Methamphetamine from Afghanistan: signals indicate that Europe should be better prepared
This report was prepared before recent developments in Afghanistan and before the withdrawal of US military and other NATO allies from Afghanistan.

It is too early to say what lies ahead for the political situation in Afghanistan or what impact it will have on drug trafficking, production and use. An economic crisis in Afghanistan could result in higher levels of drug production in the coming years, as occurred during the Taliban’s last period of rule in the late 1990s. That said, levels of opium poppy cultivation are already higher now and methamphetamine production has emerged. While it is difficult to predict any impact from the rapidly evolving situation, however, the fieldwork conducted in this project found no indications that the Taliban were actively involved either in ephedrine production from ephedra plants or in methamphetamine production or trafficking activities. The only apparent involvement found during this and subsequent rounds of fieldwork has been in the collection of taxes (Mansfield et al., 2019; Alcis et al., 2021). This follows the general narrative that the drug trade is but one of many funding sources for the Taliban (Nellemann et al., 2018). It is noted that the Taliban did implement a short-lived ban on opium poppy cultivation in 2000, which led to a dramatic drop in opium and heroin production in Afghanistan and a shortage of heroin in Europe and elsewhere (Griffiths et al., 2012). This occurred six years after they seized Kandahar and much of southern Afghanistan, where the opium production was concentrated, and four years after the capture of Kabul (Mansfield, 2019a). It also followed five previous statements by the Taliban prohibiting opium production, none of which led to substantial reductions in cultivation (Mansfield 2019).

The findings of this report therefore must be regarded as preliminary and will need to be reviewed and updated as more information becomes available from the region. While Afghanistan clearly has the potential to play a larger international role in methamphetamine production and supply, it is currently unclear how recent developments will impact this threat. Given the current instability in the country, it will be important to monitor carefully in order to be better prepared to respond in a timely manner to any identified developments that may have negative implications for Europe or elsewhere.

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**Introduction**

Although it is a major cause of harm in some countries such as Czechia and Slovakia, the available data indicate that methamphetamine use remains lower in Europe than in other parts of the world. Currently, Southeast Asia and Mexico are documented as the main production areas for the drug. However, production elsewhere appears to be growing and recent information indicates that the production of methamphetamine is increasing in Europe, where a number of large-scale production facilities have been dismantled since 2019. Some large volume seizures have also included methamphetamine manufactured in Mexico. While the final destination of these drugs appears primarily to be consumer markets in Asia and Oceania, there is a risk that increased supplies could also lead to increased consumption in Europe.

This threat to Europe is further compounded by the relatively recent emergence and apparently rapid development of methamphetamine produced in Afghanistan from ephedrine extracted from ephedra plants grown in the mountains. This report highlights relevant points for policymakers in relation to the latter phenomenon.

Initial reports of a nascent methamphetamine industry in Afghanistan emerged in 2015 (Bjelica, 2015), when production appeared to be constrained by a reliance on imported and increasingly expensive over-the-counter (OTC) medicinal products containing pseudoephedrine (Mansfield and Soderholm, 2019). There is evidence that this has gradually shifted toward ephedra-based production according to research in the southwestern province of Farah in November 2018 (Mansfield, 2019b). Subsequent, in-depth research and imagery analysis in ephedra-growing areas in central Afghanistan, along some of the trading routes, and in the district of Bakwa in Farah, have revealed an increasingly mature market for the ephedra crop operating across the southwest and the potential for significant methamphetamine production (Mansfield et al., 2019).

In 2019, the assumption that any methamphetamine consumed would be produced locally using OTC products was put into question by a growing body of high-resolution imagery and research and the economic logic of Afghan drug producers building capacity to produce large amounts of methamphetamine. In order to assess whether this new global producer presents a threat to the EU and neighbouring countries and recognising some of the inconsistencies and gaps in our knowledge, the EMCDDA commissioned initial studies to establish what we know about the methamphetamine industry in Afghanistan and assess the extent of market penetration in the Middle East, the Persian Gulf, South Asia and elsewhere.
Afghanistan has the potential to play a greater role in the global supply of methamphetamine as a result of the following factors:
- the plentiful supply of a wild ephedra crop that grows across the country’s central highlands and that can be used to produce ephedrine, a precursor in the manufacture of methamphetamine;
- the low price of ephedra, which could allow Afghan producers to manufacture methamphetamine of a comparable quality but at a lower price than more established producers in Mexico, the Netherlands and Southeast Asia;
- the limited capacities of Afghan law enforcement;
- an economic crisis in Afghanistan, which may result in larger numbers of people turning to illicit drugs as a source of livelihood, including the production and trafficking of ephedrine and the production of methamphetamine.

