



**UNODC**  
United Nations Office on Drugs and Crime



# 3 DRUG SUPPLY

# WORLD 2020 DRUG REPORT

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# PREFACE

This is a time for science and solidarity, as United Nations Secretary-General António Guterres has said, highlighting the importance of trust in science and of working together to respond to the global COVID-19 pandemic.

The same holds true for our responses to the world drug problem. To be effective, balanced solutions to drug demand and supply must be rooted in evidence and shared responsibility. This is more important than ever, as illicit drug challenges become increasingly complex, and the COVID-19 crisis and economic downturn threaten to worsen their impacts, on the poor, marginalized and vulnerable most of all.

Some 35.6 million people suffer from drug use disorders globally. While more people use drugs in developed countries than in developing countries, and wealthier segments of society have a higher prevalence of drug use, people who are socially and economically disadvantaged are more likely to develop drug use disorders.

Only one out of eight people who need drug-related treatment receive it. While one out of three drug users is a woman, only one out of five people in treatment is a woman. People in prison settings, minorities, immigrants and displaced people also face barriers to treatment due to discrimination and stigma. Of the 11 million people who inject drugs, half of them are living with hepatitis C, and 1.4 million with HIV.

Around 269 million people used drugs in 2018, up 30 per cent from 2009, with adolescents and young adults accounting for the largest share of users. More people are using drugs, and there are more drugs, and more types of drugs, than ever.

Seizures of amphetamines quadrupled between 2009 and 2018. Even as precursor control improves globally, traffickers and manufacturers are using designer chemicals, devised to circumvent international controls, to synthesize amphetamine, methamphetamine and ecstasy. Production of heroin and cocaine remain among the highest levels recorded in modern times.

The growth in global drug supply and demand poses challenges to law enforcement, compounds health risks and complicates efforts to prevent and treat drug use disorders.

At the same time, more than 80% of the world's population, mostly living in low- and middle-income

countries, are deprived of access to controlled drugs for pain relief and other essential medical uses.

Governments have repeatedly pledged to work together to address the many challenges posed by the world drug problem, as part of commitments to achieve the Sustainable Development Goals, and most recently in the 2019 Ministerial Declaration adopted by the Commission on Narcotic Drugs (CND). But data indicates that development assistance to address drug control has actually fallen over time.

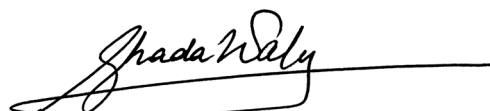
Balanced, comprehensive and effective responses to drugs depend on governments to live up to their promises, and provide support to leave no one behind.

Health-centred, rights-based and gender-responsive approaches to drug use and related diseases deliver better public health outcomes. We need to do more to share this learning and support implementation, most of all in developing countries, including by strengthening cooperation with civil society and youth organizations.

The international community has an agreed legal framework and the commitments outlined in the 2019 CND Ministerial Declaration. The United Nations Office on Drugs and Crime (UNODC) provides integrated support to build national capacities and strengthen international cooperation to turn pledges into effective action on the ground.

The theme for this year's International Day against Drug Abuse and Illicit Trafficking, "Better Knowledge for Better Care", highlights the importance of scientific evidence to strengthen responses to the world drug problem and support the people who need us. It also speaks to the ultimate goal of drug control, namely the health and welfare of humankind. Through learning and understanding we find compassion and seek solutions in solidarity.

It is in this spirit that I present the UNODC *World Drug Report 2020*, and I urge governments and all stakeholders to make the best use of this resource.



Ghada Waly  
Executive Director  
United Nations Office on Drugs and Crime

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# EXPLANATORY NOTES

The designations employed and the presentation of the material in the *World Drug Report* do not imply the expression of any opinion whatsoever on the part of the Secretariat of the United Nations concerning the legal status of any country, territory, city or area, or of its authorities, or concerning the delimitation of its frontiers or boundaries.

Countries and areas are referred to by the names that were in official use at the time the relevant data were collected.

Since there is some scientific and legal ambiguity about the distinctions between “drug use”, “drug misuse” and “drug abuse”, the neutral term “drug use” is used in the *World Drug Report*. The term “misuse” is used only to denote the non-medical use of prescription drugs.

All uses of the word “drug” and the term “drug use” in the *World Drug Report* refer to substances controlled under the international drug control conventions, and their non-medical use.

All analysis contained in the *World Drug Report* is based on the official data submitted by Member States to the UNODC through the annual report questionnaire unless indicated otherwise.

The data on population used in the *World Drug Report* are taken from: *World Population Prospects: The 2019 Revision* (United Nations, Department of Economic and Social Affairs, Population Division).

References to dollars (\$) are to United States dollars, unless otherwise stated.

References to tons are to metric tons, unless otherwise stated.

The following abbreviations have been used in the present booklet:

AIDS	acquired immunodeficiency syndrome
ATS	amphetamine-type stimulants
APAAN	<i>alpha</i> -phenylacetonitrile
ASEAN	Association of Southeast Asian Nations
COVID-19	coronavirus disease
Europol	European Union Agency for Law Enforcement Cooperation
DEA	Drug Enforcement Administration
EMCDDA	European Monitoring Centre for Drugs and Drug Addiction
FARC	Revolutionary Armed Forces of Colombia
ha	hectares
INCB	International Narcotics Control Board
MDMA	3,4-methylenedioxy-methamphetamine
3,4-MDP-2-P	3,4-methylenedioxyphenyl-2-propanone
MDPV	methylenedioxypropylvalerone
P-2-P	1-phenyl-2-propanone
PMK	piperonyl methyl ketone
UNODC	United Nations Office on Drugs and Crime

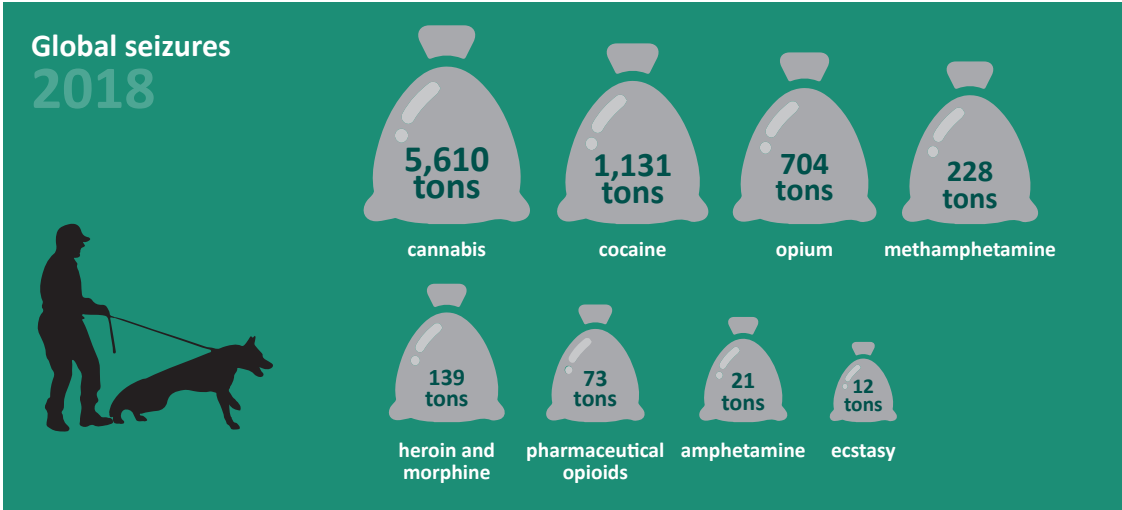




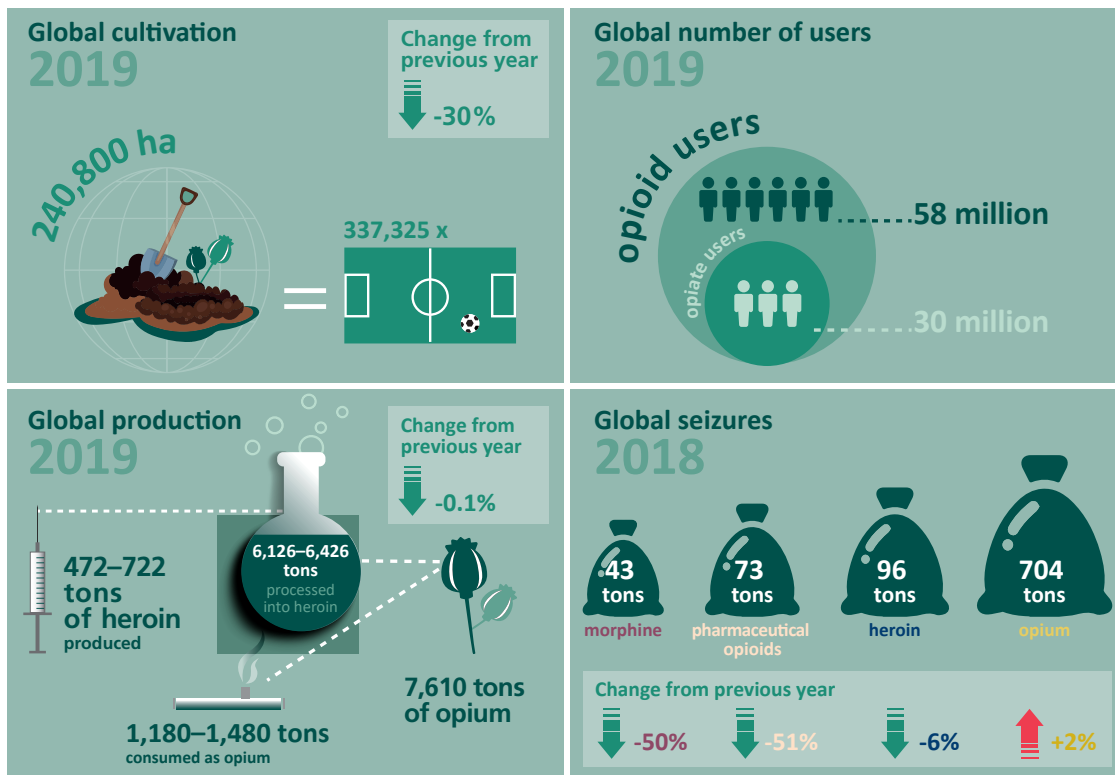
# SCOPE OF THE BOOKLET

This, the third booklet of the *World Drug Report 2020*, contributes evidence to support the international community in implementing operational recommendations dedicated to supply reduction and related measures, effective law enforcement and responses to drug-related crime, including the recommendations contained in the outcome document of the special session of the General Assembly, held in 2016.

The booklet provides an overview of the extent of illicit crop cultivation and trends in drug trafficking at the global and regional levels. The analysis is presented by drug type and, using the latest estimates as a basis, the booklet reviews the general situation and trends in the supply of opiates, cocaine, amphetamine-type stimulants and cannabis. In addition, some issues emerging in these markets are discussed, such as the impact of changes in illicit crop cultivation and production along the drug supply chain to the main consumption markets, and emerging markets along the drug trafficking routes and beyond in other regions.





**OPIATES****Opium poppy cultivation and opiate production**

Opium is illicitly produced in some 50 countries worldwide, although the three countries where most opium is produced have accounted for about 97 per cent of global opium production over the past five years.

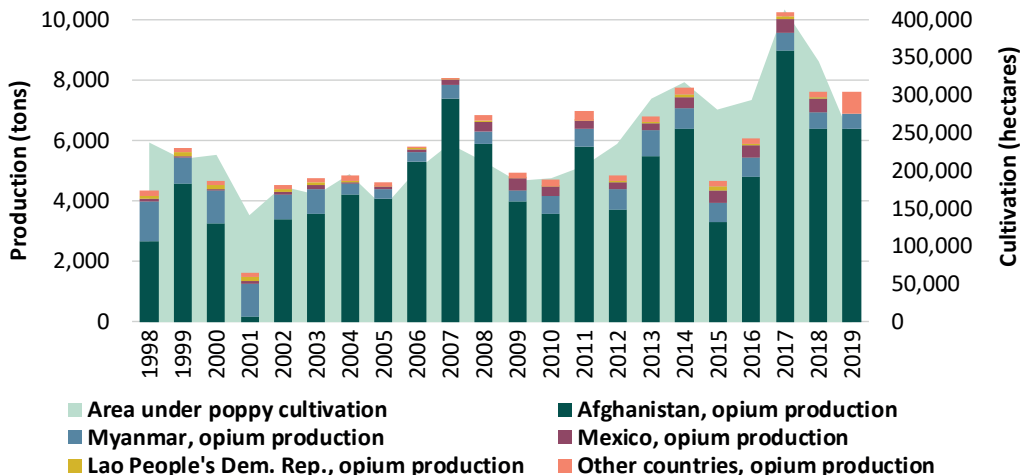
Afghanistan, the country where most opium is produced, which has accounted for approximately 84 per cent of global opium production over the past five years, supplies markets in neighbouring countries, Europe, the Near and Middle East, South Asia and Africa and to a small degree North America (notably Canada) and Oceania. Countries in South-East Asia – mostly Myanmar (some 7 per cent of global opium production) and, to a lesser extent, the Lao People's Democratic Republic (about 1 per cent of global opium production) – supply markets in East and South-East Asia and Oceania. Countries

in Latin America – mostly Mexico (6 per cent of global opium production) and, to a far lesser extent, Colombia and Guatemala (less than 1 per cent of the global total) – account for most of the heroin supply to the United States and supply the comparatively small heroin markets of South America.

**Global area under opium poppy cultivation declined for the second year in a row in 2019**

Despite a long-term upward trend, the global area under opium poppy cultivation declined by 17 per cent in 2018 and then by 30 per cent in 2019, falling to an estimated 240,800 ha. Declines in the area under cultivation were reported in both Afghanistan and Myanmar in 2018 and 2019. Despite the recent declines, the global area under opium poppy cultivation is nevertheless still substantially larger than a decade ago and at similar level of the global area under coca cultivation.

**FIG. 1** Opium poppy cultivation and production of opium, 1998–2019



Source: UNODC calculations based on illicit crop monitoring surveys; and UNODC, responses to the annual report questionnaire. Note: Data for 2019 are preliminary. For countries for which no estimates for 2019 are as yet available, the 2018 estimates have been used as a proxy and those countries are included in the category of “other countries”.

### Global opium production remained largely stable in 2019

Global illicit opium production has also shown a long-term upward trend, although it remained stable at 7,610 tons in 2019 compared with the previous

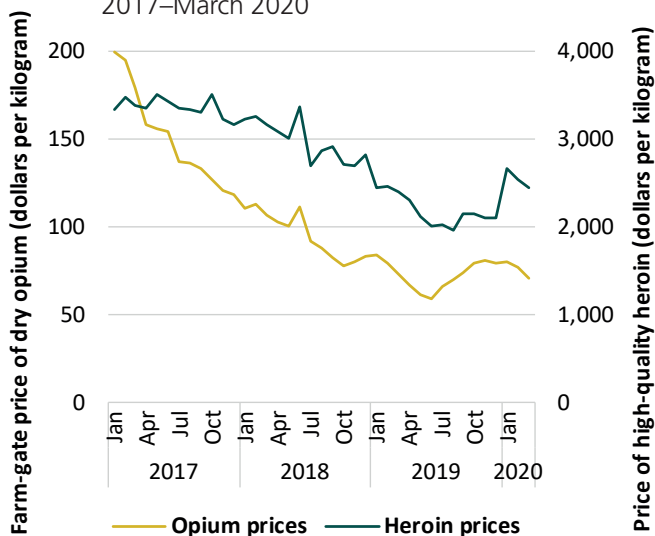
year (7,620 tons in 2018) and was 26 per cent lower than the peak reported in 2017 (10,270 tons).

Despite the decline in the area under opium poppy cultivation in 2019, opium production remained stable in 2019, with higher yields reported in the main opium production areas for 2019, as neither disease nor drought – as occurred in previous years – reduced opium output in 2019.

Taking opium consumption into account, estimated global opium production in 2019 would have been sufficient to manufacture 472–722 tons of heroin (expressed at export purities) – in other words, quantities similar to the previous year.

Despite global opium production in 2018 being less than in 2017, there have been no indications to date of a shortage in the supply of heroin to the respective consumer markets. In 2018 and 2019, both opium and heroin prices declined in the main opium production areas in Afghanistan, with opium farm-gate prices falling by an average of 37 per cent (on a year earlier) in 2018 and by 24 per cent in 2019, while high-quality heroin prices fell by an average of 11 per cent in 2018 and by 27 per cent in 2019 in Afghanistan.<sup>1</sup> Due to the bumper opium harvest

**FIG. 2** Average dry opium farm-gate prices and high-quality heroin prices in Afghanistan, January 2017–March 2020



Source: Afghanistan, Ministry of Counter-Narcotics, Afghanistan drug price monitoring monthly report (April 2020), and previous years.

<sup>1</sup> Afghanistan, Ministry of Counter-Narcotics and UNDOC, Afghanistan drug price monitoring monthly report (April 2020), and previous years.

of 2017, opium prices showed significant declines at an earlier stage (starting in 2017) than did heroin prices (basically starting in 2018), suggesting that it may have taken some time for clandestine heroin manufacture to adjust to the overall greater availability of opium before expanding, as later reflected in lower heroin prices. At the same time, data also show that, following two years of decreased opium production as compared with 2017, the downward trend in drug prices came to a halt, in the case of opium, in June 2019, and a few months later, in August 2019, in the case of heroin as well. Prior to the expected opium harvest in April/May 2020, however, opium prices started falling again in Afghanistan in March 2020 and the temporary increase in heroin prices at the beginning of 2020 also came to a halt, both for high-quality and medium-quality heroin.

### Opium production has been fluctuating greatly but global opiate seizures have increased steadily over the past two decades

Both opium production and opiate seizures have shown an upward trend over the past two decades, although the increase has been more pronounced

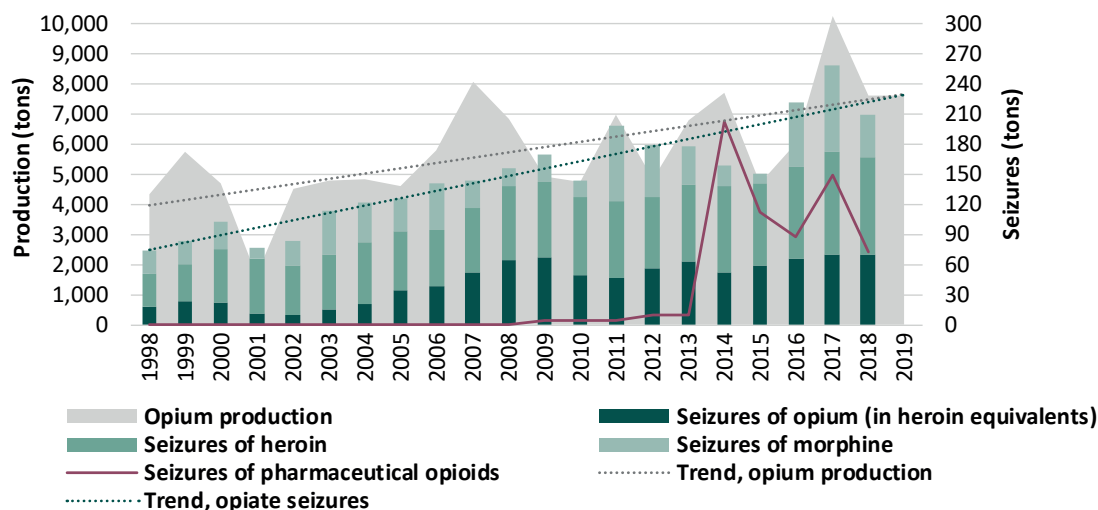
in the quantities of opiates seized than in the estimated quantities of opium produced. This suggests that law enforcement authorities may have become more efficient in intercepting trafficked opiates worldwide. An alternative explanation is that a significant decline in heroin purity over the past two decades has led to less-pure heroin being seized; but this is not backed up by available data on the development of heroin purity over time.

At the same time, annual opium production has been fluctuating more than the quantity of opiates seized and even more so than the annual quantity of heroin seized, suggesting the existence of opiate inventories. To offset fluctuations in opium production, opium may be temporarily stocked along the supply chain, thus ensuring a smooth supply of heroin to the main consumer markets.

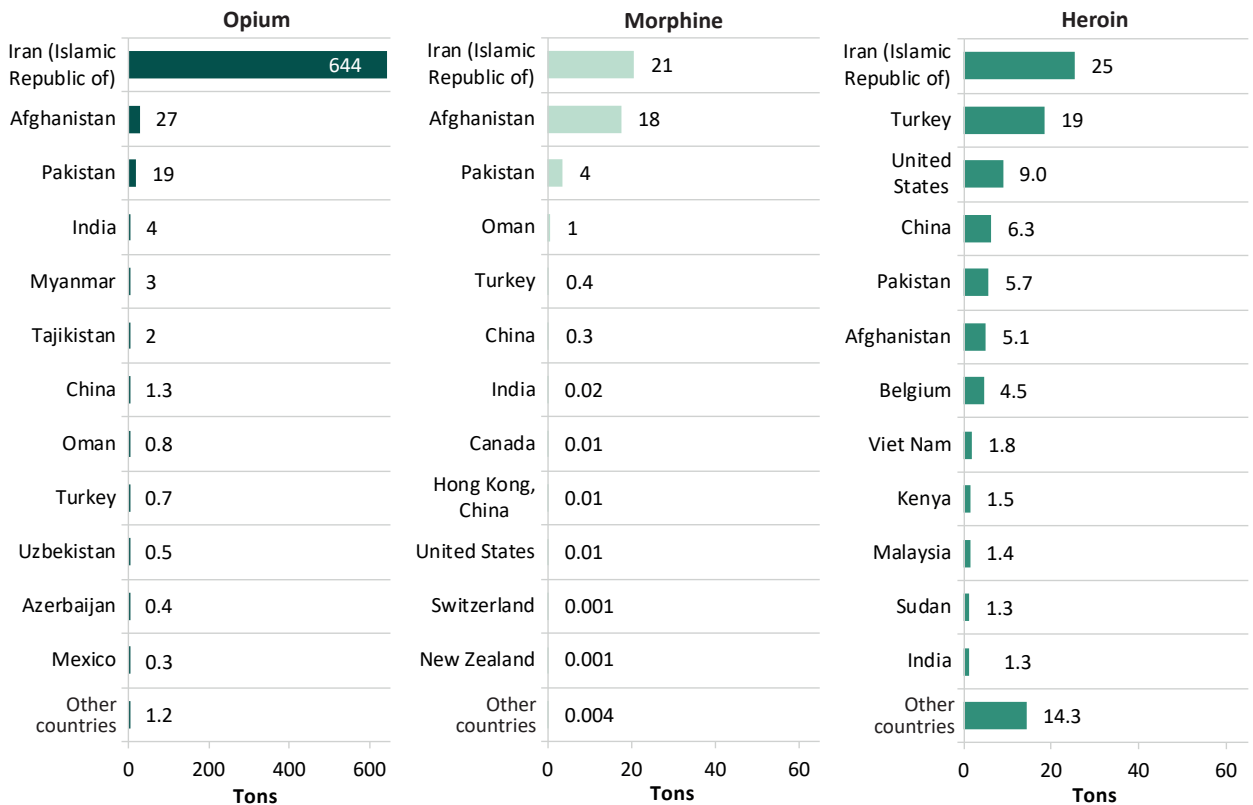
### Despite a decline in 2018, the quantity of opiates seized globally remains at a high level

Despite a 19 per cent decline in the quantity of opiates seized globally from 2017 to 2018 (calculated on the basis of converting those seizures into heroin equivalents), dropping to 210 tons, that was still the third highest amount ever reported and continued

**FIG. 3** Global opium production and quantities of opioids seized, 1998–2019



Sources: UNODC calculations based on illicit crop monitoring surveys; and UNODC, responses to the annual report questionnaire. Note: A ratio of 10:1 was used to convert quantities of opium into heroin equivalents, and a ratio of 1:1 was used to convert quantities of morphine into heroin equivalents.

**FIG. 4** Countries reporting the largest quantities of opiates seized, 2018

Source: UNODC, responses to the annual report questionnaire.

to exceed the quantity of pharmaceutical opioids seized.<sup>2</sup> The overall decline in the quantity of opiates seized in 2018 was mostly due to a decrease by half in the quantity of morphine seized. The quantity of opium and heroin seized, by contrast, remained rather stable in 2018 (+2 per cent for opium; and -6 per cent for heroin on a year earlier).

2 A direct comparison between seizures of opiates and pharmaceutical opioids is made difficult by variations in potency between different substances. The largest quantity of the pharmaceutical opioids seized, i.e., tramadol and codeine, accounting for more than 95 per cent of all pharmaceutical opioids seized in 2018, are clearly less potent than heroin, while fentanyl, accounting for 4 per cent of the quantity of all pharmaceutical opioids seized is, in principle, 50 to 100 times more potent than heroin. However, the bulk of the fentanyl seized can be highly adulterated; for example, seized fentanyl substances contain, on average, 5 per cent of fentanyl in seizures analysed in the United States (Department of Justice, DEA, *2019 National Drug Threat Assessment* (December 2019)), the country responsible for most of the fentanyl seized at the global level.

The opiate seized in the largest quantity in 2018 continued to be opium (704 tons), followed by heroin (97 tons) and morphine (43 tons). Expressed in heroin equivalents, however, heroin continued to be seized in larger quantities than opium or morphine. Globally, 47 countries reported opium seizures, 30 countries reported morphine seizures and 103 countries reported heroin seizures in 2018, suggesting that trafficking in heroin continues to be more widespread in geographical terms than trafficking in opium or morphine.

The quantities of opium and morphine seized continued to be concentrated in just a few countries in 2018, with three countries accounting for 98 per cent of the global quantity of opium seized and 97 per cent of the global quantity of morphine seized. By contrast, seizures of heroin continue to be more widespread, with 54 per cent of the global quantity of heroin seized in 2018 accounted for by the three countries with greatest seizures.

### Quantities of opiates seized remain concentrated in Asia, notably in South-West Asia

Most opiates seized are reported in or close to the main opium production areas. Thus Asia, host to more than 90 per cent of global illicit opium production and the world's largest consumption market for opiates, accounted for almost 80 per cent of all opiates seized worldwide, as expressed in heroin equivalents, in 2018.

The largest quantities of opiates continued to be seized in South-West Asia in 2018, accounting for 98 per cent of the global quantity of opium seized, 97 per cent of the global quantity of morphine seized and 38 per cent of the global quantity of heroin seized that year (i.e., equivalent to 70 per cent of all opiates seized globally as expressed in heroin equivalents). Overall, 690 tons of opium, 42 tons of morphine and 37 tons of heroin were seized in South-West Asia in 2018.

Expressed in common heroin equivalents, the country where the overall largest quantity of opiates was seized in 2018 was once again the Islamic Republic of Iran, which accounted for more than half (53 per cent) of the global total, followed by Afghanistan (12 per cent), Turkey (9 per cent), Pakistan (5 per cent), the United States (4 per cent) and China (3 per cent).

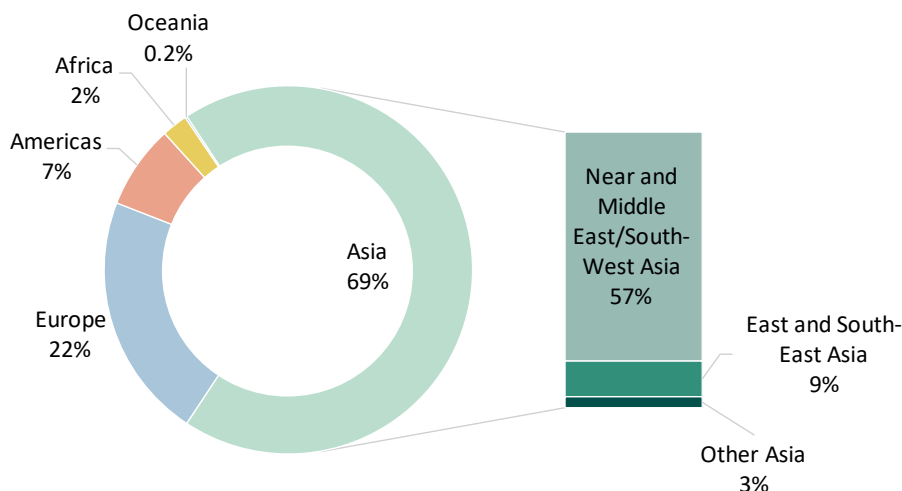
The largest quantities of both opium and morphine seized were reported by the Islamic Republic of Iran, followed by Afghanistan and Pakistan, while seizures reported by other countries remained comparatively modest. The largest total quantity of heroin seized by a country in 2018 was that seized by the Islamic Republic of Iran (for the first time since 2014), followed by Turkey, the United States, China, Pakistan, Afghanistan and Belgium.

Almost 70 per cent of the global quantities of heroin and morphine (the two main internationally trafficked opiates) seized in 2018 were intercepted in Asia, mostly in South-West Asia. The two subregions surrounding Afghanistan, South-West Asia and Central Asia, together accounted for more than 56 per cent of the global quantity of heroin and morphine seized.

### Quantities of heroin and morphine seized declined in South-West Asia

In parallel to the decrease in opium production, quantities of heroin and morphine seized in South-West Asia declined by 42 per cent in 2018, to 79 tons, from the record high reported in 2017. Despite the decline in 2018, the overall trend in seizures of heroin and morphine in that subregion continued to be an upward one over the period 2008–2018. South-West Asia continued to account for the majority of the global quantities of heroin and morphine

**FIG. 5** Distribution of global quantities of heroin and morphine seized, 2018



Source: UNODC, responses to the annual report questionnaire.  
 Note: Based on global quantities of opiates seized of 139 tons.

seized globally in 2018 (close to 56 per cent), with the largest quantities seized being reported by the Islamic Republic of Iran, followed by Afghanistan and Pakistan.

Accounting for 9 per cent of the global total in 2018, the quantities of heroin and morphine seized in East and South-East Asia declined slightly in 2018. Most heroin and morphine seizures in that subregion in 2018 were again reported by China, accounting for more than half (53 per cent) of all such seizures, followed by Viet Nam, Malaysia, Myanmar, Thailand and the Lao People's Democratic Republic.

Quantities of heroin and morphine seized in other subregions of Asia appear to have remained quite stable in 2018. That overall stable level obscures, however, the partial climb in heroin and morphine seizures reported in Central Asia and Transcaucasia following years of ongoing declines, and the decline in 2018 of seizures in South Asia, which follows a series of strong increases up to 2017.

### Quantities of heroin and morphine seized have reached record levels in Europe

The largest total quantity of heroin and morphine seized in a region outside Asia is that reported for Europe (22 per cent of the global total in 2018), which is an important market for the consumption of heroin. Heroin and morphine seized in Eastern and South-Eastern Europe continued to account for the bulk (66 per cent) of all such quantities seized in Europe in 2018, with most of the heroin and morphine seized in the region continuing to be reported by Turkey (62 per cent), followed by Western and Central Europe (31 per cent) and Eastern Europe (3 per cent) in 2018.

The quantities of heroin and morphine seized in Europe more than doubled in 2017 and rose by a further 24 per cent in 2018 to reach a record level of 30 tons, thus exceeding the previous record level of 29 tons in 2008. While the strongest increase in the quantities of heroin and morphine seized in 2017 was reported in Eastern and South-Eastern Europe (the same year as the bumper opium harvest reported in Afghanistan), the strongest increase in 2018 was reported in Western and Central Europe (89 per cent). This suggests that it may take a year from when opium is harvested in Afghanistan until

it is manufactured into the heroin that ends up on the streets of Western and Central Europe. There were increases in heroin and morphine seizures in Europe in the countries along the Balkan route in 2018, although most of the increase was due to an increase in the quantities of heroin and morphine seized in Belgium and, to a lesser extent, in France and Italy.

In contrast to Western and Central Europe as a whole, which continues to be supplied mainly by heroin trafficked along the Balkan route by land, trafficking to Belgium in 2018 to a large extent (98 per cent) took the form of maritime shipments departing from the Islamic Republic of Iran or Turkey. Similarly, trafficking to Italy was characterized by maritime shipments in 2018 (61 per cent of the total quantity seized by customs authorities), with the bulk of seizures in 2018 having departed from the Islamic Republic of Iran in containers, followed by shipments by air (37 per cent), often departing from the Middle East (Qatar) or Africa (South Africa), while heroin shipments destined for France typically transited the Netherlands and Belgium in 2018.<sup>3</sup> The overall largest quantities of heroin and morphine seized in Western and Central Europe in 2018 were reported by Belgium, followed by France, Italy, the United Kingdom and the Netherlands.

Seizures of heroin and morphine in Eastern and South-Eastern Europe, which had tripled in 2017, rose by a further 6 per cent in 2018. Turkey continued to account for the bulk of heroin and morphine seized in that subregion (95 per cent). Quantities of heroin and morphine seized in Eastern Europe rose by 60 per cent in 2018, partly reversing the long-term downward trend in such seizures. Most of these seizures were reported by the Russian Federation.

### Quantities of heroin and morphine seized are on the rise in the Americas

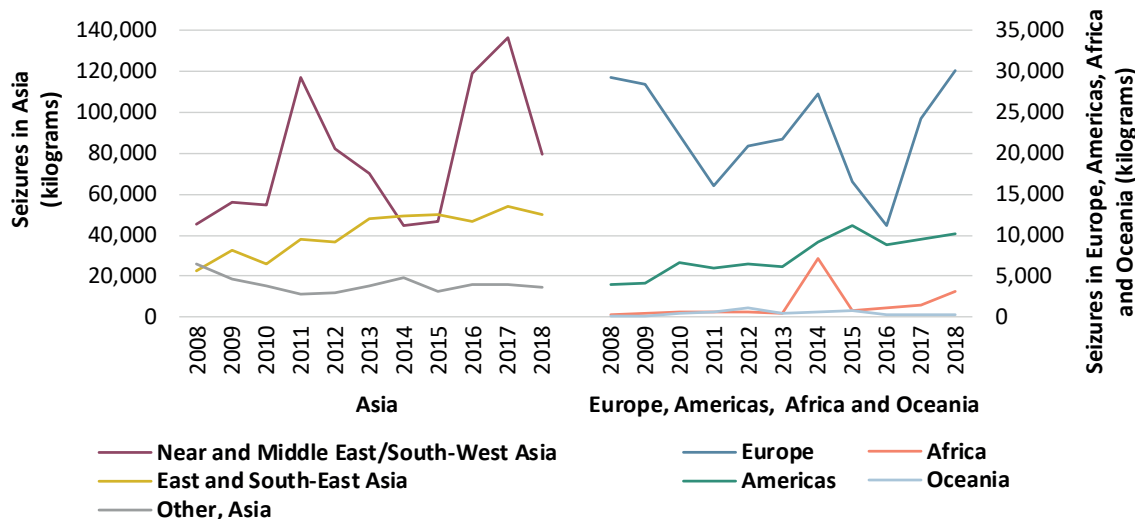
Quantities of heroin and morphine seized in the Americas rose by 9 per cent in 2017 and by a further 8 per cent in 2018 to reach 10 tons.

Heroin trafficking in the Americas remains concentrated in North America. The subregion accounted

3 UNODC, responses to the annual report questionnaire.



**FIG. 6** Quantities of heroin and morphine seized, by region, 2008–2018



Source: UNODC, responses to the annual report questionnaire.

for 94 per cent of all quantities of heroin and morphine seized in the Americas in 2018, when seizures reported in North America were almost four times as high as a decade earlier. Seizures made in the United States accounted for 87 per cent of all heroin and morphine seized in the Americas in 2018, followed by Mexico (the country where most opium is produced in the region), Colombia, Ecuador, Brazil, Canada and Guatemala.

### Heroin and morphine seizures are also on the rise in Africa

Heroin and morphine seizures reported in Africa, which account for approximately 2 per cent of the global total, rose by some 30 per cent in 2017 and doubled in 2018 to 3.1 tons. The quantity seized in 2018 was thus 10 times that seized 2008.

Most of the heroin and morphine seized in Africa in 2018 was reported in East Africa (52 per cent of all heroin and morphine seized in Africa in 2018), followed by seizures reported in North Africa (42 per cent), while seizures remained more modest in West and Central Africa (4 per cent of the total) and Southern Africa (2 per cent of the total).

