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Methamphetamine

A European Union perspective in the global context

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Introduction

This publication is the first in a series dedicated to prevalent illicit synthetic stimulant drugs, also known as amphetamine-type stimulants (ATS). The ATS category is made up of two groups of substances:

- the 'amphetamines', which includes amphetamine, methamphetamine and related substances such as fenetylline, methylphenidate, phenmetrazine, cathinone, etc.;
- the 'ecstasy-type' drugs (MDMA and its close relatives MDA and MDEA).

This study focuses on the supply and use of methamphetamine in Europe, set in a global context. Amphetamine and ecstasy will be addressed in future publications in the series.

Methamphetamine is probably the most widely consumed synthetic stimulant in the world. In many countries across the globe it is reportedly the second most prevalent illicit drug after cannabis. Its prevalence is a result of both historical and recent factors. From its initial synthesis from ephedrine in 1919, methamphetamine use has evolved over the years. Originally it was a legal, experimental substance used as a medicine; it was then used as a stimulant and performance-enhancer by fighters in World War II; in the late 1940s it was a licit product of mass consumption and a widely prescribed medication; and since the 1970s it has been an illicitly used and produced drug that has gained dramatically in popularity in some parts of the world since the 1990s.

Globally today, methamphetamine is associated with significant public health, social and security problems. These are especially visible in North America and Asia. Moreover, the use of the drug is also spreading to new areas, notably in the southern hemisphere and to some developing and transitional countries.

Although methamphetamine use remains limited in Europe as a whole, especially in comparison to other stimulants like cocaine and amphetamine, it is the cause of significant harm in some Member States. In the Czech Republic it is the most used illicit drug after cannabis. Since the late 1990s, methamphetamine problems have also grown in the Slovak Republic and the drug is now responsible for an important component of the country's drug problem. Some limited diffusion may also be occurring in other countries in Central and Eastern Europe. Moreover, large seizures in recent years in the Nordic and neighbouring countries suggest that methamphetamine is increasingly available in these countries and may to some extent be replacing amphetamine in the stimulant market. This, combined with the relative ease with which the drug can be produced, and some evidence of growing methamphetamine production outside the areas in which it has traditionally been found, raises concerns that future supply-driven diffusion cannot be ruled out. Thus, monitoring developments in the use or supply of this drug remains an important concern for both Europol and the EMCDDA.

When considering the potential implications of any diffusion of methamphetamine use across Europe, it is important to note that users may find the effects of amphetamine and methamphetamine practically indistinguishable. This fact may facilitate the spread of methamphetamine in markets where amphetamine is currently the stimulant of choice, such as

Finland, Norway and Sweden. Outside of Europe, the smoking of methamphetamine and crystalline methamphetamine in particular, is a behaviour highly associated with negative public health implications. This underscores the need for careful monitoring of the availability, characteristics, and modes of use of different stimulant drugs across Europe and is one reason why the EMCDDA and Europol have selected methamphetamine as the first synthetic stimulant to be covered in their series of joint publications.

This report provides a condensed review of key issues relevant to understanding how Europe stands vis-à-vis the global methamphetamine problem today. At various points in the document, background information on the chemistry of methamphetamine, production methods and their specificities, as well as key European figures are provided.

Methamphetamine

Methamphetamine is a synthetic substance that acts as a stimulant of the central nervous system, and is closely related to amphetamine. Methamphetamine base is a colourless volatile oil, insoluble in water. The most common salt is hydrochloride, which occurs as a white or off-white powder or as crystals soluble in water. Illicit products mostly consist of powders, but the pure crystalline hydrochloride, sometimes referred to as 'ice', may also be found.

'Street' terms for methamphetamine include speed, crank, meth, crystal meth, ice, Pervitin, yaba and shabu (some countries in the Far East, especially Thailand, the Philippines and Japan).

Methamphetamine may be ingested, snorted and, less commonly, injected or smoked. Unlike the sulfate salt of amphetamine, methamphetamine hydrochloride, particularly the crystalline form, is sufficiently volatile to be smoked. When smoked, it reaches the brain much more rapidly and this mode of use is particularly associated with a high risk of producing dependence and health problems. Injection of methamphetamine carries with it not only a high risk of developing dependence and experiencing health problems but also the same viral infection hazards (e.g. HIV and hepatitis) as are found with the injection of other drugs.

Although methamphetamine is a more potent CNS-stimulant than amphetamine, in uncontrolled situations the effects are usually difficult to distinguish. It is important to note here that there is a large variation in reported purities of these stimulants across Europe, and other factors such as the acidity of an individual's urine which will effect the rate the drug is metabolised in the body. Methamphetamine increases the activity of the noradrenergic and dopamine neurotransmitter systems. The *S*-isomer has greater activity than the *R*-isomer. Fatalities directly attributed to methamphetamine are rare, but acute intoxication causes serious cardiovascular disturbances as well as behavioural problems, including paranoia and violence. Chronic use of methamphetamine causes neurochemical and neuroanatomical changes. The symptoms of dependence include paranoid, tactile and other hallucinations. These effects may outlast drug use, although they usually resolve eventually.

Although it has occasional therapeutic uses, most of the methamphetamine available globally is manufactured illicitly. Methamphetamine is under international control. The *S*-enantiomer is listed in Schedule II of the United Nations 1971 Convention on Psychotropic Substances. The racemate (a 50:50 mixture of the *R*- and *S*-stereoisomers) is also listed in the same Schedule, but the *R*-enantiomer is not separately identified in the Convention.

Source: EMCDDA (2007–08), Drug profiles, European Monitoring Centre for Drugs and Drug Addiction, Lisbon (http://www.emcdda.europa.eu/publications/drug-profiles); Europol.

Analysis begins with a summary of the history of methamphetamine in Europe, set in a global context. There then follows an outline of the situation regarding current methamphetamine trends worldwide, and recent changes in the international trafficking patterns of indispensable precursor chemicals.

The publication then focuses on Europe. The latest trends in the use, manufacture and trafficking of methamphetamine within Europe are examined, and the role of Europe in the international trade of precursors is described. Finally, the report provides an overview of initiatives at the international and European Union levels to address methamphetamine production and precursor trafficking and their consequences.

Methamphetamine in Europe at a glance

- Among European countries, the highest prevalence of methamphetamine is in the Czech Republic and the Slovak Republic, although many other countries sporadically report its availability, use or seizure.
- Available national estimates of problem methamphetamine use: between 2.8 to 2.9 cases per 1 000 people aged 15–64 years in the Czech Republic; between 1.5 to 4 cases per 1 000 people aged 15–64 years in the Slovak Republic.
- Almost 4 500 seizures were reported by 17 countries in 2007, resulting in the interception of about 340 kilograms of methamphetamine.
- Countries reporting the largest number of seizures (in descending order): Norway, Germany, Slovak Republic, Sweden and Latvia.
- Countries reporting the largest quantities seized (in descending order): Norway, Sweden, Lithuania, Finland and Latvia.
- Typical (modal) price of methamphetamine: from EUR 8.5 to EUR 36.5 per gram.
- Typical (modal) purity of methamphetamine varies considerably: from 3 % to 79 %.
- Common adulterants or cutting agents include caffeine, glucose and other sugars and, less commonly, ephedrine or ketamine. Methamphetamine has also been found as an adulterant in ecstasy tablets.

Source: EMCDDA, 2009 and 2007–08 (2007 data unless otherwise indicated).

Methamphetamine: The global context

Historical background

Methamphetamine was first synthesized from ephedrine in Japan in 1919 by Akira Ogata. Ephedrine had been isolated from the *Ephedra vulgaris* ([1]) plant by another Japanese chemist, Nagayoshi Nagai, some years earlier (Zábranský, 2007; Ogata, 1919). The drug was patented in 1920, then marketed in hydrochloride form by the Burroughs Wellcome company under the brand name 'Methedrine' (Logan, 2002).

Figure 1. *Ephedra vulgaris*



In the 1920s and 1930s, the medical and paramedical use of methamphetamine and amphetamine (Benzedrine, Dexedrine) increased in Europe and in the West in general. For instance, amphetamine was prescribed for depression and other mood disorders in the United Kingdom, but was also sought out for its stimulant effects (by students, for instance). Problematic side effects of chronic and non-medical use of amphetamine, including hypertension, depression, dependence, and psychiatric disturbances have been documented since the late 1930s (ACMD, 2005). Nevertheless, both amphetamine and methamphetamine enjoyed widespread acceptance as safe and beneficial drugs among the medical profession and the public at large, well into the 1960s.

