: INCB, *Precursors and chemicals used in the illicit manufacture of narcotic drugs and psychotropic substances*, 2002 and previous years.

Seizures of ephedrine are also reported from other countries in the region, but quantities are significantly smaller. *Hong Kong SAR* seizes most, related to attempted international diversion of ephedrine from mainland China. Ephedrine seized elsewhere in the region is reported to originate also in China or, to a lesser extent, in India.

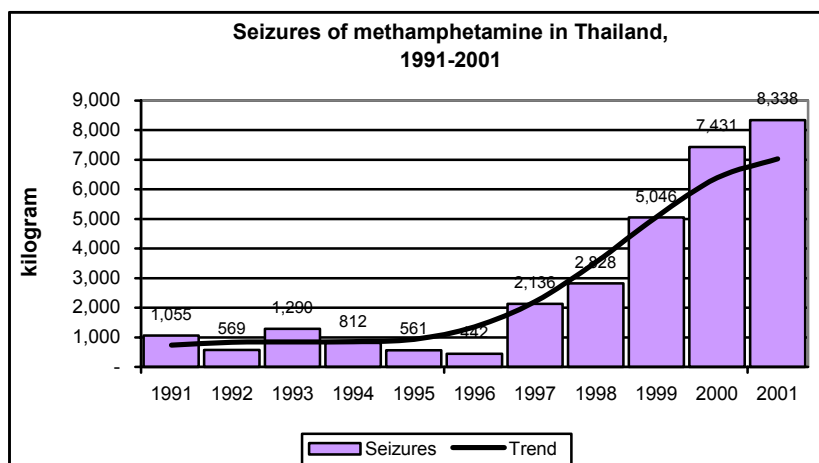


**Figure 100**  
 Source: INCB, *Precursors and chemicals used in the illicit manufacture of narcotic drugs and psychotropic substances*, 2002 and previous years.

While useful for overall trend analyses, aggregation of ephedrine seizure data can disguise more specific patterns and operationally relevant changes at sub-regional level. In 1998, for example, the pattern of ephedrine distribution with destination Myanmar began to change, when Myanmar authorities began to make frequent seizures of Indian ephedrine along the Myanmar-India border. In the last five years, Myanmar authorities seized 8.7 tons of Indian ephedrine, significantly more than the 5.2 tons of Chinese ephedrine seized.

In addition to changes in the source of ephedrine used in methamphetamine laboratories in Myanmar, there has also been more recently a change away from the traditionally used ephedrine to phenylacetic acid, which itself can be used to manufacture P-2-P. Anecdotal reports have also suggested that even ephedrine itself has been manufactured illicitly in Myanmar.

Thailand accounted for close to 30% of all methamphetamine seizures in South/East/South-East Asia over the 1996-2001 period. Particularly over the past few years, record seizures were reported, making Thailand the world's number one in reported methamphetamine seizures in 2001. Of concern to the authorities has been also the trend towards small-scale, often mobile, laboratories, and a network of small-scale traffickers, which make the epidemic of methamphetamine manufacture and trafficking widespread and difficult to control. This is similar to the situation in Cambodia, where small-scale, family-based, and often mobile, laboratories are typically encountered. Of more general note, a trend towards more scattered, small-scale manufacturing facilities is also seen on a global basis. While paradoxical, this is entirely consistent with an increased global involvement of criminal organizations, which also draw together a number of smaller operational units, established to reduce risk.



**Figure 101**  
 Source: UNODC, Annual Reports Questionnaire Data.

As in the whole of South/East/South-East Asia, the clandestine laboratory situation in Thailand is not clear with regard to the distinction of 'powder' and 'tablet laboratories'. Up until 1996/97, clandestine methamphetamine manufacture in that country was characterized by the existence of large-scale manufacturing sites in the central part of the country. Since then, in response to enhanced law enforcement activity, most laboratories have moved northwards to the mountainous border region, and to neighbouring countries in the Golden Triangle. It is estimated that about 80% of methamphetamine in the Thai market come from this source. However, within Thailand, clandestine 'tablet laboratories' continue to exist, as evidenced by the seizure of mixing and tableting machines with dies and punches for the typical 'wy' logo seen in South-East Asia.

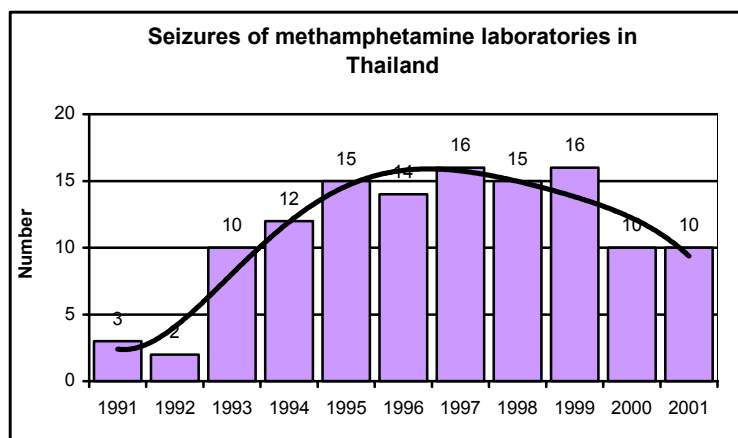


Figure 102

Source: UNODC, Annual Reports Questionnaire Data.