### Quantities of heroin and morphine seized are declining in Oceania

Heroin and morphine seizures in Oceania, by contrast, declined for the third year in a row and are

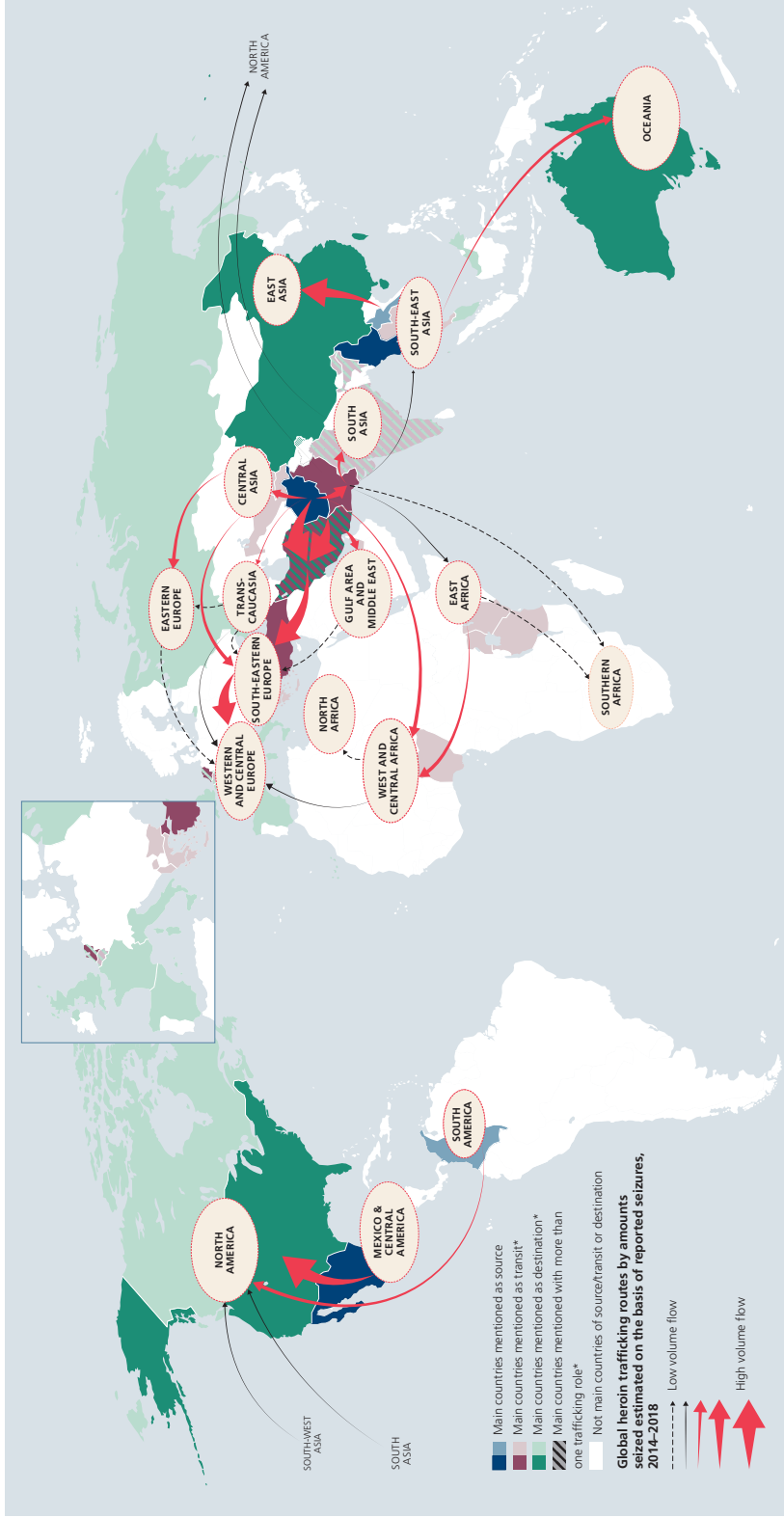
now at the lowest level since 2009. More than 99 per cent of all reported heroin and morphine seizures in Oceania took place in Australia.

## Opiate trafficking

The main opiate trafficking flows depart from the three key production areas:

- Afghanistan: supplying markets in neighbouring countries (notably in Iran (Islamic Republic of), Pakistan, countries in Central Asia/Transcaucasia and India), Europe, the Near and Middle East, South Asia and Africa, with smaller amounts supplied to South-East Asia, North America (mostly Canada) and Oceania;
- South-East Asia (Myanmar and, to a lesser extent the Lao People’s Democratic Republic): supplying markets in East and South-East Asia and Oceania;
- Latin America (most notably Mexico, and, to a far lesser extent, Colombia and Guatemala): accounting for most of the heroin supply to North America (most notably the United States), while also supplying the still small heroin markets of South America.

**MAP 1** Main heroin trafficking routes as described in reported seizures, 2014–2018



Source: UNODC, responses to the annual report questionnaire, and individual drug seizure database.

\* A darker shade indicates a larger amount of heroin being seized with the country as source/transit/destination. The size of the route is based on the total amount seized on that route, according to the information on trafficking routes provided by Member States in the annual report questionnaire, individual drug seizures and other official documents, over the 2014–2018 period. The routes are determined on the basis of reported country of departure/transit and destination in these sources. As such, they need to be considered as broadly indicative of existing trafficking routes while several secondary routes may not be reflected. Route arrows represent the direction of trafficking: origins of the arrows indicate either the area of departure or the one of last provenance, end points of arrows indicate either the area of consumption or the one of next destination of trafficking. Therefore, the trafficking origin does not reflect the country in which the substance was produced. The main countries mentioned as transit or destination were identified on the basis of both the number of times they were identified by other Member States as departure/transit or destination of seizures, and the annual average amount that these seizures represent during the 2014–2018 period. For more details on the criteria used, please see the Methodology section of the present report.

The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations. The dotted line represents approximately the Line of Control in Jammu and Kashmir agreed upon by India and Pakistan. The final status of Jammu and Kashmir has not yet been agreed upon by the parties.

## Trafficking in opiates continues to be dominated by those originating in Afghanistan

In line with the dominance of the opium production in Afghanistan, quantities of heroin and morphine seized related to Afghan opiate production accounted for some 84 per cent of the global total in 2018, a slight decrease from 88 per cent in 2017, the year of the bumper harvest in the country. Most of the heroin found in Europe, Central Asia/Transcaucasia and Africa is derived from opium of Afghan origin, accounting for 100 per cent of all mentions in the responses to the annual report questionnaire by countries in Central Asia/Transcaucasia, 96 per cent in Europe and 87 per cent in Africa over the period 2014–2018.

### *Most opiates originating in Afghanistan are trafficked along the Balkan route and its various branches*

The world's single largest heroin trafficking route continues to be the so-called "Balkan route", along which opiates from Afghanistan are shipped to Iran (Islamic Republic of), Turkey, the Balkan countries and to various destinations in Western and Central Europe. Not counting seizures made in Afghanistan itself, countries along the Balkan route accounted for 58 per cent of the global quantities of heroin and morphine seized in 2018. A further 8 per cent of those global seizures were reported by countries in Western and Central Europe, whose markets are supplied to a great degree by heroin and morphine that is trafficked along the Balkan route.

Most heroin and morphine seized along the Balkan route in 2018 continued to be that reported by the Islamic Republic of Iran (46 tons), followed by Turkey (19 tons) and the Balkan countries (3 tons). By comparison, the countries of Western and Central Europe seized 9 tons that year.

The Islamic Republic of Iran reported that 75 per cent of the morphine and 75 per cent of the heroin seized on its territory in 2018 had been trafficked via Pakistan, while the remainder had been smuggled directly into the country from Afghanistan. Typically, heroin is then smuggled to Turkey (70 per cent of all the heroin seized in the Islamic Republic of Iran in both 2016 and 2017) and from

there along the Balkan route to Western and Central Europe, either via the western branch of the route via Bulgaria to various western Balkan countries or, to a lesser extent, via the eastern branch of the route via Bulgaria and then to Romania and Hungary, before reaching the main consumer markets in Western and Central Europe.

Heroin trafficking along the Balkan route was referred to in roughly 80 per cent of mentions of countries of origin, departure and transit in responses to the annual report questionnaire by countries in Western and Central Europe over the period 2014–2018. A further 3 per cent referred to shipments via the Islamic Republic of Iran and 7 per cent mentioned shipments via Pakistan, in both cases with subsequent smuggling along the Balkan route to consumer markets in Western and Central Europe. However, heroin is also smuggled to Western and Central Europe either via direct shipments from the Islamic Republic of Iran and Pakistan or via the southern route to Western Europe.

### *Opiate trafficking via the countries of the Caucasus is increasing*

In 2018, the Islamic Republic of Iran saw an increase in heroin seized in transit to the Caucasus countries.<sup>4,5</sup> In parallel, seizures of heroin and morphine reported in the Caucasus region also increased, from 0.3 tons in 2017 to 1.3 tons in 2018. From the two countries in the Caucasus bordering the Islamic Republic of Iran, heroin is trafficked either to Georgia (with 70 per cent transiting Azerbaijan and 20 per cent Armenia in 2018) and from there across the Black Sea to other countries in Europe, or from Azerbaijan to the Russian Federation. The increasing importance of the Caucasus region has also been identified by the Russian Federation, which reported that by 2018 some 40 per cent of the heroin found on its market had transited Azerbaijan, up from 30 per cent in 2017.

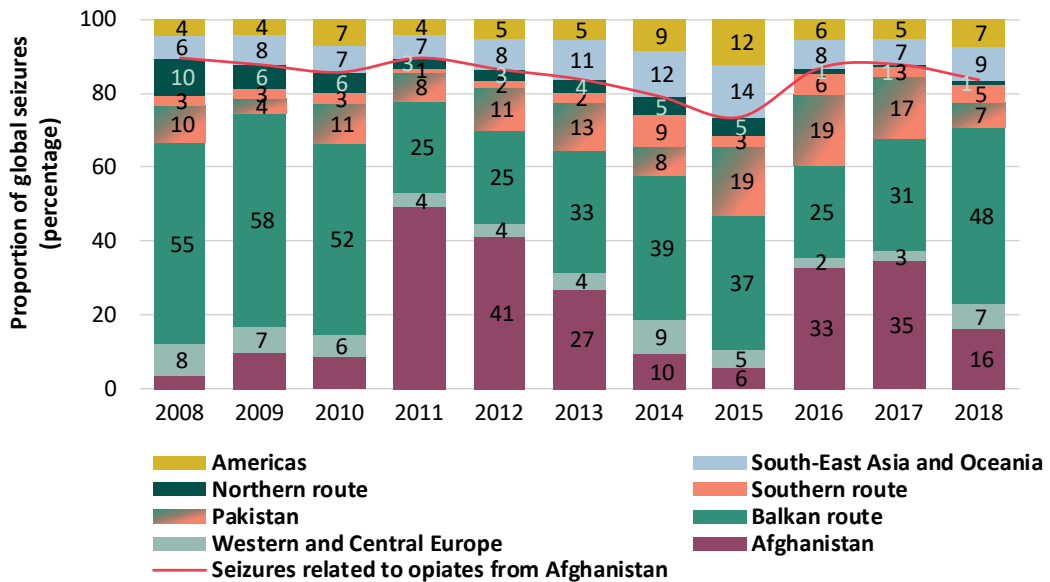
### *Opiate trafficking along the northern route to the Russian Federation is on the decrease, but is on the increase to Western Europe*

Trafficking in heroin via the traditional northern route, i.e., via Central Asia, declined over the past

4 UNODC, responses to the annual report questionnaire.

5 UNODC, Drugs Monitoring Platform.

**FIG. 7** Distribution of the quantities of heroin and morphine seized, by main trafficking route, 2008–2018



Source: UNODC, responses to the annual report questionnaire.

Note: The Balkan route: Islamic Republic of Iran, half of Transcaucasia, South-Eastern Europe; the southern route: South Asia, Gulf countries and other countries in the Near and Middle East and Africa; the northern route: Central Asia, Eastern Europe and half of Transcaucasia. Heroin seized in Transcaucasia was partly attributed to the Balkan route and partly to the northern route as it may supply both routes.

decade. Accounting for just 1 per cent of the global quantities of heroin and morphine seized in 2018, such trafficking was down from 10 per cent in 2008, with declines in heroin (and morphine) seizures reported by the countries of Central Asia and by the Russian Federation.

At the same time, trafficking groups from outside the region – making use of citizens from various countries in the region – may have begun to exploit the northern route by trafficking heroin in trucks via the Islamic Republic of Iran to countries in Central Asia and then countries of the Eurasian Customs Union, including Kyrgyzstan, Kazakhstan, the Russian Federation and Belarus, to final destinations in Western and Central Europe.

Examples of this newly emerging pattern include the seizure of 670 kg of heroin from Afghanistan intercepted in Frankfurt an der Oder, Germany, in May 2019 on a truck travelling from Kyrgyzstan to Belgium driven by a Turkish national living in Kyrgyzstan; the seizure of 1.1 tons of heroin seized in Kazakhstan on a truck that had departed the Islamic Republic of Iran with a final destination in Germany

– a trafficking operation that involved people from Iran (Islamic Republic of), Turkey, Serbia, Poland, Germany and the Netherlands; and the seizure of some 550 kg of heroin in Minsk, in November 2019, which had been trafficked via the northern route to Belarus for onward trafficking to the European Union, involving a number of foreign nationals.<sup>6,7</sup>

*Small quantities of heroin continue to be trafficked along the southern route*

Trafficking along the southern route includes heroin trafficking via Pakistan or the Islamic Republic of Iran to India (for domestic consumption and re-export to countries in the region) and to Africa (for local consumption and re-export to Europe). Beyond Pakistan, countries along the southern route accounted for 6 per cent of the global quantities of heroin and morphine seized (excluding seizures made in Afghanistan) in 2018, up from 3 per cent in 2015.

6 Ibid.

7 UNODC meeting on the recent developments of the opiate market in Central Asia, the Russian Federation and the Caucasus, Vienna, 29–30 January 2020.

Overall, 11 per cent of mentions of countries of origin, departure and transit of heroin by countries in Western and Central Europe were linked to trafficking along the southern route over the period 2014–2018. The main countries identified in which heroin was trafficked along the southern route to Western and Central Europe over the period 2014–2018 included India, the Gulf countries (notably Qatar and United Arab Emirates) and a number of Southern and East African countries (notably South Africa, Kenya, Ethiopia, Mozambique, the United Republic of Tanzania, Rwanda, Burundi, Uganda and Madagascar). The European countries reporting most trafficking along the southern route over the period 2014–2018 were Belgium (mostly via Kenya, Burundi, Rwanda, Uganda, South Africa, Ethiopia and the United Republic of Tanzania) and Italy (mostly via Qatar, the United Arab Emirates, South Africa, Ethiopia, Madagascar and Oman).

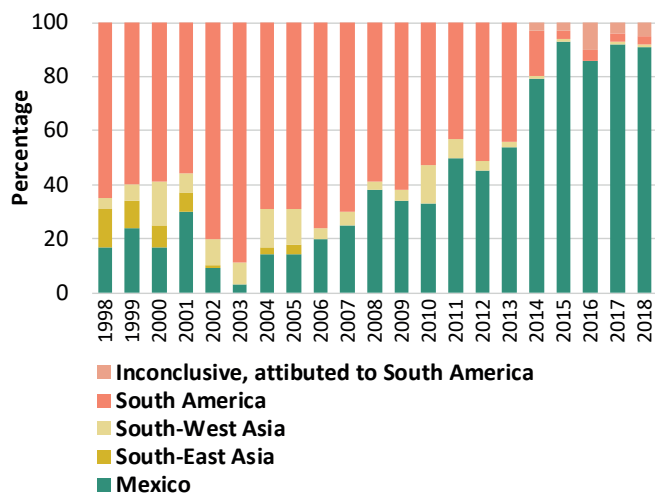
### Decline in heroin trafficking in East and South-East Asia while supply to Oceania continues

The most significant trafficking activities worldwide of opiates not of Afghan origin concern opiates produced in South-East Asia (mostly Myanmar), which are trafficked to other markets in East and South-East Asia (mostly China and Thailand) and to Oceania (mostly Australia). Seizures made in those countries accounted for 11 per cent of the global quantities of heroin and morphine seized (excluding seizures made by Afghanistan) in 2018, down from 15 per cent in 2015. This went in parallel with reported reductions in opium production in Myanmar of 20 per cent over the period 2005–2018.

Despite the recent declines in opium production in Myanmar, based on a detailed analysis of bulk weight border seizures, Australian authorities reported that the proportion of heroin seized that was of South-East Asian origin increased from a low of 26 per cent in 2008 to almost 100 per cent over the period January–June 2018.<sup>8</sup> Nonetheless, in line with the reported declines in opium production in Myanmar, the quantities of heroin seized at Australia’s borders turned out to be lower in the fiscal

8 Australian Criminal Intelligence Commission, *Illicit Drug Data Report 2017–18* (Canberra, 2019).

**FIG. 8** Origin of heroin seized at the wholesale level in the United States, 1998–2018



Source: United States Department of Justice, DEA, *2019 National Drug Threat Assessment* (December 2019), p. 24.

Note: Regarding the very high proportions shown for South America at the beginning of the twenty-first century, which were not in line with United States opium production estimates for South America (or United Nations estimates), some questions were raised. It was argued that the sampling used may not have been representative and that the high proportions for South America may have also been the result of some heroin manufacturers in Mexico using “Colombian manufacturing methods”, resulting in such heroin being classified as South American heroin in United States statistics in the past. In fact, South American and South American-like heroin manufactured in Mexico are currently the most challenging to differentiate in terms of geographical origin through the analysis of their organic composition.<sup>9, 10, 11, 12, 13</sup>

year 2017/18 than in 2014/15. The main embarkation point for heroin seized at the Australian border in 2017/18 was, by weight, Thailand, followed by the Lao People’s Democratic Republic, Malaysia, Cambodia and Viet Nam – all countries located in South-East Asia.

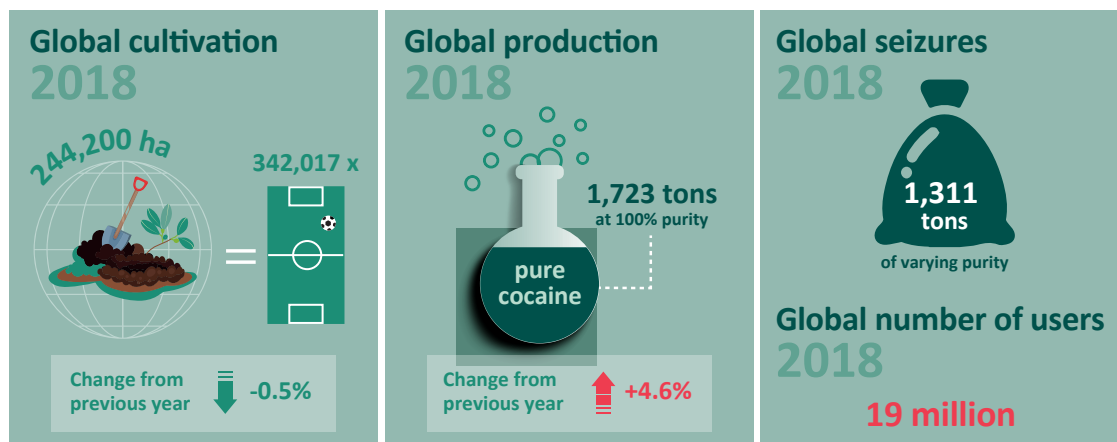
- 9 United States General Accounting Office, “Review of the Drug Enforcement Administration’s Heroin Signature and domestic monitor programs” (February 2001).
- 10 United States General Accounting Office, “Drug Control: DEA could improve its heroin signature and domestic monitor programs’ geographic source data” (March 2002).
- 11 Steven Dudley and David Gagne, “What US heroin seizures tell us about the market”, *InSight Crime*, 8 December 2014.
- 12 United States, Drug Enforcement Agency, Intelligence Programs Section, *The Heroin Signature Program and Heroin Domestic Monitor Program: 2014 Reports* (September 2016).
- 13 Joshua DeBoard and others, “Profiling of heroin and assignment of provenance by<sup>87</sup> Sr/<sup>86</sup> Sr isotope ratio analysis”, *Inorganica Chimica Acta*, vol. 468, November 2017, pp. 294–299.

### Most heroin trafficked in the Americas continues to originate within the region

On the basis of seizure data, heroin trafficking within the Americas, in particular to the United States, appears to have increased over the past decade. Quantities of heroin and morphine seized reported in the Americas rose from 4 per cent of the global total (excluding seizures made in Afghanistan) in 2008 to 9 per cent in 2018.

Most heroin (and morphine) trafficking in the Americas continues to take place within North America, i.e., from Mexico to the United States and, to a far lesser extent, from Colombia and from Guatemala (typically via Mexico) to the United States. Based on forensic profiling, United States authorities estimated in 2017 that over 90 per cent of the heroin samples analysed originated in Mexico and 4 per cent in South America, while around 1 per cent originated in South-West Asia. This stands in stark contrast to a decade earlier (2007), when only 25 per cent was sourced from Mexico and 70 per cent was imported from South America.<sup>14</sup>

<sup>14</sup> United States Department of Justice, DEA, *2019 National Drug Threat Assessment* (December 2019), p. 24.

**COCAINE**

## Cultivation of coca bush and manufacture of cocaine

### A trend towards stabilization in 2018, following years of increase

Following a massive upward trend over the period 2013–2017, during which the area under coca bush cultivation at the global level more than doubled, the size of that area seems to have stabilized and remained, in 2018, at a historically high level. According to preliminary estimates, the global area under coca cultivation may have even declined marginally in 2018 compared with a year earlier due to declines reported by Colombia (1.2 per cent) and Bolivia (Plurinational State of) (5.7 per cent), while comparable estimates for Peru are not available.

Even though final global estimates for 2018 are not yet available, preliminary results indicate that Colombia remains the country where most coca leaf is produced. In 2017, the latest year for which comparable estimates are available, Colombia accounted for 70 per cent of the global area under coca cultivation, Peru for 20 per cent and Bolivia (Plurinational State of) for 10 per cent.<sup>15</sup>

On the basis of preliminary estimates, the global manufacture of cocaine hydrochloride may have reached its highest level ever in 2018, at 1,723 tons

(expressed at 100 per cent purity). While cocaine manufacture is estimated to have almost doubled between 2014 and 2018, growth in manufacture has slowed over the years, pointing to a potential stabilization in 2018. Global cocaine manufacture increased by 37 per cent between 2015 and 2016, by 23 per cent between 2016 and 2017, and by 4.6 per cent between 2017 and 2018.

### Precursors and essential chemicals in the manufacture of cocaine

The cocaine manufacturing process is generally well understood. However, it varies by region and according to the availability of precursors and essential chemicals. The manufacture of cocaine hydrochloride, the most common cocaine retail product distributed across drug consumption markets, relies on a number of precursor substances and essential chemicals, including potassium permanganate, sodium metabisulfite, calcium chloride, ammonia, ethyl ether and diethyl ether, toluene, dichloromethane (methylene chloride), methyl ethyl ketone (MEK), hydrochloric acid, sulphuric acid and gasoline.

Most of these substances are diverted from legal supply in the chemical industry. However, cocaine manufacturers, especially in Colombia, are increasingly aiming to achieve self-sufficiency by producing certain crucial substances themselves, including potassium permanganate. Thus, after

<sup>15</sup> *World Drug Report 2019* (United Nations publication, Sales No. E.19.XI.8).

## The impact of improved efficiency in cocaine manufacture

An increase in the size of coca leaf harvests since 2014 has contributed to the dramatic increase in global cocaine manufacture in recent years, most notably in Colombia.

Moreover, the concentration of coca leaf production in some high-yield areas, in combination with a decline in eradication over the past few years, cultivation on larger plots (almost doubling in size in Colombia from, on average, 0.6 ha in 2013 and 2014 to 1.1 ha in 2018), the use of higher-yielding varieties, and improvements in agricultural practices and in the age structure of the coca bush plants, with plants reaching the right age for coca leaf to be harvested, are all factors that appear to have contributed to higher yields of coca leaf. The coca leaf yield rose in Colombia from an average of 4.7 tons of fresh coca leaf per hectare in 2014 to 5.7 tons per hectare in 2018.<sup>a</sup>

Regarding overall laboratory efficiency, however, opposing trends have been observed. On the one hand, that efficiency has declined as more and more farmers, notably in Colombia, have started not only to cultivate coca leaf but also to become involved in the manufacture of coca paste or cocaine base (to date, some 45 per cent of those farmers). This is done in small, relatively rudimentary manufacturing facilities, often without even basic chemistry skills. Other factors are the significant increases in coca leaf production and thus falling and/or strongly fluctuating coca leaf prices as “traditional” coca leaf buyers, in particular groups operating under the protection of FARC in territories under its control, left the market, thereby prompting farmers to become more involved in the various processes requisite to the manufacture of cocaine.

On the other hand, there is evidence of a concurrent increase in the optimization of cocaine-manufacturing processes in the larger laboratories. A recently identified trend has been the use of “re-oxidized base”, which involves the standardization of the oxidation level of batches of cocaine base produced (often by farmers) in different locations before it is all processed into cocaine hydrochloride.<sup>b</sup> Another recent development, which may be linked to the previous one, is batches of cocaine base produced (often by farmers) in different locations before it is all processed into cocaine hydrochloride.<sup>b</sup>

Nonetheless, it appears that overall laboratory efficiency is now significantly lower than a decade ago (although some of the changes are also the result of improved and more rigorous data collection). This prompted a revision of the coca leaf-to-cocaine hydrochloride conversion ratios for Colombia, which was retrospectively applied to all years from 2014 onwards. While previous calculations suggested that in 2017, on average, approximately 8.2 kg of cocaine hydrochloride (at 100 per cent purity) could be obtained per hectare under coca cultivation (harvested) in Colombia, a revised calculation, taking into account the greater share of farmers involved in the coca paste and base production process, arrived at a significantly lower ratio of an average of just 6.3 kg of cocaine hydrochloride per hectare under coca cultivation (harvested) in 2017.<sup>c</sup>

Nevertheless, based on the revised data set for Colombia, it has been detected that the overall efficiency of the coca sector in Colombia has been improving in recent years – an improved efficiency that is then reflected in the manufacturing of cocaine at the global level. Overall, an average of 5.2 kg of cocaine hydrochloride were obtained per hectare under coca cultivation (harvested) in Colombia in 2015, rising to 6.3 kg in 2017 and to 6.5 kg in 2018.<sup>d</sup>

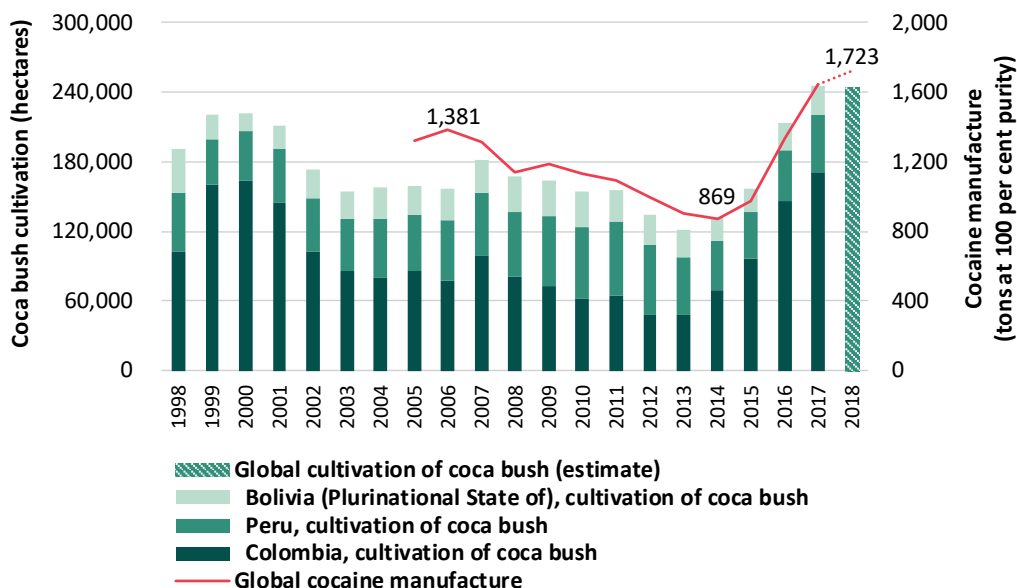
<sup>a</sup> UNODC and Colombia, Colombia: *Monitoreo de Territorios Afectados por Cultivos Ilícitos 2017* (September 2018).

<sup>b</sup> EMCDDA and Europol, *EU Drug Markets Report 2019* (Luxembourg, Publications Office of the European Union, 2019).

<sup>c</sup> UNODC and Colombia, Colombia: *Monitoreo de Territorios Afectados por Cultivos Ilícitos 2017*.

<sup>d</sup> UNODC and Colombia, Colombia: *Monitoreo de Territorios Afectados por Cultivos Ilícitos 2018* (August 2019).



**FIG. 9** Global coca bush cultivation and cocaine manufacture, 1998–2018

Sources: UNODC, coca cultivation surveys in Bolivia (Plurinational State of), Colombia and Peru, 2018 and previous years; United States Department of State, *International Narcotics Control Strategy Report*, various years.

Note: The 2018 global estimate is preliminary as comparable data for Peru are not available.

record-breaking seizures of potassium permanganate in 2016 (585 tons), there followed a sharp decline in seizures of the substance in subsequent years, falling to 70 tons in 2018,<sup>16</sup> which can be explained, at least in part, by this development, as it reduces the likelihood of trade flows of those substances being intercepted by the authorities.

### Coca cultivation continues to be widespread in Colombia

The overall area under coca bush cultivation in Colombia decreased by 1.2 per cent in 2018 compared with a year earlier. However, reductions in the area under coca bush cultivation in 2018 were observed in only about two thirds of all the departments in Colombia where coca cultivation is taking place. In parallel, there has been an ongoing trend towards an ever-stronger geographical concentration of coca leaf production in Colombia. By 2018, five departments (Nariño, Norte de Santander, Putumayo, Cauca and Antioquia, in order of size of area under coca cultivation) accounted for almost 80 per

cent of the national area under coca cultivation in Colombia, while 8 of the 22 coca leaf-producing departments had less than 100 ha under cultivation in 2018.<sup>17</sup>

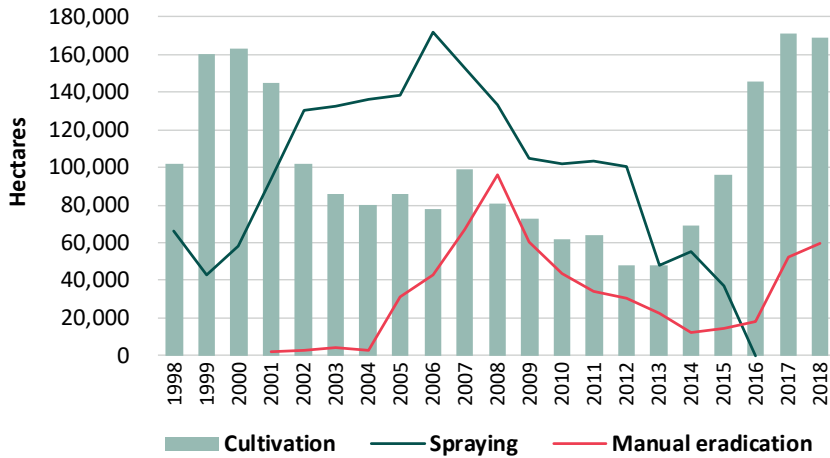
Nonetheless, coca cultivation in Colombia remains widespread and continued to be identified in close to 70 per cent of all departments in Colombia (i.e., in 22 of 32 departments). In 2018, most coca bush cultivation continued to take place in the south of the country, notably in Nariño (25 per cent of the total) and Putumayo (16 per cent), although cultivation in those two departments declined by 8 per cent and 11 per cent, respectively, in 2018 compared with a year earlier. By contrast, cultivation in northern Colombia, notably in Norte de Santander (20 per cent of total cultivation) increased by 19 per cent from 2017 to 2018.<sup>18</sup> At the regional level, the strongest declines were found in the departments of Meta and Guaviare in south-central Colombia (-31 per cent) and the Amazon region (-25 per cent), i.e., the southern region bordering Peru and Brazil.

<sup>17</sup> Ibid.

<sup>18</sup> Ibid.

<sup>16</sup> E/INCB/2019/4.

**FIG. 10** Area under coca bush cultivation, sprayed and manually eradicated in Colombia, 1998–2018



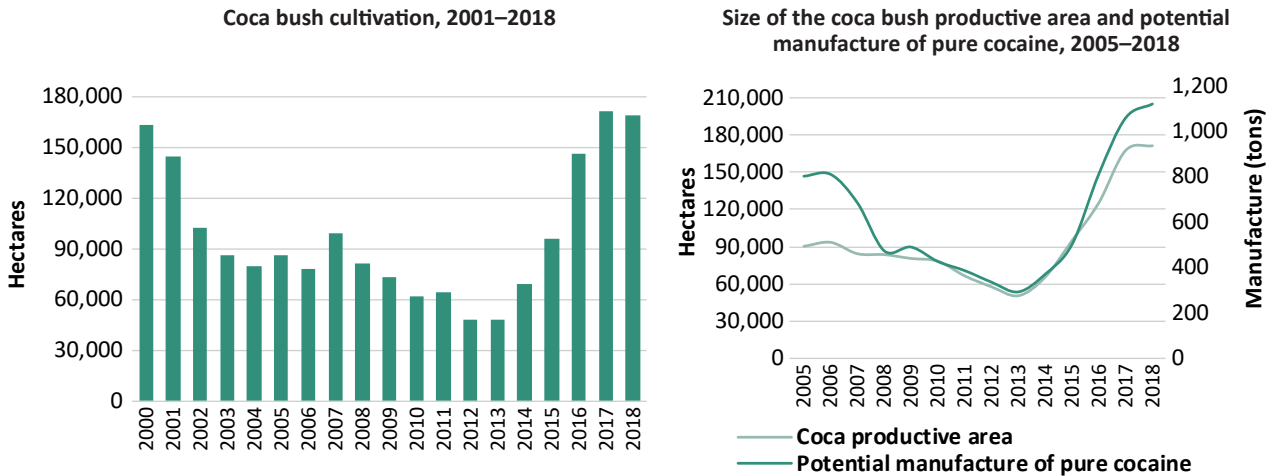
Source: UNODC and Colombia, *Colombia: Monitoreo de Territorios Afectados por Cultivos Ilícitos 2018* (August 2019), and previous years.

Despite the slight decline in the size of the area under coca cultivation in 2018, coca cultivation was still at the second highest level ever reported in Colombia. In parallel to the decline in coca bush cultivation in Colombia, by 2,000 ha, to 169,000 ha in 2018, manual eradication of coca bush increased by almost 8,000 ha to almost 60,000 ha.

**Cocaine manufacture is still on the increase in Colombia despite a slight decrease in the area under coca cultivation**

The estimated area under cultivation in Colombia as at 31 December 2018 totalled 169,000 ha, a slight decrease from 171,000 ha in 2017. The “productive

**FIG. 11** Coca cultivation and manufacture of cocaine in Colombia



Source: UNODC and Colombia, *Colombia: Monitoreo de Territorios Afectados por Cultivos Ilícitos 2018* (August 2019).

area” increased, nonetheless, by 3.8 per cent in 2018 as more of the areas where coca bush had previously been planted became “productive” as the plants matured and reached the right age for coca leaf to be harvested. In parallel, coca yields increased further, with fresh coca leaf production rising by 5 per cent. Finally, an increase in laboratory efficiency meant that overall manufacture of cocaine increased further, by 5.9 per cent, to 1,120 tons, in 2018.

Over the period 2013–2018, the amount of illicit cocaine manufactured almost quadrupled in Colombia, thus increasing more significantly than did coca cultivation, which doubled over this period. At the same time, growth in the manufacturing of cocaine hydrochloride in Colombia has slowed down from

62 per cent year-on-year growth in 2016 and 31 per cent in 2017 to 5.9 per cent in 2018.<sup>19</sup>

### Coca bush cultivation in Peru

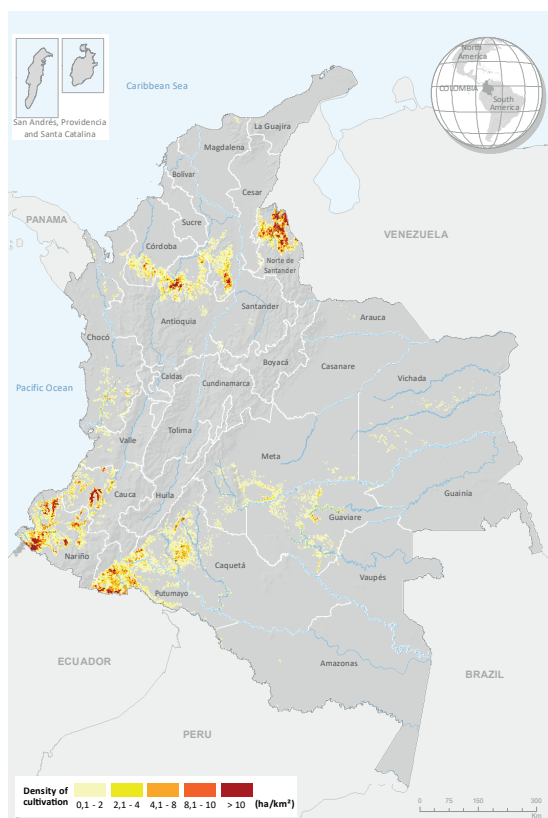
Peru accounts for approximately one fifth of global coca bush cultivation. While no coca bush cultivation survey was carried out by the Peruvian authorities and UNODC in 2018, the latest estimates verified by UNODC for 2017 suggested a total area of 49,900 ha under coca bush cultivation, approximately 14 per cent more than a year earlier. Most coca leaf production was reported in the valley of the three rivers Apurimac, Ene and Mantaro (VRAEM), located east of the capital, Lima, accounting for 67 per cent of the national total, and in La Convención y Lares (13 per cent of the total), located even further east. By contrast, only very modest coca leaf production was reported in Peru’s traditional coca-producing region, Alto Huallaga (4 per cent of national coca leaf production).<sup>20</sup>

After a long-term decline in coca cultivation in Peru throughout the 1990s and a resurgence in production in the early 2000s, the area under coca bush cultivation in that country fluctuated between 40,000 and 65,000 ha throughout the 2010s. Since 2016, however, coca cultivation and potential production output have undergone moderate year-on-year increases.<sup>21, 22</sup>

Between January 2020 and April 2020 coca leaf prices declined by 46 per cent in Peru as a whole and in the main coca-producing region, VRAEM, by 61 per cent. Previously close to the national average, coca leaf prices in VRAEM turned out to be almost one third below the national average in April 2020.