In 1938, the Berlin-based Temmler pharmaceutical company started production of methamphetamine under the brand name 'Pervitin' (Griffiths et al., 2008). During World War II, Pervitin was widely distributed to German troops to enhance performance and increase concentration, and became known in Germany as 'Pilot's chocolate', and 'Pilot's salt'. The drug also gained popularity among German civilians (UNODC, 2003; Zábranský, 2007).

In Japan, methamphetamine was first manufactured in 1941. It was supplied to Japanese soldiers, especially pilots, and to workers in key war industries under the brand name 'Philopon' from 1942 onwards. Methamphetamine use spread in the Japanese population, who dubbed the drug 'shabu' (Tamura, 1989). The name is still used today for illicit methamphetamine tablets in parts of south-east Asia. In the Allied camp, although millions of methamphetamine tablets were supplied to US military personnel (AMCD, 2005), the stimulant given to soldiers was more commonly

([1]) Chinese herbalists have used 'Ma Huang' (*Ephedra vulgaris*) from the first century AD, in particular to treat asthmatic conditions (AMCD, 2005).

amphetamine, which again also resulted in some subsequent post-war diffusion of use to civilian populations (Zábranský, 2007) ([2]).

Fuelled by the sale of the enormous war surplus of (meth)amphetamine to the general population, this initial wave of synthetic stimulant use continued into the late 1940s. There was widespread medical and non-medical use of amphetamine in Europe (especially in Sweden and the United Kingdom), amphetamine and methamphetamine in North America (notably in the United States), and methamphetamine in the Far East (specifically Japan) (Zábranský, 2007; AMCD, 2005; UNODC, 2003; Case, 2005; Tamura, 1989).

Although initial restrictions on the prescription and sale of amphetamine and methamphetamine products (tablets, ampoules, inhalers) were imposed in all three regions in the early 1950s, demand remained high, and (meth)amphetamine use continued in the 1950s and 1960s (AMCD, 2005; Tamura, 1989), especially among women (Case, 2005) ([3]).

The overwhelming majority of the (meth)amphetamine available at that time was manufactured legally by pharmaceutical companies and prescribed by medical practitioners for a wide variety of disorders, including depression, attention deficit disorder, alcoholism, obesity and anorexia (AMCD, 2005; Case, 2005; NDLERF, 2005). However, during the 1950s in Japan and 1960s in North America and Europe, supply channels began to shift and illicit sources of supply gradually emerged, probably responding to the increasing restrictions placed on the medical use of these drugs (Tamura, 1989; Case, 2005; AMCD, 2005a).

These supply channels reportedly took three forms — illegal distribution or diversion of domestically manufactured pharmaceutical products; illegal importation of products manufactured abroad; and illicit domestic manufacture (Tamura, 1989; AMCD, 2005; Case, 2005; ODCCP, 2001) ([4]). In some instances, pharmaceutical firms supplied such channels (Tamura, 1989), while in other cases criminal organisations became involved, such as Japanese gangsters in the 1950s and US biker gangs in the 1960s (Tamura, 1989; Case, 2005).

In Europe, the United Kingdom experienced increasing misuse of ATS. From the 1950s, amphetamine obtained from licit medical prescription was diverted into the illicit market. By the 1960s, this trend reached epidemic proportions in some cities (ACMD, 2005). From 1968, prescribed methamphetamine contained in 'Methedrine' brand capsules that were legally used in the treatment of cocaine addicts, began to be diverted into the illegal market, causing a localised epidemic of intravenous methamphetamine use. Over time, methamphetamine and amphetamine diverted from therapeutic use were replaced on the market by illicitly produced amphetamine

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([2]) An estimated 200 million amphetamine and methamphetamine tablets were distributed to US troops during World War II, while an estimated 72 million amphetamine tablets were supplied to British soldiers (AMCD, 2005).

([3]) According to Case (2005), most of the 31 million (meth)amphetamine prescriptions written in the United States in 1967 were issued to women.

([4]) The ODCCP (2001) notes that starting in the 1950s the illicit manufacture of methamphetamine was gradually displaced from Japan to Korea, the Philippines and later China, although methamphetamine was still manufactured legally in Japan at that time.

sulfate and by the 1980s, methamphetamine had virtually disappeared from the UK's illicit drugs market (ACMD, 2005) ([5]).

This pattern was common for most European countries where amphetamine, joined later by MDMA, have been the main ATS drugs used for a considerable period of time. A notable exception here is the Czech Republic where the illegal production and use of methamphetamine has been an important element in the country's drug problem since the 1970s. At this time, a simple formula for methamphetamine production, known locally as Pervitin, was rediscovered, probably in Prague but then quickly spreading to the Czech, but not Slovak, parts of the country. Production was carried out usually by small groups of user-producers and was facilitated by the existence of the VUAB factory, which was an important manufacturer of ephedrine for the global licit market. Some of this output was diverted into the illicit market. Other pharmaceuticals that contain ephedrine or pseudo-ephedrine, such as 'Solutan' (later 'Modafen' and 'Paralen plus'), were widely available and were used in the production of methamphetamine using the 'reduction method', together with other freely available chemicals.

Although the VUAB factory closed down its production in 2003 (Griffiths et al., 2008), illicit (but usually small-scale) methamphetamine production is still common in the Czech Republic.

Global methamphetamine production

The UNODC conservatively estimated in its World Drug Report 2008 that there were 14 million amphetamines users worldwide in 2006, approximately 55 % of whom would live in East and south-east Asia where the ATS most used is, overwhelmingly, methamphetamine (UNODC, 2008a) ([6]). The global production of ATS is estimated to have reached 494 tonnes in 2006, including 392 tonnes of amphetamines, of which 266 tonnes was methamphetamine. Global methamphetamine production levels are reported to have fallen slightly in 2006 compared to 2005 (278 tonnes) and 2004 (291 tonnes) (UNODC, 2008a) ([7]).

Meanwhile, the number of ATS manufacturing facilities detected worldwide, including methamphetamine labs, has dropped markedly from 18 639 in 2004 to 8 245 in 2006. But this is attributed to a rapid decline in the detection of small-scale methamphetamine labs in the United States, which peaked in 2004 (UNODC, 2008b), and the UNODC warns that illicit methamphetamine production has not declined globally because it is 'increasingly manufactured in super or mega-laboratories' (UNODC, 2008a, p. 125) ([8]).

([5]) Nonetheless, in recent years methamphetamine has become more prevalent in the United Kingdom, with reported incidents of production leading to methamphetamine being upgraded to a class 'A' drug.

([6]) 2006 is the last year for which global statistics were available at the time of writing this report.

([7]) The UNODC reports that these are 'point estimates' of 2006 global outputs based on the following corrected ranges — ATS: between 421 to 574 tonnes; amphetamines: between 320 and 469 tonnes; no range given for methamphetamine (ranges not corrected for propagation of error are much wider) (UNODC, 2008a).

([8]) However, in 2009 methamphetamine manufacturing in small-scale labs from the pseudo-ephedrine contained in over-the-counter medicines seems to be making a come-back in some areas of the United States (Young, 2009).

([9]) However, this is not the case for BMK (P-2-P), a precursor frequently used to make amphetamine illicitly but which may be also used for methamphetamine, for which there are only limited licit applications in the European Union (mostly to manufacture medical amphetamine and methamphetamine) (Krawczyk et al., 2005).

Some specificities of methamphetamine production

Globally, illicit methamphetamine is most frequently synthesized from the precursors ephedrine and pseudo-ephedrine. It may also be manufactured from 1-phenyl-2-propapone, also known as BMK (Benzyl Methyl Ketone) and P-2-P and phenylacetone, although BMK is more commonly used to manufacture amphetamine. Amphetamine and methamphetamine are rarely trafficked on intercontinental routes, unlike some of their precursors or plant-based illicit drugs like heroin and cocaine. Indeed, methamphetamine tends to be produced in or near the consumer markets, greatly lowering the risks associated with long-distance transportation and multiple border crossings. This is due to a combination of factors, outlined below.

Methamphetamine (and ATS generally) production is not labour-intensive, it is easily hidden and protection requirements are much lower than in the case of plant-based drugs, which require work and attention over long growing cycles on large tracts of land that must be protected against thieves and law enforcement.