A combination of easily applicable extraction methods, the availability of low-cost chemicals and high demand has now led to a thriving cottage industry in ephedrine extraction from ephedra plants in parts of southwestern Afghanistan. Meanwhile, methamphetamine production itself is carried out by more experienced ‘cooks’.

This study has estimated that the Bakwa district in Farah province alone could potentially produce 98 tonnes a month of the precursor ephedrine, which may theoretically allow the manufacture of 65.3 tonnes a month of methamphetamine. Ephedrine extraction facilities have also been identified in areas that neighbour Bakwa.

Increased production in Afghanistan has been accompanied by a dramatic increase in seizures of both ephedrine and methamphetamine in Iran, suggesting the presence of facilities for the processing of ephedrine into methamphetamine in Iran, where it is both consumed and exported to other world markets.

There is evidence of the trafficking of methamphetamine from Southwest Asia to areas of Turkey (sometimes in liquid form), the Middle East, east and southern Africa, Asia and Australia.

Some of these areas lie on known heroin trafficking routes to Europe, and there is a risk that Afghan-origin methamphetamine could be trafficked alongside heroin and become available to consumers in the EU and neighbouring countries.

Afghanistan as an emerging methamphetamine producer

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Afghanistan: a new player in the global methamphetamine market

Afghanistan's move into large-scale ephedra-based methamphetamine production appears to have occurred relatively rapidly. Informants report that pressed by a shrinking of profit margins caused by a fall in methamphetamine prices in neighbouring Iran and by the high cost of extracting precursors from cough syrups or decongestants imported from Pakistan, producers in Afghanistan began to experiment with extracting ephedrine from ephedra plants as early as 2016. There is considerable speculation about how Afghan producers learned that the ephedra crop is a source of ephedrine, a precursor of methamphetamine. Whatever the case, research in southwestern Afghanistan has indicated that this is a cheaper option and has now largely
replaced the extraction of methamphetamine precursors from medicines containing ephedrine or pseudoephedrine (a skill that Afghans learned from Iranian ‘chemists’) (EMCDDA 2020).

Growing wild in the mountainous central highlands, the ephedra crop was traditionally used as fuel for cooking, animal fodder and local medicine, with a small amount exported to India. As a result, few inhabitants of the villages at the foothills of the mountains showed much interest in the crop. The discovery that ephedra is a source of a precursor for the production of methamphetamine altered the situation. From 2016, the price of ephedra increased dramatically, and by 2018 traders were setting up stalls for the duration of the harvest season in provinces as widespread as Ghor, Ghazni and Wardak, purchasing the crop at the mountainside, where it was then dried, packaged and shipped to markets in southwestern Afghanistan (Mansfield et al., 2019). It is important to note that the new growth of the perennial plant is harvested with a sickle, leaving the roots intact to ensure the sustainability of the crop. High-resolution imagery shows the expansion of local markets in areas where methamphetamine production is concentrated, including bazaars like Abdul Wadood in Bakwa, in Farah province. There the dried and milled ephedra is stored on open ground next to shops where chemicals and hardware for methamphetamine processing such as iodine, red phosphorus and sulfuric acid are sold, highlighting just how few restrictions there are on drug production in the area.

It is apparent that a thriving cottage industry has emerged for the extraction of ephedrine from dried ephedra crops, an essential stage in the methamphetamine production process (EMCDDA 2020). Simple chemistry and low-cost chemicals and equipment appear to have enabled increasing numbers of farmers to enter the business, ‘cooking’ the crops and extracting ephedrine in empty buildings within their own household compounds or in abandoned compounds nearby. The scale of production, the quantities of inputs required — in particular ephedra and diesel — and the level of waste allow these facilities to be identified using high-resolution satellite imagery. In Bakwa, 329 suspected ephedrine facilities have been identified, enough to produce an estimated 98 tonnes a month of ephedrine, from which 65.3 tonnes a month of methamphetamine may theoretically be produced (EMCDDA, 2021).