Over the period January to April 2020, price decreases in Peru were also observed for coca paste (-23 per cent) and cocaine hydrochloride (-25 per

**MAP 2** Absolute variation of the area under coca bush cultivation, 2017–2018



Source: UNODC and Colombia, *Colombia: Monitoreo de Territorios Afectados por Cultivos Ilícitos 2018* (September 2019).

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

19 Ibid.

20 UNODC and Peru, *Perú: Monitoreo de Cultivos de Coca 2017* (December 2018).

21 Ibid., and previous years.

22 According to estimates from the United States, which are not fully comparable with those from the surveys implemented by the Government of Peru and UNODC, the area under coca cultivation amounted to 49,800 ha in 2017 and to 52,100 ha in 2018 (United States, Office of National Drug Control Policy 2019, “ONDCP releases data on coca cultivation and production in Peru”, 30 September 2019).

cent) but were less marked than those for coca leaf.<sup>23</sup> This may indicate a decline in the demand for coca-related products in the wake of the COVID-19 pandemic as restrictions on the movement of persons were applied, leading, in particular, to a decline in the demand for coca leaf by the laboratories that process it into cocaine hydrochloride, thus resulting in falling coca leaf prices.

### Slight decrease in coca bush cultivation in the Plurinational State of Bolivia

The area under coca bush cultivation in the Plurinational State of Bolivia decreased by 5.7 per cent from 2017 to 2018, to 23,100 ha; this was equal to the estimated level in 2013, although still only half the size at the peak in 1990 (50,300 ha). Most coca bush in the country continues to be cultivated in the traditional coca-producing area, Yungas de La Paz (65 per cent in 2018), and to a lesser extent in Trópico de Cochabamba (33.5 per cent). Coca bush cultivation also takes place at a very low level in Norte de La Paz (1.5 per cent). While very small

compared with the country's other coca-producing areas, the area under cultivation in Norte de La Paz increased by 57 per cent from 2017 to 2018.

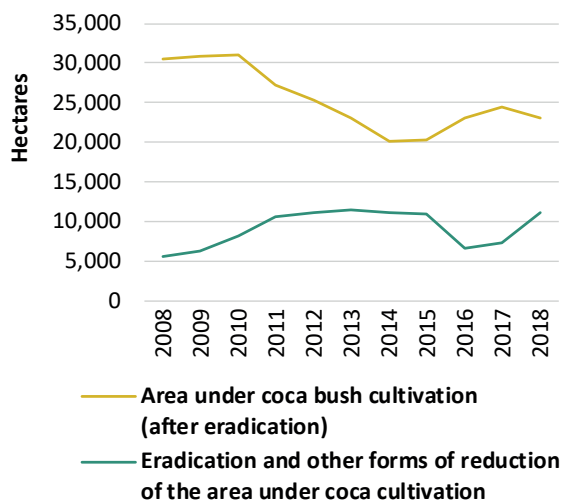
The reduction in coca bush cultivation in the Plurinational State of Bolivia in 2018 continues the gradual decrease in the area under cultivation that occurred in the period 2010–2015, during which cultivation decreased by 35 per cent. While there was a subsequent increase in the area under cultivation in 2016 and 2017, the area used for coca bush cultivation remains considerably smaller than it was a decade ago.<sup>24</sup>

### Quantities of cocaine seized show early signs of stabilization at a high level

In 2018, the total global quantity of cocaine seized increased by 2.7 per cent, to 1,311 tons (prior to purity adjustments), over the preceding year. The annual rate of increase fell, however, from a 41 per cent increase in 2015 to a 23 per cent increase in 2016 and 13 per cent in 2017, and to a less than 3 per cent increase in 2018, thus showing early signs of a trend towards stabilization in seizure levels. Nevertheless, total global seizures reported for 2018 were at a record high. The increase in the quantity of cocaine seized over the past decade (a 71 per cent increase between 2008 and 2018) primarily reflects the increase in cocaine manufacture over the same time period (a 51 per cent increase) and the consequent increase in cocaine trafficking, although efficiency gains achieved by law enforcement action, partly due to the improved national, regional and international cooperation, have contributed to the increase in the overall interception rate.

In terms of quantity, the bulk of cocaine continues to be seized in the Americas, which accounted for 85 per cent of total seized globally in 2018. The largest portion of that was seized in South America (55 per cent of the global total in 2018), where the largest quantities were seized by Colombia (35 per cent of the global total), followed by Ecuador (6.1 per cent), Brazil (6.0 per cent), Venezuela (Bolivarian Republic of) (2.7 per cent) and Peru (1.6 per cent).

**FIG. 12** Area under coca cultivation and area of eradication in the Plurinational State of Bolivia, 2009–2019



Source: UNODC and Plurinational State of Bolivia, *Estado Plurinacional de Bolivia: Monitoreo de Cultivos de Coca 2018* (August 2019).

23 National Commission for Development and Life without Drugs (DEVIDA) of Peru, “Monitoreo de precios de hoja de coca y derivados cocainicos en zonas estratégicas de intervención”, Reporte No. 1 (April 2020).

24 UNODC and Plurinational State of Bolivia, *Estado Plurinacional de Bolivia: Monitoreo de Cultivos de Coca 2018* (August 2019).

In contrast to the trend at the global level, the total quantity of cocaine seized in South America decreased by 4 per cent between 2017 and 2018 to 721 tons, with most countries in that subregion reporting a drop. Colombia reported a decrease of 7 per cent in the seizure of cocaine products to 457 tons in 2018, while Peru and Bolivia (Plurinational State of) each reported a decline of 8 per cent and Ecuador a decline of 5 per cent. By contrast, Brazil reported a significant increase (65 per cent) and thus its highest level of cocaine seizures ever recorded (79 tons), placing Brazil second for cocaine seizures in South America, after Colombia.

In parallel, there are indications of a trend in trafficking in intermediary products, coca paste and base, from Colombia,<sup>25</sup> to other countries in South America,<sup>26, 27</sup> Central America,<sup>28, 29</sup> the Caribbean<sup>30</sup> and Europe,<sup>31, 32</sup> suggesting that the final steps in the process of the manufacture of cocaine hydrochloride may be increasingly taking place outside Colombia. Overall, 15 countries reported cocaine-related processing over the period 2011–2014, rising to 21 countries over the period 2015–2018, with the number of coca product processing laboratories outside the three Andean countries (Colombia, Peru and Bolivia (Plurinational State of)) rising from an average of 67 per year over the period 2015–2018 to 108 per year over the period 2015–2018.<sup>33</sup> According to media sources, this development may point to changes in production and supply patterns and may indicate shifts in the involvement of

criminal organizations that originated outside the coca leaf-producing regions.<sup>34</sup> Some coca leaf production, including processing into cocaine hydrochloride, has even been reported by countries in Central America.<sup>35, 36, 37, 38</sup> Nonetheless, most of the coca-/cocaine-related processing laboratories continue to be reported by the three Andean countries (on average 10,000 per year over the period 2015–2018).<sup>39</sup>

A number of countries in Latin America reported the dismantling of cocaine base and cocaine hydrochloride laboratories over the period 2014–2018. In descending order of the number of laboratories dismantled, those countries were Colombia, Bolivia (Plurinational State of), Peru, Venezuela (Bolivarian Republic of), Argentina, Chile, Brazil, Paraguay, Ecuador, Guatemala and Honduras. Moreover, small numbers of cocaine laboratories dismantled over that period were reported by countries in North America (Canada and the United States of America) and Europe (Greece, Spain, Slovenia, Belgium, Sweden and Portugal). These laboratories were most likely used for the secondary extraction of cocaine incorporated into other substances for trafficking purposes, but some may also have been used to complete the final stages of cocaine hydrochloride manufacture.

In North America, the quantities of cocaine seized rose by 10 per cent in 2018. The United States continued to account for the largest quantity of cocaine seized (19 per cent of the global total). In Central America, the largest quantities seized were reported by Panama (4 per cent) and Costa Rica (2 per cent). Seizures reported by countries in the Caribbean, by contrast, accounted for just 1 per cent of the total global quantity of cocaine intercepted, mostly reflecting seizures made by the Dominican Republic.

25 UNODC, responses to the annual report questionnaire.

26 Tristan Clavel, “Dismantled Chile cocaine lab with Bolivia ties hints at evolving crime dynamics”, *InSight Crime*, 20 March 2017.

27 *Diario Popular*, “Hay unos 300 laboratorio “caseros” de cocaína – el negocio de la producción de cocaína presenta en Argentina una alarmante modalidad”, 26 September 2015.

28 Héctor Silva Ávalos, “Honduras da el salto: de país de tránsito a productor de cocaína”, *InSight Crime*, 19 March 2020.

29 Loren Riesenfeld and Elyssa Pachico, “Colombia narcos prefer trafficking coca base, not cocaine”, *InSight Crime*, 4 February 2015.

30 Charles Parkinson, “Desmantelan el ‘laboratorio de drogas más grande del Caribe’ en República Dominicana”, *InSight Crime*, 2 September 2013.

31 Luis Izquierdo, “Desmantelada la principal red española de fabricación de cocaína”, *Lavanguardia*, 29 May 2019.

32 *El Heraldo*, “Desmantelan en España laboratorio de cocaína de disidentes de las Farc”, 3 December 2019.

33 UNODC, responses to the annual report questionnaire.

34 Oscar Medina, “Mexican drug cartels now make their own cocaine, Colombia says”, *Bloomberg*, 15 May 2019.

35 José Meléndez, “Descubierta la primera plantación de hoja de coca en Centroamérica”, *El País*, 22 June 2013.

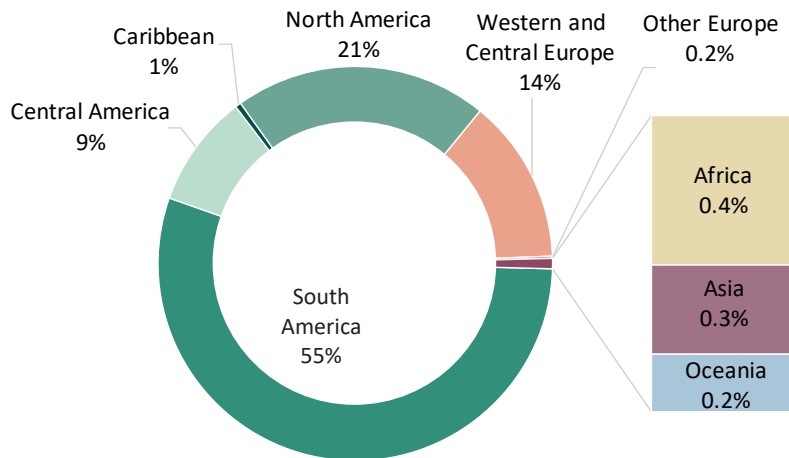
36 *La Prensa*, “Guatemala: descubren un laboratorio de droga y una plantación de cocaína”, 13 September 2019.

37 Edargo Cruz, “Honduras localiza cultivo de hoja de coca y laboratorio para procesar drogas”, *Ardio America*, 2 March 2020.

38 *El Heraldo*, “Destruyen casi 1,5 millones de plantas de coca en Guatemala”, 20 September 2019.

39 UNODC, responses to the annual report questionnaire.

**FIG. 13** Global quantity of cocaine seized, breakdown by region and subregion, 2018



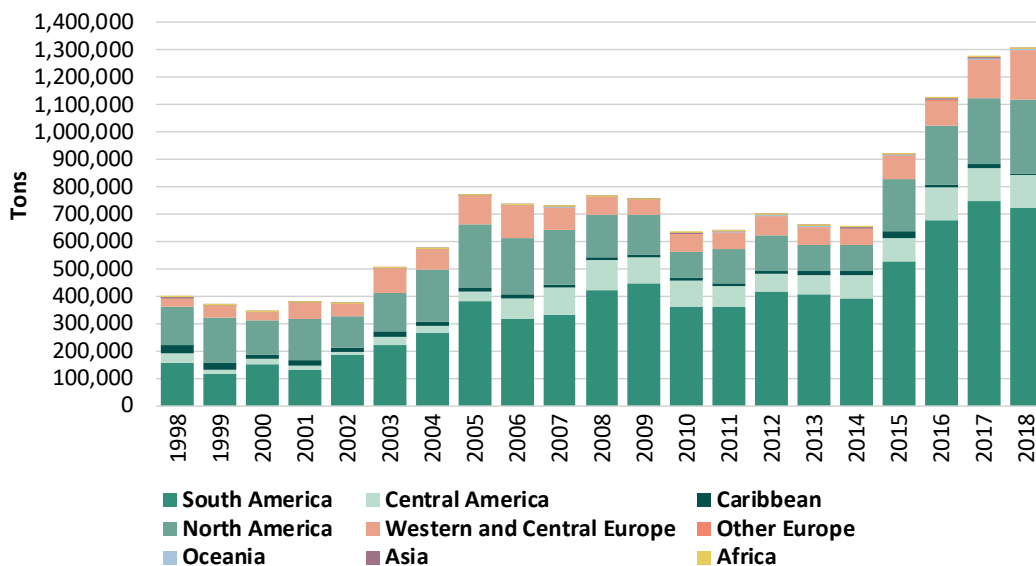
Source: UNODC, responses to the annual report questionnaire.

Note: Based on a total amount seized of 1,311 tons, including cocaine hydrochloride, coca paste and base, and “crack” cocaine.

After the Americas, the region with next largest quantity of cocaine seized in 2018 was, once again, Europe (14 per cent of the global total), with seizures being mostly in Western Europe, in particular in Belgium (4 per cent of the global total), followed by Spain (3.7 per cent), the Netherlands (3.1 per cent) and France (1.2 per cent). Total quantities of

cocaine seized in Europe increased by 25 per cent to 179 tons in 2018, including an increase of 26 per cent in Western and Central Europe and of 16 per cent in South-Eastern Europe but with a decline of 89 per cent in Eastern Europe as the stimulant market there shifted to synthetic cathinones in 2018.

**FIG. 14** Global quantity of cocaine seized, breakdown by region and subregion, 1998–2018



Source: UNODC, responses to the annual report questionnaire.

Note: Includes seizures of cocaine hydrochloride, coca paste and base and “crack” cocaine.

The quantity of cocaine seized in the rest of the world in 2018 remained comparatively limited, with the seizure of 5.6 tons in Africa (most notably in North Africa), 3.4 tons in Asia (most notably in China, including Hong Kong, China, followed by Iraq and Pakistan), and 2.1 tons in Oceania, with cocaine seizures there being reported mainly by Australia. Seizures in Australia dropped considerably between 2017 and 2018 (53 per cent). At the same time, seizures in New Zealand nearly doubled (96 per cent) in the same period.

The global quantity of cocaine seized in 2018 increased slightly, by 2.7 per cent, from the previous year, reflecting increases in quantities seized in the previous year in Africa (66 per cent), Western and Central Europe (26 per cent) and North America (15 per cent). Seizures in Asia remained basically stable (1.8 per cent). By contrast, from 2017 to 2018 there were sharp declines in the quantity of cocaine seized in the Caribbean (-62 per cent) and Oceania (-50 per cent). The largest declines in terms of actual amounts were those reported in South America.

## Cocaine trafficking

### Cocaine trafficking to North America

In the Americas, the primary cocaine trafficking flow is from Colombia to the United States. The analysis of cocaine seizure samples in the United States mainland suggests that 90 per cent of that cocaine originated in Colombia and 6 per cent originated in Peru, while the origin of the rest was unknown.<sup>40</sup>

Cocaine seizures in North America tripled over the period 2014–2018, from 91 tons in 2014 to 272 tons in 2018. The main destination country for cocaine shipments continues to be the United States. Overall, cocaine seizures reported by the United States increased by 14 per cent to 254 tons.<sup>41</sup> However, most of those seizures took place outside the United States mainland, where they increased. By contrast, cocaine seizures reported by United States Customs and Border Protection fell from 34 tons in 2017 to 27 tons in 2018, including the reported decreases in seizures along the south-western border,

and “drug removals” reported by the DEA, covering seizures made within the territory of the United States, which dropped from 114 tons in 2017 to 93 tons in 2018. This decrease in seizures may have been the result of significant seizures being effected by the United States authorities prior to the cocaine’s arrival in the United States, as well as a combination of changes in trafficking and supply patterns and an overall law enforcement focus on opioids.<sup>42</sup> The largest DEA “cocaine removals” at the state level in 2018 were, however, still those reported by states and territories, notably California, Texas, Florida, Georgia and Puerto Rico, all of which are in southern parts of the United States or have a southern border, in addition to the State of New York, in the northeast.<sup>43</sup> At the same time, the availability of cocaine was perceived to have declined slightly among the general population in the United States in 2018 as compared to a year earlier.<sup>44</sup> This suggests that declines in seizures within the United States in 2018 may indeed have been primarily a reflection of a decrease in cocaine trafficking taking place within the country.

The main trafficking flow of cocaine still goes from the drug’s major production centres in Colombia, either by sea, in particular via the Pacific Ocean, to Central America or to Mexico, or through Ecuador (mainly for cocaine manufactured in southern Colombia) or by land to Central America (mainly for cocaine manufactured in northern Colombia) and onwards to Mexico<sup>45</sup> from where it enters the United States across the south-western border, which is the section of the border where most seizures of cocaine by the United States authorities are made.

The Pacific route and, to a lesser extent, the Atlantic route remain the two main trafficking routes from Colombia to North America, while trafficking by air and mail continues to be comparatively limited.

<sup>42</sup> Ibid.

<sup>43</sup> Ibid.

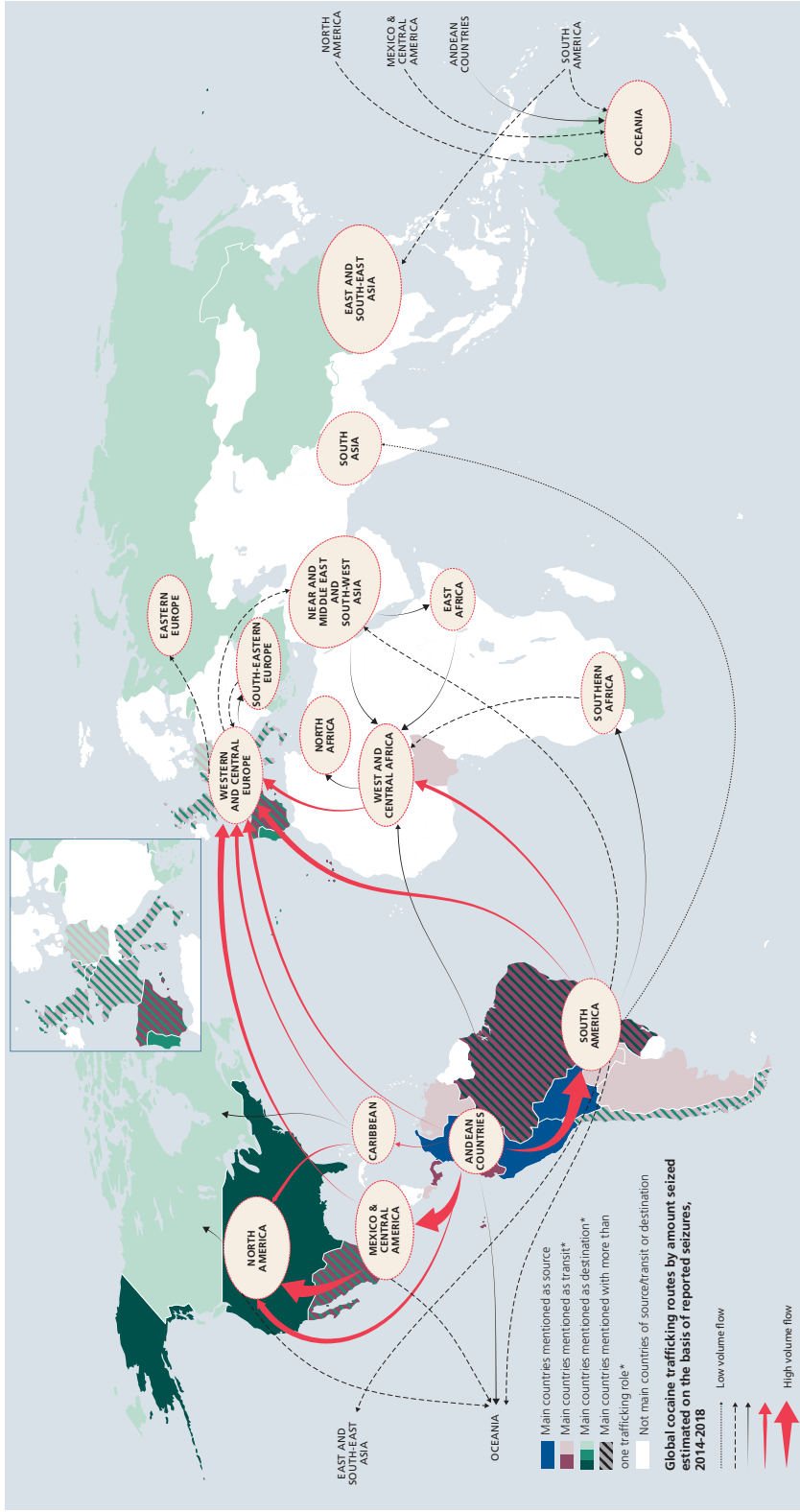
<sup>44</sup> United States, Substance Abuse and Mental Health Services Administration, *Key Substance Use and Mental Health Indicators in the United States: Results from the 2018 National Survey on Drug Use and Health: Detailed Tables* (Rockville, Maryland, Center for Behavioral Health Statistics and Quality, 2019).

<sup>45</sup> United States, Immigration and Customs Enforcement, Homeland Security Investigations, “Executive information statistical report”, quoted in UNODC, response to the annual report questionnaire.

<sup>40</sup> United States Department of Justice, DEA, *2019 National Drug Threat Assessment* (December 2019).

<sup>41</sup> UNODC, responses to the annual report questionnaire.

**MAP 3** Cocaine trafficking routes as described in reported seizures, 2014–2018



Source: UNODC, responses to the annual report questionnaire, and individual drug seizure database.

\* A darker shade indicates a larger amount of cocaine being seized with the country as transit/destination. The size of the route is based on the total amount seized on that route, according to the information on trafficking routes provided by Member States in the annual report questionnaire, individual drug seizures and other official documents, over the 2014–2018 period. The routes are determined on the basis of reported country of departure/transit and destination in these sources. As such, they need to be considered as broadly indicative of existing trafficking routes while several secondary routes may not be reflected. Route arrows represent the direction of trafficking; origins of the arrows indicate either the area of departure or the one of last provenance, and points of arrows indicate either the area of consumption or the one of next destination of trafficking. Therefore, the trafficking origin does not reflect the country in which the substance was produced. The main countries mentioned as transit or destination were identified on the basis of both the number of times they were identified by other Member States as departure/transit or destination of seizures, and the annual average amount that these seizures represent during the 2014–2018 period. For more details on the criteria used, please see the Methodology section of the present report.

The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations. The dotted line represents approximately the Line of Control in Jammu and Kashmir agreed upon by India and Pakistan. The final status of Jammu and Kashmir has not yet been agreed upon by the parties.



## “Narco-submarines” in the Atlantic Ocean

The use of submersible or semi-submersible vessels for the trafficking of cocaine has been an established phenomenon along the Pacific coast of North and South America for decades. However, the recent interception of a semi-submersible vessel in the Atlantic Ocean close to the Spanish coast indicates that traffickers have also begun using this trafficking modus operandi to reach Europe.

According to media reports, a semi-submersible vessel was located by law enforcement authorities off the coast of Galicia, Spain, after it had travelled 9,000 km from the Americas to Europe. The vessel was approximately 20 m in length and was transporting 3,000 kg of cocaine. The journey probably took some 26 days,<sup>a</sup> with the vessel arriving in European waters in late November 2019. Before being arrested, as they were unable to unload the drug, the drug traffickers sank the submarine with the intention of returning later to retrieve the cargo.

The interception of the vessel was the result of an intelligence-led joint law enforcement operation involving the Spanish National Police Intelligence Centre against Terrorism and Organized Crime, the Maritime Analysis and Operations Centre – Narcotics of European Union member States and law enforcement authorities of the United Kingdom.<sup>b</sup>

The use of submersibles or semi-submersibles traversing the Atlantic Ocean is a new development that poses additional challenges for law enforcement authorities trying to intercept cocaine shipments.

<sup>a</sup> Patricia Ortega Dolz and others, “26 días de travesía en un narcosubmarino”, *El País*, 16 December 2019.

<sup>b</sup> Ministerio de Hacienda, Operación de Agencia Tributaria, Guardia Civil y Policía Nacional, “Interceptado en la costa gallega el primer “narcosubmarino” detectado en Europa”, Nota de Prensa, 27 November 2019.

In 2018, most of the cocaine seized by the United States continued to be seized during land transit (53 per cent), followed by seizures at sea (28 per cent) and at air borders (14 per cent).<sup>46</sup>

### Cocaine trafficking to Western and Central Europe

The second most important cocaine trafficking flow worldwide is that from the Andean countries to Western and Central Europe, which is the second-largest market for cocaine worldwide after the United States. The quantity of cocaine seized in Western and Central Europe almost tripled, from 62 tons in 2014 to 177 tons in 2018, accounting for 99 per cent of the cocaine intercepted in Europe as a whole in 2018, as has been the case since 2014. The main entry points for cocaine trafficked to Europe from South America, either directly or via transit regions such as West Africa, remain Spain, Belgium and the Netherlands.<sup>47</sup>

Forensic testing of cocaine samples from seizures of cocaine smuggled to Western and Central Europe has confirmed that the cocaine trafficked to Europe primarily originates in Colombia and, to a lesser degree, Peru and Bolivia (Plurinational State of).<sup>48</sup>

Although most of the cocaine trafficked to Europe continues to originate in and depart from Colombia, Brazil continues to gain in importance as a major departure point for cocaine trafficked to Europe.<sup>49</sup> Some cocaine trafficked to Europe also passes through transit regions. West Africa, for example, is an important transit area for cocaine trafficked from South America to Europe,<sup>50</sup> as reflected in the significant seizures of cocaine in West Africa and Morocco, as well as in Africa as a whole, in recent years. Overall cocaine seizures in Africa rose from 1.2 tons in 2015 to 3.3 tons in 2017 and 5.6 tons in 2018.<sup>51</sup>

<sup>46</sup> Data reported to the National Seizure System, quoted in UNODC, response to the annual report questionnaire.

<sup>47</sup> EMCDDA and Europol, *EU Drug Markets Report 2019*.

<sup>48</sup> Ibid.

<sup>49</sup> Ibid.

<sup>50</sup> Ibid.

<sup>51</sup> UNODC, responses to the annual report questionnaire.

## Record seizures made in the port of Antwerp

Belgium, the Netherlands and Spain are the main entry points for cocaine trafficked to Europe as part of container shipments. While there has been a steady increase in the quantities of cocaine seized at these main entry points, 2019 saw a record level of seizures in the port of Antwerp in particular.

Official statements by local authorities reported in the media confirm that Belgian law enforcement authorities seized 62 tons of cocaine in 119 seizures in Antwerp in 2019. This represents a significant increase of 660 per cent from the previous year in terms of the quantity of cocaine seized in the port.<sup>a</sup>

<sup>a</sup> *De Standaard*, “Recordvangst voor drugs - en vooral cocaïne - vorig jaar in Antwerpse haven”, 8 January 2020.

Most of the cocaine available in European drug markets is smuggled to Europe by sea, primarily in maritime container shipments entering Europe at major ports such as Antwerp, Rotterdam, Hamburg and Valencia.<sup>52</sup> After entry to Europe at these main distribution hubs, cocaine shipments are typically trafficked onwards by road to destination markets.<sup>53</sup>

## Cocaine trafficking to Africa

The quantities of cocaine seized in Africa and user prevalence data suggest that the continent is not a major destination market for cocaine and/or that it may suffer from the limited capacity of local law enforcement authorities to carry out effective interddictions. Despite large increases in cocaine seizures in recent years, Africa still accounted for only 0.4 per cent of global quantities of cocaine seized in 2018. Yet while Africa appears to be a marginal destination market for cocaine, there are signs that West and North Africa are of continued and possibly increasing importance as transshipment areas for cocaine destined for Europe and other profitable markets. Repeated large-scale seizures of cocaine either in Africa or during transit to Africa have

52 EMCDDA and Europol, *EU Drug Markets Report 2019*.

53 *Ibid.*

## Alternative departure points for cocaine trafficked from South America

Traffickers appear to be diversifying the routes and departure points used to traffic cocaine from South America to Europe and West Africa. Previously, the Bolivarian Republic of Venezuela was a major departure point for cocaine, but it appears to have declined in significance, possibly due to the volatile security situation in the country. By contrast, Brazil remains a major departure country and, possibly owing to its good infrastructure, may have gained in importance in recent years.<sup>a</sup>

At the same time, new departure countries are also emerging. According to media sources, in December 2019, Uruguayan law enforcement authorities seized more than 6 tons of cocaine destined for Togo in West Africa. The previous record seizure in Uruguay

was 3 tons of cocaine found in a container, also destined for Africa, in the port of Montevideo in November 2019.<sup>b</sup>

In April 2020, amidst the COVID-19 pandemic, 555 kg of cocaine destined for the port of Abijan, Côte d'Ivoire, were seized in the port of Paranaguá, Brazil, concealed in a tipper trailer.<sup>c</sup>

<sup>a</sup> UNODC, responses to the annual report questionnaire.

<sup>b</sup> Lucía I. Suarez Sang, “Uruguay seizes 6 tons of cocaine worth \$1B in country’s largest bust”, *Fox News*, 28 December 2019.

<sup>c</sup> *G1 Paraná*, “Receita apreende meia tonelada de cocaína escondida em carga de ração no Porto de Paranaguá”, 8 April 2020.

## Recent cocaine seizures in West and Central Africa suggest major expansion of cocaine trafficking to/via the subregion

Significant individual seizures of cocaine in countries in Africa in 2019 suggest that the total quantities of cocaine seized may have risen to a historical record of more than 20 tons in the whole region in 2019, most of it resulting from major interceptions in West and Central Africa.<sup>a</sup>

In Senegal, 0.8 tons of cocaine were seized in Dakar in June 2019, which was en route from Brazil to Angola.<sup>b</sup> A further 0.8 tons were seized in Senegal, shipped from Suriname, in a joint operation of the Senegalese navy in cooperation with the Spanish Civil Guard.<sup>c</sup> In Benin, 0.8 tons of cocaine were seized in Cotonou in December 2019 in a container shipped from Brazil that was destined for Niger.<sup>d</sup> Record seizures of cocaine were also made in Guinea-Bissau in 2019, including a seizure of 0.8 tons in March 2019 that was reportedly intended for subsequent shipment via the Sahel zone to North Africa and Europe.<sup>e</sup> The largest seizure ever made in that country, of more than 1.8 tons, was made in September 2019, involving people from Guinea-Bissau, Colombia and Mali.<sup>f</sup> Furthermore, a record shipment of 9.5 tons of cocaine was intercepted at the port of Praia in Cabo Verde in February

2019,<sup>g</sup> thereby raising the overall quantity of cocaine seized in the country to 11.1 tons in 2019.<sup>h</sup>

In North Africa, 0.3 tons of cocaine were seized by the navy forces in Skikda, Algeria, in January 2019,<sup>i</sup> and 3 tons in Berrechid, Morocco, in August 2019.<sup>j</sup>

A further 0.7 tons of cocaine were seized at the Port of Ngqura, South Africa, in January 2019 on a ship en route to Singapore.<sup>k</sup>

<sup>a</sup> UNODC, Drugs Monitoring Platform.

<sup>b</sup> Ibid.

<sup>c</sup> UNODC Regional Office for West and Central Asia, “Cocaine seizures of interest in West Africa” (May 2020).

<sup>d</sup> UNODC, Drugs Monitoring Platform.

<sup>e</sup> Mark Shaw, Tuesday Reitano and Andreia Teixeira, “Drug trafficking and organized crime in Guinea-Bissau” (November 2019), draft.

<sup>f</sup> UNODC, Drugs Monitoring Platform.

<sup>g</sup> Ibid.

<sup>h</sup> UNODC, responses to the annual report questionnaire.

<sup>i</sup> UNODC, Drugs Monitoring Platform.

<sup>j</sup> Ibid.

<sup>k</sup> Ibid.

highlighted the continent’s continued role in the global cocaine market.

Quantities of cocaine seized, although fluctuating markedly in recent years, point to West and Central Africa as the main subregion in Africa affected by cocaine trafficking. Countries in West and Central Africa reported the largest quantities of cocaine seized in Africa in most years over the past two decades (13 out of 20) and accounted for almost two thirds of the total amount of cocaine seized in Africa over this period.

Countries in West and Central Africa accounted, with cocaine seizures of on average 2.4 tons per year, for more than 90 per cent of all quantities of cocaine seized in Africa over the period 2009–2013. However, the share of cocaine seized in West and Central Africa out of all the cocaine seized in Africa declined over the period 2014–2018 to 13 per cent and, with an average of 0.3 tons per year seized in the subregion, have remained well behind the quantities of cocaine seized in North Africa (1.2 tons on average

per year) over this period. Following a low in recorded seizures over the past decade of 157 kg in 2017, cocaine seizures in West and Central Africa recovered to 278 kg in 2018. Preliminary estimates, based solely on significant individual seizures, point to a dramatic increase in the total quantity of cocaine intercepted in 2019 to over 16 tons.<sup>54</sup> This is clearly above the record seizures of 4.6 tons reported in West and Central Africa in 2007.

Overall recorded seizures of cocaine for the whole of Africa in 2018 were the highest reported for that region over the past two decades, at 5.6 tons, an increase of 65 per cent compared with a year earlier. This was the result of large quantities of cocaine seized reported by a number of countries, including (in order of aggregated amount seized) Morocco, Algeria, Namibia, Mozambique, South Africa and Nigeria in 2018.<sup>55</sup>

<sup>54</sup> UNODC, Drugs Monitoring Platform

<sup>55</sup> Ibid.

## Indications of intensified use of North Africa as transit area for cocaine shipments

Seizures of unprecedented quantities of cocaine in or en route to North Africa indicate a potential intensification of the trafficking of cocaine via that subregion.

According to media sources, in February 2019, law enforcement authorities in Cabo Verde seized in the port of Praia a Russian vessel carrying 9.5 tons of cocaine.<sup>a</sup> The seizure was the outcome of collaboration between the authorities of Cabo Verde and the Lisbon-based Maritime Analysis and Operations Centre – Narcotics. The seizure was a record amount of cocaine for Cabo Verde.<sup>b</sup> The vessel was travelling from South America to Morocco, which appears to be emerging as an increasingly important trans-shipment point for drugs trafficked to Europe and other destinations.

Later, the importance of this route was further underlined by news reports of an additional seizure of 3 tons of cocaine in Morocco, at Sidi Rahal beach, 123 km south of Rabat, in the province of Berrechid, in August 2019.<sup>c</sup>

<sup>a</sup> UNODC, West and Central Africa, “Massive drug operation by Cabo Verdean authorities successfully seizes 9.5 tons of cocaine in Praia”, 5 February 2019.

<sup>b</sup> *Reuters*, “Cape Verde seizes record cocaine haul from Russian ship”, 1 February 2019.

<sup>c</sup> *Morocco World News*, “Police seize 3 tons of cocaine on Moroccan beach”, 16 August 2019.

## Seizure of 12 tons of cocaine in Malaysia

Asia is currently a minor destination region for trafficked cocaine compared with North America and Western and Central Europe.<sup>a</sup> However, large individual seizures in Asia indicate that there is a market for cocaine or that Asia is being used as a transit region for significant quantities of cocaine destined for other regions.

According to media sources, in September 2019, Malaysian law enforcement authorities seized 12 tons of cocaine.<sup>b</sup> The cocaine was concealed by being mixed with 60 tons of coal. This seizure surpassed the previous seizure record of August 2019, when police seized 500 kg of ketamine and over 3.2 tons of cocaine worth over half a billion ringgits in Shah Alam.<sup>c</sup> This development may indicate increasing trafficking flows to and via Asia.

<sup>a</sup> UNODC, responses to the annual report questionnaire.

<sup>b</sup> *Straits Times*, “Malaysia’s biggest drug bust: 12 tonnes of cocaine worth S\$791m seized in Penang”, 20 September 2019.

<sup>c</sup> *Reuters*, “Drugs worth \$161 million seized in Malaysia’s biggest haul”, 23 August 2019.

Over the period 2014–2018, most of the cocaine trafficked to Africa seems to have departed from Brazil, followed by Colombia, Bolivia (Plurinational State of) and Peru. The cocaine trafficked via Africa appears to be primarily destined for markets in Europe, such as Spain, France and Italy.

## Cocaine trafficking to Asia

The quantity of cocaine seized in Asia in 2018 amounted to 3.5 tons, a slight increase from the 3.3 tons seized in 2017, although still below the record high of the 6.4 tons seized in 2016. Over the period 2014–2018, the largest quantities of cocaine were seized in East and South-East Asia (56 per cent) and the Near and Middle East/South-West Asia (30 per cent).

Colombia remains the main country of origin for cocaine seized in Asia. Brazil is frequently mentioned in Member States’ responses to the annual report questionnaire as the key departure point for cocaine destined for markets in Asia.