More recently, in 2001-02, there are reports of seizures of methamphetamine tablets that differ in physical appearance (colour and "brand") and/or quality from those seized regularly in Thailand in the past. The appearance of these tablets is considered by Thai authorities to be an indication of the existence of new manufacturing sources outside of the Golden Triangle, located near the western Thai border. Large-scale seizures of caffeine, near the suspected new manufacturing areas are also considered to provide support for this trend.<sup>16</sup> These observations provide evidence of the existence of specific production trends even within the larger picture of South-East Asian methamphetamine manufacture and trafficking.

Increased enforcement efforts are not only believed to have gradually driven clandestine manufacture to areas with little or no legislative control, but they are also considered to be responsible for the most recent appearance of fake methamphetamine tablets in Thailand in 2002/2003. These tablets reportedly contain no methamphetamine but combinations of a wide variety of substances, controlled and non-controlled, a possible response to the tightening of law enforcement efforts, or simply an attempt to participate in the lucrative ATS market by building on the popularity of existing products (particularly ecstasy pills). As with similar combinations seen elsewhere, for example in Australia, the health implications of this development are as yet unclear.

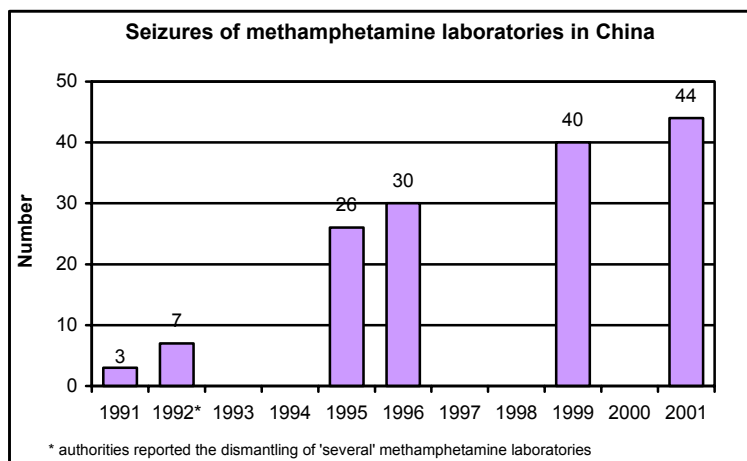
The People's Republic of China is not only a source of ephedrine and pseudoephedrine, but also of illicit methamphetamine in East and South-East Asia. More recently, that country also emerged as a source of ecstasy; China is a major source of ecstasy precursors including 3,4-MDP-2-P, safrole and sassafras oil.

Clandestine manufacture of both forms of methamphetamine (tablets and crystal methamphetamine) has been reported from China. While tablets are typically manufactured in areas bordering the countries of the Golden Triangle, i.e., Yunnan province, crystal methamphetamine is

<sup>16</sup> In recognition of the importance of caffeine in the region's methamphetamine tablets (about 60%-70% caffeine per tablet, compared to about 20%-30% methamphetamine), Thailand, and more recently also Myanmar, have introduced controls for that substance in their border areas, which resulted in large-scale seizures of about 20 tons since 1999.

manufactured mainly in the southeastern provinces of Fujian and Guangdong, close to *Hong Kong SAR*. The latter provinces are also known to be the manufacturing source for clandestine ecstasy.

Although reports from the country are not available on a regular basis, the number of clandestine laboratory seizures appears to increase steadily. In 2001, authorities reported the dismantling of 44 clandestine ATS laboratories, up from 26 laboratories in 1995. No such manufacture was reported before 1990.



**Figure 103**  
Source: UNODC, Annual Reports Questionnaire Data

Similar to other countries in the region, methamphetamine manufacturing estimates are not available for China. However, based on methamphetamine and ephedrine seizure data as an indicator, potential clandestine manufacturing capacity in China exceeds by far that of other countries.

Efforts by the Chinese authorities in recent years to crack-down on clandestine methamphetamine manufacture in the country appear to have indeed limited the outflow of methamphetamine from China. The pattern of seizures, with exceptionally large amounts seized in 1999 and 2000, was also seen in Japan (although at significantly lower absolute amounts), confirming reports by the Japanese authorities that China, for several years, has been a major source of methamphetamine found in Japan, and that the two markets are, indeed, linked.

The impact of Chinese law enforcement activities in recent years is reflected further in other changes in the pattern of methamphetamine availability in the region, and the emergence or re-emergence of new source countries.