Both ephedrine and pseudo-ephedrine are cheaply available worldwide, although enhanced control efforts in recent years seem to have made them somewhat harder to obtain. Because these precursors have widespread legal uses, especially by the pharmaceutical industry, very large amounts of them are traded worldwide every year, which complicates monitoring and detection efforts while making it easier to import them for illicit ends (9). This is also true for the other chemicals that are needed to produce methamphetamine (solvents, reagents, etc.), most of which have a wide variety of licit applications and are therefore difficult to monitor.

In addition, a relatively small (and easily concealed) quantity of precursor is enough to manufacture sizeable — and valuable — amounts of methamphetamine. A kilogram of BMK may yield as much as 1.25 kg of methamphetamine (Krawczyk, 2005). In 2005, the mean price of a kilo of BMK was reported to be EUR 900 on the black market in Europe (EUR 100 if bought legitimately) (Krawczyk et al., 2005), while the mean retail price of a gram of methamphetamine in, for instance, the Czech Republic, was reported at EUR 35 (EMCDDA, 2007). If retailed entirely in one-gram doses of pure methamphetamine, a kilo of the drug could generate a gross earning in excess of EUR 43 750. This is a theoretical calculation since in the Czech Republic, methamphetamine production is usually conducted on a small scale and the mean purity at retail level was reported as 63 % in 2005 (EMCDDA, 2007), nonetheless, it does illustrate how profitable illicit methamphetamine manufacturing can be.

The methamphetamine manufacturing process is flexible, since it is simple to synthesize the drug from a range of precursors and other chemicals through a variety of basic, often one-step, chemical processes. If one chemical is lacking, another can easily be used instead. The scale of production is also flexible, since the drug may be (and is) manufactured in facilities ranging from 'kitchen labs' using rudimentary know-how and technology and operated by the users themselves, to (increasingly) industrial premises equipped with the latest technology and run by organised criminal gangs (ODCCP, 2001; NDLERF, 2005; UNODC, 2008a).

A final factor is that methamphetamine labs can be set up rapidly to supply a specific order and taken apart equally quickly to avoid detection. The equipment can easily be stored in a car, van or lorry and set up at another location.

Methamphetamine is predominantly illicitly produced near its main consumer markets in east and south-east Asia, North America, and Oceania (UNODC, 2008a). Nevertheless, in recent years methamphetamine production and use have spread to new regions, notably South Africa (UNODC, 2008b, 2008c). Although these estimates should be treated with caution, they do suggest that methamphetamine is probably the most widely manufactured and used illicit synthetic stimulant in the world.

The methamphetamine precursors

Although the trade in methamphetamine rarely takes place across long distances (see box on page 11), the situation is quite different when it comes to its main precursors, ephedrine, pseudo-ephedrine and, to a lesser extent, BMK.

Commercial ephedrine and pseudo-ephedrine are currently produced by extraction from the ephedra plant, or by chemical synthesis. All three substances in bulk form are placed under international control and listed in Table I of the United Nations Convention against Illicit Traffic in Narcotic Drugs and Psychotropic Substances of 1988. However, the control regime applied to pharmaceutical preparations containing ephedrine and pseudo-ephedrine (e.g. cold remedies in tablet form) is not as strict (UNODC, 2008b).

All three chemicals are produced and traded globally for legitimate ends. However, the global legitimate trade of BMK is more restricted compared with ephedrine and pseudo-ephedrine, reflecting the fact that BMK has few legitimate applications. In 2007, in data reported to the INCB by 18 UN Member States, world legitimate requirements of BMK amounted to a total of 164.5 tonnes. In contrast, 80 countries reported legitimate requirements of bulk ephedrine totalling 827 tonnes and 71 countries reported legitimate requirements of bulk pseudo-ephedrine totalling 1 315 tonnes (INCB, 2009).

As far as illicit uses are concerned, it should be noted that, at world level since the 1980s, BMK has been gradually replaced by ephedrine and pseudo-ephedrine as the methamphetamine precursor of choice, and is now mainly associated with the illicit manufacture of amphetamine in Europe (UNODC, 2008b). However, some BMK is still used to synthesize methamphetamine in Europe (Europol, 2007e) and possibly elsewhere, since seizures or illicit manufacture of BMK outside Europe are reported to be increasing (UNODC, 2008b).

Although it is quite difficult to ascertain which countries are the main manufacturers of the three precursors, and therefore potential sources of raw material for illicit production, countries that manufacture BMK include China, India, Japan, the United States and the Russian Federation (Krawczyk et al., 2005). Furthermore, China, Germany and India are among the world's largest manufacturers of ephedrine and pseudo-ephedrine; and China and India are the two countries most often reported as sources of seized illicit shipments of ephedrine and pseudo-ephedrine (UNODC, 2008b; INCB, 2009). The illicit BMK found in Europe originates mostly from the Russian Federation.

Illicit methamphetamine production is now reported to be better controlled by regulatory and law enforcement bodies due to the implementation of precursor control and prevention programmes. These have created more effective hindrances to the illegal diversion of precursors (at least for small-scale methamphetamine producers) (UNODC, 2008b), as has an increasing awareness of the risks inherent to ATS use (UNODC, 2008a).

Nevertheless, in some regions such as North America producers have adapted by substituting controlled precursors with non-scheduled chemicals, such as N-acetylpseudoephedrine acetate, natural ephedra plant extracts and above all pharmaceutical preparations containing ephedrine and especially pseudo-ephedrine (UNODC, 2008b).

Similarly, trafficking routes have adapted in order to circumvent law enforcement and may shift further in future (Chouvy and Meissonnier, 2004; UNODC, 2008b). Recent reporting to the UNODC indicates illegal trafficking of more than 120 tonnes of ephedrine or pseudo-ephedrine through Africa and the Middle East (UNODC, 2008a). Seizures of large amounts of ephedra powder and plants, which are not placed under international control but whose trade is restricted in several countries, have been carried out in Europe in 2005–08 (UNODC, 2008b; INCB, 2009). Additionally, South and Central American countries reported increased attempted diversions of large amounts of pseudo-ephedrine during 2006–08. Recent illustrations include a significant seizure of 5 million pseudo-ephedrine tablets (reportedly shipped from Hong Kong) in Guatemala in 2008 (UNODC, 2008b), and the confiscation of a total of 1.2 tonnes of ephedrine in Argentina during the same year (INCB, 2009). In both cases, most of the seized precursors were probably intended for methamphetamine manufacturing in Mexico, although they could also have been for a methamphetamine lab that was found in Argentina in July 2008 (INCB, 2009; UNODC, 2008a). The shift in the international trafficking routes for methamphetamine precursors also has consequences for Europe. These are reviewed in the next section.

Methamphetamine issues in the European context

Europe is a producer of methamphetamine and of two of its three main precursors. It is also a consumer of the drug and a transit territory for international shipments of precursors from Asia destined for North America, especially Mexico. However, the social and health problems posed by the drug are not found on the same scale as those in North America and Asia. Two factors are important here. First, significant methamphetamine use remains limited in Europe to a few countries in central Europe, although methamphetamine may now be replacing amphetamine on the illicit market in some Nordic and Baltic countries. Second, the health impact of methamphetamine use is likely to be influenced by the route of administration adopted. The smoking of the drug, especially in its crystalline form, is likely to be particularly worrying from a public health perspective. However, in contrast to other parts of the world, this form of use of the drug is not currently common among European consumers.

Caution is required in any assessment of methamphetamine trends since sensitive data on emerging drug use patterns are difficult to collect and analysis is complicated, especially when demand-side and supply-side data do not substantiate each other. However, even if the current use of methamphetamine remains very limited in most of Europe, sufficient information does exist to suggest that we cannot be complacent about the possibility of the future spread of this drug. Although overall the indicators in place do not show an increase in methamphetamine use, some supply-side data suggest that methamphetamine is gradually becoming more available.

In some countries in Eastern Europe, prevalence data also suggest that the use of the substance might be spreading. In the Slovak Republic methamphetamine use and problems have increased dramatically since 2002 and now the drug is responsible for a significant proportion of treatment demands. Some data also point to increased availability in Hungary, Poland and Germany, although overall levels of use still appear relatively low. In the Czech Republic, some evidence exists to suggest that methamphetamine use may also be diffusing from the stable chronic population into the recreational drug scene. This would be a worrying development and point to potential for wider diffusion. Moreover, in some of the countries neighbouring the EU evidence is emerging that methamphetamine problems may also be growing, especially among young injectors. Recent studies among drug injectors in both the Ukraine and Georgia have found high levels of methamphetamine use and again this phenomenon seems to be a relatively recent development (Booth et al., 2008; Otiashvili et al., 2008).