Some parts of Asia have seen record seizures of cocaine in recent years. This may signal increasing trafficking activity to service potentially expanding markets or highlight the development of previously unseen trafficking routes for cocaine destined for

established markets. The trafficking of cocaine to Asia seems to take place mainly by air, the exception in recent years being China, a country to which most cocaine is trafficked by sea.<sup>56</sup>

### Cocaine trafficking to Oceania

The cocaine seized in Australia accounted for 97 per cent of all the cocaine seized in the period 2014–2018 in Oceania, during which seizures of the drug nearly tripled from 756 kg to 2.1 tons. The quantity of cocaine seized in New Zealand during the same period also increased, from 10 kg to 213 kg.

In New Zealand in 2017/18, cocaine was detected in the international mail, air passengers/crew, air cargo and sea cargo streams. By number of seizures, the international mail stream accounted for the greatest proportion of cocaine detections in that period (94.1 per cent), followed by the air cargo (5.2 per cent), air passengers/crew (0.6 per cent) and sea cargo (0.1 per cent) streams. By weight, the air cargo stream accounted for the greatest proportion of cocaine detected during the reporting period (76.2 per cent), followed by international mail (10.6 per cent), sea cargo (10.6 per cent) and air passengers/crew (2.6 per cent).<sup>57</sup> Most of the cocaine seized by the New Zealand Customs Service in 2018 was seized at mail centres (78 per cent).<sup>58</sup>

The trafficking of cocaine to Australia remains highly profitable, given the high price of cocaine in that country, and the wholesale price was estimated to be between 165,000 and 230,000 Australian dollars per kilogram (equivalent to about 110,000–154,000 United States dollars) in 2017/18.<sup>59</sup> This, however, was a decrease in the wholesale price compared with the previous annual reporting period and may be a reflection of an increase in the supply and availability of cocaine in this market, as quantities of cocaine taken out of the market declined. In fact, the analysis of wastewater in Australia suggested a significant increase in the amount of cocaine consumed in Australia, from 3.1

56 Ibid.

57 Australian Criminal Intelligence Commission, *Illicit Drug Data Report 2017–18* (Canberra, July 2019).

58 New Zealand Customs Service, drug seizure database. Available at [www.customs.govt.nz/](http://www.customs.govt.nz/).

59 UNODC, response submitted by Australia to the annual report questionnaire for 2019.

### New Zealand police seize 190 kg of cocaine hidden among bananas in country's largest ever drug bust

According to media sources,<sup>a</sup> in August 2018, law enforcement officials in New Zealand detected and seized 190 kg of cocaine, the largest ever single seizure of the drug in the country. The shipment had departed Panama and was destined for Auckland, New Zealand.

Authorities inspected the container and found five duffel bags on top of banana boxes that contained 190 blocks of cocaine, each weighing about a kilogram. The seizure resulted in the arrest of one suspect.

<sup>a</sup> *Reuters*, “New Zealand police seize 190 kg of cocaine hidden in banana shipment”, 16 November 2018.

tons in the fiscal year 2016/17 to 4.1 tons in the fiscal year 2017/18 and 4.6 tons in the fiscal year 2018/19.<sup>60</sup>

Nonetheless, the smuggling of cocaine to Australia remains highly profitable even from high-price transit countries such as the United States, where cocaine wholesale prices ranged between \$4,000 and \$45,000 per kilogram in 2018.

In 2018, most of the cocaine seized by Australian law enforcement authorities was being transported by mail (58.4 per cent), followed by seizures of cocaine trafficked by sea (40.2 per cent) and in air transport (1.4 per cent).<sup>61</sup> Forensic profiling of the cocaine seized in Australia in the past five years shows that Colombia continues to dominate the supply of cocaine trafficked to Australia. This is also possibly a reflection of increasing trafficking in cocaine via North America – which is dominated by cocaine from Colombia – to Australia, while in some of the previous years, notably 2012 and 2013, most of the cocaine originated in Peru and was often trafficked

60 Australian Criminal Intelligence Commission, University of Queensland and University of South Australia, *National Wastewater Drug Monitoring Program*, Report No. 9 (March 2020).

61 UNODC, response submitted by Australia to the annual report questionnaire for 2019.

## Cocaine interception rate in Australia

Despite the recent decline in cocaine seizures, available data suggest that the interception rate of cocaine shipments is still very high in Australia by international standards.

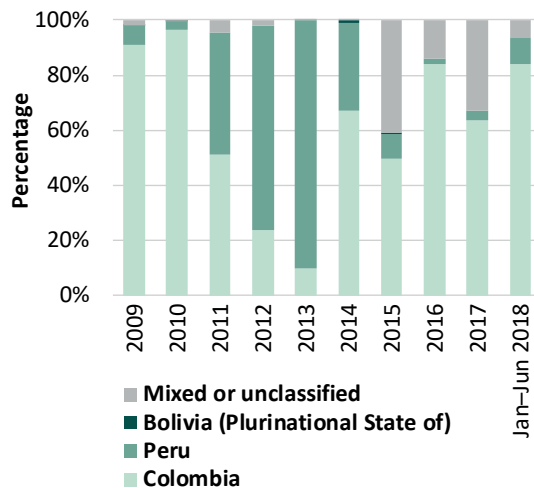
With reported amounts of 4.1 tons consumed in the fiscal year 2017/18 and 4.6 tons in 2018/19 based on the analysis of wastewater in Australia,<sup>a</sup> it can be assumed that in 2018 approximately 4.4 tons of cocaine may have been consumed. The quantity of cocaine seized, not adjusted for purity, amounted to 1.9 tons in 2018.<sup>b</sup> This would have been equivalent to 1.4 tons of

pure cocaine, based on an average purity of 73 per cent at the wholesale level across jurisdictions in Australia.<sup>c</sup> This suggests that 5.8 tons (4.4 tons plus 1.4 tons) of cocaine may have entered Australia, 1.4 tons, or 24 per cent, of which were intercepted by the authorities in 2018.

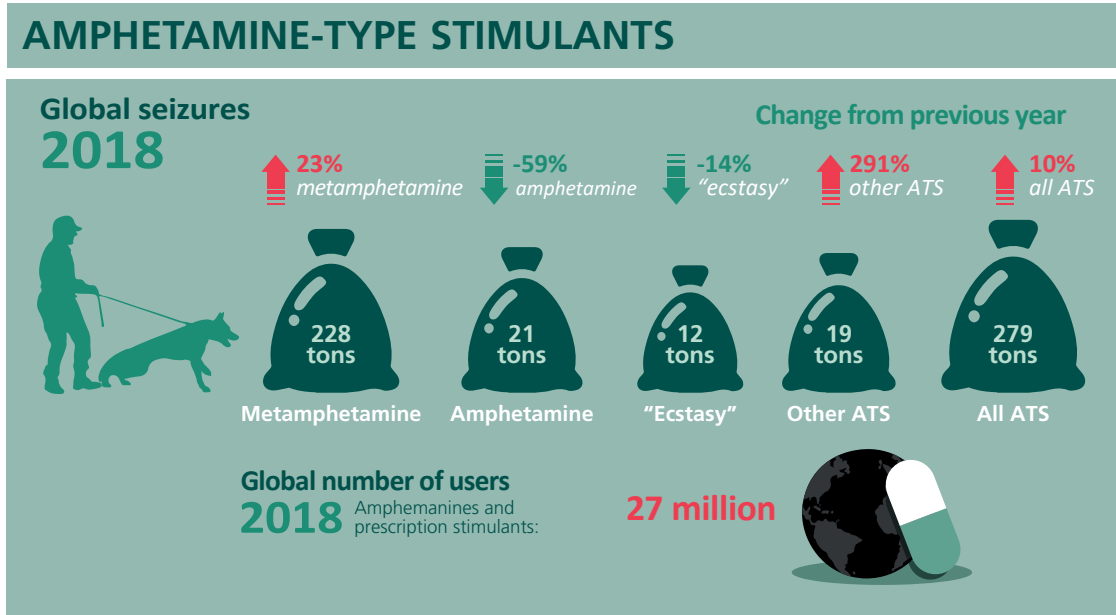
- <sup>a</sup> Ibid.
- <sup>b</sup> UNODC, response to the annual report questionnaire.
- <sup>c</sup> Australian Criminal Intelligence Commission, *Illicit Drug Data Report 2017–18*.

via Chile or Brazil to Australia. Cocaine originating in Colombia accounted for more than 84 per cent of the quantity of cocaine seized in the first two quarters of 2018.

**FIG. 15** Distribution of the geographical origin of cocaine border seizures in Australia, 2009–June 2018



Source: Australian Criminal Intelligence Commission, *Illicit Drug Data Report 2017–18* (Canberra, July 2019).  
 Note: Distribution of the geographical origin of coca leaf used to produce cocaine as a proportion of total bulk weight of analysed border seizures.



Note: Data refer to 2018.

## Manufacture of amphetamine-type stimulants continues to be dominated by methamphetamine

Over the period 2014–2018, Member States reported the dismantling of close to 30,000 clandestine laboratories<sup>62</sup> used in the manufacture of ATS. Approximately 95 per cent of those laboratories had been manufacturing methamphetamine, while 2 per cent had been manufacturing amphetamine, and 1 per cent “ecstasy”, and the rest had been manufacturing other stimulants. Most of those laboratories were dismantled in the Americas (84 per cent), more specifically, in North America (which accounted for more than 99 per cent of all laboratories dismantled in the Americas), followed by Europe and Asia (around 6 per cent each of all laboratories dismantled worldwide), Oceania (3 per cent) and Africa (0.2 per cent). However, data should be interpreted with caution as the reporting on the dismantling of ATS laboratories is uneven across

62 The annual report questionnaire considers as clandestine laboratories: (a) sites where a substance was manufactured; (b) sites where refining, tableting, cutting and packaging has taken place; (c) sites where equipment or chemicals were stored; and (d) sites where equipment, packaging or chemical waste were seized. The numbers include kitchen laboratories, small-scale laboratories, medium-to-large-scale laboratories and industrial-scale laboratories.

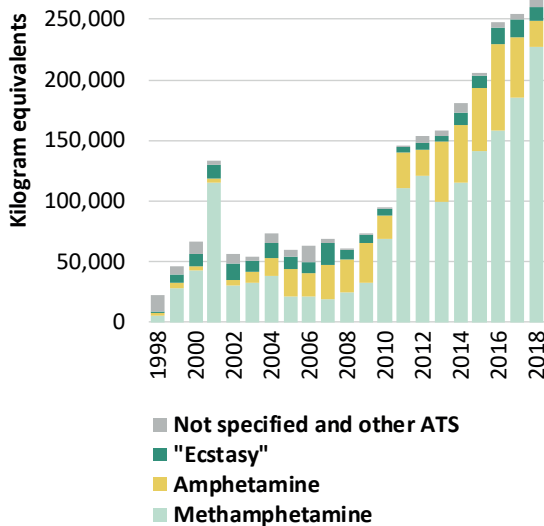
countries, a situation aggravated by the fact that a number of clandestine ATS laboratories operate in areas that are difficult for authorities to access due to security issues, notably in Asia.

## Quantity of amphetamine-type stimulants seized globally has increased over the past two decades

The quantity of ATS seized at the global level has increased over the past two decades, in particular over the period 2009–2018, when the quantity of ATS seized quadrupled. The increase was primarily due to the increasingly large quantities of methamphetamine being seized, as seizures increased sevenfold over the period 2009–2018. The largest proportional increase (18-fold) was for the group of “other stimulants” (including prescription ATS, a number of cathinones, such as mephedrone or MDPV, which are now under international control, and non-specified ATS). The total quantity of “ecstasy” seized doubled over the period 2009–2018.

In most years since 1998, the ATS seized in the largest quantities was methamphetamine, which in the period 2014–2018 accounted for 71 per cent of the total quantity of ATS seized globally, followed by

**FIG. 16** Global quantities of amphetamine-type stimulants seized, 1998–2018



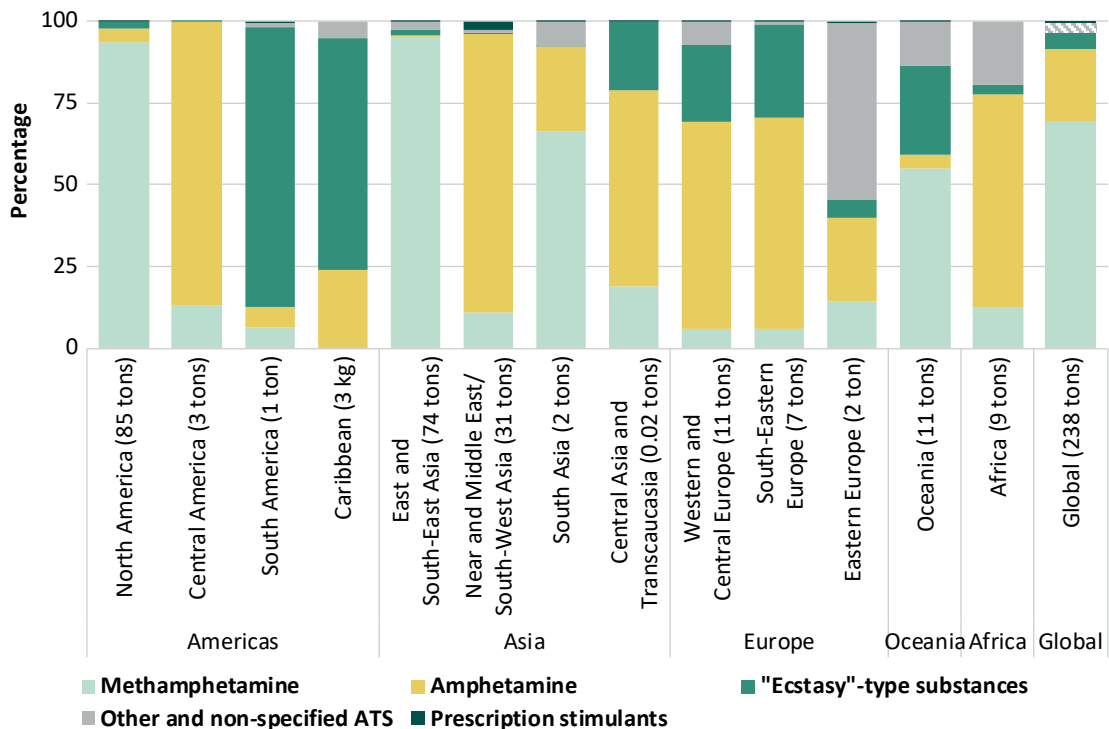
Source: UNODC, responses to the annual report questionnaire.

amphetamine (21 per cent) and “ecstasy” (5 per cent). The rest (3 per cent) of seized ATS included former synthetic new psychoactive substances such as mephedrone, MDPV or methylone (0.4 per cent of the total).

While the number of countries reporting seizures of “ecstasy” declined slightly, from 109 countries in the period 2004–2008 to 100 countries in the period 2014–2018, the number of countries reporting seizures of amphetamine increased from 85 to 97 in that same time. Those reporting seizures of methamphetamine increased by more than 50 per cent, from 69 to 105 countries, which suggests that there has been a significant increase in the geographical spread of methamphetamine trafficking at the global level.

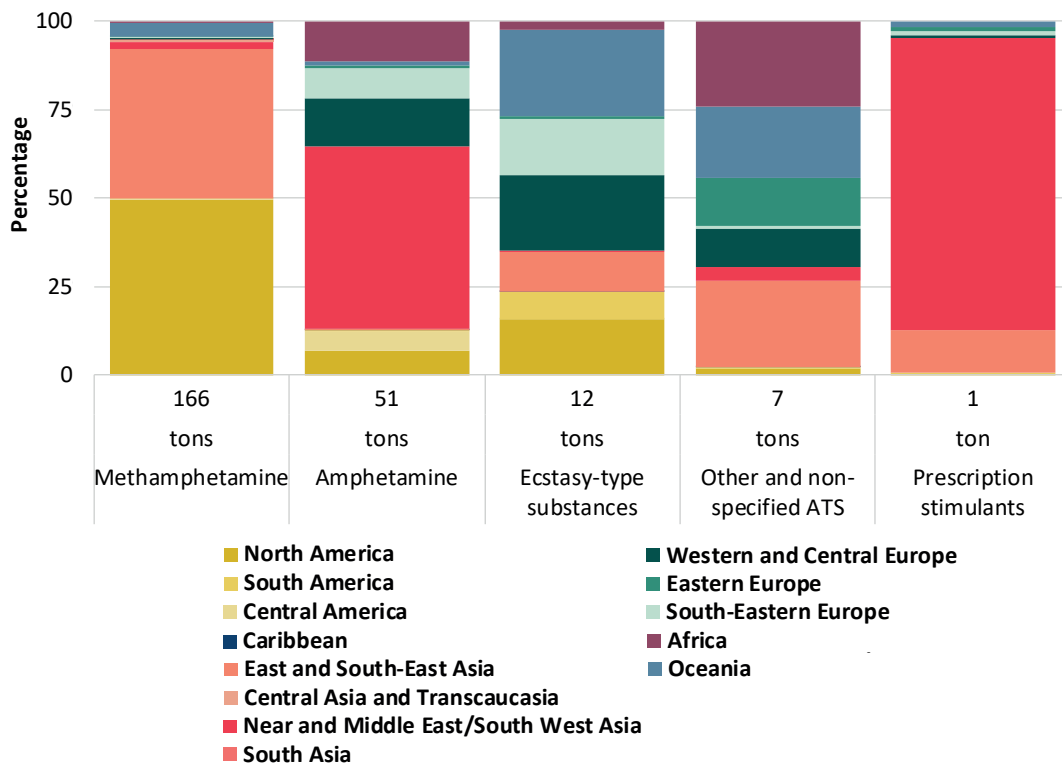
Nonetheless, seizures of methamphetamine remain highly concentrated: the three countries responsible for most of the methamphetamine seized worldwide in 2018 (the United States, Thailand and Mexico)

**FIG. 17** Distribution of the average annual quantity of amphetamine-type stimulants seized, by subregion, 2014–2018



Source: UNODC, responses to the annual report questionnaire.



**FIG. 18** Regional distribution of average annual quantity of amphetamine-type stimulants seized, by substance, 2014–2018

Source: UNODC, responses to the annual report questionnaire.

accounted for 80 per cent of the global total, while the three countries reporting the largest quantities of amphetamine (Turkey, Pakistan and the Syrian Arab Republic) and the three countries reporting the most “ecstasy” seized (Turkey, the United States and Australia) accounted for a significantly smaller proportion of the global total (around 50 per cent) in 2018.

Different substances are predominant in the seizures of ATS in different regions: methamphetamine is predominant in North America, East and South-East Asia, South Asia and Oceania; and amphetamine in the Near and Middle East/South-West Asia, Europe, Africa and Central America. South America and the Caribbean were the only subregions where the quantities of “ecstasy” seized were predominant among all ATS intercepted in the period 2014–2018.

## Supply of methamphetamine

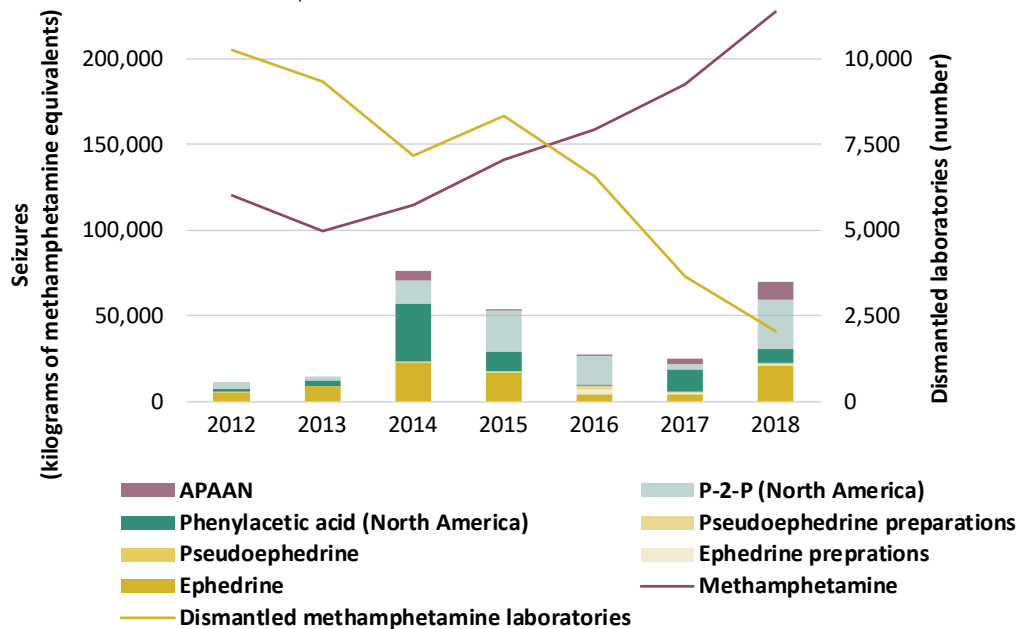
### Manufacture of methamphetamine is increasingly complex

In contrast to previous decades, when methamphetamine was primarily manufactured from ephedrine and pseudoephedrine, nowadays more than half of seized precursor chemicals linked to the manufacture of methamphetamine are P-2-P and/or its precursor chemicals.<sup>63</sup> There is, however, a significant geographical divide. Most methamphetamine production in Asia, Oceania and Africa – and possibly some in Europe – continues to be based primarily on ephedrine and pseudoephedrine as the key precursor chemicals, while manufacture of methamphetamine in North America is now primarily based on P-2-P and its precursor chemicals<sup>64</sup>. In some instances,

<sup>63</sup> E/INCB/2019/4.

<sup>64</sup> Ibid.

**FIG. 19** Global quantities of methamphetamine and methamphetamine precursors seized,<sup>a</sup> and dismantled methamphetamine laboratories, 2012–2018



Sources: UNODC, responses to the annual report questionnaire; and E/INCB/2019/4 and previous years.

*a Only internationally controlled precursor chemicals used in the manufacture of methamphetamine are listed here; P-2-P and its precursor phenylacetic acid are shown only for North America because in other parts of the world P-2-P and its precursor(s) continue to be mainly used in the manufacture of amphetamine. APAAN, a precursor for P-2-P, is also shown here, although it is used in the manufacture of not only methamphetamine but also amphetamine.*

precursor chemicals for the manufacture of P-2-P also seem to have been used in the manufacture of methamphetamine in Western Europe.<sup>65</sup>

While the quantities of methamphetamine seized have increased rapidly over the past decade, seizures of internationally controlled chemicals used in the manufacture of methamphetamine have fluctuated over the years and showed a clear increase only in 2018, when methamphetamine precursor seizures almost tripled compared with 2017. The marked increase was the result of record quantities of P-2-P linked to methamphetamine manufacture in North America being seized – an almost ninefold increase – and the global quantities of ephedrine seized increasing almost fivefold. By contrast, the reported number of dismantled laboratories continued to decline, from 10,600 methamphetamine laboratories dismantled in 2010 to close to 3,700 in 2017 and

less than 2,100 in 2018.<sup>66</sup> A possible explanation of the phenomenon of an expanding market going hand in hand with fewer and fewer laboratories being dismantled could be a shift towards operating fewer but larger laboratories in parallel with a general shift in production to countries with comparatively limited interdiction capacities.

Regarding precursor chemicals, it has to be taken into account that increasing quantities of methamphetamine are now being produced from pre-precursors that are not under international control; for example, substances such as benzaldehyde and nitroethane are used in the clandestine manufacture of P-2-P, in both North America and Europe. Similarly, benzyl chloride and sodium cyanide are used in the clandestine manufacture of phenylacetic acid, which is also used to manufacture P-2-P, the main precursor used in methamphetamine manufacture in North America.<sup>67</sup>

65 EMCDDA and Europol, *EU Drug Markets Report 2019* (Luxembourg, Publications Office of the European Union, 2019).

66 UNODC, responses to the annual report questionnaire.

67 E/INCB/2019/4.

At the same time, data show that methamphetamine manufacture is already a widespread phenomenon at the global level. Over the period 2014–2018, about 28,000 clandestine methamphetamine laboratories were dismantled in 28 countries, but actual manufacture may be even more widespread. Overall, 52 countries were identified by Member States as likely countries of origin of the methamphetamine found on their markets in the period 2014–2018.

### Global methamphetamine manufacture appears to be declining in the “traditional” countries of manufacture but increasing in neighbouring countries

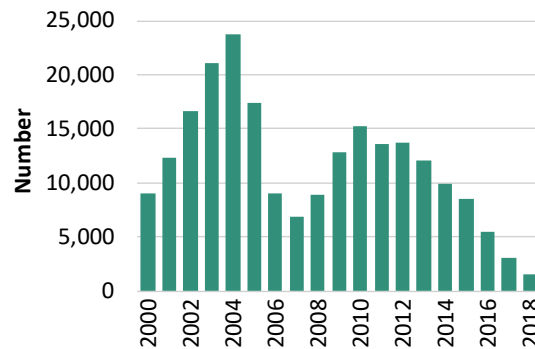
In 2018, the majority of laboratories dismantled worldwide continued to be dismantled in North America (88 per cent), mostly in the United States, followed by Mexico and Canada. However, this does not seem to reflect longer-term overall production output of methamphetamine in North America.

#### *Decline in domestic methamphetamine manufacture in the United States*

The United States reported the dismantling of 1,607 methamphetamine laboratories in 2018, accounting for 78 per cent of all methamphetamine laboratories dismantled worldwide that year. However, the overall output of domestic methamphetamine manufacture in the United States now appears to be considerably smaller than the potential output produced by several of the large, industrial-scale laboratories found in other parts of the world, such as Mexico and East and South-East Asia, in recent years. Over the past few years, the United States has reported that most of the methamphetamine found on its market has been smuggled into the country from abroad, most notably from Mexico.<sup>68</sup> Most of the clandestine production and smuggling seems to be controlled by various Mexican drug cartels.

The vast majority of the methamphetamine production facilities dismantled in the United States were “kitchen laboratories” (1,426), which typically produce two ounces or less per production cycle<sup>69</sup> for local demand, although the overall figure also included the dismantling of 11 industrial-scale

**FIG. 20** Methamphetamine-manufacturing facilities dismantled in the United States, 2000–2018



Source: El Paso Intelligence Center, National Seizure System as of March 2019, in United States Department of Justice, DEA, *National Drug Threat Assessment 2019*.

methamphetamine laboratories in the United States in 2018.<sup>70</sup> Nevertheless, the overall number of clandestine methamphetamine laboratories detected in the United States fell by about 90 per cent over the period 2010–2018 and by 93 per cent since the peak in 2004.<sup>71</sup> According to the United States authorities, the initial decline after 2004 resulted from improved precursor control, notably through the regulation of over-the-counter sales of methamphetamine precursor chemicals such as ephedrine preparations and pseudoephedrine, and ongoing efforts to dismantle laboratories, which acted as a deterrent to domestic methamphetamine manufacture.<sup>72</sup> The decline in domestic manufacture after 2004 may have contributed to the reduced domestic demand for methamphetamine; the annual prevalence of methamphetamine use in the United States fell from 0.7 per cent in 2002 to 0.3 per cent in 2008.<sup>73</sup>

By contrast, the decline in the number of dismantled laboratories after 2010 was no longer in line with the upward trend in a number of other indicators, which had been clearly pointing to an expansion of the methamphetamine market, both

70 UNODC, responses to the annual report questionnaire.

71 United States Department of Justice, DEA, *National Drug Threat Assessment 2019*.

72 Ibid.

73 United States, Substance Abuse and Mental Health Services Administration, Center for Behavioral Health Statistics and Quality, *Results from the 2014 National Survey on Drug Use and Health: Detailed Tables* (Rockville, Maryland, 2015).

68 United States Department of Justice, DEA, *National Drug Threat Assessment 2019* (December 2019).

69 Ibid.

in terms of supply (rising seizures, falling purity-adjusted prices) and demand (rising prevalence rates, positive tests among the general workforce, treatment admissions and deaths). The purity<sup>74</sup> of methamphetamine rose from 95 per cent in the first quarter of 2012 to 98 per cent in the first quarter of 2018, while the potency of methamphetamine<sup>75</sup> increased from 85 to 97 per cent over the same period.<sup>76</sup> This indicates an improvement in the know-how of organized crime groups manufacturing methamphetamine from various (non-scheduled) P-2-P precursors in neighbouring Mexico, an overall increase in the supply of methamphetamine in the United States and the emergence of a potentially even more problematic substance, showing ever-higher levels of purity and potency, thus increasing the risk of overdose.

While the annual prevalence of methamphetamine use more than doubled from 0.3 to 0.7 per cent of the population aged 12 and older in the United States over the period 2008–2018,<sup>77</sup> the number of psychostimulants involved in drug poisoning deaths in the United States rose from 1,302 to 12,676 deaths over the same period, equivalent to an almost 10-fold increase. This increase may have been inflated by an increasing number of contaminations of psychostimulants with opioids (such as fentanyl and its analogues); however, psychostimulant-related deaths excluding any involvement of opioids still showed an eightfold increase, from 807 deaths in 2008 to 6,271 deaths in 2018.<sup>78</sup>

The decline in the domestic supply of methamphetamine, indicated by the falling number of manufacturing facilities dismantled in the United

States, going hand in hand with increasing use and an overall increase in the supply of the drug, can be explained by the increasing importance of rapidly growing illegal methamphetamine imports from clandestine manufacture sites in neighbouring Mexico. According to the United States authorities, the latter phenomenon appears to have resulted from attempts by Mexican organized crime groups to diversify their drug portfolio as they attempted to reduce their dependence on cocaine produced in countries in South America, preferring instead to source the required chemicals from China and produce methamphetamine themselves. Methamphetamine shipments intercepted along the south-western border of the United States increased almost fourfold between 2013 and 2018.<sup>79</sup>

#### *Methamphetamine manufacture in Asia*

The region with the next largest number of methamphetamine laboratories dismantled was Asia, accounting for 6 per cent of the global total in the period 2014–2018. Most of these facilities were dismantled in China and the Islamic Republic of Iran, which together accounted for 94 per cent of all reported laboratories dismantled in Asia, while some clandestine methamphetamine laboratories were also dismantled, in descending order of importance, in Malaysia, the Philippines, Indonesia, India, the Republic of Korea, Myanmar and Hong Kong, China. In addition, the clandestine manufacture of methamphetamine has been reported in recent years by Afghanistan and Iraq. Countries identified as significant source countries for methamphetamine shipments in Asia in the period 2014–2018 included Myanmar, followed by China, Thailand, India and Iran (Islamic Republic of). Clandestine methamphetamine manufacture in Asia seems to be still largely based on the use of pseudoephedrine or ephedrine as precursors, although reports from Afghanistan suggest that ephedrine is extracted from ephedra plant material and used as a precursor for methamphetamine.<sup>80</sup> The authorities in Myanmar and Thailand have reported the seizure of increasing quantities of sodium cyanide and benzyl cyanide in

74 Purity is defined as a measure of the amount of an illicit substance present in a sample compared with other substances in the sample such as adulterants, diluents or solvents.

75 Potency is defined as the measure of drug activity in terms of the dosage required to exert an effect on the body and is measured by the amount of the highly potent d-isomer present in the drug substance.

76 United States Department of Justice, DEA, *National Drug Threat Assessment 2019*.

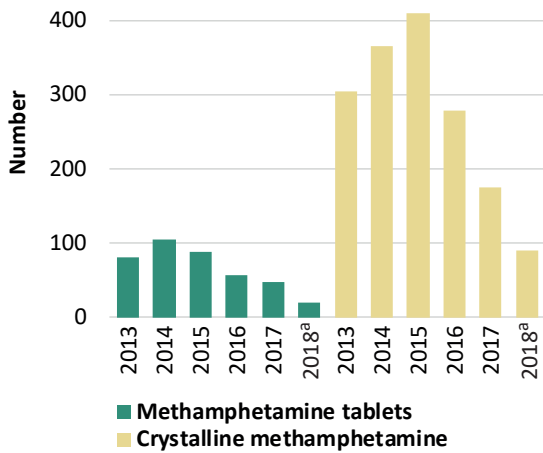
77 United States, Substance Abuse and Mental Health Services Administration, Center for Behavioral Health Statistics and Quality, *Results from the 2018 National Survey on Drug Use and Health: Detailed Tables* (Rockville, Maryland, 2019).

78 United States Department of Justice, DEA, *National Drug Threat Assessment 2019*.

79 Ibid.

80 David Mansfield and Alexander Soderholm, “Long read: the unknown unknowns of Afghanistan’s new wave of methamphetamine production”, London School of Economics, United States Centre, 30 September 2019.

**FIG. 21** Methamphetamine-manufacturing facilities dismantled in China, 2013–2018



Source: UNODC, *Synthetic Drugs in East and South-East Asia: Trends and Patterns of Amphetamine-type Stimulants and New Psychoactive Substances*, (March 2019).

<sup>a</sup> Data for 2018 cover the first 10 months of the year.

recent years. These substances can be used for synthesizing P-2-P, which is then used to manufacture either amphetamine or methamphetamine.<sup>81</sup>

Similar to the situation in the United States, where the manufacture of methamphetamine declined while increasing in neighbouring Mexico, both China and Iran (Islamic Republic of) reported declining domestic production, reflected in the decreasing numbers of methamphetamine laboratories dismantled in recent years, going hand in hand with the expansion of methamphetamine manufacture in their neighbouring countries. Indeed, by 2018 the Islamic Republic of Iran reported that most of the methamphetamine found on its territory originated in Afghanistan and was trafficked either from there directly or via Pakistan.<sup>82</sup> Similarly, China reported that methamphetamine seized in recent years has originated primarily in Myanmar.<sup>83</sup> In contrast to many other countries, however, the marked declines in the domestic manufacture of

methamphetamine in China appear to have more than outweighed any increase in clandestine manufacture and imports from neighbouring countries.<sup>84, 85, 86</sup> This is revealed in the decline in methamphetamine found in the wastewater in cities across China,<sup>87, 88</sup> with wastewater-based estimates suggesting a fall in methamphetamine consumption amounts of 26 per cent over the period 2014–2018.

#### *Methamphetamine manufacture in Europe*

Europe accounted for 5 per cent of all methamphetamine laboratories dismantled globally in the period 2014–2018, with more than 90 per cent of those laboratories being dismantled in Czechia (mostly “kitchen laboratories”), followed by another 12 countries, including, in descending order of the number of laboratories dismantled, Germany, Austria, Bulgaria, Poland and Slovakia.<sup>89</sup> This masks the emergence of large-scale methamphetamine manufacture in the Netherlands and Belgium in recent years, reflected in the dismantling, in 2019, of three large crystalline methamphetamine production facilities in those countries, in which Mexican nationals were involved.<sup>90</sup>

While Czechia remains the country most frequently mentioned in the annual report questionnaire as a country of origin of methamphetamine in Europe, the Netherlands emerged, in 2018, as the most frequently mentioned European source country overall (including mentions of origin, last departure and transit), ahead of Czechia and Lithuania.<sup>91</sup> The

81 UNODC, *Synthetic Drugs in East and South-East Asia: Trends and Patterns of Amphetamine-type Stimulants and New Psychoactive Substances* (March 2019).

82 UNODC, responses to the annual report questionnaire.

83 Ibid.

84 UNODC, *Synthetic Drugs in East and South-East Asia: Trends and Patterns of Amphetamine-type Stimulants and New Psychoactive Substances*.

85 China, National Narcotics Control Commission, *Annual Report on Drug Control in China 2018* (Beijing, 2018).

86 UNODC, responses to the annual report questionnaire.

87 “Trends in methamphetamine and ketamine use in major Chinese cities from 2012 to 2016”, poster presentation by Peng Du of the Laboratory of Earth Surface Processes, College of Urban and Environmental Sciences, Peking University at the third international conference “Testing the waters 2017: wastewater-based epidemiology – current applications and future perspectives”, held in Lisbon on 26 and 27 October 2017.

88 Zhe Wang and others, “Reduction in methamphetamine consumption trends from 2015 to 2018 detected by wastewater-based epidemiology in Dalian, China”, *Drug and Alcohol Dependence*, vol. 194, January 2019, pp. 302–309.

89 UNODC, responses to the annual report questionnaire.

90 EMCDDA and Europol, *EU Drug Markets Report 2019*.

91 UNODC, responses to the annual report questionnaire.

manufacture of methamphetamine in small to mid-scale illicit laboratories in Czechia continues to be mostly based on pseudoephedrine, extracted from medicines often originating in Turkey or Poland. By contrast, the large-scale production laboratories found in the Netherlands and Belgium in 2019 manufactured methamphetamine using non-scheduled precursors of P-2-P, similar to the methods used in North America.<sup>92</sup>

#### *Methamphetamine manufacture in Oceania*

In Oceania, all methamphetamine manufacturing facilities dismantled over the period 2014–2018 were reported by Australia and New Zealand, accounting for a limited share (1 per cent) of the global total. Most of the clandestine laboratories in Australia continue to be dismantled in Queensland, followed by Victoria, New South Wales and South Australia. Some 70 per cent of all clandestine laboratories dismantled in Australia in 2018 were linked to the manufacture of methamphetamine; in New Zealand, the proportion reached 95 per cent.<sup>93</sup> Fewer than 2 per cent of all laboratories dismantled in Australia were industrial-scale laboratories.<sup>94</sup>

The number of clandestine laboratories dismantled, most of which were involved in the manufacture of methamphetamine, gradually declined in Australia between the peak in the fiscal year of 2011/12 and the latest year (2017/18) for which data were available, declining by 45 per cent, to 432 laboratories. Similarly, in New Zealand, the number of clandestine methamphetamine laboratories fell from a peak of 109 in 2011 to 68 in 2018 (-38 per cent).