The process of converting ephedrine into methamphetamine, which is technically demanding, is reported to be conducted by more skilled operators known as ‘cooks’. While these cooks were responsible in the past for the entire process of producing methamphetamine from ephedrine and pseudoephedrine extracted from medicines, now they purchase ephedrine at the market or directly from the large number of people processing ephedra locally. With small batch sizes and limited amounts of waste, methamphetamine production is found to be a more discreet process, making it difficult to identify methamphetamine laboratories among typical household compounds.

Given that the cost of ephedrine production stands at EUR 36 per kilogram and the cost of producing methamphetamine stands at EUR 280 per kilogram, this research has indicated that the economic barriers to entry are fairly low. At the same time, local profit margins are also relatively low for both ephedrine (EUR 31) and methamphetamine (EUR 23), potentially incentivising Afghan producers to engage in cross-border smuggling as a way to increase profits.

The full extent of ephedrine and methamphetamine production in Afghanistan remains unknown, but it could be considerable. Previous research has shown that the ephedra crop grows at an altitude of over 2 500 metres; an area covering 192 000 square kilometres in Afghanistan (Mansfield et al., 2019). Research has also reported on the degree to which traders
travel to purchase the harvested crops in some of the country’s mountainous hinterlands. While seizures of methamphetamine by the Afghan authorities increased from 200 kilograms in 2018 to 1.2 tonnes in 2019, these figures are unlikely to provide a reliable picture of the situation, since law enforcement in Afghanistan has been constrained by years of conflict, particularly in the rural areas of the southwest where production is concentrated (UNODC, 2020).

The current study has focused on one district in southwestern Afghanistan where methamphetamine production is concentrated and that serves as a market hub for the sale and purchase of inputs, including dried ephedra (EMCDDA, 2020). An initial examination using satellite imagery of the neighbouring districts of Gulistan in Farah and Khashrud in Nimroz indicates that there are significant numbers of ephedrine labs in operation (Alcis et al., 2021). There are also reports of processing further afield, including in the provinces of Helmand and Nangarhar, both of which have a history of heroin production and are located near mountainous areas where ephedra grows. This suggests that the scale of methamphetamine production in Afghanistan could be considerable.

**Iran: from producer to transit nation**

Iran has a longer history of methamphetamine production than neighbouring Afghanistan and it is possibly for this reason that widespread processing in Afghanistan went largely unnoticed until recently. In 2017, the United Nations Office on Drugs and Crime (UNODC) suggested that at the time most of the methamphetamine consumed in Afghanistan was most likely imported from Iran (UNODC, 2017). However, subsequent research indicates that since 2010 methamphetamine producers in Iran have faced growing economic, regulatory and law enforcement pressures that have limited domestic production and led to a growing reliance on cheaper imports from Afghanistan (EMCDDA, 2021).

The Iranian authorities, in particular, are reported to have played a key part in making domestic production riskier and less profitable. For example, better regulation of OTC medicines that were typically used in the production of methamphetamine prior to 2010, made it more difficult for Iranian cooks to obtain precursor chemicals. Subsequent restrictions on the imports of pseudoephedrine between 2010 and 2015, combined with law enforcement efforts, also appear to have limited the opportunities to divert this precursor from the licit pharmaceutical industry. Also, the devaluation of the Iranian rial in 2018 with the introduction of US sanctions led to a rise in the cost of imported chemicals and equipment, even further squeezing the profit margins of Iranian producers. Falling domestic prices for methamphetamine, which were initially due to overproduction in Iran and subsequently in Afghanistan, are also likely to have reduced the incentive for domestic methamphetamine production in Iran.