Problem methamphetamine use

In contrast to other parts of the world, where the use of methamphetamine has increased in recent years, its use in Europe appears limited (Griffiths et al., 2008). Since the early 1970s, its use in Europe has been concentrated in the Czech Republic and, more recently, the Slovak Republic. These are the only two European countries to report recent estimates of problem use of 'Pervitin', as methamphetamine is known there. In 2007, in the Czech Republic there were estimated to be

approximately 20 400–21 400 problem users (2.8 to 2.9 per 1 000 aged 15–64 years), twice the estimated number of problem opioid users; and in the Slovak Republic there were approximately 5 800–15 700 problem users (1.5 to 4.0 cases per 1 000 aged 15–64 years), around 20 % fewer than the estimated number of problem opioid users (EMCDDA, 2009).

In the last five years, the reported demand for treatment related to methamphetamine use has been increasing in both the Czech Republic and the Slovak Republic. Methamphetamine became the primary drug most often reported by those requesting treatment for the first time in the Slovak Republic in 2006, and in 2007 it accounted for 26 % of all drug treatment requests. Use of the drug was not significantly reported in treatment populations before 2000 and methamphetamine problems in the Slovak Republic can be considered a relatively recent development. In the Czech Republic, 61 % of all drug treatment clients report methamphetamine as their primary drug (EMCDDA, 2009) and the drug accounts for around two thirds of estimated problem drug users. Clients in treatment for methamphetamine often report high rates of injecting drug use: 41 % in the Slovak Republic and 82 % in the Czech Republic.

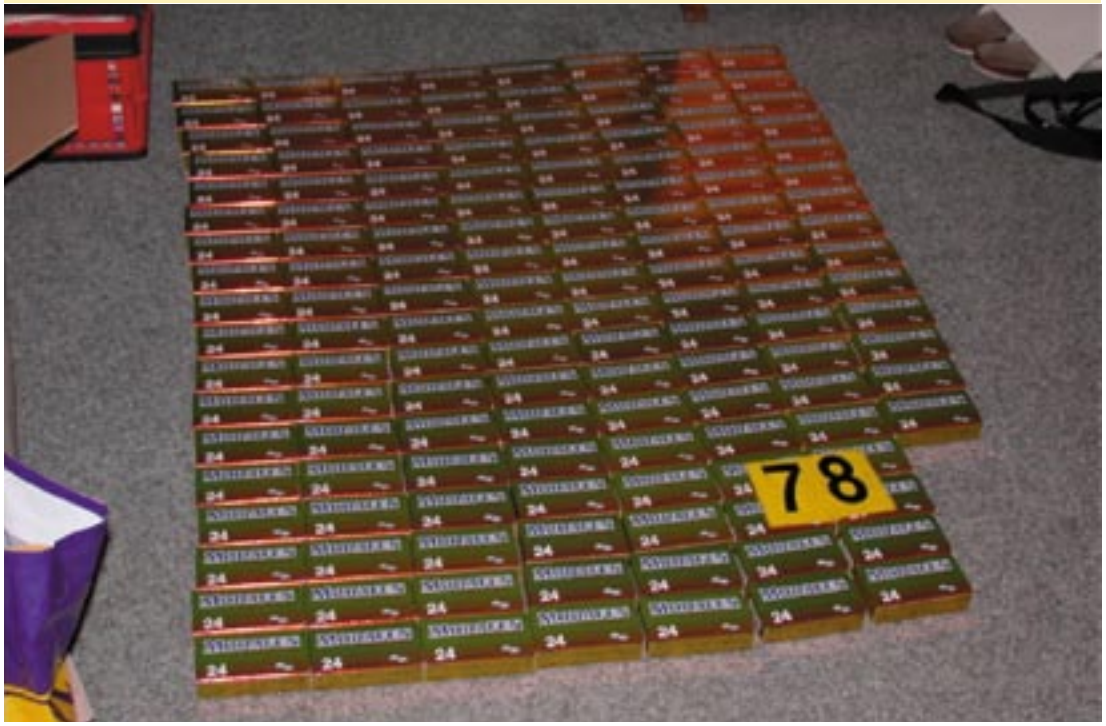
Data on the situation prevailing in the Nordic and Baltic countries are difficult to interpret, especially because users (especially those who inject the drug) may find it difficult to differentiate between methamphetamine and amphetamine, but a number of reports suggest that more methamphetamine is available at retail level now than was previously the case. Overall, data on drug consumption in this area remains weak, making trends difficult to interpret. However, some data does point to increased use of the drug. For instance, in Norway, methamphetamine was reported to be a factor in some 10 % of traffic accidents in 2003, while in 2006 it was 20%. Seizures in Nordic countries suggest that methamphetamine may be replacing amphetamine, to some extent, in these markets. This may be a supply-driven change reflecting dynamics in illicit drug production. Many Nordic countries have a long-standing problem with the injecting of amphetamines and the public health implications of any possible substitution of methamphetamine for amphetamine among these populations remain unclear.

As noted already, apart from the Czech and Slovak Republics and possible recent changes in Nordic and Baltic countries, levels of methamphetamine use still remain low overall in Europe. That said, some diffusion in use does now appear to be taking place in some central European countries and some neighbouring countries to the EU report a growing problem with the drug. In western and southern Europe, however, countries report only very limited use of methamphetamine mostly restricted to experimentation in some high-risk populations. The available data do not suggest that the popularity of methamphetamine is increasing or that it is spreading to new populations of users in these countries. It is not clear what factors have impeded the spread of methamphetamine use in many parts of Europe but some studies have reported consumer and market resistance to the drug. It is also possible that a growing cocaine market in many western European countries has limited the potential opportunities for the spread of other stimulants. This conclusion remains speculative, but does point to a pressing need to understand better both the consumer and market factors which may inhibit or encourage the future spread of methamphetamine use in Europe.

Methamphetamine production

Methamphetamine is most commonly produced by the reduction of ephedrine or pseudo-ephedrine, together with the use of other chemicals. Most of these chemicals are readily available household products. In this regard, it is important to note that, following the recent imposition of restrictions on the trade in bulk ephedrine and pseudo-ephedrine, there is a growing trend for illicit methamphetamine manufacturers to obtain these precursors by extraction from some pseudo-ephedrine-based tablets sold as over-the-counter cold remedies. This is especially the case in the Czech Republic ([10]). This trend makes it more difficult for the authorities of the countries concerned to control methamphetamine production effectively.

Figure 2. Seized packages of over-the-counter cold remedies containing pseudo-ephedrine used to manufacture methamphetamine in the Czech Republic (2007)



The synthesis of the precursors with other chemicals into the end-product methamphetamine is relatively simple. However, most methods involve flammable and corrosive chemicals and may therefore cause serious injuries and even death, while producing varying amounts of toxic waste that are often disposed of unsafely and may cause environmental damage (see box on page 17).

([10]) However, a decision by the State Institute for Drug Control of the Czech Republic in May 2009 imposed restrictions on the sale of pseudo-ephedrine containing OTC products. These include prohibiting mail order sales, setting a maximum dose sold per patient per month (1 800 mg of pseudo-ephedrine), and registering sales in a 'central repository of electronic prescriptions' also containing data on patients.

Health and environmental risks posed by illicit methamphetamine production

In all methamphetamine production methods the following three groups of chemicals are present, which may be toxic: solvents; metals and salts; and acids and bases. Contamination by inhalation and skin exposure are the most likely hazards.

Inhaling solvents at low levels of concentration can cause eye, nose and throat irritation, whilst high-concentration inhalation can result in intoxication, loss of consciousness, and liver and kidney impairments.

As most metals and salts are stable solids, the risk of injury by mere exposure is minimal. However if they are present in the air as dust, vapour or fumes they can be extremely corrosive in the presence of moisture. This is especially the case for sodium, potassium or sodium hydroxide. Aluminium hydride presents a risk of fire and explosion.

Acids or bases may be present as volatile gases or liquids, creating a risk for inhalation resulting in eye irritation, inflammation and corneal injury. Inhalation can also cause mucous membrane irritation, chest pain and shortness of breath, and in severe cases bleeding in the lungs. Direct contact can cause severe eye or skin burns.