Seizures of precursor substances in both Australia and New Zealand suggest that most of the domestic manufacture of methamphetamine is still linked to ephedrine and pseudoephedrine,<sup>95</sup> while imported methamphetamine is increasingly being manufactured using P-2-P, typically reflecting methamphetamine smuggled from North America.<sup>96</sup>

92 EMCDDA and Europol, *EU Drug Markets Report 2019*.

93 UNODC, responses to the annual report questionnaire.

94 Australian Criminal Intelligence Commission, *Illicit Drug Data Report 2017–18* (Canberra, 2019).

95 E/INCB/2019/4.

96 Australian Criminal Intelligence Commission, *Illicit Drug Data Report 2017–18*.

Despite an apparent decline in the domestic manufacture of methamphetamine in both Australia and New Zealand, wastewater analysis in Australia suggests that the overall consumption of methamphetamine has increased by about 37 per cent, from 8.4 tons in the fiscal year 2016/17 to 11.5 tons in the fiscal year 2018/19.<sup>97</sup>

#### *Methamphetamine manufacture in Africa*

Based on the number of methamphetamine-manufacturing facilities dismantled, manufacture of methamphetamine in Africa appears to remain limited. The region accounted for less than 0.1 per cent of the global total of clandestine methamphetamine laboratories dismantled in the period 2014–2018, although the number of clandestine methamphetamine laboratories seized and reported to UNODC actually increased, from 2 laboratories per year in the period 2014–2017 to 13 in 2018.

Most of the methamphetamine laboratories dismantled in Africa in the period 2014–2018 were dismantled in South Africa, followed by Nigeria. Nigeria has regularly reported the dismantling of methamphetamine laboratories, and there are also indications that the production capacity of the clandestine methamphetamine manufacturing facilities detected has been on the rise in that country in recent years. Moreover, indirect information suggests that methamphetamine manufacture may also take place in other African countries. Mozambique, the United Republic of Tanzania, the Congo, Benin and other West African countries, in descending order of number of mentions, have been reported in replies to the annual report questionnaire as countries of origin. Nigeria in particular, followed by Ghana and Benin, were mentioned most frequently as departure countries for African methamphetamine shipments by Member States of the United Nations in the period 2014–2018.

Methamphetamine manufactured in Africa is still mainly based on the use of ephedrine and pseudoephedrine as the key precursors.<sup>98</sup> In contrast to the manufacture of the drug in other regions, methamphetamine manufactured in Africa seems to a

97 Australian Criminal Intelligence Commission, University of Queensland and University of South Australia, *National Wastewater Drug Monitoring Program*, Report No. 9 (2020).

98 E/INCB/2019/4.

significant extent to be destined for overseas markets, in particular in East and South-East Asia.<sup>99</sup>

### Global methamphetamine market is expanding but remains mainly concentrated in North America and East and South-East Asia

The information available globally on methamphetamine points to a market expansion over the past two decades, in particular since 2009. Qualitative information on methamphetamine trafficking trends reported by Member States, data on drug treatment facilities, prevalence data in countries based on survey data, and prices all suggest that the methamphetamine market has been expanding, particularly in the two subregions where demand for the drug is highest, South-East Asia and North America, while most trafficking in methamphetamine continues to be intraregional.

Methamphetamine continues to be seized mainly in North America and in East and South-East Asia,

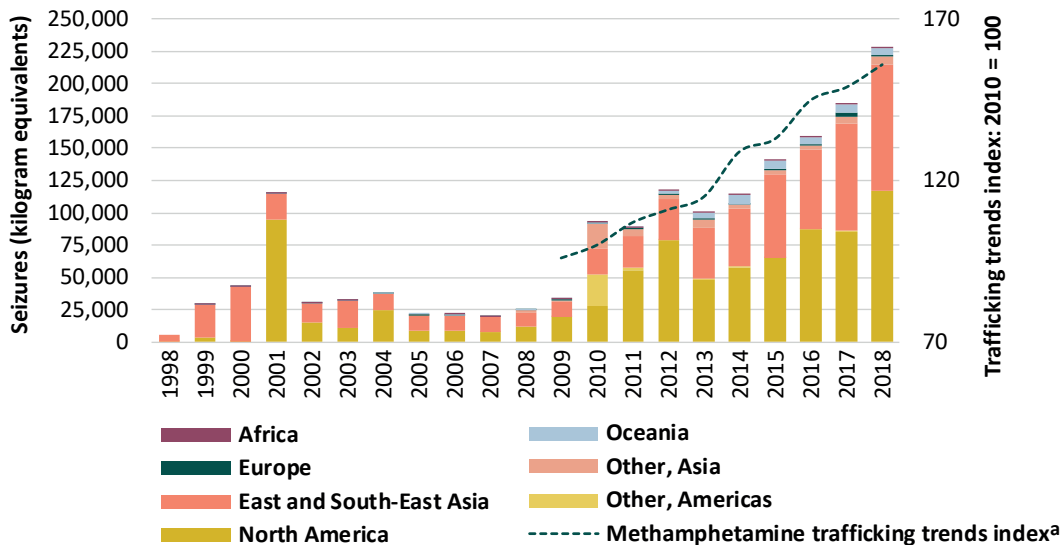
which accounted for, respectively, 50 per cent and 42 per cent of the global quantities of methamphetamine seized in the period 2014–2018, while the quantities of the drug seized in Oceania (4 per cent), the Near and Middle East/South-West Asia (2 per cent), South Asia and Europe (1 per cent each) continued to be far smaller.

The largest quantities of methamphetamine seized in 2018 were the quantities seized in the United States, followed by Thailand and Mexico. Marked increases in the quantities seized from 2017 to 2018 were reported by the United States and Thailand, while the quantities of methamphetamine seized in China declined, in line with reports of wastewater analysis that showed a significant decline in methamphetamine consumption in that country.

### Trafficking in methamphetamine continues to increase in North America

The quantities of methamphetamine seized in North America rose sixfold between 2009 and 2018, to

**FIG. 22** Global quantities of methamphetamine seized and reported trends in methamphetamine trafficking, 1998–2018

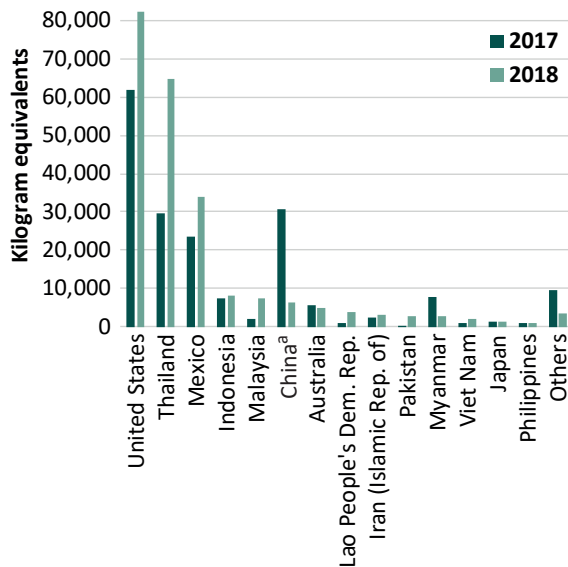


Source: UNODC, responses to the annual report questionnaire.

<sup>a</sup> The trafficking trends index is based on qualitative information on trends in methamphetamine trafficking reported by Member States. The trend line is computed on the basis of the number of countries reporting increases minus the number of countries reporting decreases (2 points for "strong increase", 1 point for "some increase", 0 points for "stable", -1 point for "some decline", and -2 points for "strong decline").

99 UNODC, responses to the annual report questionnaire.

**FIG. 23** Quantities of methamphetamine seized in the main seizing countries, 2017–2018



Source: UNODC, responses to the annual report questionnaire.

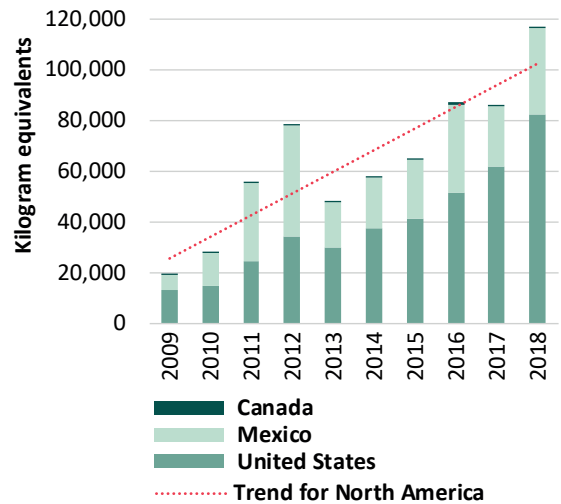
<sup>a</sup> Data shown here are based on responses by Member States to the UNODC annual report questionnaire. Different seizure data for 2018, however, were provided by the National Narcotics Control Commission of China to the UNODC global Synthetics Monitoring: Analysis, Reporting and Trends (SMART) programme for the UNODC report *Synthetic Drugs in East and Southeast Asia: Latest Development and Challenges* (May 2020).

117 tons. North American methamphetamine seizures accounted for more than 99 per cent of all the methamphetamine seized in the Americas in 2018. Methamphetamine seizures in the subregion were dominated by those reported by the United States (71 per cent of the total in 2018), followed by Mexico (29 per cent), while the quantities of methamphetamine seized in Canada (0.4 per cent) remained more limited.

### Trafficking in methamphetamine continues to increase in North America

The quantities of methamphetamine seized in North America rose sixfold between 2009 and 2018, to 117 tons. North American methamphetamine seizures accounted for more than 99 per cent of all the methamphetamine seized in the Americas in 2018. Methamphetamine seizures in the subregion were dominated by those reported by the United States (71 per cent of the total in 2018), followed by

**FIG. 24** Quantities of methamphetamine seized in North America, 2009–2018



Source: UNODC, responses to the annual report questionnaire.

Mexico (29 per cent), while the quantities of methamphetamine seized in Canada (0.4 per cent) remained more limited.

In the United States, most methamphetamine is sold as methamphetamine. However, there have also been reports of tablets sold as “ecstasy” that contained methamphetamine instead (notably in Missouri).<sup>100</sup> The sale of methamphetamine in the form of falsified Adderall<sup>101</sup> tablets is a new phenomenon, with laboratories manufacturing such falsified medicaments found in a number of states, in particular Georgia and California.<sup>102</sup> The expansion of methamphetamine trafficking has also gone hand in hand with the increasingly common practice of mixing methamphetamine with fentanyl. This practice has proved to be particularly harmful and has contributed to the rapid rise in methamphetamine-related deaths in recent years.<sup>103</sup>

100 United States Department of Justice, DEA, *National Drug Threat Assessment 2019*.

101 A mixture of amphetamine and dextroamphetamine, used in the treatment of attention deficit disorders.

102 United States Department of Justice, DEA, *National Drug Threat Assessment 2019*.

103 Ibid.



Generally, methamphetamine has maintained a strong presence in the western, south-western, and south-eastern regions of the United States. This has been linked, among other things, to the proximity of the south-western border with Mexico and the use of the interstate highway infrastructure for onward trafficking purposes. However, more recently, methamphetamine has also developed a growing presence in regions that historically have not had a large market for the drug, such as the North-East.<sup>104</sup>

As cross-border methamphetamine trafficking in North America consists mainly of trafficking from Mexico to the United States, the south-western border thus remains the main entry point for illegal imports of methamphetamine into the United States: in 2018, 95 per cent of the methamphetamine seizures made by United States customs authorities were effected at or near the country's south-western border.<sup>105</sup> Quantities of methamphetamine seized in the United States as a whole almost tripled between 2013 and 2018, whereas those intercepted along the south-western border quadrupled during the same period.<sup>106</sup> Trafficking *modi operandi* include concealment by human couriers on commercial flights, the use of parcel delivery services, and the use of pick-up trucks and commercial buses, as well as unusual goods deliveries such as concealment in metal collars, cargo stabilizers, electric transformers and industrial drill bits,<sup>107</sup> reflecting the increasing sophistication of methamphetamine smuggling activities. Another emerging trend over the past few years has been the use of drones, which easily fly over physical barriers on the border while the operators remain at a safe distance from where the drugs are dropped, thereby reducing the risk of arrest.<sup>108</sup>

Practically all the major transnational criminal organizations in Mexico seem to be involved in the smuggling of methamphetamine to the United States. They include the Sinaloa Cartel, the Jalisco New Generation Cartel, the Juárez Cartel, the Gulf Cartel, the Los Zetas Cartel and the Beltrán-Leyva

Organization.<sup>109</sup> In parallel, outlaw motorcycle gangs continue to be involved in the distribution of methamphetamine within the United States.<sup>110</sup> The increased involvement of Mexican organized crime groups in the trafficking of drugs other than cocaine has contributed to the spread of methamphetamine trafficking from the western United States to the whole country over the past decade, including states in the eastern part of the country that had previously been spared from the large-scale harmful use of methamphetamine.<sup>111</sup>

Although most of the methamphetamine trafficking related to North America is intended for markets within the subregion, smaller amounts of methamphetamine are also trafficked from North America to other subregions, including other parts of the Americas, Oceania, East and South-East Asia and Western and Central Europe. The United States, for example, has been reported by other countries as a country of departure of methamphetamine for Oceania (Australia and New Zealand), Asia (Japan, the Philippines, Hong Kong, China and Mongolia) and Europe (Ireland).<sup>112</sup> Moreover, methamphetamine trafficking has been reported not only from Mexico or from Canada into the United States but also from the United States to those two countries, suggesting a number of two-way trafficking flows across the countries of North America. Methamphetamine trafficked from Canada has been reported in the United States, South America (Chile), Oceania (Australia and New Zealand) and a few countries in Europe (Iceland and Latvia).

In addition to significant trafficking of methamphetamine from Mexico to the United States there has also been, to a far lesser extent, some trafficking to countries in Asia (Japan, the Republic of Korea and the Philippines), Oceania (New Zealand) and Europe (Belgium, the United Kingdom of Great Britain and Northern Ireland and Spain) over the period 2014–2018. More recently, methamphetamine shipments have also been intercepted en route from Mexico to

109 United States Department of Justice, DEA, *National Drug Threat Assessment 2019*.

110 Ibid.

111 United States, Substance Abuse and Mental Health Services Administration, Center for Behavioral Health Statistics and Quality, *Results from the 2018 National Survey on Drug Use and Health: Detailed Tables*.

112 UNODC, responses to the annual report questionnaire.

104 Ibid.

105 Ibid.

106 Ibid.

107 Ibid.

108 Ibid., and previous years.

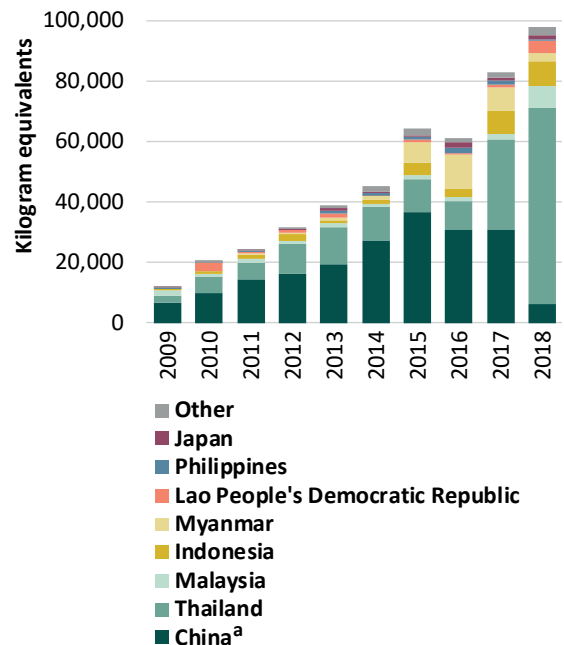
the Netherlands for distribution in Europe; moreover, Mexican “methamphetamine cooks”, linked to Mexican organized crime groups, were arrested in Europe, after being detected in large-scale methamphetamine manufacture in Western Europe. For example, in February 2019, the authorities of the Netherlands dismantled a methamphetamine laboratory used for the crystallization of the substance, seized around 400 kg of methamphetamine and arrested nationals of Mexico, the Dominican Republic and the Netherlands<sup>113</sup>. Also, in May 2019, the authorities of the Netherlands raided a river boat in the country that had a full crystalline methamphetamine laboratory on board,<sup>114, 115</sup> and seized more than 300 litres of methamphetamine oil.<sup>116</sup> Similarly, in June 2019, the Belgian police dismantled a large production site where crystalline methamphetamine was being synthesized, arresting four Mexicans, two nationals of the Netherlands and one Belgian in connection with the case.<sup>117</sup>

### Signs of a marked expansion of methamphetamine trafficking in South-East Asia in 2018

Quantities of methamphetamine seized in East and South-East Asia increased eightfold over the period 2009–2018, to close to 100 tons, and preliminary data for 2019<sup>118</sup> show further strong increases in the quantities of methamphetamine seized, in particular in South-East Asia, with increases reported in 2019 by, among other countries, Brunei Darussalam, Cambodia, Hong Kong, China, Indonesia, Japan, the Lao People’s Democratic Republic, Myanmar, the Philippines, Singapore and Viet Nam.<sup>119</sup>

In most years in the past decade the largest quantities of methamphetamine seized in East and South-East Asia were reported by China. In 2018,

**FIG. 25** Quantities of methamphetamine seized in East and South-East Asia, by country, 2009–2018



Sources: UNODC, responses to the annual report questionnaire.

<sup>a</sup> Data shown here are based on responses by Member States to UNODC annual report questionnaire. Different seizure data for 2018, however, were provided by the National Narcotics Control Commission of China to the UNODC global SMART programme for the UNODC report on *Synthetic Drugs in East and Southeast Asia: Latest Developments and Challenges*.

by contrast, 66 per cent of all the methamphetamine seized in that subregion was seized in Thailand, followed by Indonesia (8 per cent) and Malaysia (8 per cent) and only then by China (6 per cent),<sup>120</sup> reflecting underlying shifts in the methamphetamine market in South-East Asia, that is, a decline in the methamphetamine market in China in parallel with ongoing increases in the ASEAN countries.<sup>121</sup>

While the typical purity of methamphetamine tablets

113 EMCDDA and Europol, *EU Drug Market Report 2019*.

114 Janene Pieters, “Mexican cartel tied to booby-trapped floating drug lab in Dutch police sting”, *NL Times*, 13 May 2019.

115 Daniel Boffey, “Booby trap scuppers police raid on Dutch floating crystal meth lab”, *Guardian*, 13 May 2019.

116 EMCDDA and Europol, *EU Drug Market Report 2019*.

117 Ibid.

118 Even more countries may have been showing increases in 2019, as available data for a number of countries in East and South-East Asia for 2019 do not fully cover the 4th quarter.

119 UNODC, *Synthetic Drugs in East and Southeast Asia: Latest Developments and Challenges* (May 2020).

120 UNODC, responses to the annual report questionnaire.

Different seizure data for 2018, however, were provided by the National Narcotics Control Commission of China to the UNODC global SMART programme for the UNODC report on *Synthetic Drugs in East and Southeast Asia: Latest Developments and Challenges*.

121 UNODC, *Synthetic Drugs in East and South-East Asia: Trends and Patterns of Amphetamine-type Stimulants and New Psychoactive Substances*.

encountered in East and South-East Asia has remained relatively stable in recent years (mostly within a range of 15 to 25 per cent),<sup>122</sup> retail prices of methamphetamine tablets have decreased sharply in several countries in the subregion, which, when combined with the increases in quantities seized, suggests that the supply of methamphetamine may have outstripped demand in East and South-East Asia.<sup>123, 124</sup>

The average purity of crystalline methamphetamine in East and South-East Asia continues to remain very high, again suggesting an abundant supply of the drug. The average purity of samples analysed in China reached 95 per cent in 2018 and other countries in the subregion (Brunei Darussalam, Cambodia, Indonesia, Malaysia and Viet Nam) reported purity levels of between 70 and 90 per cent.<sup>125</sup> While purity has remained high, retail prices of crystalline methamphetamine have decreased in several countries in the subregion in recent years, including Cambodia, Indonesia, Japan, the Lao People's Democratic Republic, Malaysia and Myanmar,<sup>126, 127</sup> pointing to an increase in the availability of crystalline methamphetamine in the subregion.<sup>128</sup> In Indonesia, Thailand and Viet Nam, retail prices of crystalline methamphetamine have actually more than halved over the past decade.<sup>129</sup> At the same time, the average purity of crystalline methamphetamine rose in Thailand from 90 per cent in 2011 to around 95 per cent in 2019, with almost all (99 per cent) of the crystalline methamphetamine samples analysed in 2019 showing purity levels of over 90 per cent. Typical purities of crystalline methamphetamine analysed in Indonesia and Malaysia also showed increases over the period 2011–2019.<sup>130</sup> In parallel, sharp decreases in typical retail prices of methamphetamine tablets were

reported from countries in the Mekong region (including Cambodia, the Lao People's Democratic Republic, Myanmar and Thailand). In Thailand, the reported price of a methamphetamine tablet in 2019 was \$2.50, a 70 per cent decrease compared with 2011 (\$8.20).<sup>131</sup>

All in all, tablet and crystalline methamphetamine prices in several countries in the region reached their lowest level over the past decade despite a record number of seizures being made every year during the same period.<sup>132</sup> The decrease in prices also appears to have contributed to an increase in the use of methamphetamine and, subsequently, in more methamphetamine-related treatment demand. Thus, there have been sharp increases in methamphetamine-related treatment admissions reported in recent years by several countries in South-East Asia, including a more than 30-fold increase in the number of treatment admissions for the use of methamphetamine reported by Malaysia over the period 2011–2018.<sup>133</sup>

Trends in China regarding methamphetamine supply and trafficking stand in contrast to trends in the rest of the region. Data on seizures and prices suggest that the methamphetamine market in China<sup>134</sup> (including Hong Kong, China)<sup>135</sup> contracted while the markets outside China expanded. The number of dismantled clandestine laboratories has declined in China in recent years<sup>136</sup> (both for the manufacture of methamphetamine tablets and for crystalline methamphetamine),<sup>137</sup> as have the quantities of methamphetamine seized in China. In parallel, the number of registered users of synthetic drugs (with methamphetamine users accounting for more than 95 per cent of this total) declined in China in both 2018 and 2019, after still having shown increases over the period 2015–2017.<sup>138</sup> In addition, research conducted in China

122 Ibid.

123 Ibid.

124 UNODC, *Synthetic Drugs in East and Southeast Asia: Latest Developments and Challenges*.

125 UNODC, responses to the annual report questionnaire.

126 UNODC, *Synthetic Drugs in East and South-East Asia: Trends and Patterns of Amphetamine-type Stimulants and New Psychoactive Substances*.

127 UNODC, *Synthetic Drugs in East and Southeast Asia: Latest Developments and Challenges*.

128 Ibid.

129 Ibid.

130 Ibid.

131 Ibid.

132 Ibid.

133 Ibid.

134 Ibid.

135 Ibid.

136 China, National Narcotics Control Commission *Annual Report on Drug Control in China 2018*, p. 52.

137 UNODC, *Synthetic Drugs in East and South-East Asia: Trends and Patterns of Amphetamine-type Stimulants and New Psychoactive Substances*, p. 27.

138 UNODC, *Synthetic Drugs in East and Southeast Asia: Latest*

has also shown a decline in the quantities of methamphetamine found in wastewater in recent years, which, according to the Chinese authorities, followed campaigns that cracked down on the drug's manufacture and use.<sup>139, 140</sup>

This shift from China as the main location of methamphetamine manufacture and trafficking to other countries in East and South-East Asia is also indirectly reflected in trafficking data reported by Australia. China and Hong Kong, China, were the two main embarkation points for methamphetamine trafficked to Australia in 2015, whereas in the fiscal years 2016/17 and 2017/18 the most important embarkation points were the United States, followed by Thailand and Malaysia.<sup>141</sup> In fact, in 2018, the Australian authorities reported that the importance of China as a source country for methamphetamine had declined while there has been an emerging trend in the growth of quantities of seized methamphetamine originating in South-East Asia, mainly in the Mekong region, including the Lao People's Democratic Republic, Myanmar and Thailand.<sup>142</sup>

Most of the methamphetamine available in East and South-East Asia is sourced within the subregion. The dynamics of methamphetamine manufacture and trafficking within that subregion are, however, less well understood than in others as the available indicators show partly contradictory patterns. Although in previous years, China and Myanmar were identified as the most frequently identified countries of "origin", "departure" and "transit" in East and South-East Asia, manufacture of methamphetamine may now be more widely spread across the subregion, although it is not clear whether frequently mentioned departure countries, such as Malaysia or Thailand, are also the countries of origin or mainly transit countries for methamphetamine manufactured in Myanmar. In fact, Myanmar reported Thailand and the Lao People's Democratic Republic as main destination countries for

methamphetamine shipments in 2018, while Malaysia reported Thailand as the main departure country. At the same time, the number of dismantled clandestine methamphetamine laboratories declined over the period 2016–2019 in Malaysia as well as in Indonesia and the Philippines,<sup>143</sup> and no dismantling of a methamphetamine laboratory in Thailand has been officially reported to UNODC since 2012.<sup>144</sup> In conjunction with increasing imports of methamphetamine, this lends support to the hypothesis that a stronger concentration or consolidation of methamphetamine manufacture is occurring in this subregion, possibly in Myanmar.<sup>145</sup> Some methamphetamine, however, was also reportedly sourced outside the subregion in 2018, including from Bangladesh, India and the United States, and – when the past five years are considered – also from Iran (Islamic Republic of), Mexico and Nigeria.<sup>146</sup>

While methamphetamine trafficking flows from East and South-East Asia to countries outside the subregion remain modest, some smuggling to destinations around the world was reported, mainly smuggling from Malaysia, Thailand and Myanmar in 2018 or, when the period is extended to the past five years, mainly from China and Thailand. Destinations outside the subregion included countries in South Asia, the Near and Middle East (Saudi Arabia as well as Israel), Oceania (Australia and New Zealand), North America (the United States as well as Canada), Western Europe (notably Switzerland as well as Italy, Germany, France, Spain and Iceland), Eastern Europe (notably the Russian Federation) and Africa (notably South Africa) over the period 2014–2018.<sup>147</sup>

### High levels of methamphetamine trafficking into and across Oceania

The quantities of methamphetamine seized in Oceania showed a marked increase over the period 2008–2014, while remaining stable, at 5 to 6 tons annually, over the period 2015–2018. Australia accounted for 90 per cent of all quantities seized in

#### *Developments and Challenges.*

139 David Cyranoski, "China expands surveillance of sewage to police illegal drug use", *Nature* 16 July 2018.

140 Wang and others, "Reduction in methamphetamine consumption trends from 2015 to 2018".

141 Australian Criminal Intelligence Commission, *Illicit Drug Data Report 2017–18*, and previous years.

142 UNODC, response to the annual report questionnaire.

143 UNODC, *Synthetic Drugs in East and Southeast Asia: Latest Developments and Challenges*.

144 UNODC, responses to the annual report questionnaire.

145 UNODC, *Synthetic Drugs in East and Southeast Asia: Latest Developments and Challenges*.

146 UNODC, responses to the annual report questionnaire.

147 Ibid.

Oceania over the period 2015–2018, and New Zealand for 10 per cent, while over the period 2008–2014 Australia accounted for 97 per cent of all methamphetamine seized in the region and New Zealand for just 3 per cent.

In parallel with the marked increase in the quantities of methamphetamine seized, the median purity of methamphetamine samples in Australia also increased dramatically, from around 10 per cent purity in the period 2007–2010 to 60–80 per cent in the period 2014–2015 and has remained at that level since then, except for a decline reported for Tasmania (Australia).<sup>148</sup>

The relative stability of the quantities of methamphetamine seized over the period 2015–2018 is not, however, in line with the results of wastewater testing in Australia (covering 57 per cent of the country's total population), which suggest an increase in methamphetamine consumption from 8.4 tons in the fiscal year 2016/17 to 9.8 tons in 2017/18 and 11.5 tons in 2018/19.<sup>149</sup> This suggests that interceptions may have declined as methamphetamine traffickers found new ways to smuggle the drug into the country and/or to manufacture it in clandestine laboratories in Australia without being detected. Nonetheless, available data also suggest that methamphetamine interception rates in Australia are still high by international standards.

Methamphetamine found in Australia and New Zealand is both locally manufactured and, to a larger extent, imported from North America and Asia. In the fiscal year 2017/18, methamphetamine was mainly smuggled into Australia from the United States, followed by Thailand, Malaysia, the United Arab Emirates, Canada, China (including Hong Kong, China), Mexico, Lebanon, Viet Nam and India.<sup>150</sup> The United States was also the main source country of the methamphetamine found in New Zealand in 2018, followed by Canada and, in South-East Asia, by Malaysia and the Lao People's Democratic Republic.<sup>151</sup>

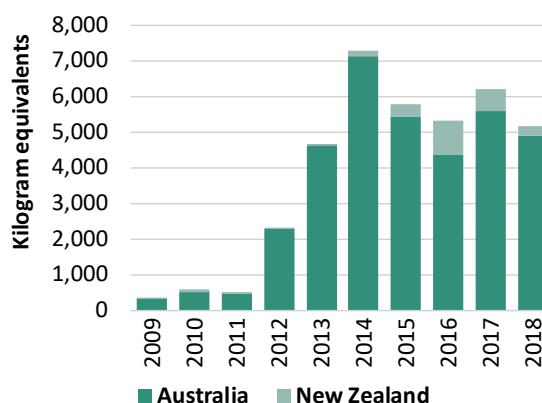
148 Australian Criminal Intelligence Commission, *Illicit Drug Data Report 2017–18*.

149 Australian Criminal Intelligence Commission, University of Queensland and University of South Australia, *National Wastewater Drug Monitoring Program*, Report No. 9.

150 Ibid.

151 UNODC, responses to the annual report questionnaire.

**FIG. 26** Quantities of methamphetamine seized in Oceania, 2009–2018



Source: UNODC, responses to the annual report questionnaire.

The chemical analysis of seizures at the Australian border revealed the increasing presence of methamphetamine manufactured using P-2-P precursors, increasing from 2 per cent of the total weight of the methamphetamine samples analysed in 2010 to 29 per cent in 2015 and 64 per cent in the first two quarters of 2018.<sup>152</sup> This points to Mexico and, to a lesser extent, the United States as the main countries of origin of the methamphetamine seized at Australia's borders, although the drug seems to be mostly trafficked into Australia via the United States. Methamphetamine manufactured in Canada and Asia is still predominantly manufactured using ephedrine and pseudoephedrine, suggesting that they are unlikely to be the main locations of manufacture of the methamphetamine found in Australia.

Indeed, price data are compatible with North America being the source of methamphetamine found in Oceania. Methamphetamine prices at the retail level amounted to, on average, \$524 per gram (range \$280–\$581) in Australia and \$345 per gram (range \$138–\$892) in New Zealand.<sup>153</sup> This compares with prices of \$70 (range: \$23–\$116) per gram in Canada

152 Australian Criminal Intelligence Commission, *Illicit Drug Data Report 2017–18*.

153 UNODC, responses to the annual report questionnaire.

## Market size and seizures of methamphetamine in Australia

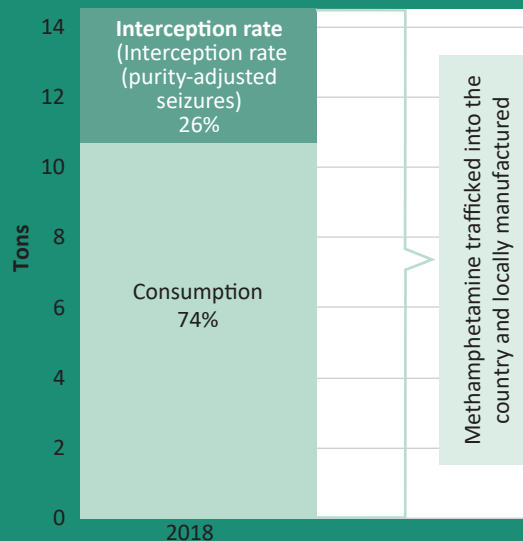
Wastewater analysis has been used in Australia to estimate the annual amount of methamphetamine consumed in the country at 9.8 tons in the fiscal year 2017/18 and 11.5 tons in the fiscal year 2018/19.<sup>a</sup> This suggests that around 10.7 tons of methamphetamine may have been consumed in Australia in the calendar year 2018, when reported quantities of methamphetamine seized amounted to 4.9 tons.<sup>b</sup> With average purity in 2018 (first two quarters) reported at 77 per cent,<sup>c</sup> purity-adjusted seizures may have thus amounted to some 3.8 tons that year. This suggests that some 14.5 tons of methamphetamine either entered the country and/or were manufactured domestically in 2018, of which 3.8 tons, or 26 per cent of the total, appear to have been seized and 10.7 tons to have been consumed. Such a high interception rate may also explain the high drug prices, including the high price of methamphetamine, in Australia.

<sup>a</sup> Australian Criminal Intelligence Commission, *Illicit Drug Data Report 2017–18*.

<sup>b</sup> UNODC, responses to the annual report questionnaire.

<sup>c</sup> Australian Criminal Intelligence Commission, *Illicit Drug Data Report 2017–18*.

Estimated size of the methamphetamine market in Australia in tons, 2018



Sources: Australian Criminal Intelligence Commission, University of Queensland and University of South Australia, *National Wastewater Drug Monitoring Program*, Report No. 9 (2020); Australian Criminal Intelligence Commission, *Illicit Drug Data Report 2017–18*; and UNODC, responses to the annual report questionnaire.

and around \$66<sup>154</sup> per gram (range: \$10–\$400)<sup>155</sup> in the United States. Wholesale prices are even lower, possibly amounting to some \$22,000<sup>156</sup> per kg (range: \$3,000–\$120,000)<sup>157</sup> in the United States, thus making the smuggling of methamphetamine from otherwise high-price countries in North America to Australia and New Zealand still highly lucrative.

<sup>154</sup> Based on a purity adjusted price of \$65 and a purity level of 94.1 per cent over the period January–December 2017 as reported by DEA of the United States Department of Justice, in *National Drug Threat Assessment 2019*.

<sup>155</sup> UNODC, responses to the annual report questionnaire.

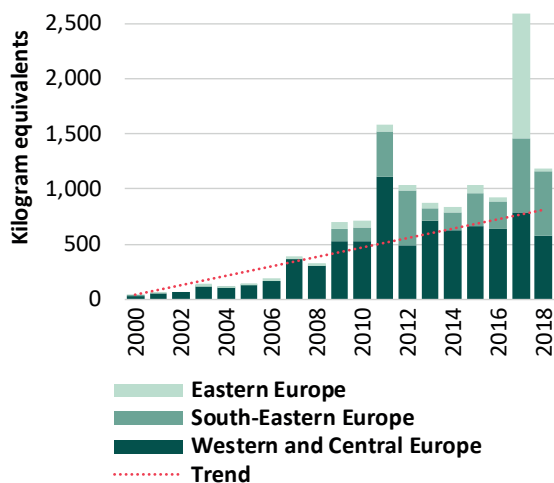
<sup>156</sup> The price range given at the wholesale level in the annual report questionnaire is around 1/3 of the price range given for the retail level. Thus, a retail price of some \$66 per gram can be expected to correspond to approximately \$22 per gram or \$22,000 per kg at the wholesale level.

<sup>157</sup> UNODC, responses to the annual report questionnaire.

## Methamphetamine seizures in Europe remain modest

The quantity of methamphetamine intercepted in Europe remains comparatively limited. With an average of 1.3 tons seized annually, the region accounted for less than 1 per cent of the global quantity of methamphetamine seized in the period 2014–2018. Western and Central Europe accounted for around 50 per cent of the European total, South-Eastern Europe for 30 per cent and Eastern Europe for 20 per cent.

The quantity of methamphetamine seized in Europe peaked in 2017, mainly due to record quantities reported by the Russian Federation that year. In 2018, the Russian Federation reported smaller quantities of methamphetamine seized as trafficking in

**FIG. 27** Quantities of methamphetamine seized in Europe, 2000–2018

Source: UNODC, responses to the annual report questionnaire.

that country moved from methamphetamine to other synthetic stimulants, i.e., mostly cathinones, most notably mephedrone and its derivatives. Smaller declines in the quantities of methamphetamine seized were also seen in Turkey, the Nordic countries (Denmark, Finland, Norway and Sweden), some of the Baltic States (Estonia and Latvia), Poland and Slovakia.

Larger quantities of methamphetamine seized, by contrast, were reported by a number of countries in Western and Central Europe, including Belgium, France, Spain and the United Kingdom, as well as Czechia, the country that regularly reports the largest number of dismantled methamphetamine laboratories in Europe, and neighbouring Austria. The increase in the quantities of methamphetamine seized in Czechia went in parallel with a decline in the number of methamphetamine laboratories dismantled in the country over the past few years. Such a trend suggests a possible decline in the manufacture of methamphetamine in “kitchen laboratories” and an increase in manufacture in larger laboratories.