EMCDDA research suggests a prevalence of what is termed ‘cheap Afghan meth’ across consumer markets in Iran, and points to retail prices as low as USD 1.70 to USD 2.20 per gram in August 2020, indicating a 50 % reduction in retail prices over a 12-month period (EMCDDA, 2021). Seizures also reveal that Afghan methamphetamine increasingly dominates the Iranian domestic market. Iranian authorities reported seizing 17 tonnes of methamphetamine between March 2019 and March 2020, more than twice the amount seized in the previous year. In November 2020, Iran reported seizing a further 10 tonnes over a 6-month period, claiming 90 % had been smuggled from Afghanistan (EMCDDA, 2021). According to UNODC data, a large proportion of these methamphetamine seizures, many involving shipments of more than 100 kilograms, were made in areas bordering Afghanistan (UNODC, 2021).
EMCDDA research has also highlighted the potential reprocessing of Afghan ephedrine and methamphetamine in Iran (EMCDDA, 2021). Seizures of ephedrine and liquid methamphetamine from Afghanistan, as well as interviews with Iranian cooks, suggest that the phenomenon is growing. Given the low price of Afghan methamphetamine in Iran, it is probable that any final processing is for the higher-end consumer market in Iran or even more likely for export.

Possible consumer markets for southwest Asian methamphetamine

Seizures of methamphetamine in the European Union have increased in the last ten years, although not to levels observed elsewhere in the world. The current market for methamphetamine in Europe is much smaller than for other stimulants such as cocaine and MDMA, with consumption restricted to specific countries, regions or user groups (EMCDDA, 2019). Nonetheless, there are concerns that interest in the drug may be growing and that it could have the potential to play a greater role in Europe’s future drug problem. The production capacity that exists in Europe appears to be located mostly in the Netherlands and Czechia, and seems to be more than sufficient to satisfy current demand among European consumers. The large-scale methamphetamine production that has recently emerged in Europe appears to be destined for export to other parts of the world.

Nevertheless, the rapid development of the production of what appears to be a comparatively cheap form of pure methamphetamine in Afghanistan remains a cause for concern, because the drug could enter the European drug market via well-established trafficking routes for smuggling Afghan heroin, notably the Balkan route via Iran and Turkey. Without forensic analysis, it is difficult to ascertain for certain whether the methamphetamine seized on trafficking routes has been manufactured in Afghanistan since the drug is also produced in both Iran and Pakistan, but a number of recent developments indicate that this is a possibility.

Increased seizures of methamphetamine in Turkey, a key country on the Balkan route, point to a growing availability of methamphetamine. Between 2019 and 2020, the amount of methamphetamine seized in Turkey increased fourfold, with the Turkish government reporting more than 4 tonnes of methamphetamine seized in 2020, much of it coming from Iran. It is therefore possible that some of seized product may have originated in Afghanistan. Interestingly, increasing amounts of methamphetamine in liquid form have also been seized in Turkey, with most cases occurring in provinces close to or bordering Iran (TNP, 2021).

Organised crime groups (OCGs) from the Western Balkans have long been involved in the supply and distribution of heroin in the EU, controlling sections of the Balkan route (EMCDDA and Europol, 2019). The availability of abundant supplies of relatively cheap Afghan methamphetamine may draw the attention of some of these OCGs as significant profits could be obtained from selling it in Europe. As noted above, methamphetamine seizures have increased dramatically in Iran since 2018, and they have also increased along the southern route in the waters off the Iranian and Pakistani coasts (the Makran coast) and further away in the Persian Gulf and Indian Ocean. In 2020, more than 3 tonnes of methamphetamine were seized from vessels, often manned by Iranian or Pakistani nationals, that had departed from the Makran coast. The Combined Maritime Task Force reports that in several cases, large amounts of methamphetamine were seized with heroin and cannabis resin in packaging that suggested an
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Afghan origin (Eligh, 2021). Some particularly large seizures of methamphetamine made further afield, such as 821 kilograms seized in Indonesia in May 2020, have been linked back to seizures in the Persian Gulf and Indian Ocean, further highlighting the export market potential (EMCDDA, 2020). In April 2021, Indonesian authorities seized a further 2.5 metric tonnes of methamphetamine that they reported originated in Afghanistan and had been transhipped via Malaysia (Ariana, 2021).