Where the illicit production of methamphetamine takes place, contamination of the production location is inevitable.

Methamphetamine production is often carried out through one-step reaction methods, resulting in less chemical waste than amphetamine, which involves several steps. Although no data is available on the amount of waste occurring as a result of methamphetamine production in Europe, US federal authorities estimate that the production of 1 kg of methamphetamine results in a total of 3 kg of waste, depending on the skills of the producer. Such waste consists mainly of chemicals, including ether, Freon, acetone, anhydrous ammonia, toluene, sodium hydroxide, sulphuric acid, lithium and red phosphorus (DEA, n.d.). All are toxic and should be disposed of following specific procedures in order to preserve the environment. However, such waste is often dumped in the environment or drained into the sewer, causing environmental pollution. Cleaning up methamphetamine labs or dump sites is a costly and hazardous task (Oregon Department of Health and Human Services, 2005).

There are five known methamphetamine production methods in Europe. The three most common are lithium-ammonia, hypophosphorous acid/iodine and hydriodic acid/red phosphorus. All three are simple, one-step reactions of ephedrine or pseudo-ephedrine carried out using glass or stainless steel equipment. In addition to the precursor (pseudo-)ephedrine, the following chemicals are employed:

- Lithium/ammonia: lithium or sodium metal, ammonia, solvents and hydrochloric acid are needed. There is a danger that hydrogen gas and toxic fumes will be created.
- Hypophosphorous acid/iodine: iodine, hypophosphorous acid, solvents and hydrochloric acid are added.
- Hydriodic acid/red phosphorus: red phosphorus, hydriodic acid, solvents and hydrochloric acid are added. If overheating occurs phosphine will be created, and burning red phosphorus makes it turn into white phosphorus. This method involves corrosive and flammable hazards (Europol, 2007b, 2007c, 2007d).

The hypophosphorous acid/iodine and hydriodic acid/red phosphorus methods are most frequently used for the illicit manufacture of 'Pervitin' in the Czech Republic.

The two remaining methods, the Leuckart method and the reductive amination method, synthesize methamphetamine from BMK and are less frequently used (Europol, 2007d).

All of these methamphetamine production methods strongly depend on the availability of the precursors and the know-how of the producers. It should be noted that whilst the 'red phosphorus' production methods using ephedrine or pseudo-ephedrine are mainly found in the Czech Republic, Slovak Republic, Germany and the Netherlands, methamphetamine seized from Lithuanian organised criminal groups is produced with BMK as the precursor.

In 2006–08 Europe reported to the UNODC the largest increase in detection of methamphetamine-related production sites outside North America, although in 2006 Europe only accounted for an estimated 0.8 % of the quantity of methamphetamine seized in the world (UNODC, 2007). These production sites were mainly located in central and eastern Europe, overwhelmingly in the Czech Republic, and in the Russian Federation ([11]).

However, compared to production in east and south-east Asia, North America and Oceania, much of which is done in large manufacturing facilities, the production of methamphetamine in the Czech Republic is small-scale. Most of it appears to be carried out in so-called 'kitchen labs' (see Figure 3) operated by 'cooperatives' or 'squads' of users for their own consumption (Zábranský, 2007), and they obtain the precursors, especially pseudo-ephedrine, from cold remedies sold without prescription in pharmacies ([12]).

Figure 3. Small-scale methamphetamine production facility set in a garage, Czech Republic (2007)



([11]) The Russian Federation reported the seizure of 137 methamphetamine sites (referred to as 'Pervitin' and 'Ephedron' sites) in 2007; all were kitchen-type labs.

([12]) E-mail from the National Drug Headquarters of the Czech Republic police, 18 March 2009.

According to information received by Europol, in addition to the 'kitchen labs' reported by the Czech Republic, seven methamphetamine production sites were detected in Europe outside the Czech Republic in 2007, with one production site dismantled in Belgium, the Netherlands, Poland and Portugal, and three in Germany.

In 2008, Europol received 483 reports ([13]), and the majority of production sites (457) were so-called 'kitchen labs' reported by the Czech Republic. In addition to the small-scale facilities in the Czech Republic, 26 production sites (11 in Germany, one in Ireland, three in the Netherlands (mid-scale), one in Portugal, four in the Slovak Republic, three in the United Kingdom and three in Poland ([14])) were also reported. In addition, Belgian police found a recipe for large-scale methamphetamine manufacturing when intervening on an amphetamine facility in 2008.

Trafficking in methamphetamine and its precursors

Intra-European trafficking

Europol has identified two main intra-European methamphetamine trafficking routes. On the first route, methamphetamine produced in the Czech Republic is exported by car to bordering countries, especially Germany (mainly Bavaria and Saxony) and the Slovak Republic (see Figure 4).

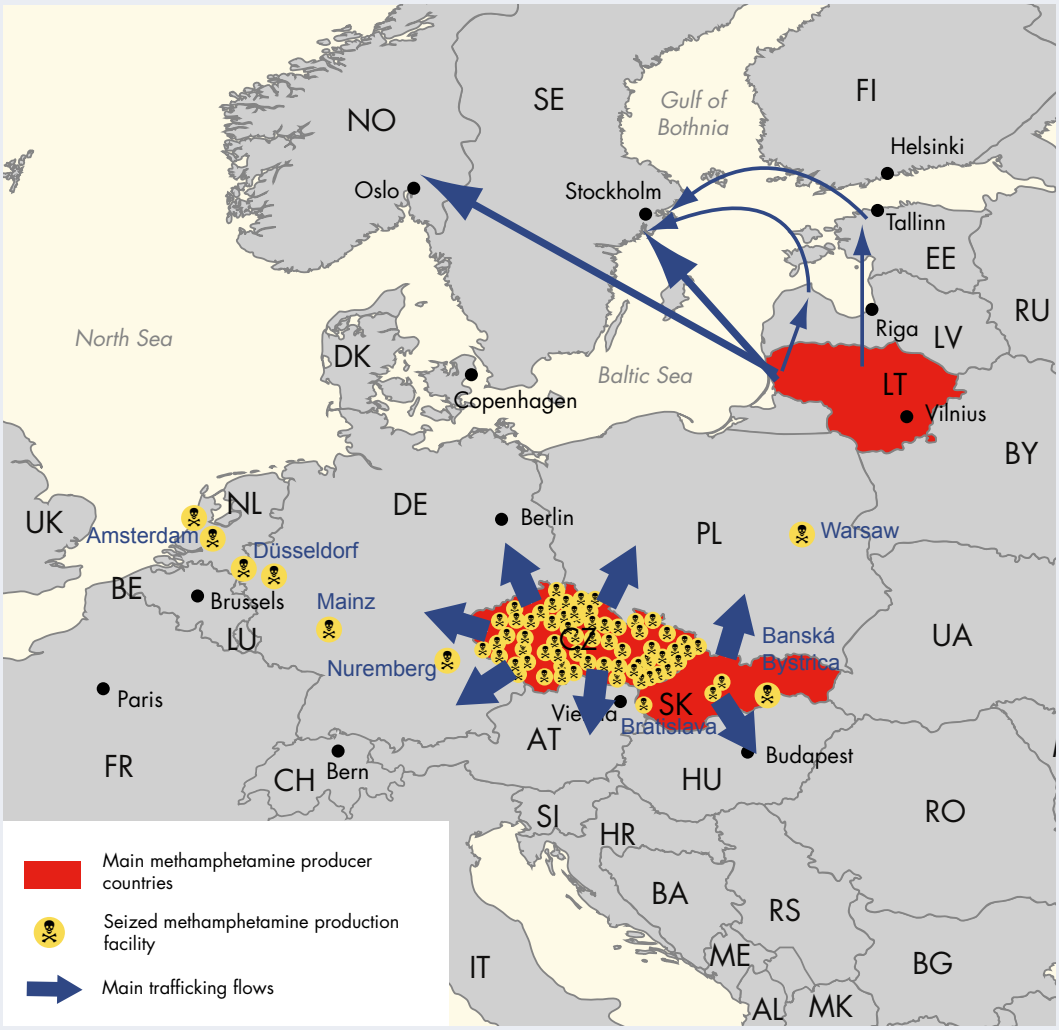
The other route reportedly carries larger quantities of the drug. It links the Baltic States predominantly to Sweden and Norway. Analysis of seizure information from Norway and Sweden has identified a common modus operandi for trafficking significant amounts of methamphetamine of about 10 kg each time, although occasionally the smuggling may involve quantities of up to 50 kg. While both Scandinavian and Lithuanian criminal groups control methamphetamine trafficking to Nordic countries, Lithuanian nationals, using personal vehicles, mainly carry out the smuggling itself. Methamphetamine is usually concealed in custom-made hiding places or in other cavities of the cars and trafficked by regular ferry lines from Lithuanian, Latvian and/or Estonian ports via the Baltic Sea (see Figure 4).