In parallel, the manufacture of methamphetamine appears to have increased in the Netherlands in recent years. This is partly due to the fact that some of the Vietnamese organized crime groups that were previously involved in methamphetamine

manufacture in Czechia have left Czechia for the Netherlands.<sup>158</sup> In addition, there are also signs that methamphetamine manufacture in the Netherlands and Belgium, partly with the help of Mexican specialists,<sup>159</sup> is increasingly based on the use of various non-controlled precursor chemicals for the manufacture of P-2-P instead of on the use of ephedrine and pseudoephedrine – the traditional methamphetamine precursors – and that this methamphetamine is also manufactured for overseas markets, notably in Asia and Oceania.<sup>160</sup> While in most of the preceding years (including 2016 and 2017), Czechia was identified by countries in Europe as the main source country (i.e., country of origin, departure or transit) of the methamphetamine found on their markets, this changed in 2018 when the Netherlands emerged as the country most frequently mentioned, clearly ahead of Czechia.<sup>161</sup>

When considering a longer time period, data suggest the geographical expansion of methamphetamine trafficking across Europe. The number of countries reporting seizures of the drug increased from 12 countries in 2000 to 34 countries in 2018, and the overall quantity of methamphetamine seized increased from 30 kg in 2000 to 1.1 tons in 2018. In addition, consumption data, based on wastewater analyses, have shown an upward trend in Europe, in particular in 2019, increasing in most of the cities monitored and overall by more than 40 per cent from the previous year, with most of the increases reported in cities in the Netherlands and Belgium and, to a lesser extent, cities in Czechia and neighbouring Germany and Austria. Overall, 28 European cities, i.e., 64 per cent of all cities where the wastewater was analysed in both 2018 and 2019, showed increases in methamphetamine consumption in 2019, while decreases were reported in 16 cities.

## Supply of amphetamine

### Amphetamine manufacture remains concentrated in Europe

Of the total number of amphetamine laboratories reported dismantled worldwide in the period

158 EMCDDA and Europol, *EU Drug Market Report 2019*.

159 Ibid.

160 Ibid.

161 UNODC, responses to the annual report questionnaire.

2014–2018 (749 laboratories), more than half were dismantled in Europe (417), most notably in Western and Central Europe (316) and, to a lesser degree, in Eastern Europe (100). Overall, 16 European countries reported the dismantling of clandestine amphetamine laboratories over the period 2014–2018, in particular the Netherlands. The Netherlands, followed by Poland, Lithuania and Belgium, were the most frequently identified source countries of amphetamine in Europe. Amphetamine from South-Eastern Europe was reported as being mainly sourced from Bulgaria and Turkey. However, it is likely that such statistics are heavily skewed as a number of countries, in particular in the Middle East, where large-scale amphetamine manufacture has been reported, have a very limited capacity to dismantle laboratories and thus are not appropriately represented in these statistics

Close to a fifth of the total number of clandestine amphetamine laboratories that were reported dismantled worldwide in the period 2014–2018 were in North America, mostly in the United States. However, this constitutes only a small proportion of the overall number of dismantled ATS laboratories in that subregion, where manufacture of ATS is dominated by the clandestine manufacture of methamphetamine.

A number of clandestine amphetamine laboratories were also reported to have been dismantled in Oceania, although the manufacture of methamphetamine seems to dominate ATS manufacturing in that region as well. In both Australia and New Zealand, significant amounts of ephedrine and pseudoephedrine are seized, and those two substances are used in the manufacture of methamphetamine, not amphetamine. By contrast, only small amounts of amphetamine precursors, P-2-P and phenylacetic acid tend to be seized in Oceania.<sup>162</sup>

In Asia, only India and Myanmar reported the detection of a few amphetamine laboratories over the period 2014–2018, although it is not certain that the laboratories dismantled in Myanmar were manufacturing amphetamine as such or whether they were manufacturing ATS in the broader sense. While ATS precursor seizures in both countries were mainly of ephedrine and pseudoephedrine, smaller

quantities of P-2-P and phenylacetic acid were also seized,<sup>163</sup> providing indirect evidence that some amphetamine manufacture may have taken place there, in addition to the more significant manufacture of methamphetamine. At the same time, it cannot be excluded that some of the P-2-P seized was intended to be used in the manufacture of methamphetamine.

The manufacture of counterfeit “captagon” tablets, that is, amphetamine tablets mixed with caffeine, in the Near and Middle East is more widespread than the manufacture of amphetamine in South Asia or in East and South-East Asia. Indications received from other countries in the subregion pointed to the existence of clandestine laboratories manufacturing “captagon” tablets in the period 2014–2018, in particular in the Syrian Arab Republic and Lebanon, intended partly for domestic consumption and partly for the more lucrative markets of Saudi Arabia and the Gulf States, as well as the Sudan and Libya. In addition, Iran (Islamic Republic of) and Jordan have been identified by other countries in the subregion as possible countries of origin of amphetamine shipments. Jordan reported that all of the amphetamine found on its market originated in either the Syrian Arab Republic or Lebanon.

No fully operating clandestine amphetamine laboratory was reported to have been dismantled in Africa in the period 2014–2018, or in previous years.<sup>164</sup> Similarly, no seizures of P-2-P, the main precursor used in the manufacture of amphetamine, were reported by African countries to INCB in the period 2014–2018.<sup>165</sup> This may suggest an absence of the manufacture of this substance in the region and/or a limited capacity to detect its manufacture. Nonetheless, attempts to manufacture amphetamine have been undertaken. This was demonstrated by, among other things, the dismantling of a “captagon” laboratory in the Sudan, just before production was to begin, in 2015. The chemist arrested in a joint operation conducted by the Sudanese police in cooperation with DEA of the United States Department of Justice, originated in Bulgaria,<sup>166</sup> the country

163 UNODC, *Synthetic Drugs in East and Southeast Asia: Latest Developments and Challenges*.

164 UNODC, responses to the annual report questionnaire.

165 E/INCB/2019/4.

166 Statement given by the delegation of the Sudan on 3 March

162 E/INCB/2019/4.



where most of the European “captagon” tablets used to be manufactured, in clandestine laboratories, with the final destination being countries of the Near and Middle East. Another “captagon” laboratory, with a production capacity of 300 tablets per minute, was reported to have been uncovered in Khartoum in 2018. In this case, not only amphetamine and its pre-precursor, phenylactic acid but also theophylline was discovered.<sup>167</sup> The latter precursor suggests that the laboratory may have been intended to actually manufacture fenetylline, that is, the substance found in the original trademarked Captagon tablets, rather than amphetamine mixed with caffeine, the mixture commonly sold under the name “captagon” today.

Although no dismantling of operating African amphetamine laboratories or seizures of amphetamine precursors were officially reported, African countries were still mentioned, mostly by other African countries, as “countries of origin” of amphetamine in the period 2014–2018 (South Africa and Mozambique were among those mentioned), while “countries of departure” and of “transit” of amphetamine were mostly West African countries, including Benin, Burkina Faso, Ghana and the Niger, as well as Botswana, in southern Africa.<sup>168</sup> However, whether the identification of “countries of origin” in Africa means that the manufacture of amphetamine has actually been taking place in those countries is far from certain. The countries reported as “countries of origin” were at the same time destination countries for amphetamine. This may indicate that countries reported as “countries of origin” may in fact have been transit countries. Reported destination countries of amphetamine in Africa in the period 2014–2018 were (in order of frequency of mentions) South Africa, Zambia, Mozambique, the Sudan, Egypt, Libya, Algeria, Morocco, Nigeria, Zimbabwe, Seychelles and Mauritius.

2020, at the sixty-third session of the Commission on Narcotic Drugs, held in Vienna.

167 Mohamed Daghar, “Drug trafficking: is Sudan a new hub for captagon trafficking?”, *ENACT*, 24 June 2019.

168 UNODC, responses to the annual report questionnaire.

## Mixed results for amphetamine trafficking

The quantities of amphetamine seized at the global level increased markedly over the period 1998–2016, which was then followed by significant annual decreases: a 28 per cent decrease in 2017 and a 59 per cent decrease in 2018. However, those annual decreases in 2017 and 2018 appear to be largely a statistical artefact resulting from the fact that no amphetamine seizure data were obtained from a number of countries that in the past had contributed significantly to total global amphetamine seizures. In 2018, this was the case in particular with five countries in the Near and Middle East and North Africa<sup>169</sup> that together had accounted for almost two thirds (64 per cent) of the total quantities of amphetamine seized worldwide in 2016.

Assuming that all non-reporting countries had maintained seizure levels of amphetamine in line with those reported in the previous year, there would still have been a decline at the global level, but the decline would have been far more moderate.

Seizures of P-2-P, the main precursor chemical for the manufacture of amphetamine showed marked declines in 2017 (-80 per cent on a year earlier), followed by marked increases in 2018, both at the global level (rising ninefold) and in all regions except North America (rising eightfold), that is, in all regions where P-2-P is used mainly in the manufacture of amphetamine.<sup>170</sup> In parallel, trends in amphetamine trafficking, as reported by Member States, were clearly upwards in 2018, suggesting a continuation of the basic upward trend that has been observed since 2012.<sup>171</sup>

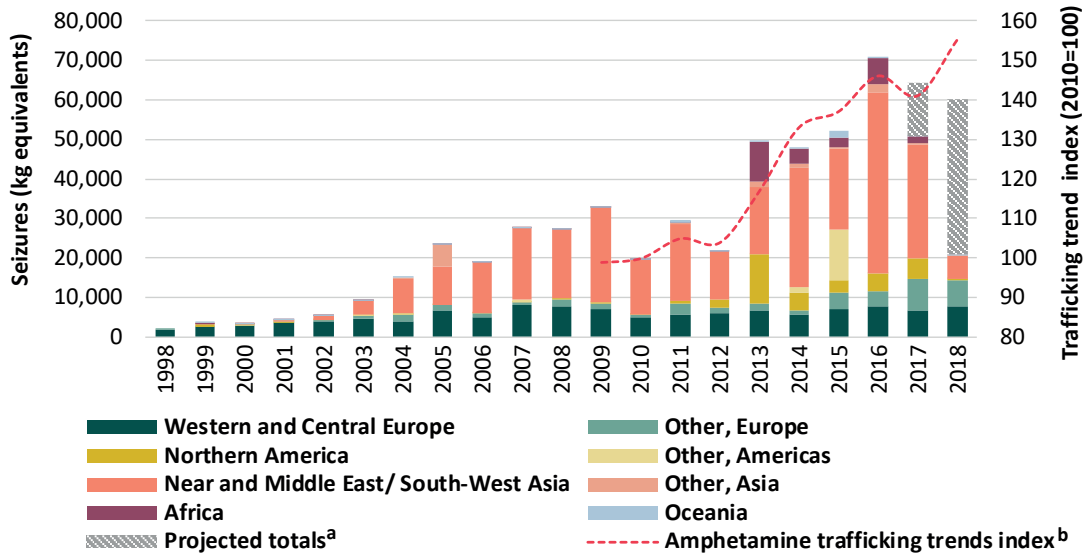
Gaps in seizure data from countries that in the past reported significant quantities of amphetamine seized and the irregular trend in seizures of amphetamine precursors, show a rather mixed picture of overall trafficking of amphetamine, which may contradict the general decline in the quantities of amphetamine seized and reported to UNODC at the global level over the period 2016–2018. Qualitative information reported by countries on

169 In descending order of importance: Saudi Arabia, Jordan, the United Arab Emirates, Egypt and Oman.

170 E/INCB/2019/4.

171 UNODC, responses to the annual report questionnaire.

**FIG. 28** Global quantities of amphetamine seized and reported trends in amphetamine trafficking, 1998–2018



Source: UNODC, responses to the annual report questionnaire.

<sup>a</sup> Projected totals: totals assuming no change in the quantities of amphetamine seized among countries not reporting to UNODC in 2017 and 2018.

<sup>b</sup> The trafficking trends index is based on qualitative information on trends in amphetamine trafficking reported by Member States. The trend line is computed on the basis of the number of countries reporting increases minus the number of countries reporting decreases (2 points for “strong increase”, 1 point for “some increase”, 0 points for “stable”, -1 point for “some decline”, -2 points for “strong decline”).

trafficking trends point to an overall expansion of amphetamine trafficking.

### Most amphetamine trafficking remains concentrated in the Near and Middle East and in Europe

Although data for 2018 were unavailable for key countries in the Near and Middle East, more than half (54 per cent) of the global quantity of amphetamine seized in the period 2014–2018 was reported in the Near and Middle East/South-West Asia. Of the rest, some 24 per cent was seized in Europe (including 14 per cent in Western and Central Europe), 13 per cent in the Americas (including 7 per cent in North America), 6 per cent in Africa (mostly in North Africa) and 1 per cent in Oceania (mostly in Australia). The regional totals for Europe and the Near and Middle East/South-West Asia show larger seizures of amphetamine than of methamphetamine over the period 2014–2018, suggesting that the availability of amphetamine may

be still greater than of methamphetamine in those regions.<sup>172, 173</sup>

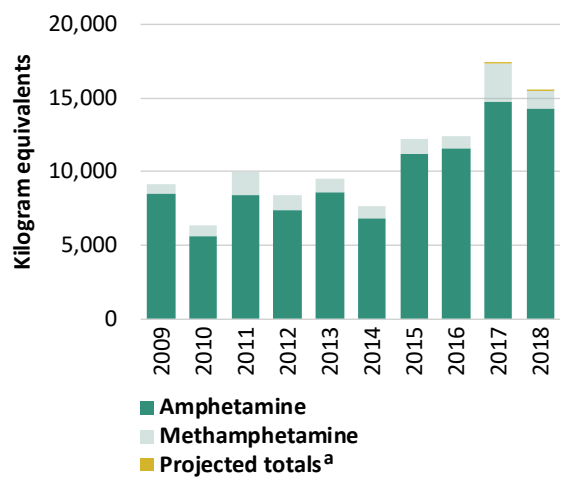
The total quantity of all amphetamines seized in Europe declined slightly in 2018, mainly due to the decrease in the quantity of methamphetamine seized, but still showed a marked increase over the period 2014–2018. Those reported seizure amounts are in line with the reported statistics on the quantity of amphetamines consumed in Europe in 2018 based on wastewater analysis, which indicated a decline in methamphetamine consumption in parallel with an increase in amphetamine consumption, before both amphetamine and methamphetamine consumption increased markedly in 2019.<sup>174</sup>

172 E/INCB/2018/1.

173 EMCDDA, *European Drug Report 2018: Trends and Developments* (Luxembourg, Publications Office of the European Union, 2018).

174 UNODC calculations based on wastewater data provided by Sewage analysis CORE group Europe (SCORE).

**FIG. 29** Quantities of amphetamine and methamphetamine seized in Europe, 2009–2018

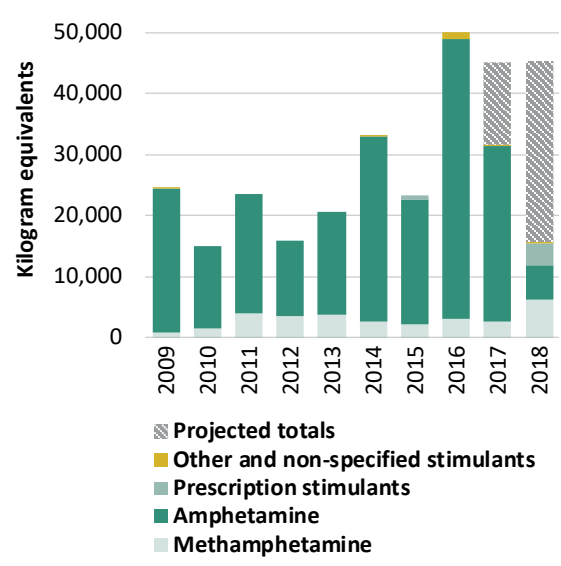


Source: UNODC, responses to the annual report questionnaire.  
<sup>a</sup> Projected totals: totals assuming no change in the quantities of amphetamine and methamphetamine seized among countries not reporting to UNODC in 2017 and 2018.

In the Near and Middle East/South-West Asia, the quantities of methamphetamine seized increased markedly in 2018. However, the marked decline in the reported quantities of amphetamine seized in recent years (-37 per cent in 2017 and -80 per cent in 2018) seems to be largely a statistical artefact. Some of this decline may have been related to changes in the categorization of stimulants seized, for example, “prescription stimulants” instead of “amphetamine”. Even more important has been the hiatus in the reporting of seizures to UNODC by some countries known to be affected by major amphetamine trafficking activities. There is plenty of evidence that trafficking in amphetamine, in particular of “captagon” tablets,<sup>175</sup> has also continued in the Near and Middle East in recent years. INCB, for example, in its most recent annual report noted the following:

<sup>175</sup> “Captagon” was originally the official trade name of a pharmaceutical preparation containing fenetylline, a synthetic stimulant. As encountered in seizures across West Asia today and as referred to in the present report, “captagon” is a counterfeit drug compressed into tablets that are similar only in appearance to the original trademarked Captagon. The active ingredient in counterfeit “captagon” is amphetamine, which is typically cut with multiple adulterants, such as caffeine and other substances.

**FIG. 30** Quantities of amphetamine, methamphetamine and other amphetamine-type stimulants (excluding “ecstasy”) seized in the Near and Middle East/South-West Asia, 2009–2018



Source: UNODC, responses to the annual report questionnaire.  
<sup>a</sup> Projected totals: totals assuming no change in the quantities of amphetamine seized among countries not reporting to UNODC in 2017 and 2018.

The manufacture and trafficking of counterfeit “captagon” continued to seriously affect the countries of the Middle East, which not only are destination markets for those drugs but are also increasingly becoming a source of counterfeit “captagon”...Political instability and unresolved conflicts, poverty and the lack of economic opportunities in some parts of the subregion have contributed to increased trafficking in...“captagon”.<sup>176</sup>

**Most amphetamine trafficking continues to be intraregional**

European countries, for example, reported that most (95 per cent of all mentions in the annual report questionnaire over the period 2014–2018) of the amphetamine trafficked on their territory originated in the region. Amphetamine destined for the European market was most frequently reported as having

<sup>176</sup> E/INCB/2019/1.

## “Captagon” tablets in the Near and Middle East

From about 1990 to the mid-2000s, amphetamine manufactured in the Balkan countries, most notably in Bulgaria, was the main source of the falsified “captagon” tablets sold in the Arabian Peninsula by Bulgarian and Turkish criminal networks.<sup>a</sup> Amphetamine also started to be synthesized in Turkey.<sup>b</sup> By the mid-2000s, law enforcement operations in Bulgaria and Turkey appeared to have succeeded in reducing the illicit manufacture of “captagon” in the two countries. However, from 2011 onward, the conflict in the Syrian Arab Republic appears to have had an impact as various factions that were seeking access to funds through involvement in the illicit drug trade had an incentive to become active in the manufacture of “captagon”.<sup>c</sup> Instability and conflict in the Middle East contributed to the trafficking in falsified “captagon” in the subregion.<sup>d</sup> A lack of control and monitoring led to an increase in the manufacture of “captagon” tablets in some countries over the period 2014–2018, which turned into an additional source of income for terrorist and insurgency groups in the Middle East.<sup>e</sup>

Captagon was originally the trademarked brand name of a medicinal product containing fenetylline, until the substance was placed under international control in 1986. While the diversion of fenetylline from existing stocks might have continued until the end of the 1990s, those stocks, some of which were apparently located in Bulgaria, became depleted. However, the “captagon” name and logo continued to be used even though the composition of the counterfeit tablets had changed, and increasingly, seized “captagon” tablets were found to contain amphetamine, often mixed with caffeine and other substances. An analysis of seizures made in Lebanon in 2013, for example, revealed that such tablets contained 8–14 per cent amphetamine, 12–35 per cent caffeine, 10–14 per cent theophylline and 6–20 per cent paracetamol.<sup>f</sup> Data generated in the context of Operation Missing Link, conducted in countries in the Middle

East and North Africa between April 2016 and January 2017,<sup>g</sup> confirmed the varied content of tablets trafficked as “captagon” and revealed that tablets sold as “captagon” contained various combinations of ingredients. Combinations of amphetamine mixed with caffeine, theophylline, quinine and paracetamol as the main active ingredients were found most frequently in analysed tablets from seizures effected in Jordan, Lebanon and the United Arab Emirates.<sup>h</sup> That operation led to the seizure of a number of pre-precursors of amphetamine, including P-2-P methyl glycidic acid derivatives,<sup>i</sup> although it also revealed that the vast majority of the amphetamine found in “captagon” tablets in the Middle East (82 per cent) had been manufactured from APAAN,<sup>j, k</sup> a precursor of P-2-P that came under international control in October 2014.<sup>l</sup> Seizures of APAAN were also reported in 2018 by a number of countries in the Near and Middle East, most notably Jordan, where it was seized from a “captagon” laboratory, along with benzyl cyanide.<sup>m</sup>

<sup>a</sup> EMCDDA, *Captagon: Understanding Today's Illicit Market*, EMCDDA Paper (Luxembourg, Publications Office of the European Union, 2018).

<sup>b</sup> *World Drug Report 2008* (United Nations publications, Sales No.E.08.XI.1).

<sup>c</sup> EMCDDA, *Captagon: Understanding Today's Illicit Market*.

<sup>d</sup> E/INCB/2018/1.

<sup>e</sup> *Ibid.*

<sup>f</sup> EMCDDA, *Captagon: Understanding Today's Illicit Market*.

<sup>g</sup> E/INCB/2017/1.

<sup>h</sup> EMCDDA, *Captagon: Understanding Today's Illicit Market*.

<sup>i</sup> E/INCB/2017/4

<sup>j</sup> *Ibid.*

<sup>k</sup> EMCDDA, *Captagon: Understanding Today's Illicit Market*.

<sup>l</sup> Commission on Narcotic Drugs decision 57/1 (E/2014/28).

<sup>m</sup> E/INCB/2019/4.

been sourced in the Netherlands (37 per cent of all mentions), followed by Poland (20 per cent), Lithuania (11 per cent), Belgium (10 per cent), the Russian Federation (4 per cent) and Bulgaria (3 per cent). In addition, small amounts of the amphetamine illicitly manufactured in Europe are also destined for export to markets in other regions, including in the Americas, Asia, Africa and Oceania.

The two countries most frequently reported as countries of origin of amphetamine (mainly “captagon”) seized in the Near and Middle East/South-West Asia in the period 2014–2018 were Lebanon and the Syrian Arab Republic, which together accounted for some 40 per cent of all mentions of countries of origin reported by the authorities in the subregion. Final destinations are mostly countries in the Near and Middle East, most notably Saudi Arabia and various other Gulf countries, in particular the United Arab Emirates and Qatar, using both direct and indirect routes. A number of law enforcement operations document trafficking between the Syrian Arab Republic and Lebanon as source countries, as well as countries in North Africa, notably Libya and the Sudan.<sup>177</sup> In 2017, the United Arab Emirates seized 45 million tablets of “captagon”, while Turkey reported that its territory continued to be used as a transit area for trafficking in “captagon” tablets, mainly manufactured in the Syrian Arab Republic, in some cases by terrorist and insurgency groups, and marketed in other countries in the Middle East.<sup>178</sup> In April 2019, Lebanese authorities seized 142 kg of “captagon” from a refrigerated truck in an operation coordinated with the authorities of Saudi Arabia, and seized 10 kg at the Beirut Rafic Hariri International Airport in May 2019.<sup>179</sup>

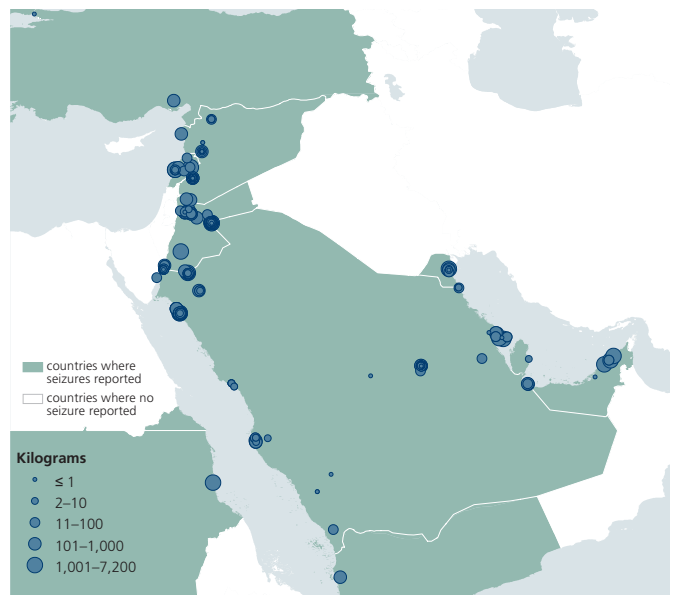
In a few cases, Europe has also been used for the transit of “captagon” for onward trafficking to Saudi Arabia. In one case, in January and February 2017, customs officials in France reported the interception of 350,000 “captagon” tablets at the Paris Charles de Gaulle Airport; the drug, hidden in industrial moulds exported from Lebanon, was intended for shipment to Czechia and onward trafficking via

177 UNODC, responses to the annual report questionnaire.

178 Ibid.

179 E/INCB/2019/1.

**MAP 4** Significant individual seizures of “captagon” tablets, January 2014–April 2020



Source: UNODC, Drugs Monitoring Platform.

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

Turkey to Saudi Arabia.<sup>180</sup> In December 2018, the authorities of Greece detained a Syrian-flagged freight ship in the Mediterranean carrying about 3 million “captagon” tablets, believed to be destined for Libya.<sup>181</sup> A few months later, in June–July 2019, the Greek authorities effected the largest seizure of “captagon” tablets ever recorded in Europe in the port of Piraeus: some 33 million “captagon” pills, that is, more than five tons of tablets. The shipment, concealed in three containers carrying medium-density fibreboard, originated in the port of Latakia in the Syrian Arab Republic and was apparently destined for China, which is to date an atypical destination for “captagon” shipments.<sup>182</sup> In some cases, Europe may also be the source of “captagon”. In February 2019, for example, authorities at the seaport in Jeddah, Saudi Arabia, seized 384,000

180 Maud Vallereau, “Premières saisies de captagon en France: 750 000 comprimés à Roissy”, LCI Fait Divers, 30 Mai 2017; Customs Today, “Captagon seizures for first time in France”, 30 May 2017; Radio France International, “Customs seize 135 kg of captagon for first time in France”, 30 May 2017.

181 E/INCB/2019/1.

182 Ibid.

“captagon” tablets concealed in a load of artificial turf in a container shipped from Rotterdam, the Netherlands.<sup>183</sup>

Large-scale trafficking of “captagon” from Jordan to Saudi Arabia has also been documented. In two separate incidents, in January and March 2018, customs authorities in Saudi Arabia foiled attempts to smuggle “captagon” tablets into the country. Prior to that, a total of about 6.3 million tablets of the substance were recovered during operations at the border with Jordan in 2017. Although some of those tablets may have originated in neighbouring countries, in January 2018, Jordan also dismantled a clandestine laboratory manufacturing “captagon” that was mainly destined for markets in Saudi Arabia and neighbouring countries.<sup>184</sup>

## Supply of “ecstasy”

### “Ecstasy” manufacture takes place in all regions but remains concentrated in Europe

In the period 2014–2018, 18 countries worldwide reported the dismantling of a total of 496 “ecstasy” laboratories, while 34 countries were identified as countries of origin of quantities of the drug seized. Nonetheless, a number of indicators suggest that “ecstasy” continues to be manufactured primarily in Europe, most notably in Western and Central Europe. Europe accounted for two thirds of the “ecstasy” laboratories dismantled worldwide in the period 2014–2018, followed by Oceania (16 per cent of the global total), Asia (9 per cent), the Americas (7 per cent, mostly North America) and Africa (0.4 per cent). The ongoing concentration of “ecstasy” manufacture in Europe seems to be linked to the high degree of chemical expertise, innovation and flexibility of the operators of “ecstasy” laboratories in that region in overcoming shortages in the supply of traditional precursors by constantly identifying alternative substances that can be more easily imported and used as pre-precursors.

Both the number of “ecstasy” laboratories dismantled and reports by countries on the origin of the

drug point to the Netherlands and Belgium as the countries where most “ecstasy” was manufactured in Europe in the period 2014–2018. The largest number of dismantled “ecstasy” laboratories in the Americas was reported by the United States, followed by Canada and Brazil in the period 2014–2018, while the largest number dismantled in Asia was reported by Malaysia, followed by Indonesia. Most “ecstasy” laboratories in Oceania were dismantled in Australia.

### Manufacture of “ecstasy” is increasingly based on non-controlled pre-precursors

A number of indicators, such as the number of ecstasy laboratories dismantled, the number of “ecstasy”-related seizure cases, the quantities of “ecstasy” seized and trends in “ecstasy” trafficking, based on qualitative information reported by Member States, show an upward trend between 2010 and 2018, suggesting that the overall supply of “ecstasy” increased during that period. In addition, several countries reported levels of MDMA content in “ecstasy” tablets (over 100 mg of MDMA per tablet) as being higher than a decade ago, which also indicates a likely increase in the availability of “ecstasy”. The upward trend in the global supply of “ecstasy” followed a downward trend in the second half of the first decade of the new millennium, which was prompted by a shortage of traditional “ecstasy” precursor chemicals on the market (notably 3,4-MDP-2-P), mainly due to improved precursor control at the global level and in China in particular.<sup>185</sup> Initially, clandestine laboratories reacted to this by making increasing use of established pre-precursors such as isosafrole, safrole and piperonal, that is, substances that were already under international control but less strictly controlled than others at the national level in some countries. Once the control of those substances tightened, clandestine laboratories started looking for alternatives.<sup>186</sup>

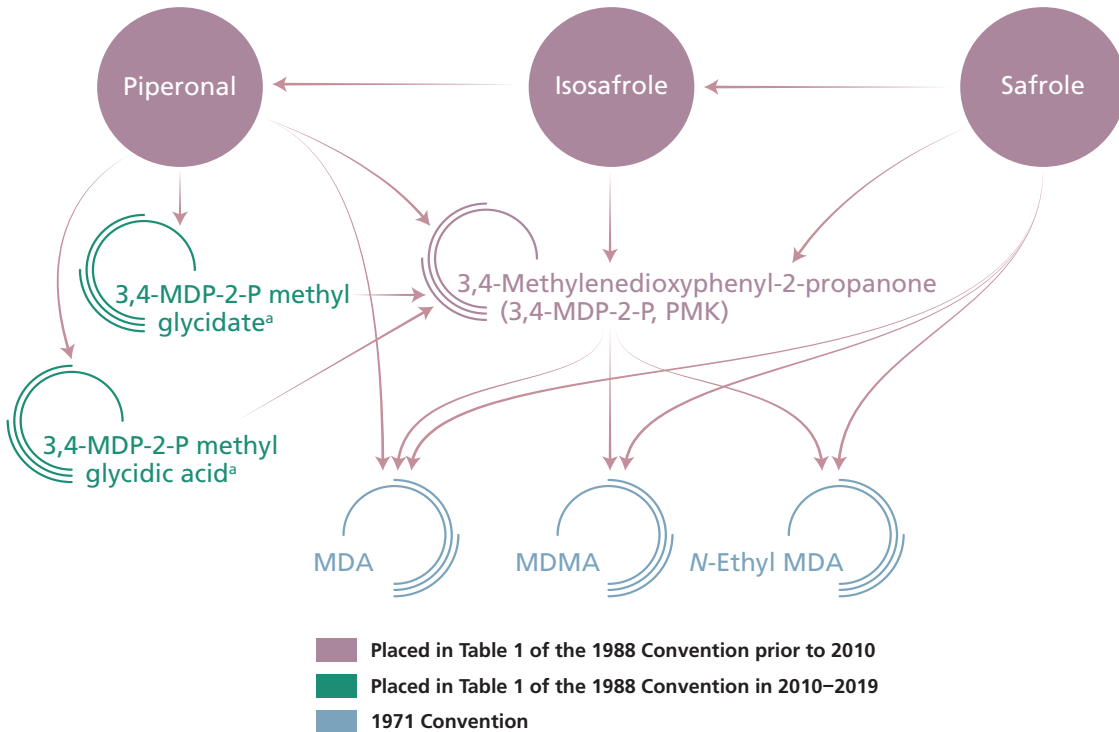
The recent increase in the supply of “ecstasy” occurred in parallel with the identification of a number of new pre-precursors. Those chemicals include a number of 3,4-MDP-2-P substitutes such

183 UNODC, Drugs Monitoring Platform, based on information from the Regional Intelligence Liaison Office of the World Customs Organisation for Western Europe.

184 E/INCB/2018/4.

185 *World Drug Report 2014* (United Nations publication, Sales No. E.14.XI.7), p. 83; and E/INCB/2013/4.

186 E/INCB/2019/4, and previous years.

**FIG. 31** Pre-precursors and precursors used in the clandestine manufacture of “ecstasy”<sup>a</sup>

Source: UNODC, “Global Smart Update: the ATS market – 10 years after the 2009 Plan of Action”, vol. 22 (October 2019).

<sup>a</sup> Placed in Table I, United Nations Convention against Illicit Traffic in Narcotic Drugs and Psychotropic Substances of 1988 at the sixty-second session of the Commission on Narcotic Drugs, held in March 2019.

as helional, as well as “designer precursors” such as various 3,4-MDP-2-P methyl glycidic acid derivatives, manufactured using piperonal in locations where the substance was, in practice, still less strictly controlled than others. With no legitimate use, these chemicals appear to have been developed exclusively for use in the clandestine manufacture of “ecstasy”.<sup>187</sup> Not under international, these designer precursors could be easily shipped across the globe to clandestine laboratories where they were transformed into 3,4-MDP-2-P, which was then used to manufacture “ecstasy”.<sup>188</sup> Against that background, both 3,4-MDP-2-P methyl glycidate and 3,4-MDP-2-P methyl glycidic acid<sup>189</sup> were placed under

international control in 2019.<sup>190</sup> However, the operators of clandestine laboratories seem to have already identified a number of other substances, such as helional (2-methyl-3-(3,4-methylenedioxyphenyl) propanal), which can be used in the manufacture of both methamphetamine and MDMA.<sup>191</sup>

### Trafficking in “ecstasy” increased over the period 2011–2016, but trends have since been mixed

Trafficking in “ecstasy”, as reflected in quantities of the drug seized, expanded at the global level over the period 1998–2007, in parallel with increasing demand for the drug; it then declined over the period 2007–2011 as a consequence of a market shortage of “ecstasy” precursors, mainly due to

187 E/INCB/2018/4.

188 UNODC, “Global Smart Update: the ATS market – 10 years after the 2009 Plan of Action”, vol. 22 (October 2019).

189 E/CN.7/2019/9.

190 E/INCB/2019/4.

191 E/INCB/2018/4.

improved controls of 3,4-MDP-2-P by China.<sup>192</sup> After 2011, “ecstasy” trafficking increased again as clandestine MDMA manufacture switched to the use of non-controlled pre-precursors.<sup>194, 195</sup> These trends are also reflected in qualitative information reported by Member States.

“Ecstasy” seizures at the global level more than doubled from 4.4 tons in 2011 to 12 tons in 2018. There was a marked increase in “ecstasy” seizures in practically all regions from 2011 to 2018. In Europe, “ecstasy” seizures more than tripled, from 1.8 tons in 2011 to 6.3 tons in 2018. This went hand in hand with signs of an ongoing expansion of the “ecstasy market”, including the increasing use of “ecstasy” pre-precursors in the manufacture of the drug in the region, a decline in “ecstasy” prices and a very sharp increase in the MDMA content of “ecstasy” tablets since the low in 2009. The average MDMA content of “ecstasy” tablets more than doubled over the period 2007–2017 in the countries of the European Union,<sup>196</sup> with some very high concentrations of MDMA found in some batches of the drug, resulting in increased harm and even deaths linked to the use of “ecstasy”.<sup>197</sup>

Nonetheless, the trend was less clear at the global level for the period 2016–2018. While qualitative information reported by Member States suggests an ongoing increase in “ecstasy” trafficking activities in 2017 and 2018, the global quantities of “ecstasy” seized remained stable in 2017 but declined in 2018 (by 14 per cent). The total number of reported “ecstasy” seizure cases fell by 8 per cent in 2017 but increased again by 17 per cent from 2017 to 2018, and as a result was 7 per cent higher than in 2016.<sup>198</sup> Other market indicators also show mixed trends; for example, data from England and Wales (United Kingdom) indicated a decline in past-year “ecstasy” use in the fiscal year 2016/17, followed by an increase in 2017/18 and still higher levels of “ecstasy”

use in 2018/19.<sup>199</sup> Wastewater data for Europe suggest an ongoing increase in “ecstasy” consumption in 2017 and 2018,<sup>200, 201</sup> while wastewater data for Australia showed a stable level in 2018, followed by significant increases in 2019.<sup>202</sup> National household survey data for “ecstasy” use in the United States showed a stable pattern over the period 2016–2018,<sup>203</sup> while annual prevalence of “ecstasy” use among high-school students declined slightly between 2016 and 2018, followed by an increase among 10th grade students in 2019.<sup>204</sup> Overall, “ecstasy” use trends reported by Member States, based on quantitative and qualitative sources of information, suggest a stable level in 2017, followed by an increase in 2018.<sup>205</sup>

Overall, 100 countries reported seizures of “ecstasy” in the period 2014–2018, up from 62 countries over the period 1994–1998, which suggests that there has been a geographical expansion of trafficking in “ecstasy” over the past two decades.

In the period 2014–2018, Europe once again had the largest regional quantity of “ecstasy” seizures, with 38 per cent of global seizures, followed by Oceania and the Americas, which each accounted for a quarter of the global total.

While the overall quantities of “ecstasy” seized in the Americas increased in 2018, this primarily reflects the larger seizure quantities reported in North America and, to a lesser extent, Central America and the Caribbean. By contrast, the quantities of “ecstasy” seized in South America have declined

192 UNODC, “Global Smart Update 2012”, vol. 7 (March 2012).

193 *World Drug Report 2014*; and E/INCB/2013/4.

194 UNODC, “Global Smart Update 2012”.

195 E/INCB/2017/4.

196 EMCDDA, *European Drug Report 2019: Trends and Developments* (Luxembourg, Publications Office of the European Union, 2019), p. 31.