The Philippines (re)emerged as a source of crystal methamphetamine (“shabu”) in the second half of the 1990s.<sup>17</sup> Ten high-capacity clandestine laboratories were dismantled between 1997 and 2002, using ephedrine smuggled from China as starting material. According to the Philippine authorities, this development coincides with the crackdown on methamphetamine manufacture in China since 1998, when a number of high-capacity methamphetamine laboratories were seized in that country. In that context there are also indications of a transfer of technical know-how between operators in the two countries: equipment seized in 2003 at a major laboratory in the Philippines was similar to items seized previously in China. Authorities also believe that the rise in domestic manufacture may also be a response to increased enforcement efforts related to methamphetamine importation, while smuggling of ephedrine still carries fewer risks because law enforcement officials are less familiar with precursors.

The Philippines is also a major consumer market in the region. Based on the number of people in treatment, and other indicators (seizures, arrests), it is estimated that 70%-90% of drug abuse relates to

<sup>17</sup> Recent developments in the Philippines are just another phase in a cycle which, in this case, is determined by the availability and relative risk of smuggling the ephedrine starting material compared to methamphetamine. During the 1990s clandestine methamphetamine manufacture almost disappeared, because it was reportedly easier to smuggle methamphetamine into the Philippines than to manufacture it from scarce raw materials.

the abuse of methamphetamine.<sup>18</sup> 1.3 million people, or 2.8% of the population age 15-64, may thus be using methamphetamine in the Philippines.

#### ATS sources in South-East Asia: a continuously changing cycle

The history of clandestine production of ATS in East and South-East Asia is marked by dynamics unseen in other regions of the world. Long before the emergence of Myanmar and China as today's major regional sources of illicit methamphetamine, South Korea, the Philippines and *Taiwan Province of China* have, at different times, been recognized as the origin of much of the drug trafficked and abused in the region. Over time, with the introduction and strengthening of drug controls, traffickers have moved to set up laboratories in new countries in an attempt to find safer havens away from effective law enforcement activity, or with easier access to precursor chemicals. Inevitably, they have sometimes returned to locations favoured in the past: the Philippines, for example, which with Indonesia and Malaysia is one of today's emerging sources of illicit ATS, is no stranger to clandestine methamphetamine manufacture.

Recent developments should, therefore, be seen as just another phase in the evolution of clandestine manufacture in the region. However, new features have emerged, and today's laboratory operations are characterized also by an international sharing of expertise to develop a more sophisticated "commercial" production capacity, and the wider involvement of criminal organizations with diverse interests. In 2002, in Indonesia, a large-scale ecstasy laboratory was operated with Dutch expertise; unconfirmed reports suggest the same may have happened in Myanmar. In June, 2003, police in China have dismantled a ring involved in the clandestine manufacture of both ecstasy and "ice", and have seized drugs and related precursors, as well as weapons and explosives.

Criminal organizations have forged partnerships to facilitate regional trafficking of methamphetamine, a cause of particular concern to Japanese law enforcement agencies. Even worse is the suspicion that some criminal organizations may also be linking up with rogue military units or Government agencies supporting the clandestine manufacture and trafficking of drugs.

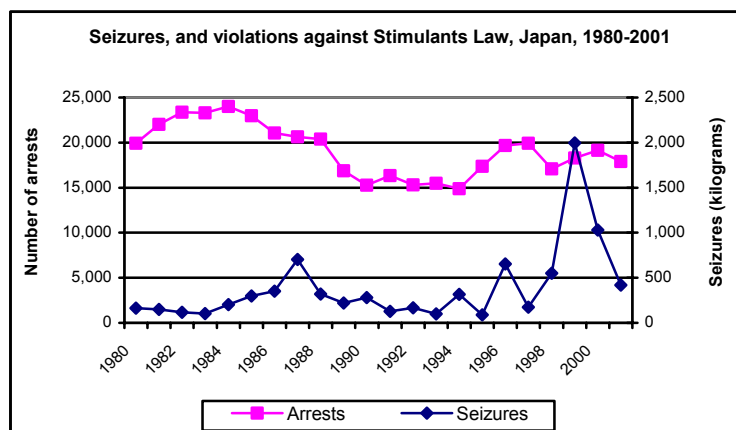
Again, as part of the greater cycle, such suspicions are not new. Reports in the past have suggested that military elements in some countries of the region have protected production sites and trafficking routes, especially for heroin. Today, the Democratic People's Republic of Korea is the focus of much attention related to the alleged role of officials of that country in drug production and trafficking. Allegations are rife that the North Korean Government has boosted its arms spending by trafficking drugs to Japan, *Taiwan Province of China*, China and Australia. Since the 1970's several North Korean diplomats have been arrested around the world, accused of smuggling and selling cocaine and heroin, as well as other illicit goods. By the late 1990's evidence of diversification to synthetic drugs emerged, with the arrest in 1998 of a diplomat attempting to smuggle some 500,000 tablets of Rohypnol, the "date-rape" drug.