Recent EMCDDA seizure data appear to corroborate the fact that the traffic in methamphetamine across the Baltic Sea involves larger amounts than the cross-border trafficking of Czech-manufactured 'Pervitin' into neighbouring countries, since the quantities reported as seized in 2006 and 2007 in the countries of the 'Baltic Route' (Finland, Latvia, Lithuania, Norway and Sweden) are several times larger than those reported by the Czech Republic and its neighbours (Austria, the Czech Republic, Germany, Hungary, Poland and the Slovak Republic) (see Figure 6).

Outside these two main trafficking hotspots in northern and central Europe, recent developments suggest that some methamphetamine could also be produced in western Europe. For example, in

([13]) Statistical data for 2008 is provisional, as not all Member States have yet provided information to Europol.
([14]) One of the three methamphetamine production sites reported by Poland in 2008 used the red phosphorus production method, whilst the methods of production of the remainder are unknown.

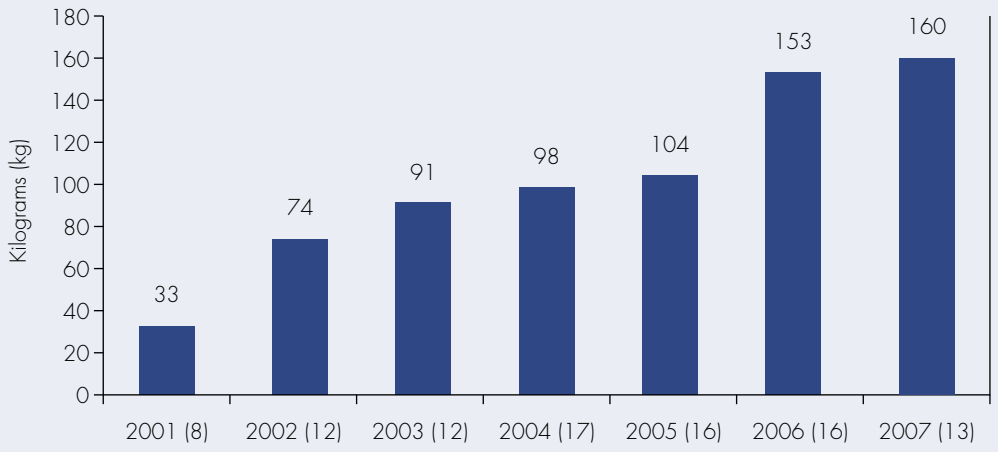
Figure 4. Seized methamphetamine production facilities in 2008 and main trafficking flows



Note: Trafficking flows represented on the map are an attempt to synthesise the analysis of data reported to Europol by Member States of the European Union. Such analyses are based mainly on information related to drug seizures along the trafficking routes, but also on other information mostly from law enforcement. The trafficking routes represented on the map should be considered as indicative rather than accurate descriptions of the main flows.
Source: Reports from EU Member States to Europol.

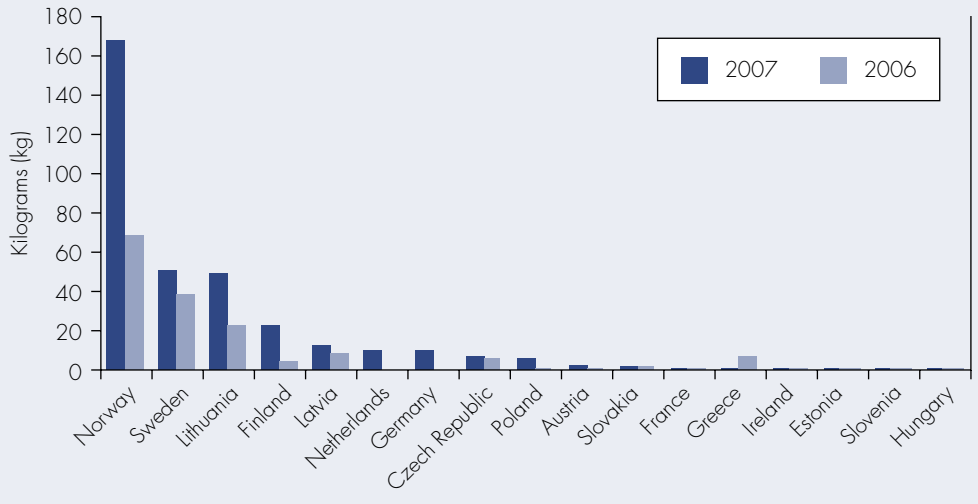
December 2007, Dutch authorities seized one tabletting unit together with 100 kg of MDMA powder, 29 different logo punches and 8 kg of high purity methamphetamine. One of the punches represented a logo rarely found in Europe but frequently found on methamphetamine tablets manufactured in Asia. Another police operation in the Netherlands in February 2008 resulted in the seizure of a tabletting unit, MDMA, 2C-B and a small amount of methamphetamine (Europol, 2008b).

Figure 5. Trend in amounts of methamphetamine seized reported to the EMCDDA 2001–06 and Europol 2007



Note: The number in parentheses shown after each year is the number of countries reporting seizures above 0 grams.
Source: Table SZR-18, Quantities (kg) of methamphetamine seized — 2001 to 2006, EMCDDA Statistical bulletin; Europol 2008a.

Figure 6. Quantities of methamphetamine seized (kg) reported to the EMCDDA 2006–07



Source: Reitox national focal points.

Trafficking of precursors

Only around 6 % of global ephedrine seizures are made in Europe. However, a relatively new development has been the export, transhipment and diversion of ephedrine or pseudo-ephedrine. India is a major source, and consignments have been trafficked from/via various regions including the Balkans, Iran, the Philippines, Pakistan, Syria, the United Arab Emirates and Africa.

The bulk shipments that cross through the European Union, mainly via Amsterdam, Brussels, Frankfurt am Main, London and Paris airports, are destined for Mexico. Some cases of exchange of ephedrine or pseudo-ephedrine for cocaine by criminal groups have been identified (Europol, 2008a). In 2006–07 the Netherlands reported to Europol an attempted diversion amounting to more than 200 tonnes of ephedrine and pseudo-ephedrine, while German authorities seized 14.5 tonnes of ephedrine and more than 1.6 million pseudo-ephedrine tablets in 2008.

In addition, large amounts of ephedra extracts have been confiscated in Europe in recent years. For instance, 800 tonnes of diverted ephedra extracts were seized in Germany in 2005–06, while a seizure of 94 tonnes was performed in the Netherlands. In January 2007, Luxembourg reported the seizure of 2 tonnes of ephedra en route from Germany to Mexico (UNODC, 2008b).

A shift in BMK trafficking in Europe seems to have taken place since the mid-2000s. Indeed, before law enforcement action against some precursor traffickers was taken in 2004, almost all of the BMK used illicitly in Europe came from China. At present, illicit BMK seems to be sourced mainly from the Russian Federation, although the UNODC noted a resurgence in BMK trafficking from China in 2007 (Europol, 2007e; UNODC, 2008b).

Up until 2006, there were limited indications that organised crime was involved in methamphetamine production and trafficking activities in the European Union. However, Nordic and Baltic countries recently reported to Europol that Lithuanian criminal groups were involved in methamphetamine trafficking. Combined with recent significant ephedrine and pseudo-ephedrine seizures, an increase in methamphetamine seizures in Europe, and the discovery of production sites in countries other than the Czech Republic, the Slovak Republic and neighbouring countries, including three mid-scale production sites in the Netherlands in the second half of 2008, this could indicate organised crime involvement in methamphetamine production and trafficking. This is a potential new threat for the European Union (Europol, 2008a) ([15]).

([15]) In May 2009, the Lithuanian authorities seized a mid-size methamphetamine production site in the Kaunas region, together with approximately 100 kg of high purity methamphetamine. The drugs were intended for the Norwegian market.