197 *Ibid.*, p. 31.

198 UNODC, responses to the annual report questionnaire.

199 United Kingdom, Home Office, *Drug Misuse Appendix tables: Findings from the 2018/19 Crime Survey for England and Wales*, Statistical Bulletin No. 21/19 (London, 2019).

200 UNODC calculations based on data provided by SCORE Europe to UNODC.

201 EMCDDA, “Wastewater analysis and drugs: a European multi-city study”, *Perspectives on Drugs Series* (Lisbon, March 2019).

202 Australian Criminal Intelligence Commission, University of Queensland and University of South Australia, *National Wastewater Drug Monitoring Program*.

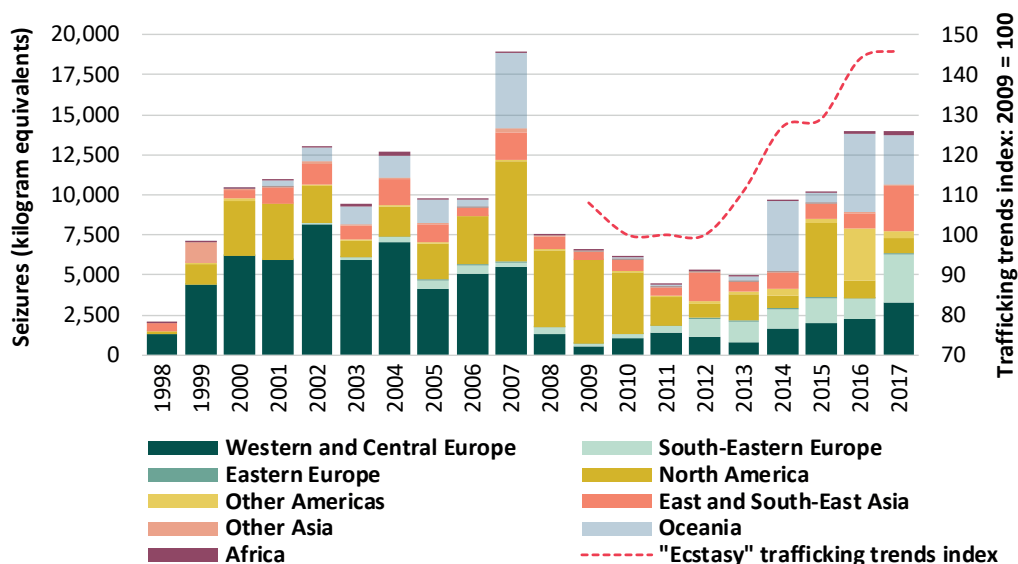
203 United States, Substance Abuse and Mental Health Services Administration, Center for Behavioral Health Statistics and Quality, *Results from the 2018 National Survey on Drug Use and Health: Detailed Tables*.

204 United States, National Institute on Drug Abuse, *Trends and Statistics, “Monitoring the Future”* (updated January 2020).

205 UNODC, responses to the annual report questionnaire.



**FIG. 32** Global quantities of “ecstasy” seized, by region and reported trends in “ecstasy” trafficking, 1998–2018

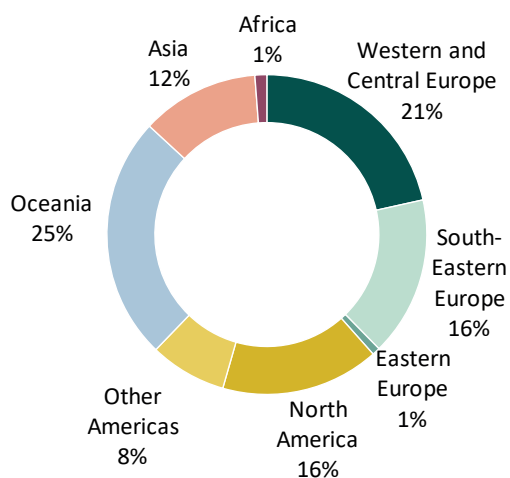


Source: UNODC, responses to the annual report questionnaire.

<sup>a</sup> The trafficking trends index is based on qualitative information on trends in “ecstasy” trafficking reported by Member States. The trend line is computed on the basis of the number of countries reporting increases minus the number of countries reporting decreases (2 points for “strong increase”, 1 point for “some increase”, 0 points for “stable”, -1 point for “some decline”, -2 points for “strong decline”).

sharply since the peak in 2016, mainly reflecting declines in seizures reported by Chile, and the smaller seizure amounts reported by Brazil and Argentina in the period 2017–2018. On the other

**FIG. 33** Regional distribution of the quantity of “ecstasy” seized, 2014–2018



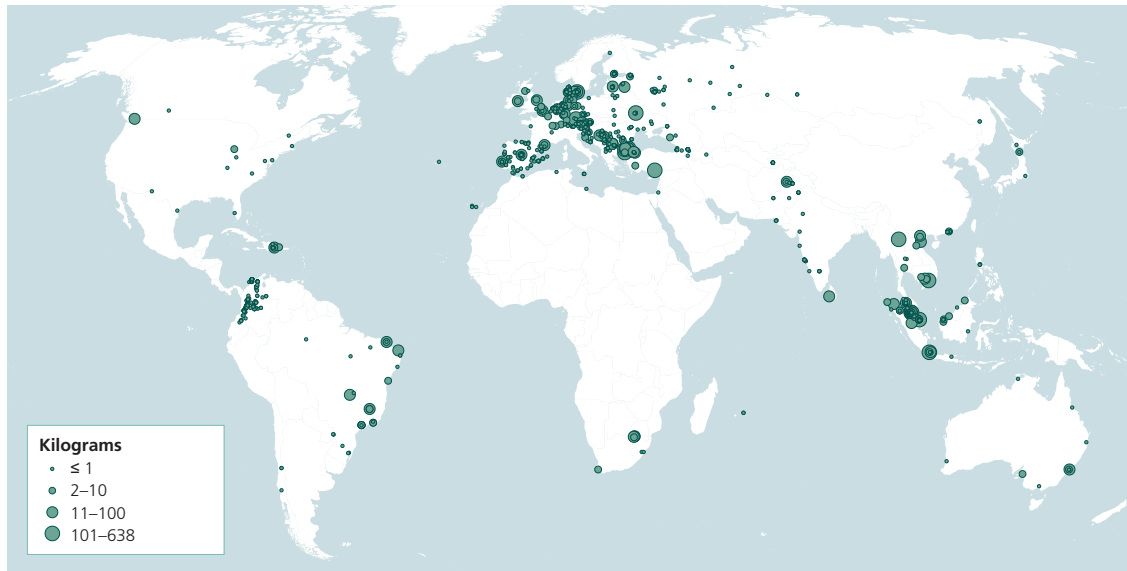
Source: UNODC, responses to the annual report questionnaire.

hand, increases were reported in that period by Uruguay, Paraguay and Ecuador.

Most of the “ecstasy” seized in Europe in the period 2014–2018 continued to be intercepted in Western and Central Europe (56 per cent of the European total), while most “ecstasy” intercepted in Oceania was reported in Australia (98 per cent).

Most of the “ecstasy” seized in the Americas was intercepted in North America (two thirds of the total). In Asia, most seizures were in East and South-East Asia (96 per cent), and most seizures in Africa were in North Africa (92 per cent).

The predominance of “ecstasy” trafficking in Europe, South-East Asia and Australia is also reflected in the significant individual drug seizures reported to UNODC. Seizures of “ecstasy” in the Americas mainly take place in the eastern states of the United States. “Ecstasy” seizures in Africa still appear to be very limited, reflecting low levels of domestic manufacture and trafficking of the drug, although this may also be a reporting issue, because even if such seizures are made, they are not necessarily reported to UNODC.

**MAP 5** Significant individual seizures of “ecstasy”, January 2014–April 2020<sup>a</sup>

Source: UNODC, Drugs Monitoring Platform.

<sup>a</sup> The latest 600 cases.

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

In 2018, for the first time ever, Turkey was the country that reported the largest national total of seized “ecstasy”; the country’s authorities reported that the seized “ecstasy” originated mainly in the Netherlands and Belgium. With respect to seizure amounts, Turkey was followed by the United States, Australia and Belgium. The largest “ecstasy” seizure totals in Asia were those reported by Indonesia and Malaysia. The largest “ecstasy” seizures in Africa were reported by Morocco, with the drug mainly originating in the Netherlands and Belgium and destined for the domestic market; Morocco was followed by South Africa, which reported that the seized “ecstasy” had originated in the Netherlands and was for domestic use or destined for China.

Unlike other ATS, “ecstasy” is trafficked not only intraregionally but also interregionally in large amounts – that is, between regions, most notably from Europe to other regions. Globally, 81 per cent of all mentions of countries of origin or departure of “ecstasy” in replies to the annual report questionnaire were of countries in Europe, followed by countries in Asia (10 per cent) and the Americas (7 per cent). The Netherlands and Belgium remain the most frequently mentioned source countries of

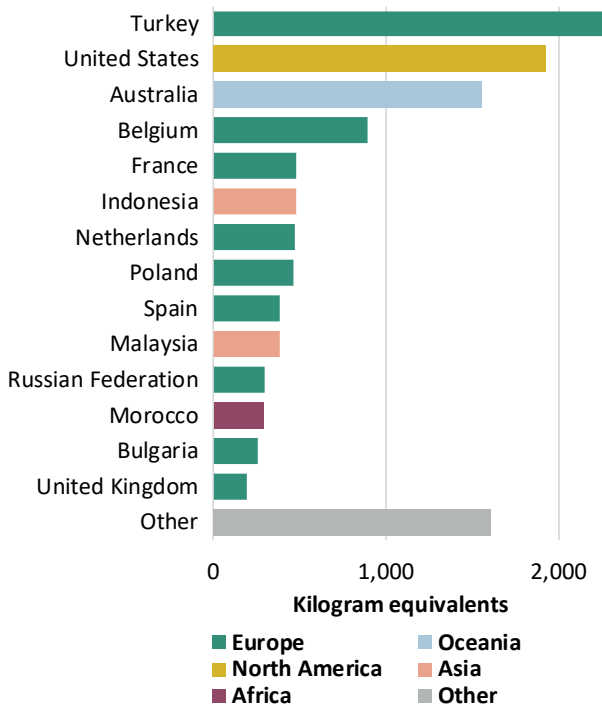
“ecstasy” worldwide, accounting for 41 and 14 per cent, respectively, of all mentions of countries of origin of “ecstasy” in the period 2014–2018. A number of other European countries, mostly of Western and Central Europe, including, in descending order, Germany, Spain, the United Kingdom, France and Bulgaria, have also been frequently mentioned as countries of origin or departure for “ecstasy” found on markets in both Europe and other regions in the period 2014–2018.

Countries frequently mentioned as countries of origin or departure of “ecstasy” in Asia include China, Malaysia and India, and, in the Americas, the United States.

“Ecstasy” manufacture in regions other than Europe seems to be mostly for use within the region of manufacture, although there are also exceptions.

Countries in Oceania not only report local manufacture of “ecstasy” and imports from Europe but also shipments from countries in Asia. In the period 2014–2018, the main countries of origin or departure in Europe, as reported by countries in Oceania, were the Netherlands, followed by the United Kingdom and Germany, and from Asia, China and Israel.

**FIG. 34** Quantity of “ecstasy” seized in main seizing countries, 2018



Source: UNODC, responses to the annual report questionnaire.

In the fiscal year 2017/18, Australia once again mainly reported countries in Europe as main embarkation points (i.e., the Netherlands, followed by Germany, France, Spain, the United Kingdom and Belgium), as well as China.<sup>206</sup> However, with the growing importance of “ecstasy” sales on the darknet and subsequent delivery by mail (the method used for 99 per cent of all quantities of inbound MDMA seized in Australia and 92 per cent in New Zealand in 2018), the importance of Europe as the key source region for “ecstasy”, supposedly delivering better-quality MDMA tablets, appears to have increased, while the importance of Asia as a source region for MDMA shipments to Oceania seems to have declined in recent years.<sup>207</sup> For the first time ever,

206 Australian Criminal Intelligence Commission, *Illicit Drug Data Report 2017–18*.

207 The proportion of Asian countries mentioned as countries of origin, departure or transit fell from 19 per cent of all such mentions by countries in Oceania in the period 2009–2013 to less than 7 per cent in the period 2014–2018 (UNODC, responses to the annual report questionnaire).

in the fiscal year 2017/18, Australia reported Turkey as the main transit country for “ecstasy” shipments from Western Europe to Oceania. Turkey accounted for 30 per cent of the total quantities of “ecstasy” seized in Australia for which a transit country could be identified, followed by Germany (20 per cent) and the Netherlands (15 per cent).<sup>208</sup>

Another interregional trafficking flow seems to be that of “ecstasy” manufactured in North America destined for Asia. Countries in Asia – in addition to their mentions of “ecstasy” imports from Europe (51 per cent of all mentions of countries of origin and departure in the period 2014–2018) and local manufacture in Asia (42 per cent) – also mentioned North America (8 per cent of mentions) as a main source of “ecstasy” on their markets. In Asia, the main countries of other regions identified as countries of origin and departure of “ecstasy” were, among European countries, the Netherlands; among Asian countries, Malaysia, followed by China and India; and of the Americas, the United States. Despite a marked decline in the quantity of “ecstasy” seized in Asia in 2018 (a 59 per cent decline from 2017), the quantity seized in 2018 (1.2 tons) was still almost double the amount seized in 2010 (660 kg).

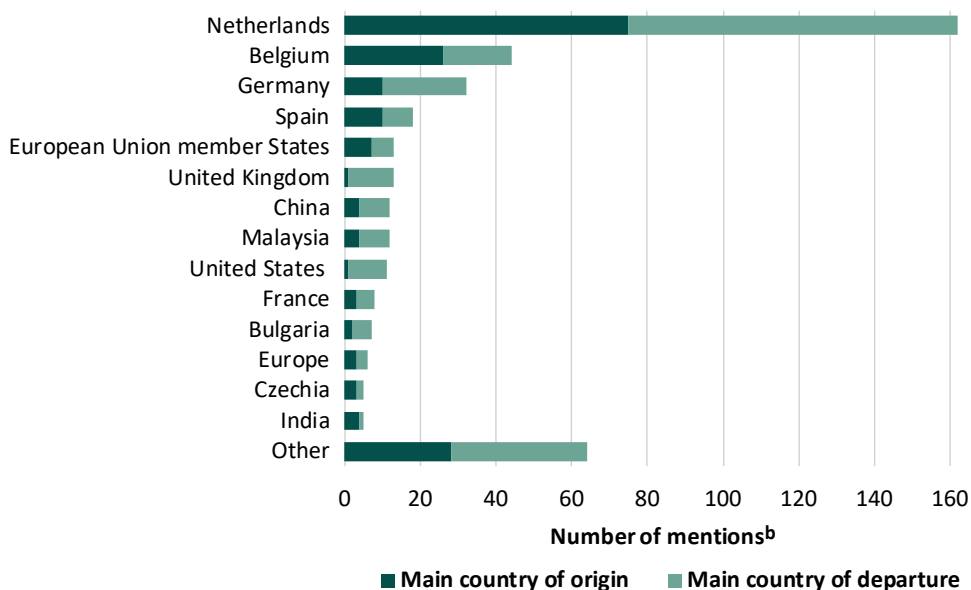
In contrast to the situation in “ecstasy” markets in other regions, the quantity of “ecstasy” seized in North America decreased from 4.7 tons in 2015 to 0.9 tons in 2017, before increasing to 2 tons in 2018. While operators of clandestine laboratories in Europe were successful in overcoming the shortage of the key “ecstasy” precursor 3,4-MDP-2-P after 2011 by using various pre-precursors,<sup>209</sup> “ecstasy” in North America continued to be manufactured using traditional precursors. That method was still being confirmed in 2017, when more than 4,000 litres of 3,4-MDP-2-P (sufficient for the manufacture of close to 4 tons of “ecstasy”) were seized in Canada, at the container examination facility of Vancouver, in a commercial container arriving from Viet Nam.<sup>210</sup> The reliance on traditional precursor chemicals, in combination with improved controls, however, meant that the local manufacture of

208 UNODC, responses to the annual report questionnaire.

209 E/INCB/2018/4.

210 Canada Border Services Agency, “Over 4,000 litre of MDP-2-P precursor drug seized at the Vancouver Container Exam Facility”, news release, 18 July 2017.

**FIG. 35** Main countries<sup>a</sup> of origin and of departure of “ecstasy” trafficked, as reported by seizing countries, 2014–2018



Source: UNODC, responses to the annual report questionnaire.

<sup>a</sup> Including groups of countries and regions.

<sup>b</sup> Number of times a country was mentioned by UNODC Member States as being among the three main countries of origin or the three main countries of departure of “ecstasy” shipments in the period 2014–2018.

“ecstasy” in North America declined, reflected in the falling number of “ecstasy” laboratories detected<sup>211</sup> and falling amounts of seizures of “ecstasy” precursors in North America.<sup>212</sup>

Possibly as a consequence of this reduction in the domestic production of MDMA, there have been reports of counterfeit “ecstasy” tablets on the United States market containing methamphetamine.<sup>213</sup> More recently, there have also been indications of the emergence of “ecstasy” pre-precursors in North America;<sup>214</sup> however, neither the United States nor Canada reported the dismantling of “ecstasy” laboratories in 2018.<sup>215</sup> In any case, although the long-established involvement of Asian criminal groups in the manufacture of “ecstasy” in Canada<sup>216</sup>

(using precursor chemicals smuggled into Canada from East and South-East Asia) and the subsequent smuggling of “ecstasy” tablets from Canada into the United States was continuing,<sup>217, 218</sup> there was an increase in “ecstasy” imports from Europe in 2018, most notably from the Netherlands and Belgium.<sup>219</sup>

211 UNODC, responses to the annual report questionnaire.

212 E/INCB/2019/4.

213 United States Department of Justice, DEA, *National Drug Threat Assessment 2019*.

214 E/INCB/2019/4.

215 UNODC, responses to the annual report questionnaire.

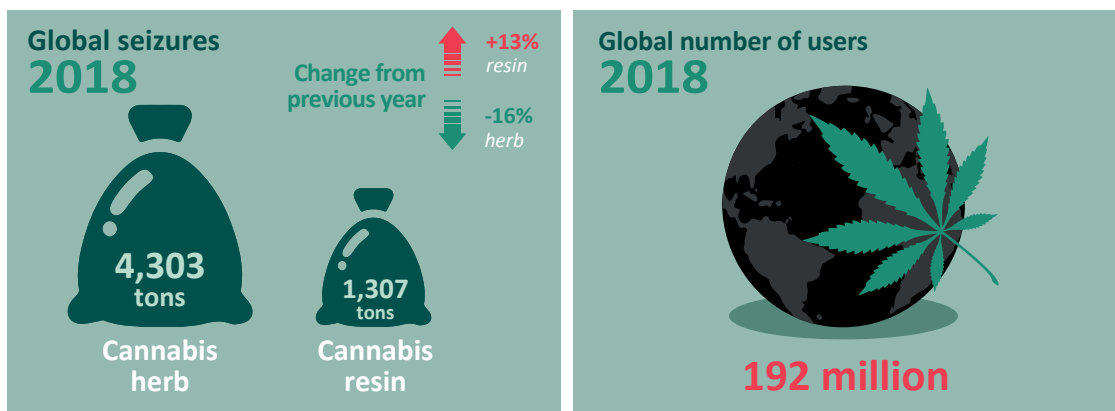
216 United States Department of Justice, DEA, 2018 National Drug Threat Assessment (October 2018).

217 Ibid.

218 United States Department of Justice, DEA, *National Drug Threat Assessment 2019*.

219 UNODC, responses to the annual report questionnaire.

## CANNABIS



### Cannabis cultivation

#### Illicit cannabis cultivation and production affects all regions

Unlike other plant-based drugs, for which cultivation and production is concentrated in only a limited number of countries, cannabis is produced in almost all countries worldwide. The cultivation of cannabis plants was reported by 151 countries in the period 2010–2018 – countries home to 96 per cent of the global population – and was reported through either direct indicators (such as the cultivation or eradication of cannabis plants and the eradication of cannabis-producing sites) or indirect indicators (such as seizures of cannabis plants and the origin of cannabis seizures reported by other Member States).

Most countries do not have a comprehensive system in place for monitoring areas under illicit cannabis cultivation. At present, the information available is insufficient to produce scientifically accurate global estimates of the area under illicit cannabis cultivation. In addition, most of the estimates of the areas under illicit cannabis cultivation reported to UNODC do not generally meet scientific standards.

Available data for indirect indicators of cannabis cultivation show values that fluctuate greatly from year to year and show opposing trends, thus making it difficult to identify any clear trends in global cannabis cultivation. For example, reported data for

2018 show an increase from the previous year in the reported quantities of cannabis plants seized and in the area under cultivation that was eradicated, but they also show a marked decline in both the number of cannabis plants eradicated and the number of cannabis sites eradicated worldwide.

While data reported for those indicators have shown mixed trends over the years, qualitative information on trends reported by Member States suggests there was an expansion of global cannabis cultivation over the period 2010–2017, most notably from 2015 to 2017, before a decline in 2018. The reported overall net decline in 2018 is the result of 13 countries reporting a decrease, 8 reporting a stable situation and 9 reporting an increase.

#### Outdoor cultivation of cannabis continues to be more widespread than indoor cultivation

Globally, outdoor cannabis cultivation continues to be more widespread geographically than is indoor cannabis cultivation. Overall, 88 countries reported outdoor cannabis cultivation, law enforcement activities linked to outdoor cannabis cultivation (eradication, seizures of cannabis plants, seizures of cannabis-producing sites) or trends related to outdoor cannabis cultivation over the period 2012–2018,<sup>220</sup> while only 64 countries reported

<sup>220</sup> Qualitative information on trends reported by Member States are not available for years prior to 2012; thus, the period 2012–2018 is used for this analysis.

## Countries with probable sizeable cannabis cultivation and/or production

In addition to the scarce direct estimates of areas under cannabis cultivation, several countries report on a number of indirect indicators of cultivation and/or production of cannabis, including “hectares of cannabis eradicated”, “number of cannabis plants eradicated”, “number of cannabis sites eradicated”, “number of cannabis plants seized” and “origin of cannabis seized”. Analysis of both direct and indirect indicators for the period 2010–2018 points to a number of countries that are likely to have significant cannabis cultivation in comparison to other countries in their same region or subregion.

### Americas:

- North America: Mexico and the United States, followed by Canada
- South America: Paraguay and Brazil, followed by Colombia, Peru and Chile
- Central America: Guatemala and Costa Rica
- the Caribbean: Jamaica

### Africa:

- Morocco, as well as Nigeria, Eswatini and the Sudan – although cultivation is also widespread in most other African countries, including South Africa, Malawi, Zambia, the Democratic Republic of the Congo, Lesotho and Ghana

### Europe:

- Western and Central Europe: the Netherlands, followed by Italy, the United Kingdom of Great Britain and Northern Ireland, Spain and Belgium
- South-Eastern Europe: Albania
- Eastern Europe: the Russian Federation and Ukraine

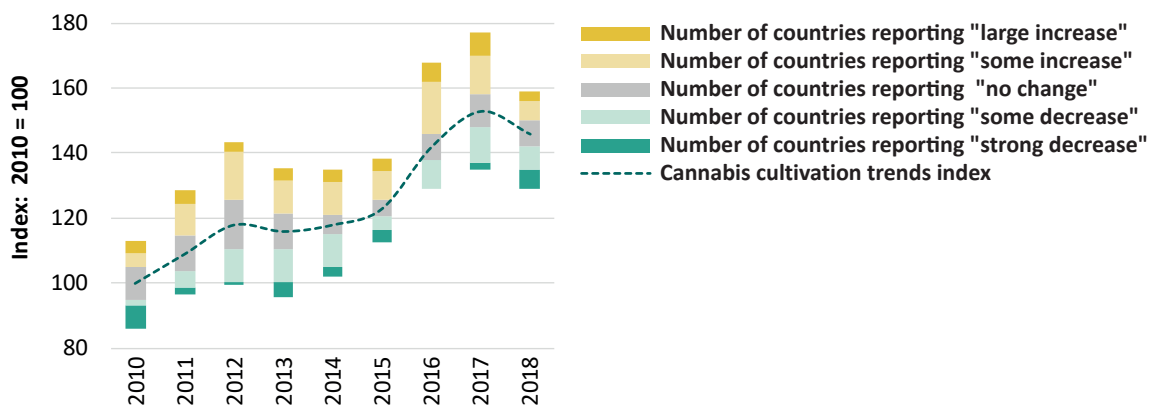
### Asia:

- Near and Middle East/South-West Asia: Afghanistan, Pakistan and Lebanon
- Central Asia: Kyrgyzstan and Tajikistan
- South Asia: India and neighbouring Nepal
- South-East Asia: Indonesia and the Philippines

### Oceania:

- Australia

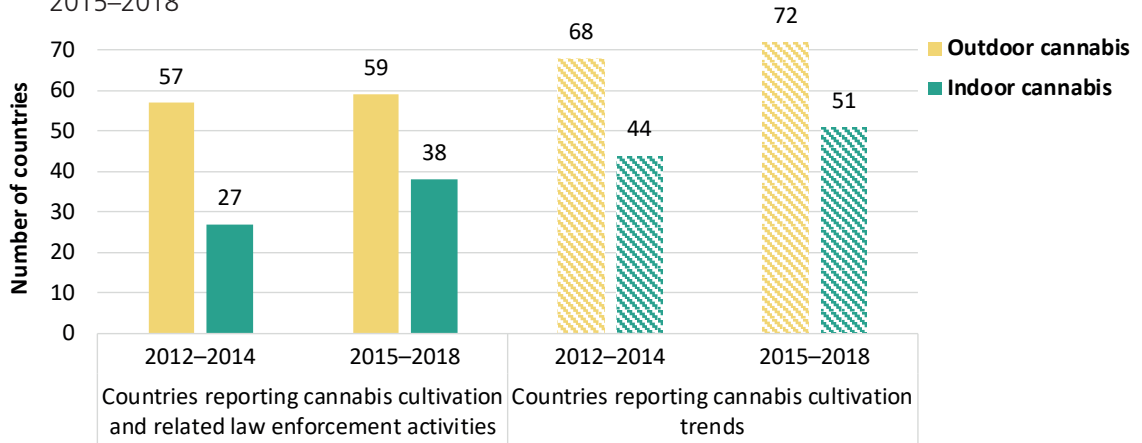
**FIG. 36** Qualitative information on trends in cannabis cultivation as reported by national experts, 2010–2018



Source: UNODC, responses to the annual report questionnaire.

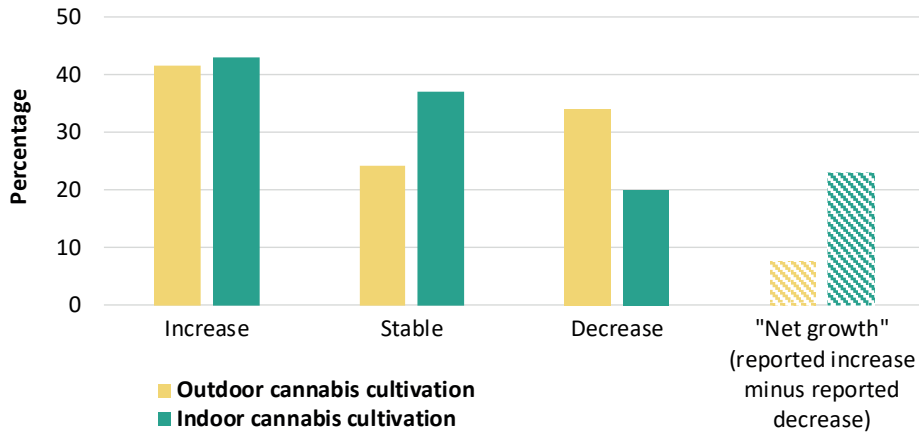
Note: The cultivation trends index is based on qualitative information on trends in cannabis cultivation reported by Member States. Calculations are based on the reports of 110 countries – on average, 35 countries per year over the period 2010–2018. The trend line is calculated on the basis of the number of countries reporting increases minus the number of countries reporting decreases (2 points for “strong increase”, 1 point for “some increase”, 0 points for “stable”, -1 point for “some decline”, -2 points for “strong decline”).

**FIG. 37** Number of countries reporting outdoor and indoor cannabis cultivation, 2012–2014 and 2015–2018



Source: UNODC, responses to the annual report questionnaire.

**FIG. 38** Qualitative information on trends in outdoor and indoor cannabis cultivation, 2012–2018



Source: UNODC, responses to the annual report questionnaire.

data for those activities as linked to indoor cultivation. Some countries reported both indoor and outdoor cannabis cultivation.

Whereas outdoor cannabis production is found across the globe, most of the countries reporting indoor cultivation continue to be countries in Europe and the Americas, most notably the United States and Canada in North America, and countries in Central and South America, including Chile, Uruguay, Colombia and Ecuador. Indoor cannabis cultivation outside those regions seems to be more limited, affecting a few countries in Oceania

(Australia and New Zealand) and Asia (including Israel, Armenia and Georgia, followed by the Islamic Republic of Iran, Uzbekistan and Hong Kong, China). So far, no indoor cannabis cultivation has been reported to UNODC by countries in Africa.

**Growth in indoor cannabis cultivation appears to be more pronounced than growth in outdoor cultivation**

Cannabis cultivation in indoor settings has expanded geographically over the years to a greater extent than has outdoor cultivation, as the number of countries

reporting indoor cannabis cultivation has increased over the past decade more markedly than has the number of countries reporting outdoor cultivation.

Similarly, qualitative information on trends reported by Member States suggests that while both outdoor and indoor cultivation of cannabis increased over the period 2012–2018, indoor cultivation appears to have grown more than has outdoor cultivation. On average, 43 per cent of countries reporting trends on indoor cultivation saw an increase over the period 2012–2018 and only 20 per cent saw a decrease, which gives an overall “net growth” of 23 per cent among all countries reporting indoor cultivation trends. That “net growth” of indoor cultivation was almost triple the corresponding overall “net growth” calculated for countries reporting outdoor cannabis cultivation trends (8 per cent) in the period 2012–2018. Trend data for 2018 suggest an ongoing increase in indoor cultivation while outdoor cultivation appears to have declined from a year earlier.

## Trafficking in cannabis

### Global quantities of cannabis seized are declining while cannabis seizures are on the increase

The number of cannabis seizure cases (herb and resin) shows – despite annual fluctuations – a long-term upward trend. Overall, 1.4 million cannabis-related

seizure cases were reported to UNODC in 2018, up from 1 million in 2008 (+40 per cent). If only cannabis herb and resin cases are considered, the increase in relative terms was even stronger (+50 per cent, from 0.9 million to 1.3 million cases). On average, 67 countries per year reported such seizure cases in the period 2008–2018.

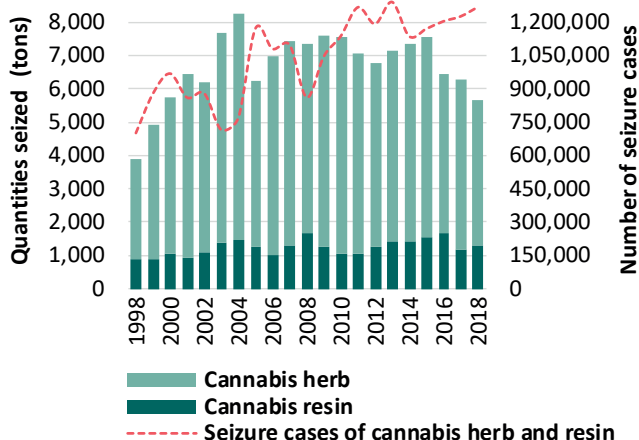
By contrast, the quantities of cannabis herb and cannabis resin seized in the period 2008–2018, as reported by an average of 130 countries per year, fell by 23 per cent over that period, to 5,642 tons in 2018. There is no clear evidence with respect to the reasons for this decline, but the increase in the global number of cannabis users over that same period suggests that the trend does not reflect a decline in the overall distribution of cannabis. The decline in reported quantities of cannabis seized is most likely the result of underreporting in some regions and shifts in the priorities of law enforcement authorities, most notably in the Americas, as that region, which accounts for the largest portion of cannabis seized globally, experienced the greatest decline in terms of the reported absolute quantities seized. Globally, in 2018 reported quantities of cannabis seized decreased 10 per cent from a year earlier, with decreases reported in all regions except Europe.

At the same time, data show that, globally, cannabis herb seizures were more concentrated in a few countries, as compared to cannabis resin seizures. While the three countries reporting the largest quantities of cannabis herb seized accounted for 44 per cent of the global total seized in 2018, cannabis resin seizures were even more concentrated: three countries accounted for 61 per cent of the total global quantity of cannabis resin seized in 2018.

### Global quantities of cannabis herb seized are strongly affected by the liberalization of cannabis markets in North America

The largest quantities of cannabis herb seized in 2018 were those reported in the Americas (61 per cent of the total), with South America alone accounting for 43 per cent of the global total. Of note is the marked decline in the share of seizures made in North America, which had long been the subregion reporting the largest cannabis herb seizures: on average, 50 per cent of the global total over the period

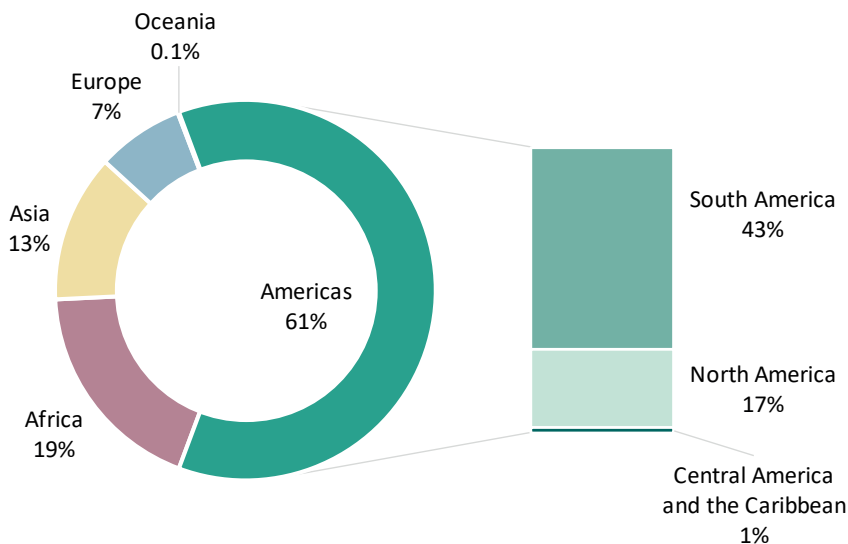
**FIG. 39** Global cannabis seizures: quantities and seizure cases, 1998–2018



Source: UNODC, responses to the annual report questionnaire.



**FIG. 40** Distribution of quantities of cannabis herb seized, 2018

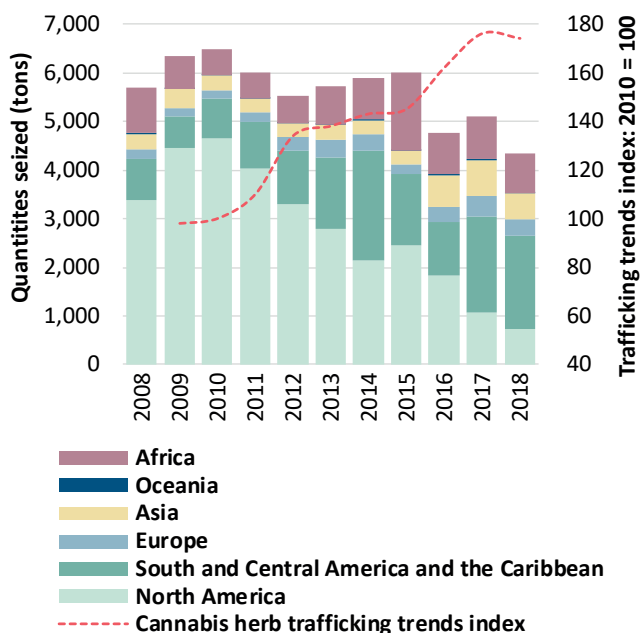


Source: UNODC, responses to the annual report questionnaire.

2008–2018, falling to 17 per cent of the global total in 2018, that is, to less than the total for Africa that year (19 per cent). The next largest regional reported seizure totals in 2018 were those for Asia and Europe.

The quantity of cannabis herb seized in 2018 declined by 16 per cent compared with a year earlier, falling to 4,303 tons, the lowest level since 1999. As compared with 2010, the quantity seized fell by 34 per cent at the global level, largely due to decreases reported in North America (-84 per cent), with marked declines being reported by Mexico, the United States and Canada. Discussions and policies aimed at liberalizing the cannabis markets, including changes in the drug’s legislation in Canada and some jurisdictions of the United States, legalizing the production, distribution and the recreational use of cannabis, seem to have played a key role in this respect. By contrast, the quantities of cannabis herb seized almost doubled in the rest of the world over the period 2010–2018 (South America: +194 per cent; Oceania: +94 per cent; Europe: +73 per cent; Asia: +71 per cent; Africa: +53 per cent). The global cannabis herb trafficking index, based on qualitative information reported by Member States on trends in cannabis herb trafficking, also increased over the same period, although the trend appeared to be stabilizing in 2018.

**FIG. 41** Quantities of cannabis herb seized and reported trends in cannabis herb trafficking, 2008–2018



Source: UNODC, responses to the annual report questionnaire.