North Korea is now reported also to be a significant supplier of illicit methamphetamine, and one of the main sources of the drug in Japan. Japanese authorities estimate that a third (1,286kg) of all methamphetamine seized in Japan from 1999 to 2002 either originated from, or transitted the territorial waters of North Korea en route to Japan. This compared to 1,904kg (49%), believed to have originated from China, including *Hong Kong SAR*, reported as the main source of the drug in recent years. So far, however, there is no hard evidence to confirm that clandestine drug manufacture is actually taking place in North Korea. Circumstantial evidence is building, however, to support involvement in smuggling activities: numerous seizures of methamphetamine in Japan, *Taiwan Province* and the Philippines during the past five years have been traced back to North Korean sources. In 2002 Japanese authorities seized more than 150kg of methamphetamine suspected to have been loaded onto a ship in North Korean waters. That is believed to be the current trend, with boats picking up drugs and then offloading them elsewhere in collusion with local criminal gangs.

Whatever the source of the illicit methamphetamine in South-East Asia, precursor chemicals are required. Those are also sourced from the region, with China recognized as one of the major suppliers. At different times, both plant-based and synthetic ephedrine, from China and India respectively, have been used; more recently methamphetamine has been manufactured from P-2-P, itself produced illicitly from phenylacetic acid. As with the relocation of laboratory sites, this development is related in part to enforcement activities in China which have forced traffickers to change methods of manufacture and use different precursors. Laboratory analysis of seized drug samples has confirmed the trend. Further analyses may be able to identify how drugs are made, which precursors were used, and even which "pre- precursors", such as phenylacetic acid, may have been used. With that information, hard evidence may yet emerge of the true source of the drugs in the region.

Also in Japan, methamphetamine is the most common drug of abuse. Levels of abuse (life-time prevalence) have remained relatively stable over the past five years, at around 0.3%-0.4% (age 15 and above). This is also reflected in drug law violation data which have remained similarly stable over the same period.

<sup>18</sup> Note: The number of treatment admissions for abuse of methamphetamine is significantly higher in Thailand.



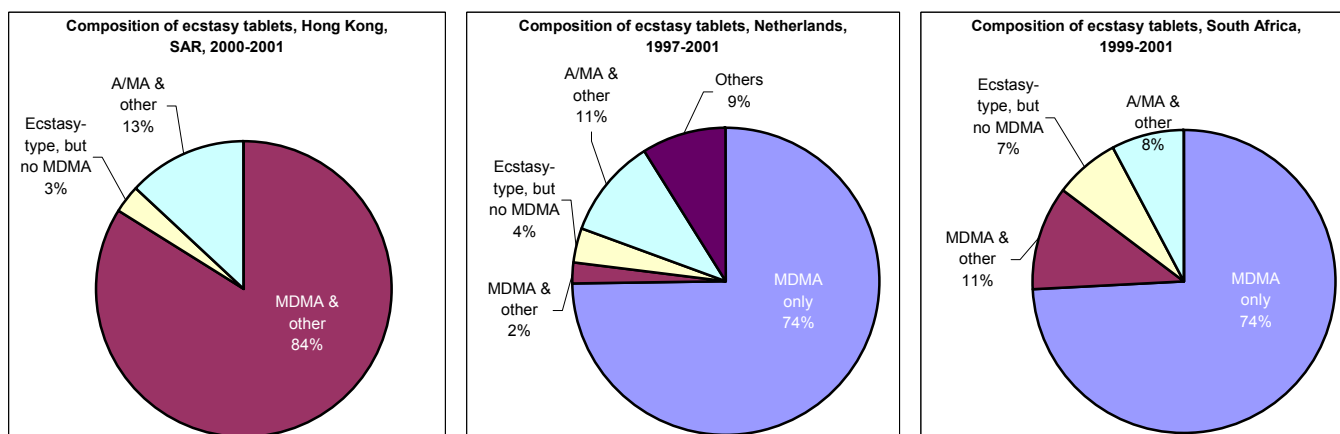
**Figure 104**  
Source: UNODC, Annual Reports Questionnaire Data

Nevertheless, average annual seizures of methamphetamine in the last five years are higher than those before the mid-1990s, and also include record seizures of 1,995 tons in 1999. As in the past, available information suggests that the bulk of the drug found on the Japanese market - mostly in the high-purity crystal form of 'ice' methamphetamine - is smuggled into the country.

There is little evidence of methamphetamine manufacture within Japan in recent years. Some methamphetamine (and LSD) manufacture in the late 1990s appears to have taken place in connection with the operations of the Aum sect, which was subsequently dismantled by the authorities. In 2001, authorities in Japan reported the importation of semi-processed methamphetamine, which was suspected to have been further refined in Japan.<sup>19</sup> Ephedrine seizures in Japan have only been reported in 1994, and there are no reports of pseudoephedrine seizures.

### Ecstasy

Ecstasy abuse is accelerating in East and South-East Asia, but this is such a recent phenomenon that very few data are available to quantify the trend. The reported problem may be confused by the fact that "ecstasy" in East/South/South-East Asia is used as a term to describe any drug in tablet form, whether or not it contains MDMA, or indeed any ATS.