Recent chemical profiling of methamphetamine samples seized in Mozambique also indicates that some of the methamphetamine seized there is of plant origin (Eligh, 2021). This is of special relevance since the northern port of Pemba is a major port of entry for dhows from the Makran coast and a stockpiling location for drug shipments bound for other east and southern African countries. Substantial seizures of methamphetamine have been made off the coast of Mozambique since 2019, including 307 kilograms in December 2019. Reports of the availability, since late 2019, of a high-quality product in South Africa and Mozambique, sold locally as ‘Pakistani meth’, may also indicate that methamphetamine produced in Afghanistan is becoming available on African markets (Eligh, 2021).

Chemical profiling by law enforcement in Australia suggests that Afghan methamphetamine may have become available on consumer markets as far afield as Oceania. For example, the Australian Federal Police (AFP) reported seizures of 500 kilograms of methamphetamine in 2020 that they could trace back to ‘Iran and surrounding countries’ and that were of plant origin and therefore possibly produced in Afghanistan (AFP, 2020). In a separate seizure in Australia in 2020, 160 litres of water shipped from Iran was found to contain methamphetamine produced from ephedrine extracted from ephedra plants (EMCDDA, 2021). While making up a relatively small proportion of the AFP’s total methamphetamine seizures, ephedra-based methamphetamine is viewed as a growing problem by the Australian authorities, particularly in the state of South Australia. Furthermore, the AFP reports that the methamphetamine that they have seized from the region is of high purity, with few adulterants, and on par with the quality of methamphetamine seized from Mexico and the Netherlands.

Conclusions

The available evidence suggests that large quantities of methamphetamine are manufactured at relatively low cost in Afghanistan and neighbouring countries based on ephedrine extracted from the ephedra plant in Afghanistan. However, the availability of Afghan-origin methamphetamine on regional and international markets is difficult to estimate at present, although there are indications that some may be consumed in Afghanistan, Iran, Turkey, east and southern Africa, and Australia.

It is also unclear how much of a threat Afghan-origin methamphetamine could represent for Europe since the European methamphetamine market is comparatively small and methamphetamine is manufactured in Europe. This is likely to mean that any increase in demand for the drug in Europe would probably be met in the first instance by domestic production, as is the case with other synthetic drugs like MDMA and amphetamine. Nevertheless, if Afghan-origin methamphetamine is available in countries close to Europe and/or countries located on drug trafficking routes to Europe, then it is a cause for concern and there is a clear need to remain vigilant and enhance monitoring of the phenomenon.
Substantial knowledge gaps remain and an initial objective should be to start filling in the most crucial gaps in order to gain a strategic understanding of the situation, especially, but not solely, as it regards Europe. From this perspective, the following initiatives should be encouraged and where possible actively supported:

- increase awareness of the issue among policy and decision-makers;
- increase the awareness and training of law enforcement, customs officials, border guards and police authorities along the Balkan, southern and northern heroin trafficking routes and at other key border crossing points, drawing particular attention to the risk of smuggling in liquid form;
- increase the awareness and training of law enforcement, customs officials, border guards and police authorities at key EU entry points, including maritime ports and airports;
- increase awareness of the issue among service providers in order to enhance preparedness;
- in line with the EU Drugs Action Plan 2021-2025, continue monitoring emerging threats related to methamphetamine consumption using wastewater-based epidemiology and proactively follow up on any signals of increased methamphetamine loads in sewage samples analysed in European cities;
- encourage the reporting of information on any increased availability of crystal methamphetamine in Europe from users through existing networks;
- encourage and support the development of methamphetamine chemical profiling techniques with a view to systematising forensic analysis of methamphetamine seizures in Europe and in the partner countries of EU4MD and the Western Balkans so as to become able to:
  - determine whether the methamphetamine has been manufactured from ephedrine obtained from ephedra or other precursors;
  - determine, if possible, whether the ephedra used to manufacture ephedrine was harvested in Afghanistan. In this respect, more information is needed on the species and varieties of ephedra presently used to produce ephedrine in Afghanistan, and research of these aspects should be encouraged.
- facilitate the transfer of methamphetamine profiling techniques among EU Member States and partner countries and ensure that adequate reporting channels, including early warning, are put in place so that any new development is reported in a timely manner;
- in light of the potential economic crisis in Afghanistan, support close monitoring of the scale of methamphetamine production in Afghanistan and the trade and trafficking to neighbouring countries including Pakistan.
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