European and international initiatives

The European Union, its Member States, and the international community have undertaken a range of initiatives to address methamphetamine production and trafficking. Three such initiatives are worth mentioning here.

Europol and European Union Member States have developed Project Synergy, which is the main synthetic drugs project in the European Union. Project Synergy and its Analytical work file (AWF) gathers and exploits relevant information available within and outside of the Member States in order to discover links between different cases, identify new criminal targets and target groups, and initiate, support and coordinate the intelligence aspects of investigations, whilst enhancing information exchange, knowledge and experience in the area of synthetic drugs-related precursors and equipment ([16]).

The AWF has 21 participating Member States: Austria, Belgium, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, the Netherlands, Poland, Portugal, Spain, Sweden and the United Kingdom. Eurojust became associated to the AWF in 2007, Australia, Canada and the United States in 2008, while Norway and Switzerland have been invited to become associated.

Project Synergy also includes the Europol Illicit Laboratory Comparison System (EILCS) and the formerly Europol Ecstasy Logo System (EELS) now incorporated into a system covering all ATS, named the Europol Synthetic Drug System (ESDS), both incorporated within the general Europol Synthetic Drug Database System (ESDDS). The EILCS collates detailed photographic and technical information on synthetic drug production, storage and dump sites, enabling the identification of matches between seized equipment, materials and chemicals, initiating information exchange, backtracking investigations and forensic examination for the targeting of facilitators and criminal groups.

The ESDS collates modus operandi, photographic and basic forensic information on significant seizures, enabling matches between seizures or seized punches to be identified, initiating information exchange, further investigations and forensic profiling for the targeting of criminal groups. Related criminal data arising from the findings of the ESDS and EILCS may be analysed within the AWF component. Furthermore, Europol specialists provide on-the-spot assistance to Member States in the dismantling of illicit synthetic drug production sites.

Project Synergy supports, and is supported by, the activities of the European Joint Unit on Precursors (EJUP), a multinational, multidisciplinary joint unit consisting of law enforcement national experts from Austria, Belgium, France, Germany, the Netherlands and the United Kingdom. The EJUP national experts are experienced in investigating serious criminal activity related to the diversions and trafficking of precursors.

([16]) AWF Synergy Data Collection Plan.

Project Synergy also supports, and is supported by, European Union initiatives on the forensic profiling of synthetic drugs and related precursors for law enforcement purposes whereby significant seizures may be forensically matched, leading to or supporting ongoing intelligence analysis.

Mutual support also exists between the European Police Chiefs Task Force's Cospol initiative and Project Synergy. The Cospol synthetic drug group comprises Belgium (Co-driver), Finland, France, Germany, Lithuania, the Netherlands (Driver), Poland, Spain, Sweden, the United Kingdom, Europol and Interpol.

The Global Synthetics Monitoring: Analyses, Reporting and Trends Programme (SMART) was launched by the UNODC in September 2008 in Bangkok, Thailand. It aims to assist UN Member States in generating, analysing and using synthetic drug information in order to design effective policies and interventions. The SMART Programme aims to provide information on the patterns of trafficking and use of synthetic drugs including methamphetamine by supporting targeted countries to better monitor trends, including detecting and reporting on new trends, while improving methods for exchanging comparable information.

Lastly, following Operation Crystal Flow (which ran from 1 January to 30 June 2007), the Project Prism Task Force coordinated by the International Narcotic Control Board (INCB) decided to continue exchange of intelligence on suspicious transactions and on backtracking investigations. The new initiative, called Operation Ice Block, took place from 2 January to 30 September 2008. Operation Ice Block focused on trade in ephedrine and pseudo-ephedrine, including pharmaceutical preparations and ephedra and, to the extent it is possible to identify such shipments, trade in P-2-P and phenylacetic acid involving countries in Africa, the Americas, west Asia and Oceania. As in previous activities, the primary tool for the identification of suspicious transactions was the PEN Online system. Operation Ice Block was supported by the governments of all major exporting and transit countries. During the nine-month active phase of the operations, the Board reviewed information on 2 057 shipments and identified 49 suspicious transactions, which led to the stoppage or seizure of shipments totalling 49 tonnes of ephedrine and pseudo-ephedrine.

Conclusions

Overall, methamphetamine use in Europe remains limited and in most countries data do not point to increasing problems. In many countries, the most notable trend in stimulant drug use appears to be the continued growth in the popularity of cocaine. Methamphetamine remains by comparison a far more limited problem. However, trends in drug use and availability can change rapidly and a number of factors clearly point to the potential for methamphetamine problems to spread further.

The European market for stimulant drugs as a whole is large and these substances may to some extent replace one another — sometimes without users even being aware of the particular drugs they are consuming. Methamphetamine may have some advantages in this respect. It is simple to produce, and for small-scale production in particular the precursors can easily be obtained from pharmacies and household products. The traditional methods of production, still relevant to a large extent to the situation in the Czech Republic and the Slovak Republic, often involve small groups of users manufacturing the drug principally for their own needs. However, although this is still the model for the majority of producers, some methamphetamine production and trafficking operations seem to have become more professionalised, and forms of organised crime may even have become involved in recent years. Given the capacity of modern illicit production processes this could potentially increase the spread and availability of the drug on the European market.

Data from law enforcement in Europe, including discussions at the Cospol synthetic drugs group, point to a notable increase in the number of methamphetamine seizures and in the quantities of methamphetamine seized in Europe. There is a new movement and potential diversion of the main precursors via, from, and/or into, the European Union, which would seem to require a proactive targeted law enforcement response. Latest trends show increased production and tabletting, which might indicate that the size of production sites is increasing to mid-level. Regional developments both in central Europe (particularly the Czech Republic, Slovak Republic and south-eastern Germany) and trafficking trends in the Nordic and Baltic countries also indicate not only that the population of European countries moves around more and more, but also that drug preferences do as well. Europol (Europol, 2008a) and EMCDDA are closely monitoring this relatively new phenomenon.

The collection of reliable data on new and emerging trends is a complex issue. It is perhaps too early to consider methamphetamine as a new growing trend. Changes in drug use patterns can occur quickly (Griffiths et al., 2008) and — although the current monitoring settings at the EMCDDA and Europol are in place — their detection may incur some delay using the standard monitoring instruments such as treatment monitoring and surveys. Close links to people in contact with risk groups and drug users, combined with faster analysis of collected information will help to keep track of such changes. In this respect, the EMCDDA and Europol are committed to ongoing collaboration to ensure that Europe remains vigilant to any changes in the availability and use of methamphetamine.

References

ACMD (2005), 'Methylamphetamine review', a report by the Advisory Council on the Misuse of Drugs, http://drugs.homeoffice.gov.uk/publication-search/acmd/ACMD-meth-report-November-2005

Booth, R., Lehman, W., Kwiatkowski, C., Brewster, J., Sinitsyna, L. and Dvoryak, S. (2008), 'Stimulant injectors in Ukraine: the next wave of the epidemic?' *AIDS and behavior*, 12 (4), pp. 652–661.

Case, P. (2005), *The history of methamphetamine: An epidemic in context*, First National Conference on Methamphetamine, HIV and Hepatitis, The Harm Reduction Project, Salt Lake City, August.

Chouvy, P.-A. and Meissonnier, J. (2004), *Yaa baa: Production, traffic, and consumption of methamphetamine in mainland southeast Asia*, Singapore University Press, Singapore.

DEA (n.d.), *Environmental impacts of methamphetamine*, US Drug Enforcement Administration, retrieved 6 March 2009, http://www.usdoj.gov/dea/concern/meth_environment.html

EMCDDA (2007), *Statistical bulletin 2007*, European Monitoring Centre for Drugs and Drug Addiction, Lisbon, http://www.emcdda.europa.eu/publications/statistical-bulletin

EMCDDA (2007–08), *Drug profiles*, European Monitoring Centre for Drugs and Drug Addiction, Lisbon, http://www.emcdda.europa.eu/publications/drug-profiles

EMCDDA (2008a), *Annual report 2008: The state of the drugs problem in Europe*, European Monitoring Centre for Drugs and Drug Addiction, Lisbon, http://www.emcdda.europa.eu/publications/annual-report

EMCDDA (2008b), *Statistical bulletin 2008*, European Monitoring Centre for Drugs and Drug Addiction, Lisbon, http://www.emcdda.europa.eu/publications/statistical-bulletin

EMCDDA (2009), *Statistical bulletin 2009*, European Monitoring Centre for Drugs and Drug Addiction, Lisbon http://www.emcdda.europa.eu/publications/statistical-bulletin

Europol (2007a), *The production and trafficking of synthetic drugs, related precursors and equipment: a European Union perspective*, Europol, The Hague; Publications Office, Luxembourg.