("A/MA" refers to amphetamine and/or methamphetamine; "other" includes a range of other psychoactive substances, controlled, or not)

**Figure 105:** Composition of tablets sold as ecstasy, selected countries

Sources: Trimbos-instituut, Netherlands, *National Drug Monitor, 2002 Annual Report*; Logo Index, Drug Section, South African Police Service (SAPS) Forensic Science Laboratory Pretoria, 2001; Forensic Science Division, Government Laboratory, Hong Kong SAR, 2002.

<sup>19</sup> Available information suggests that this refers to the recovery of methamphetamine that was concealed for trafficking purposes. This case therefore highlights again the need for a clear definition of the term 'clandestine manufacture'.

More worryingly, particularly from the health side, reports indicate that the ecstasy tablets available in the region contain mixtures of various substances (“MDMA & other”), and sometimes no MDMA at all. This contrasts with the situation in Europe and the United States, where the trend over the past years has been towards high purity single entity ecstasy tablets, containing MDMA as the only active ingredient (“MDMA only”).

From the law enforcement side, this observation of significant regional differences in tablet composition also raises doubts about the widely held belief that the majority of ecstasy tablets seen in countries of East and South-East Asia, and in Australia, are imported from Europe. There is, however, little information reported to UNODC to clarify this. In 2001, only *Hong Kong SAR* reported that cheap<sup>20</sup> ecstasy tablets are believed to be manufactured in the Asian region rather than Europe, and that the amount of the locally made tablets is increasing dramatically. Interestingly, Canada is the only country that has reported similar adulterants and diluents in ecstasy-type substances as countries from East and South-East Asia.

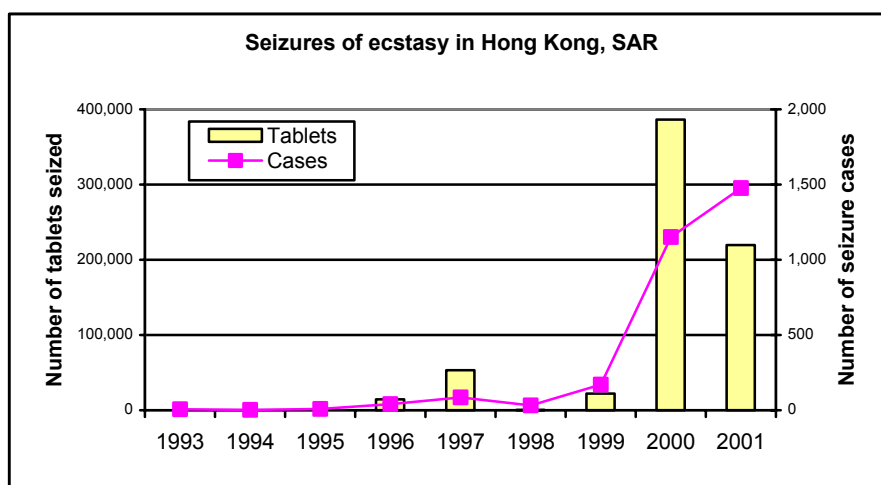


Figure 106

Source: Government Laboratory, Hong Kong, 2002

Unlike the composition of the tablets, the ecstasy logos seen in East and South-East Asia often resemble those encountered in Europe. That ecstasy tablets are, indeed, produced in the region is further emphasized by seizures in Thailand of punches, with “logos” matching those of well-known designs frequently encountered in Europe (e.g. Rolex, Masserati, Honda, etc.). There are also reports suggesting that MDMA powder, on a limited scale, may be imported from Europe to South-East Asia, where it is tabletted. This may provide for an opportunity to adapt tablets to local needs in terms of both strength (MDMA content) and composition, i.e., addition of other substances. Also, facilities that reprocess tablets into “watered down” versions, i.e., where tablets are ground, diluted, sometimes mixed with other drugs, and then re-tabletted, have been discovered in Thailand and Cambodia. There is a significant danger that the health risks associated with such tablets may be much higher than the equivalent ecstasy drug sold in Europe.

Evidence for ecstasy (MDMA) powder manufacture in the region is still limited, although there are anecdotal reports suggesting that local ecstasy is almost as available as European ecstasy in the region.

Diversification of clandestine laboratories in the region into the manufacture of ecstasy is facilitated by local availability of most precursors, such as 3,4-MDP-2P and piperonal. One ecstasy laboratory in China’s Fujian province reportedly started from safrole; the ecstasy was intended to be exported to USA.

Seizures of ecstasy laboratories have been reported in recent years also from Thailand, Indonesia, *Hong Kong SAR*, and the neighbouring Guangdong and Fujian province in southeastern China. Seizures of ecstasy precursors within the region were only reported recently from *Hong Kong SAR*.

<sup>20</sup> The retail price for ecstasy in *Hong Kong SAR* ranged from US\$7.7 to 38.5 in 2001. This was the largest range reported to UNODC in that year.



The most comprehensive information on ecstasy manufacture in South-East Asia is available from Indonesia, where nine ecstasy laboratories were seized in 2001, among them only two that were classified as small-scale or “kitchen” laboratories. Most of these laboratories were believed to have been tableting laboratories. In 2002, in addition to another large tableting laboratory, which was estimated to have been capable of producing 150,000 ecstasy tablets per day, the largest ecstasy manufacturing laboratory ever was seized.

The move from tableting operations towards large-scale ecstasy powder manufacture is a clear sign of increasing sophistication of East Asian ecstasy manufacture. The Indonesian case has also confirmed the growing cooperation between criminal operators in the region, based on colonial and ethnic ties, to increasingly share the risks of acquisition of precursor chemicals and equipment, drug powder manufacture, and tableting into the final product.



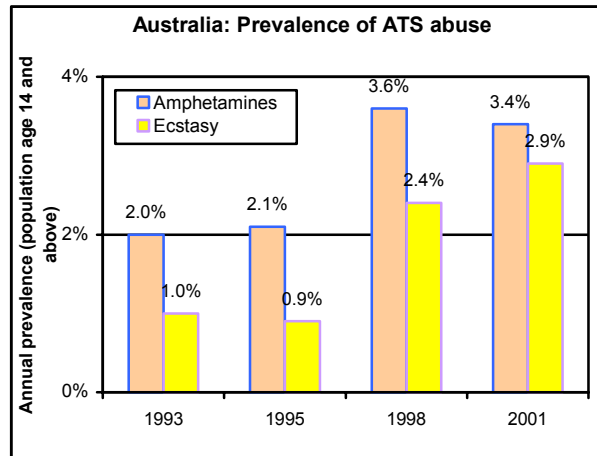
**CHAPTER 8**  
**AUSTRALIA,**  
**AFRICA AND SOUTH AMERICA**



## 8. Australia, Africa and South America

### 8.1. Australia

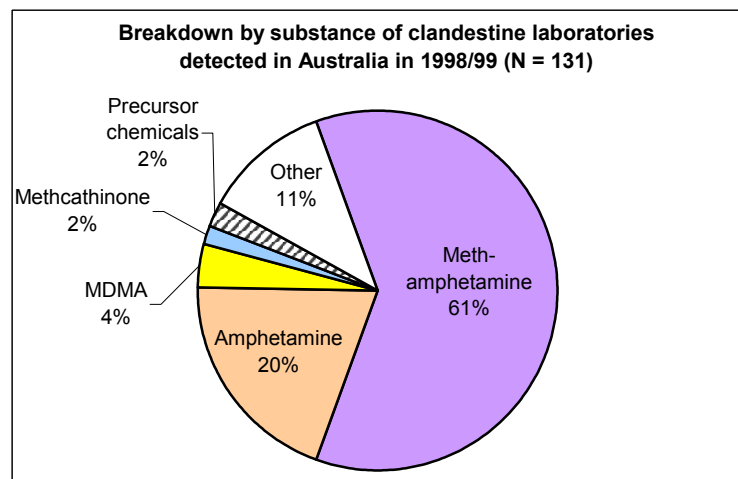
The ATS phenomenon in Australia is characterized by high levels of abuse. Australia has the highest levels of ecstasy abuse worldwide, and ranks only second after Thailand in prevalence of methamphetamine in 2001.



**Figure 107**

Source: UNODC, Annual Reports Questionnaire Data; Australian Institute of Health and Welfare, *National Drug Strategy Household Survey 2001*, and previous years.

Domestic manufacturers supply the majority of methamphetamine available on the Australian market, typically from small-scale, often mobile clandestine laboratories ('boxed' or 'boot labs'). Clandestine laboratories manufacturing ATS and their precursors account for close to 90% of all clandestine laboratories detected and dismantled in Australia. The production of methamphetamine tablets continues to increase, perhaps as a way of drawing the methamphetamine market closer to the tablet-dominated ecstasy market.



**Figure 108**

Source: Australian Bureau of Criminal Intelligence, *Australian Illicit Drug Report 1998/99*, Canberra 2000

Pseudoephedrine has been the precursor of choice for methamphetamine manufacture in Australia. However, similar to the situation in other parts of the world, precursors and their sources have changed over time in response to regulatory, law enforcement, and industry initiatives. In Australia, this

has led to a shift away from the diversion of single-entity pseudoephedrine-based preparations, to thefts from warehouses, chemical companies and factory yards.

The Australian situation is thus characterized by small-scale, but numerous, operations (purchases or thefts) to obtain the necessary precursors, frequently through retail outlets. This may explain why available precursor seizure data (between 1kg and 25kg for ephedrine, with a peak of 644kg in 2001; between less than 1kg and 80kg, with a peak of 111kg in 2000 for pseudoephedrine) do not, in general, indicate large-scale methamphetamine manufacture. Qualitative reports confirm that most of the pseudoephedrine used in the manufacture of methamphetamine is, indeed, extracted from cough and cold medications.

Clandestine ecstasy manufacture in Australia is limited. Europe is most frequently associated with ATS 'imports' into Australia. Anecdotal evidence also suggests South-East Asia, especially China, as a source of ATS seen in Australia. During 2000-01, China was the final embarkation point for more than 90% of detected ATS by weight in only 6% of the total number of cases. In 2000, the first case of MDMA trafficking from South Africa to Asia and the Pacific Region was reported.