Europol (2007b), 'Presentation — Introduction to the world of synthetic drugs', *Training in combating illicit synthetic drug laboratories*, Europol, The Hague.

Europol (2007c), 'Presentation — Methamphetamine part I', *Training in combating illicit synthetic drug laboratories*, Europol, The Hague.

Europol (2007d), 'Presentation — Methamphetamine part II', *Training in combating illicit synthetic drug laboratories*, Europol, The Hague.

Europol (2007e), *Amphetamine-type stimulants in the European Union 1998–2007: Europol contribution to the expert consultations for the UNGASS assessment*, Europol, The Hague, July, http://www.europol.europa.eu/publications/Serious_Crime_Overviews/EuropolUNGASSAssessment.pdf

Europol (2008a), *Situation report on the production and trafficking of methamphetamine in the European Union,* SYN2008-130, Europol, The Hague.

Europol (2008b), *Tabletting units seized in the European Union 2006–2008,* SYN2008-145, Europol, The Hague.

Europol (2008c), *Synergy contribution to OCTA 2009,* SYN2008-119, Europol, The Hague.

Griffiths, P., Mravcik, V., Lopez, D. and Klempova, D. (2008), 'Quite a lot of smoke but very limited fire: The use of methamphetamine in Europe', *Drug and Alcohol Review* 27 (3), pp. 236–242.

INCB (2009), *Precursors and chemicals frequently used in the illicit manufacture of narcotic drugs and psychotropic substances 2008*, International Narcotics Control Board, New York.

Krawczyk, W. (2005), *Nielegalne laboratoria narkotykow*, Wydawnictwo, Centralnego Laboratorium Kryminalistycznego KGP, Warsaw.

Krawczyk, W., Kunda, T. and Perkowska, I. (2005), 'Impurity profiling/comparative analyses of samples of 1-phenyl-2-propanone', *Bulletin on Narcotics* LVII (1 & 2), pp. 33–62, http://www.unodc.org/pdf/research/Bulletin07/Bulletin_on_narcotics_2007_Krawczyk.pdf

Logan, B.K. (2002), 'Methamphetamine: Effects on human performance and behavior', *Forensic Science Review* 14 (1/2), January, pp. 133–151).

NDLERF (2005), *The governance of illicit synthetic drugs*, Monograph 9, National Drug Law Enforcement Research Fund, Australia, http://www.ndlerf.gov.au/pub/governance_synthetic_drugs.pdf

ODCCP (2001), *Global illicit drug trends 2001*, ODCCP Studies on Drugs and Crime Statistics, United Nations Office for Drug Control and Crime Prevention, New York, http://www.unodc.org/pdf/report_2001-06-26_1/report_2001-06-26_1.pdf

Ogata, A. (1919), 'Constitution of ephedrine-desoxyephedrine', *Journal of the Pharmaceutical Society of Japan* 451, pp. 751–764.

Oregon Department of Health and Human Services (2005), *Oregon drug lab cleanup program*, retrieved 23 January 2009, http://oregon.gov/DHS/ph/druglab/chemicals.html

Otiashvili, D., Zábranský, T., Kirtadze, I., Pirashvilli, G., Chavchanidze, M. and Miovsky, M. (2008), 'Nonmedical use of Buprenorphine (Subutex) in the Republic of Georgia — a pilot study', *2008 NIDA international forum: Globally improving and applying evidence-based interventions for addictions, Book of Abstracts*, pp. 69–70.

Tamura, M. (1989), 'Japan: Stimulant epidemics past and present', *Bulletin on Narcotics* 1, pp. 83–93, http://www.unodc.org/unodc/en/data-and-analysis/bulletin/bulletin_1989-01-01_1_page007.html

UNODC (2003), *Ecstasy and amphetamines global survey 2003*, United Nations Office on Drugs and Crime, Vienna, http://www.unodc.org/pdf/publications/report_ats_2003-09-23.1.pdf

UNODC (2007), *2007 World drug report*, United Nations Office on Drugs and Crime, Vienna, http://www.unodc.org/unodc/en/data-and-analysis/WDR-2007.html

UNODC (2008a), *2008 World drug report*, United Nations Office on Drugs and Crime, Vienna, http://www.unodc.org/unodc/en/data-and-analysis/WDR-2008.html

UNODC (2008b), *Amphetamines and ecstasy 2008: Global ATS assessment*, United Nations Office on Drugs and Crime, Vienna, http://www.unodc.org/documents/scientific/ATS/Global-ATS-Assessment-2008-Web.pdf

UNODC (2008c), '"Tik": Crystal meth in Cape Town', 13 June, retrieved on 4 May 2009 from http://www.unodc.org/unodc/en/frontpage/tik-meth-in-cape-town.html

Young, N. (2009), 'Meth labs make a comeback in Tennessee: New ingredients and methods speed production of drug', *The Tennessean*, Nashville, 3 May, retrieved 5 May 2009 from http://www.tennessean.com/article/20090503/NEWS03/905030362/1017/Meth+labs+make+a+comeback+in+Tennessee

Zábranský, T. (2007), 'Methamphetamine in the Czech Republic', *Journal of Drug Issues*, Volume 37, Number 1, pp. 115–180.

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EMCDDA–Europol joint publication series

The European Monitoring Centre for Drugs and Drug Addiction (EMCDDA) and the European Police Office (Europol) stepped up their cooperation on drugs and crime in the spring of 2009, by defining a series of collaborative activities for the period 2009–12. The commitment was made in the framework of a 'Cooperation Agreement' signed in Brussels in November 2001, under which the organisations exchange information and expertise on drug-related issues, money laundering and the diversion of chemical precursors. The two bodies also collaborate actively in detecting and monitoring new and potentially threatening psychoactive substances and in assessing the involvement of organised crime in their manufacture and trafficking. This activity is carried out under the terms of a specific legal instrument, adopted by the Council of the European Union in 2005 (www.emcdda.europa.eu/drug-situation/new-drugs).

Among the collaborative activities planned for 2009–12 is an EMCDDA–Europol joint publication series covering key aspects of European drug markets. While the first titles in the series are dedicated to illicit substances — e.g. methamphetamine, amphetamine, ecstasy, cocaine, heroin and cannabis — future editions will be developed in line with ongoing and emerging information needs.

The series is designed to inform policymakers, drug experts and the general public on important aspects of the drug situation. Bringing together EMCDDA information and data on prevalence, health consequences and drug research, with Europol data and knowledge on production, trafficking, markets and drug-related crime, the publications will offer an integrated analysis of the topics chosen and constitute a joint EMCDDA–Europol view on key drug issues. The analysis will be informed by complementary information provided by the organisations' respective national networks — the Reitox national focal points and the Europol national units.

About the EMCDDA

The European Monitoring Centre for Drugs and Drug Addiction (EMCDDA) is the hub of drug-related information in Europe.
Its mission is to provide the EU and its Member States with 'factual, objective, reliable and comparable information' on drugs, drug addiction and their consequences. Established in 1993, it opened its doors in Lisbon in 1995 and is one of the EU's decentralised agencies. With a 100-strong multidisciplinary team, the agency offers policymakers the evidence base they need for drawing up drug laws and strategies. It also helps professionals and researchers pinpoint best practice and new areas for analysis.
As well as gathering information on the demand and reduction of the demand for drugs, the agency in recent years has extended its monitoring and reporting on drug supply, supply reduction and illicit drug markets.

www.emcdda.europa.eu

About Europol

Europol is the European Union's law-enforcement organisation handling criminal intelligence. Its aim is to improve the effectiveness of, and cooperation between, the competent authorities in the EU Member States in preventing and combating serious international organised crime and terrorism. Operational since 1999 and based in The Hague, the organisation employs some 600 staff to support national law-enforcement agencies in their everyday work, including efforts to tackle illicit drug trafficking, money laundering, cyber crime and terrorism. Europol comes into play when an organised criminal structure is involved and two or more EU Member States are affected. Among others, it facilitates cross-country information exchange and provides analysis of operations. Europol is set to become an EU agency in 2010.

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