Similar to the situation in South-East Asia, especially in Thailand, there are also indications that tablets containing relative large amounts of ecstasy are shipped from Europe to Australia, where they are ground up again, diluted and then re-tabletting. 'Fake MDMA' (typically methamphetamine-based, and containing various diluents and adulterants, such as ketamine, paracetamol and caffeine) is also produced domestically to meet demand, and as a response to the limited availability of ecstasy precursors. Frequently, the same logos are used to make the tablet look "authentic". A study of seizures in New South Wales in 2001 found that only 49% of tablets alleged to be MDMA contained that drug. Nevertheless, there are also reports indicating that knowledge about the poor and variable quality of ecstasy tablets was not a deterrent to use.

In response to the dynamics of the ATS market in Australia, characterized recently by changes in the forms and potency of ATS available (e.g., the introduction of high-purity crystal methamphetamine), a monitoring system has been established capable of capturing such trends at the necessary level of detail. This system is anticipated to improve the knowledge base for the development of appropriate prevention, education and treatment strategies.

Similar to the situation in Australia, new forms of ATS have also been reported from New Zealand, including the importation of liquid MDMA base from the Netherlands via France, and of crystal methamphetamine ("ice") from Malaysia. In addition, increasing demand is reported for a pure form of methamphetamine powder, similar to "ice" but not in crystal form, known locally as "Pure", "P" or "Burn". The powder is usually smoked, again similar to "ice". These and other forms contributed to high and rising levels of ATS abuse are reflected in annual prevalence estimates (general population, age 15-64) of 3.4% and 2.3% for amphetamines and ecstasy, respectively. For ecstasy, annual prevalence has more than doubled in just three years, from 1% in 1998 to 2.3% in 2001. Demand for ATS is met by a strongly increasing domestic ATS production, all across the country, and increased trafficking of methamphetamine from South-East Asia. The number of clandestine ATS laboratory seizures in New Zealand rose from one in 1998, to 39 in 2001. 95% of all clandestine laboratories dismantled in 2001 manufactured methamphetamine, with the rest manufacturing ecstasy.

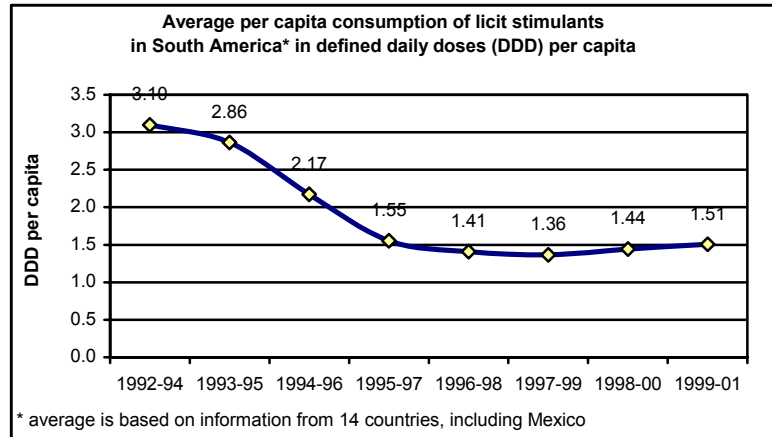
## **8.2. Africa and South America**

The ATS phenomenon in Africa and South America is still in an early stage of evolution. Licit oversupply and parallel distribution systems are the main sources for these unregulated markets. While there are individual characteristics for each market, what they have in common is the lack of specific information on the different products available and their sources, and why, exactly, they are abused.

For years, African countries have reported high or increasing levels of abuse of ATS. However, the extent and specific nature of abuse is poorly understood. Several markets appear to co-exist: legitimate, parallel (or grey), and an as yet negligible clandestine market. Clandestine ATS manufacture is limited to a few cases in a few countries, such as Egypt and South Africa. Across Africa, unregulated use of pharmaceuticals containing ATS, supplied via parallel distribution systems, appears to account for the

major market share. ATS have also apparently played a major role in the many armed conflicts across the continent, in particular the civil war in Sierra Leone.

In South America, until very recently, oversupply of ATS from legitimate sources has fed a market for those drugs, especially for purposes of weight loss (due to the anorectic effects of many ATS). Targeted efforts to better understand and control this market appear to be showing some sign of success, especially in Argentina, Chile, and Brazil.



**Figure 109**

Source: INCB, 2002 *Psychotropic Substances*, and previous years.

Unfortunately, there are now indications that the market is moving from licit oversupply towards the next phase, clandestine manufacture: following an isolated case in Brazil in the mid-1990s, clandestine ecstasy laboratories have now been also dismantled in Colombia. There is as yet little detailed information on the illicit ATS problem in South America, but emergence of any kind of problem. This is a development that may have been delayed by the ready availability of another stimulant, cocaine, throughout the sub-continent.



## **PART 3: FACING THE THREAT**





## Facing the threat

Considering current lifestyles, with their emphasis on performance and pleasure, and the use of illicit drugs to help achieve goals, there is a continuing demand for ATS, and expansion of the market. Following current dynamic trends, that market will incorporate new users in countries previously unaffected by the problem, and be characterized by the introduction of new products in existing markets, especially diversification towards new drug combinations sold as ecstasy.

More and more people are placing themselves at risk from the health hazards associated with ATS. Yet, hazards are either not recognized, or they are ignored, by users. In particular, there is little perception amongst users of the hazards associated with, and the negative impact of, ecstasy use. There are serious concerns about the long-term neurotoxicity of the substance: the dose-dependent nature of the mental deficits associated with MDMA use has been confirmed in larger samples of users; the potential for today's ecstasy users suffering from the effects of early decline in memory and mental function is real. At the same time, health risks are increasing because of the growing range and combination of drugs sold as ecstasy. Negative effects subsequent to the use of ecstasy, but also other ATS, are therefore not necessarily the side effects of one substance alone. Challenges to prevention and treatment are also presented by amphetamine and methamphetamine because of the availability of different forms, different patterns of abuse, and sometimes significantly different and specific user populations.

On the supply side, market pressures and opportunities, such as access to chemical starting materials, or law enforcement attention, continue to determine specific regional trends in clandestine ATS manufacture. Although demand is an important factor, amphetamine and methamphetamine, which were the first targets for clandestine synthesis, continue to account for the bulk of production. In attempts to maximize profits, clandestine operators are increasingly relying on the design of specific products to meet demand. There are few signs of diversification towards the development of specific designer ATS with closely related chemical structures, and with a requirement for new precursor chemicals not already under national or international control, as anticipated in the mid-1990's. Instead, there is diversification in the form of mixtures and combinations sold to mimic the effects of ATS, even though some may contain completely unrelated drugs. Products and doses can be, and are, tailored to meet the needs of specific consumer markets or groups.

With that understanding, tackling the ATS problem on both the demand and the supply sides in a comprehensive and pro-active manner needs strong political commitment. First and foremost, however, better information is required: the data on manufacture, trafficking and abuse of ATS are still full of gaps, especially for countries in Africa and Latin America. Systematic investigations of the way that attitudes and perspectives of users, especially young people, are affected by social and economic circumstances, and more detailed examinations of the complex interplay between demand for and supply of ATS and how that relates to different cultural contexts are also needed.

In view of the dimensions of ATS use by young people and certain occupational groups, more systematic research into the (long-term) health hazards of ATS use will also be one of the most important and challenging areas of future work. Controlled epidemiological studies to establish the prevalence of harms and quantify the risks of ATS use, using, for example, emergency room attendances as a means of monitoring the prevalence of adverse effects and identifying emerging problems, will contribute to increasing the currently limited capacity for analysis of ATS health hazards. Use of drug testing laboratory data will provide a better understanding of the range of products available on the illicit market. Findings will contribute to improving the design of health education and prevention programmes, as well as treatment services, which meet the needs of different types of ATS users. But such findings are also crucial for an assessment of the wider health and social implications of specific consumption patterns of ATS, now and for the future.

As importantly, further work is required to raise awareness of the added health risk associated with the drug combinations (mixtures) sold as "ecstasy" on the streets, or resulting from patterns of polydrug use, frequently encountered among ATS users. Success will therefore also depend upon early warning mechanisms and the rapid and global dissemination of information gathered on new drugs, drug combinations, or patterns of use.

In view of the widespread availability of ATS and their integration into the lifestyle of certain population groups (e.g., young people, truck drivers, fishermen, sex workers), prevention and treatment programmes tailored to the specifics of the phenomenon, and integrated into the wider concept of health promotion, should be considered key elements in any approach or strategy to reduce demand, and minimize health risks. Whatever the specific approach, it will also be essential to develop credible arguments and a convincing message to heighten the perception amongst users of the negative impact of use of ATS.

At the same time, Governments need to develop also their supply reduction programmes for ATS, or demand reduction initiatives will not work effectively. Presently, law enforcement is not adequately equipped to deal with the new challenges posed by the ATS problem. Governments therefore need to apply new anti-trafficking strategies, and intelligence skills and tools, to complement those already used to counteract cocaine and heroin trafficking. In particular, the challenge of identifying clandestine laboratories needs to be addressed urgently, because it is the mobility of such laboratories that gives clandestine operators a critical edge today. It is in that connection that strengthened efforts are also required for the control of precursor chemicals, one of the most effective means of limiting ATS supply. Interdiction successes, complemented by regulatory efforts to prevent diversion of chemicals into the hands of traffickers, are a powerful reminder in this regard. International initiatives aimed at identifying suspicious shipments of precursors, and preventing their diversion, such as Project Prism, have started to show first and promising successes. Full and active support to such initiatives is therefore essential.

By strengthening and linking up existing efforts, together, society can put in place the systems and procedures to move forward in tackling the problem, and thereby overcome the threat of ATS.