Note: The trafficking trends index is based on qualitative information on trends in cannabis herb trafficking reported by Member States. The trend line is calculated on the basis of the number of countries reporting increases minus the number of countries reporting decreases (2 points for "strong increase", 1 point for "some increase", 0 points for "stable", -1 point for "some decline", -2 points for "strong decline").

## Trafficking in cannabis herb continues to be mainly intraregional

Most of the cannabis herb produced in a region continues to be consumed within that same region. Thus, a region's trafficking remains mainly intraregional and is mostly trafficked by road, rather than by sea or air.

Over the period 2014–2018, the most frequently mentioned countries of origin, departure and transit in the annual report questionnaire were, in order of importance, the following:

### Americas:

- North America: Mexico, the United States and Canada
- South America: Paraguay and Colombia
- Central America: Guatemala
- the Caribbean: Jamaica

### Africa:

- West and Central Africa: Ghana and Nigeria

- Southern Africa: Mozambique, Eswatini and Malawi
- East Africa: United Republic of Tanzania, Uganda and Kenya
- North Africa: Morocco

### Europe:

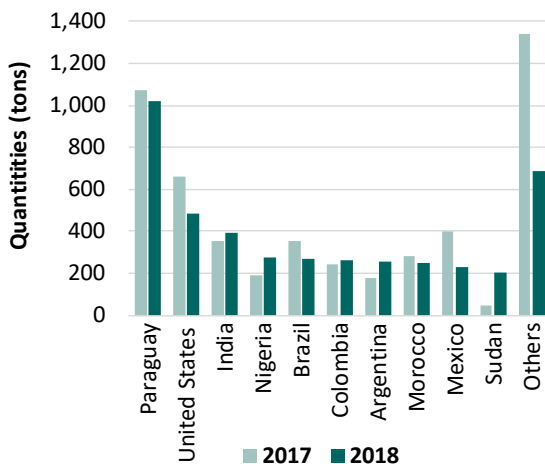
- the Netherlands and Albania

### Asia:

- South-East Asia: Myanmar
- South Asia: India
- Near and Middle East/South-West Asia: Afghanistan
- Central Asia and Transcaucasia: Kyrgyzstan, followed by Kazakhstan

The only exception is Oceania, where most cannabis herb is imported from outside the region (from the United States, Canada and the Netherlands).

**FIG. 42** Main cannabis herb-seizing countries, 2017 and 2018



Source: UNODC, responses to the annual report questionnaire.

In 2018, the largest quantities of cannabis herb seized worldwide continued to be those reported by Paraguay, followed by the United States and India. Cannabis herb produced in Paraguay is reported to have been mainly destined for neighbouring Brazil (77 per cent) and Argentina (20 per cent). Over the

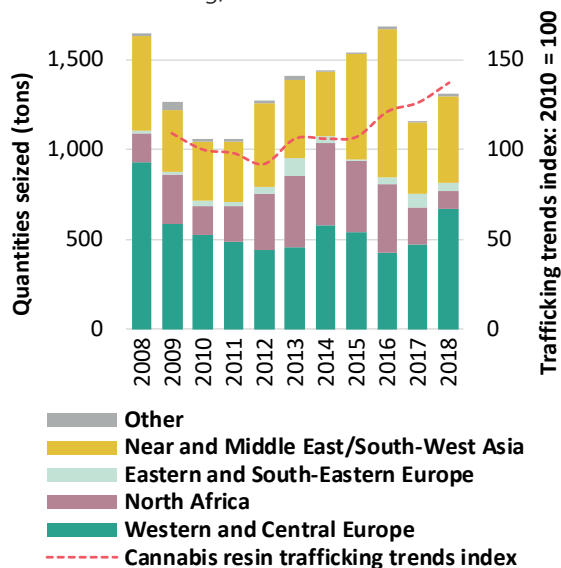
period 2008–2018, the largest cannabis herb seizures worldwide took place in the United States, followed by Mexico, Paraguay, Colombia, Nigeria, Morocco, Brazil, India and Egypt.

### Quantities of cannabis resin seized increased in 2018

The upward trend in the global quantities of cannabis resin seized over the period 2010–2016 stopped in 2017, but cannabis resin seizures started to rise again in 2018. In parallel, the cannabis resin trafficking trend index continued to rise in 2018, suggesting an overall increase in cannabis resin trafficking at the global level in 2018.

Trafficking in cannabis resin continues to be far more geographically concentrated than is trafficking in cannabis herb. More than half of all cannabis resin was seized in Western and Central Europe (51 per cent) in 2018, followed by the Near and Middle East/South-West Asia (36 per cent) and North Africa (8 per cent). These three subregions accounted for 95 per cent of all cannabis resin seized worldwide in 2018. In 2018, the largest quantities of cannabis resin were seized – as in most previous years – by Spain, followed by Pakistan, Afghanistan and the

**FIG. 43** Global quantities of cannabis resin seized and reported trends in cannabis herb trafficking, 2008–2018



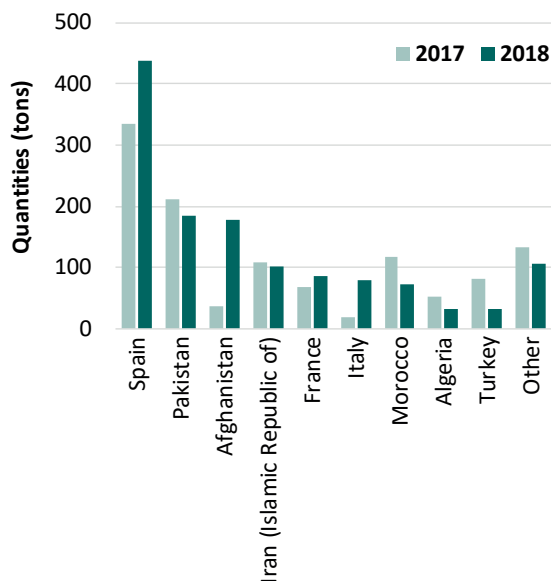
Source: UNODC, responses to the annual report questionnaire.  
 Note: The trafficking trends index is based on qualitative information on trends in cannabis resin trafficking reported by Member States. The trend line is calculated on the basis of the number of countries reporting increases minus the number of countries reporting decreases (2 points for "strong increase", 1 point for "some increase", 0 points for "stable", -1 point for "some decline", -2 points for "strong decline").

Islamic Republic of Iran. The largest cannabis resin seizures over the period 2008–2018 were reported by Spain, followed by Pakistan and Morocco.

Morocco, with 47,500 ha reported to be under cannabis cultivation in 2018, continues to be the most frequently mentioned source country for cannabis resin worldwide in the annual report questionnaire, being mentioned in more than a fifth of all cases as the main country of origin of cannabis resin seized worldwide over the period 2014–2018; Morocco was followed by Afghanistan, where, a UNODC survey found, in 2010 an area of 9,000–29,000 ha was under cannabis cultivation.<sup>221</sup> Cannabis resin produced in Morocco is mainly destined for other markets in North Africa and markets in Western and Central Europe. Some cannabis resin of Moroccan origin is also trafficked to Eastern Europe and South-Eastern Europe. Most cannabis resin of

<sup>221</sup> UNODC and Ministry of Counter Narcotics of Afghanistan, *Afghanistan: Cannabis Survey 2010* (Vienna, 2011).

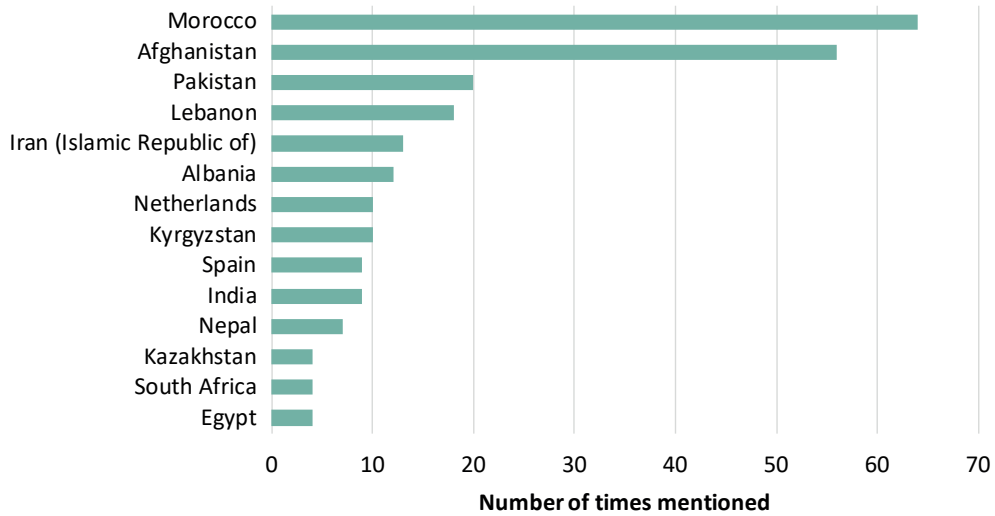
**FIG. 44** Main cannabis resin-seizing countries, 2017 and 2018



Source: UNODC, responses to the annual report questionnaire.

Moroccan origin destined for Europe is first shipped to Spain, from where it is smuggled to other markets in the region. For many years, including in the period 2014–2018, Spain has been identified by other European countries as the principal country of departure and transit for cannabis resin, followed by the Netherlands.

Afghanistan appears to be the second most important source country of cannabis resin worldwide, with 19 per cent of all mentions worldwide in the annual report questionnaire over the period 2014–2018, followed by Pakistan and Lebanon. The cannabis resin produced in these countries is principally destined for other countries in the Near and Middle East/South-West Asia, although cannabis resin originating in Afghanistan has also been identified in Central Asia, Eastern Europe and Western and Central Europe. The Islamic Republic of Iran reported that the cannabis resin found on its territory originated mainly in Afghanistan (followed by Pakistan), with some 65 per cent destined for countries of the Arabian peninsula, 15 per cent for the Caucasus and some 20 per cent for domestic consumption. Cannabis resin originating in Lebanon is mainly found in the Near and Middle East and, to a lesser extent, in Western and Central Europe.

**FIG. 45** Main countries of origin of cannabis resin as reported by Member States, 2014–2018

Source: UNODC, responses to the annual report questionnaire.

*Note: Based on data from 68 countries providing such information to UNODC over the period 2014–2018; UNODC cannot validate the accuracy of Member States reporting. That is, UNODC cannot exclude the possibility that some of the countries mentioned here as countries of “origin” may in fact have been transit or departure countries for cannabis shipments.*

TABLE 1 Illicit cultivation of opium poppy, 2008–2019 (hectares)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
<b>SOUTH-WEST ASIA</b>												
Afghanistan (best estimate)	157,000	123,000	123,000	131,000	154,000	209,000	224,000	183,000	201,000	328,000	263,000	163,000
lower bound <sup>a</sup>	102,000	104,000	104,000	109,000	125,000	173,000	196,000	163,000	182,000	301,000	242,000	149,000
upper bound <sup>a</sup>	137,000	145,000	145,000	155,000	189,000	238,000	247,000	202,000	221,000	355,000	283,000	178,000
<b>SOUTH-EAST ASIA</b>												
Lao People's Democratic Republic (best estimate) <sup>b, i</sup>	1,600	1,900	3,000	4,100	6,800	3,900	6,200	5,700	5,395	5,327	4,925	..
lower bound <sup>a</sup>	710	1,100	1,900	2,500	3,100	1,900	3,500	3,900	..	..	..	..
upper bound <sup>a</sup>	2,700	2,700	4,000	6,000	11,500	5,800	9,000	7,600	..	..	..	..
Myanmar (best estimate) <sup>b, c</sup>	28,500	31,700	38,100	43,600	51,000	57,800	57,600	55,500	..	41,000	37,300	33,100
lower bound <sup>a</sup>	17,900	20,500	17,300	29,700	38,249	45,710	41,400	42,800	..	30,200	29,700	25,800
upper bound <sup>a</sup>	37,000	42,800	58,100	59,600	64,357	69,918	87,300	69,600	..	51,900	47,200	42,800
<b>SOUTH AND CENTRAL AMERICA</b>												
Colombia (best estimate)	394	356	341	338	313	298	387	595	462	282	..	..
Mexico (best estimate) <sup>d, f, h</sup>	15,000	19,500	14,000	12,000	10,500	11,000	17,000	26,100	25,200	30,600	28,000	..
lower bound <sup>a</sup>	..	..	..	..	..	..	..	21,800	20,400	22,800	21,200	..
upper bound <sup>a</sup>	..	..	..	..	..	..	..	30,400	30,000	38,400	34,800	..

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
OTHER												
<b>Other countries e</b>	<b>10,509</b>	<b>9,479</b>	<b>12,221</b>	<b>16,390</b>	<b>12,282</b>	<b>13,293</b>	<b>11,585</b>	<b>8,549</b>	<b>62,439</b>	<b>8,792</b>	<b>11,815</b>	<b>44,745</b>
TOTAL (best estimate)	213,003	185,935	190,662	207,428	234,895	295,291	316,772	279,444	294,496	414,001	345,045	240,845
<b>lower bound</b>		<b>152,935</b>	<b>149,762</b>	<b>169,928</b>	<b>189,444</b>	<b>245,201</b>	<b>269,872</b>	<b>240,644</b>	<b>257,996</b>	<b>368,401</b>	<b>309,641</b>	<b>212,741 g</b>
<b>upper bound</b>		<b>211,835</b>	<b>233,662</b>	<b>249,328</b>	<b>287,952</b>	<b>338,309</b>	<b>372,272</b>	<b>318,744</b>	<b>333,396</b>	<b>459,701</b>	<b>381,748</b>	<b>272,348 g</b>
<b>TOTAL (best estimate, rounded)</b>	<b>213,000</b>	<b>185,900</b>	<b>190,700</b>	<b>207,400</b>	<b>234,900</b>	<b>295,300</b>	<b>316,800</b>	<b>279,400</b>	<b>294,500</b>	<b>414,000</b>	<b>345,000</b>	<b>240,800 g</b>

Sources: Afghanistan: Until 2018, Afghanistan Opium Surveys were conducted by the Ministry of Counter-Narcotics (MCN) of Afghanistan and the United Nations Office on Drugs and Crime (UNODC). Data for 2019 was obtained from the UNODC Illicit Crop Monitoring Programme.  
Lao People's Democratic Republic: Up till 2015, national illicit crop monitoring system supported by the United Nations Office on Drugs and Crime (UNODC). Data from 2016 onwards from Lao National Commission for Drug Control and Supervision.

Myanmar: national illicit crop monitoring system supported by the United Nations Office on Drugs and Crime (UNODC).

Colombia: Government of Colombia.

Mexico: up to 2014, estimates derived from surveys by the Government of the United States of America (international narcotics control strategy reports); for 2015 onwards, joint Mexico/UNODC project entitled "Monitoring of the illicit cultivation on Mexican territory".

Note: Figures in italics are preliminary and may be revised when updated information becomes available. Two dots indicate that data were unavailable. Information on estimation methodologies and definitions can be found in the online methodology section of the World Drug Report 2020.

a) Bound of the statistically derived confidence interval.

b) May include areas that were eradicated after the date of the area survey.

c) Estimates for 2014, 2015, 2018 included area estimates for Kayah and Chin states. In the absence of information on Kayah and Chin, the 2019 national area estimate uses latest available cultivation estimates (2018) for Chin and Kayah states. National estimates for 2014, 2015, 2018 and 2019 are therefore not directly comparable with other years.

d) Up to 2014, the estimates for Mexico are sourced from the Department of State of the United States. The Government of Mexico does not validate the estimates provided by the United States as they are not part of its official figures and it does not have information on the methodology used to calculate them.

e) Includes other countries with evidence of cultivation or production of opium poppy (average of less than 10 tons of opium per year since 2015) and estimates for countries with indirect evidence of illicit cultivation (eradication of opium poppy) but no direct measurement. See table "Cultivation of opium poppy and production of opium in other countries, and eradication of opium poppy, 2009-2019".

In addition, for 2016, 2018 and 2019 best estimates for countries for which data are not available (Myanmar for 2016, Colombia for 2018 and 2019 and Lao People's Democratic Republic, Mexico for 2019) are included in this category.

Starting in 2008, a new methodology was introduced to estimate opium poppy cultivation and opium/heroin production in countries with no data on illicit cultivation of opium poppy. A detailed description of the estimation methodology is available in the online methodology section of the World Drug Report 2020.

f) The figures for 2015, as published in the World Drug Report 2016 (United Nations publication, Sales No. E.16.XI.7), have been revised owing to a statistical adjustment processed by UNODC. The 2015 figures refer to the period July 2014-June 2015 and are not comparable with subsequent years, due to the updates in the methodology implemented from the 2015-2016 period onwards.

g) Preliminary estimates for 2019; they may change as more country estimates become available.

h) The figures for 2016, 2017 and 2018 are based on the estimation periods July 2015 - June 2016, July 2016-June 2017 and July 2017-June 2018 respectively.

i) Data from 2016 onwards are not comparable to prior years.

**TABLE 2** Potential production of oven-dry opium, 2008–2019 (tons)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
<b>SOUTH-WEST ASIA</b>												
Afghanistan (best estimate) j	5,900	4,000	3,600	5,800	3,700	5,500	6,400	3,300	4,800	9,000	6,400	6,400
lower bound a			3,000	4,800	2,800	4,500	5,100	2,700	4,000	8,000	5,600	5,600
upper bound a			4,200	6,800	4,200	6,500	7,800	3,900	5,600	10,000	7,200	7,100
<b>SOUTH-EAST ASIA</b>												
Lao People's Democratic Republic (best estimate) b, f	10	11	18	25	41	23	92	..	..	..	..	..
lower bound g	4	7	11	15	18	11	51	84				
upper bound g	16	16	24	36	69	35	133	176				
Myanmar (best estimate) b, h	410	330	580	610	690	870	670 <sup>h</sup>	647	..	550	520	508
lower bound		213	350	420	520	630	481	500		395	410	380
upper bound		445	820	830	870	1,100	916	820		706	664	672
<b>SOUTH AND CENTRAL AMERICA</b>												
Colombia (best estimate)	10	9	8	8	8	11	12	17	13	7	..	..
Mexico (best estimate) c, e, i	325	425	300	250	220	225	360	419	404	492	450	..
lower bound a								265	251	288	267	
upper bound a								572	557	695	633	
<b>OTHER</b>												
Other countries (best estimate) d	187	178	224	290	172	182	201	147	840	221	249	698

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
<b>TOTAL (best estimate)</b>	6,841	4,953	4,730	6,983	4,831	6,810	7,735	4,659	6,058	10,270	7,618	7,606
lower bound			3,894	5,783	3,738	5,558	6,205	3,713	4,958	8,912	6,525	6,495
upper bound			5,576	8,214	5,539	8,052	9,423	5,632	7,184	11,629	8,745	8,653
<b>TOTAL best estimate (rounded)</b>	<b>6,840</b>	<b>4,950</b>	<b>4,730</b>	<b>6,980</b>	<b>4,830</b>	<b>6,810</b>	<b>7,740</b>	<b>4,660</b>	<b>6,060</b>	<b>10,270</b>	<b>7,620</b>	<b>7,610</b>

Sources: Afghanistan: Until 2018, Afghanistan Opium Surveys were conducted by the Ministry of Counter-Narcotics (MCN) of Afghanistan and the United Nations Office on Drugs and Crime (UNODC). Data for 2019 was obtained from the UNODC Illicit Crop Monitoring Programme.

Lao People's Democratic Republic and Myanmar: national illicit crop monitoring system supported by the United Nations Office on Drugs and Crime (UNODC).

Colombia: National illicit crop monitoring system supported by UNODC. Since 2008, production was calculated based on updated regional yield figures and conversion ratios from the Department of State and the Drug Enforcement Administration of the United States of America.

Mexico: Up till 2014, estimates derived from surveys by the United States Government; from 2015 onwards national illicit crop monitoring system supported by UNODC.

Note: Figures in italics are preliminary and may be revised when updated information becomes available. Two dots indicate that data were unavailable. Information on estimation methodologies and definitions can be found in the online methodology section of the World Drug Report 2020.

a) Bound of the statistically derived confidence interval.

b) Based on cultivation figures which may include areas eradicated after the date of the area survey.

c) Up to 2014, the estimates are sourced from the Department of State of the United States. The Government of Mexico does not validate the estimates provided by the United States as they are not part of its official figures and it does not have information on the methodology used to calculate them.

d) Includes other countries with evidence of cultivation or production of opium poppy (average of less than 10 tons of opium per year since 2015) and estimates for countries with indirect evidence of illicit cultivation (eradication of opium poppy) but no direct measurement. See table "Cultivation of opium poppy and production of opium in other countries, and eradication of opium poppy, 2009-2019".

In addition, for 2016-2019 best estimates for countries for which data are not available (Myanmar for 2016 and Mexico for 2018 and 2019, and Lao People's Democratic Republic for 2016-2019, and Colombia for 2018 and 2019) are included in this category.

Starting in 2008, a new methodology was introduced to estimate opium poppy cultivation and opium/heroin production in countries with no data on illicit cultivation of opium poppy. These estimates are higher than the previous figures but have a similar order of magnitude. A detailed description of the estimation methodology is available in the online methodology section of the World Drug Report 2020.

e) The figures from 2015 on have been updated with newly available data. The joint Mexico/UNODC project "Monitoring of the illicit cultivation on Mexican territory" collected yield data for the first time in the 2017/2018 period. The production figures presented are based on: (1) annual estimates of area under cultivation, established by the joint project of the Government of Mexico and UNODC; (2) yield data collected in an initial survey in the 2017/2018 period. UNODC and Mexico are jointly working on continuously expanding the scope and quality of yield data collected. For methodological reasons, the figures shown for 2015-2018 are not comparable with the figures over the period 1998-2014.

f) Owing to the late timing of the monitoring activities in 2013, the survey may not have captured illicit cultivation in this year in its entirety.

g) Bound of the statistically derived confidence interval, with the exception of 2015. The figures for 2015 represent independently derived upper and lower estimates; the midpoint was used for the calculation of the global total.

h) Estimates for 2014, 2015, 2018 include estimates for Kayah and Chin states. In the absence of information on Kayah and Chin, the 2019 national potential production estimate uses latest available (2018) cultivation estimates for Kayah and Chin states and the 2019 weighted national average yield (15.4 kg/ha). National estimates for 2014, 2015, 2018 and 2019 are therefore not directly comparable with other years.

i) The figures for 2015, 2016, 2017, and 2018 are based on the estimation periods July 2014-June 2015, July 2015-June 2016, July 2016-June 2017 and July 2017-June 2018 respectively.

j) Data on the potential opium production for 2019 was obtained from the UNODC Illicit Crop Monitoring Programme. The same methodology was used as in previous years for yield measurement and estimation of potential opium production. These results were not validated by the Government of Afghanistan and are not recognized by the Government as its official estimate.



**TABLE 3** Global manufacture of heroin from global illicit opium production, 2008–2019 (tons)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
<b>Total potential opium production</b>	6,841	4,953	4,730	6,983	4,831	6,810	7,735	4,659	6,058	10,270	7,618	7,606
Potential opium not processed into heroin	2,360	1,680	1,728	3,400	1,850	2,600	2,450	1,360	2,510	1,100–1,400	1,225–1,525	1,180–1,480
Potential opium processed into heroin	4,481	3,273	3,002	3,583	2,981	4,210	5,285	3,299	3,548	8,870–9,170	6,093–6,393	6,126–6,426
<b>Total potential heroin manufacture</b>	600	427	383	467	377	555	544	319	376	677–1,027	468–718	472–722

Notes: The calculation shows the potential amount of heroin that could have been manufactured out of the opium produced in a given year; it does not take into account changes in opium inventories, which may add to or reduce the amount of heroin entering the market in that year. Afghanistan and Myanmar are the only countries for which the proportion of potential opium production not converted into heroin within the country is estimated. For Myanmar, these estimates were available only for 2018 and 2019. For all other countries, for the purposes of this table, it is assumed that all opium produced is converted into heroin.

The amount of heroin produced from Afghan opium is calculated using two parameters that may change: (a) the amounts of opium consumed as raw opium in the region; and (b) the conversion ratio into heroin. The first parameter's estimate is based on consumption data in Afghanistan and neighbouring countries. For the second parameter, from 2005 to 2013, a conversion ratio of opium to morphine/heroin of 7:1 was used, based on interviews conducted with Afghan morphine/heroin "cooks", on an actual heroin production exercise conducted by two (illiterate) Afghan heroin "cooks", documented by the German Bundeskriminalamt in Afghanistan in 2003 (published in *Bulletin on Narcotics*, vol. LVII, Nos. 1 and 2, 2005, pp. 11–31), and United Nations Office on Drugs and Crime (UNODC) studies on the morphine content of Afghan opium (12.3 per cent over the period 2010–2012, down from 15 per cent over the period 2000–2003). Starting from 2014, a different approach to the conversion was adopted, reflecting updated information on morphine content and a different method for taking purity into account. The revised approach uses a ratio of 18.5 (range: 17.5–19.6) kg of opium for 1 kg of 100 per cent pure heroin base (see *Afghanistan Opium Survey 2014*, UNODC, November 2014). In addition, the conversion into export-quality heroin assumes purity to be between 50 and 70 per cent. For more details, see "Afghanistan Opium Survey 2017 – Challenges to sustainable development, peace and security" (UNODC, May 2018).

The amount of heroin produced in Myanmar in 2018 and 2019 was calculated by subtracting the estimated unprocessed opium for consumption from the total opium production and using a conversion factor of 10:1. The unprocessed opium in Myanmar was based on the total unprocessed opium in East Asia and the relative cultivation levels of Lao PDR and Myanmar (see *Transnational Organized Crime in East Asia and the Pacific – A Threat Assessment*, UNODC, 2013 and *Transnational Organized Crime in Southeast Asia: Evolution, Growth and Impact 2019*, UNODC, 2019). For further information, please refer to the Methodology chapter (section 4.3) of the Myanmar Opium Survey 2018 (UNODC, January 2019) and the Myanmar Opium Survey 2019 (UNODC, February 2020).

For countries other than Afghanistan, a "traditional" conversion ratio of opium to heroin of 10:1 is used. The ratios will be adjusted when improved information becomes available. Figures in italics are preliminary and may be revised when updated information becomes available.

**TABLE 4** Global illicit cultivation of coca bush, 2008–2018 (hectares)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Bolivia (Plurinational State of)	30,500	30,900	31,000	27,200	25,300	23,000	20,400	20,200	23,100	24,500	23,100
Colombia <sup>a</sup>	81,000	73,000	62,000	64,000	48,000	48,000	69,000	96,000	146,000	171,000	169,000
Peru <sup>b</sup>	56,100	59,900	61,200	64,400							
Peru <sup>c</sup>				62,500	60,400	49,800	42,900	40,300	43,900	49,900	..
<b>Total</b>	<b>167,600</b>	<b>163,800</b>	<b>154,200</b>	<b>155,600<sup>d</sup></b>	<b>133,700</b>	<b>120,800</b>	<b>132,300</b>	<b>156,500</b>	<b>213,000</b>	<b>245,400</b>	..

Sources: Plurinational State of Bolivia: national illicit crop monitoring system supported by the United Nations Office on Drugs and Crime (UNODC). Colombia: national illicit crop monitoring system supported by UNODC. Peru: national illicit crop monitoring system supported by UNODC.

Note: Different area concepts and their effect on comparability were presented in the World Drug Report 2012 (United Nations publication, Sales No. E.12.XI.1) (p. 41–42). Efforts to improve the comparability of estimates between countries continue; since 2011 the net area under coca bush cultivation on the reference date of 31 December was estimated for Peru, in addition to Colombia. The estimate presented for the Plurinational State of Bolivia represents the area under coca cultivation as interpreted on satellite imagery.

a) Net area on 31 December.

b) Figures represent the area under coca cultivation as interpreted on satellite imagery (without deductions for subsequent eradication).

c) Net area on 31 December, deducting fields eradicated after satellite imagery was taken.

d) The global coca cultivation figure was calculated with the "area as interpreted on satellite imagery" for Peru in 2011.

**TABLE 5** Reported eradication of coca bush, 2008–2018

	Method of eradication	Unit	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Bolivia (Plurinational State of)	manual	hectare	5,484	6,341	8,200	10,509	11,044	11,407	11,144	11,020	6,577	7,237	11,174
Colombia	manual	hectare	96,003	60,565	43,804	35,201	30,456	22,121	11,703	13,473	17,642	52,001	59,978
	spraying	hectare	133,496	104,772	101,940	103,302	100,549	47,052	55,532	37,199	0	0	0
Peru	manual	hectare	10,143	10,025	12,033	10,290	14,171	23,785	31,205	35,868	30,150	23,025	25,107
Ecuador	manual	hectare	12	6	3	14	..	..	..	..	..	..	..
	manual	plants	152,000	57,765	3,870	55,030	122,656	41,996	15,874	45,266	20,896	10,100	3,818

Source: United Nations Office on Drugs and Crime annual report questionnaire and government reports.

Note: The totals for Bolivia (Plurinational State of) and Peru include voluntary and forced eradication. Reported eradication refers to the sum of all areas eradicated in a year, including repeated eradication of the same fields. Two dots indicate that data are not available.

**TABLE 6** Potential manufacture of 100 per cent pure cocaine, 2008–2018 (tons)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Bolivia (Plurinational State of) <sup>a</sup>	157	..	..	..	..	..	..	..	..	..	..
Colombia <sup>b, c, d</sup>	471	488	424	384	333	290	368	499	810	1,058	1,120
Peru <sup>a</sup>	515	..	..	..	..	..	..	..	..	..	..
<b>Total <sup>b, c, d</sup></b>	<b>1,143</b>	<b>1,188</b>	<b>1,134</b>	<b>1,090</b>	<b>997</b>	<b>902</b>	<b>869</b>	<b>977</b>	<b>1,335</b>	<b>1,647</b>	<b>1,723</b>

Sources: Plurinational State of Bolivia: calculations based on coca leaf yield surveys by the United Nations Office on Drugs and Crime (UNODC) (Yungas de La Paz) and scientific studies by the Drug Enforcement Administration of the United States of America (Chapare). Colombia: UNODC/Government of Colombia. Peru: calculations based on coca leaf to cocaine conversion ratio from scientific studies by the Drug Enforcement Administration.

Notes: *Figures in italics are subject to revision. Two dots indicate that data are not available. Information on estimation methodologies and definitions can be found in the online methodology section of the World Drug Report 2020.*

a) *Owing to a lack of updated conversion factors in Bolivia (Plurinational State of) and Peru, no final estimates of the level of cocaine production can be provided. Detailed information on the ongoing revision of conversion ratios and cocaine laboratory efficiency is available in the World Drug Report 2010 (United Nations publication, Sales No. E.10.XI.13), p. 249.*

b) *Values for Colombia for 2014–17 have been revised, using an improved methodology, to take into account the participation of new actors in the processing chain from coca leaf to cocaine. The same methodology was used for 2018. Thus, the values for 2014–18, and hence the global total for the same years, may not be directly comparable to earlier years.*

c) *Conversion of areas under coca cultivation into coca leaf and then into cocaine hydrochloride, taking yields, amounts of coca leaf used for licit purposes and cocaine laboratory efficiency into account. Current global aggregates are based on "new" conversion ratios representing the most recent data available to UNODC. See World Drug Report 2010 (United Nations publication, Sales No. E.10.XI.13, p. 249) for a discussion of "new" and "old" conversion factors and detailed information on the ongoing revision of conversion ratios and cocaine laboratory efficiency.*

d) *With respect to data published in the World Drug Report 2016 (United Nations publication, Sales No. E.16.XI.7), the following amendments have been made:*

*(i) the figure for Colombia relative to 2008 has been revised in order to ensure a consistent implementation of revisions to the methodology, affecting the way coca production is calculated, for the entire time series 2005–2015 (for details, see Colombia Coca Cultivation Survey Report 2014 (UNODC, 2015) and Colombia Survey of territories affected by illicit crops 2015, Annex 3 (UNODC 2016));*

*(ii) totals for 2009–2012 have been revised to rectify minor inaccuracies in data processing.*

**TABLE 7** Cannabis cultivation, production and eradication, latest year available from the period 2012–2017

Year	Country / Territory	Product	Outdoors/ indoors	Area cultivated (ha)	Area eradicated (ha)	Harvestable area (ha)	Production (tons)	Plants eradicated	Sites eradicated
2012	Afghanistan	resin	outdoors	10,000			1,400		
2016	Albania	herb	outdoors					2,536,288	5,205
2017	Albania	herb	indoors					7,766	
2017	Albania	herb	outdoors					66,927	500
2017	Albania	herb	outdoors					33,177	379
2018	Albania	herb	indoors					2,716	
2014	Algeria	resin	outdoors					2,522	
2016	Armenia	herb	outdoors	0.50 a	0.50	0.00		757	20
2017	Armenia	herb	outdoors	0.50 a	0.50	0.00		2,547	21
2018	Armenia	herb	indoors					1,025	36
2016	Australia	herb	indoors					31,266	408
2016	Australia	herb	outdoors					22,257	1,021
2017	Australia	herb	indoors					78,310	433
2017	Australia	herb	outdoors	1.00 a	1.00	0.00		31,431	948
2018	Australia	herb	indoors					38,492	542
2018	Australia	herb	outdoors	0.80	0.80	0.00		19,981	1,120
2015	Austria	herb	outdoors	3.00 a	3.00	0.00			
2013	Azerbaijan	herb	outdoors	23.95 a	23.95	0.00	263.96	8,469	151
2014	Azerbaijan	herb	outdoors	17.50 a	17.50	0.00		14,889	195
2017	Azerbaijan	herb	outdoors	0.25 a		0.25		336,791	
2015	Bahamas	herb	outdoors					17,270	
2012	Bangladesh	herb	outdoors					39,848	
2013	Bangladesh	herb	outdoors					35,012	
2014	Bangladesh	herb	outdoors					35,988	
2015	Bangladesh	herb	outdoors					39,967	
2016	Bangladesh	herb	outdoors					47,104	
2017	Bangladesh	herb	outdoors					69,989	
2016	Belarus	herb	indoors						28
2016	Belarus	herb	outdoors		123.80				1,945
2017	Belarus	herb	indoors						32
2017	Belarus	herb	outdoors		125.90				2,283
2018	Belarus	herb	indoors						42
2018	Belarus	herb	outdoors		106.30				2,469

Year	Country / Territory	Product	Outdoors/ indoors	Area cultivated (ha)	Area eradicated (ha)	Harvestable area (ha)	Production (tons)	Plants eradicated	Sites eradicated
2015	Belgium	herb	indoors					345,518	1,164
2015	Belgium	herb	outdoors					4,885	93
2017	Belgium	herb	indoors					415,728	1,175
2017	Belgium	herb	outdoors					848	59
2018	Belgium	herb	indoors					421,326	944
2018	Belgium	herb	outdoors					935	62
2015	Belize	herb	outdoors					50,897	
2017	Bhutan	herb	outdoors	1.00 <sup>a</sup>	1.00	0.00		100,000	12
2016	Bolivia (Plurinational State of)	herb	outdoors		14.60				35
2017	Bolivia (Plurinational State of)	herb	outdoors		14.00				52
2018	Bolivia (Plurinational State of)	herb	outdoors		13.36				52
2016	Bosnia and Herzegovina	herb	indoors		39.00				
2016	Bosnia and Herzegovina	herb	outdoors		1,680.00				
2017	Bosnia and Herzegovina	herb	indoors					1	1
2017	Bosnia and Herzegovina	herb	outdoors	0.02 <sup>a</sup>	0.02	0.00		539	53
2018	Bosnia and Herzegovina	herb	indoors	0.02	0.02	0.00			6
2018	Bosnia and Herzegovina	herb	outdoors	0.02	0.02	0.00		1,580	12
2014	Brazil	herb	outdoors		44.01			1,364,316	604
2017	Brazil	herb	outdoors		117.51			1,910,451	
2018	Brazil	herb	outdoors		68.31			968,145	
2015	Bulgaria	herb	indoors					323	
2015	Bulgaria	herb	outdoors				37.77	9,488	
2017	Central African Republic	herb	outdoors	130.00	60.00	55	10.00	250,000	22
2016	Chile	herb	indoors					26,988	2,740
2016	Chile	herb	outdoors					58,950	264
2017	Chile	herb	indoors					50,414	2,408
2017	Chile	herb	outdoors					194,694	202
2018	Chile	herb	indoors					66,007	2,357
2018	Chile	herb	outdoors					183,185	318
2016	China	herb	outdoors		9.80			1,390,000	
2018	China	herb	outdoors					710	
2016	Colombia	herb	outdoors		135.00				
2017	Colombia	herb	outdoors		173.71				

Year	Country / Territory	Product	Outdoors/ indoors	Area cultivated (ha)	Area eradicated (ha)	Harvestable area (ha)	Production (tons)	Plants eradicated	Sites eradicated
2018	Colombia	herb	outdoors		59.66				
2016	Costa Rica	herb	indoors				678.00	5	
2016	Costa Rica	herb	outdoors		17.59		2,122,244	201	
2017	Costa Rica	herb	indoors					2	
2017	Costa Rica	herb	outdoors			14.30		215	
2018	Costa Rica	herb	indoors					4	
2018	Costa Rica	herb	outdoors	11.41	11.41		1,346,273	208	
2016	Côte d'Ivoire	herb	outdoors				5		
2017	Côte d'Ivoire	herb	outdoors		0.25			1	
2018	Côte d'Ivoire	herb	outdoors				104	1	
2016	Czechia	herb	indoors				53,549	229	
2016	Czechia	herb	outdoors				4,111		
2017	Czechia	herb	indoors				50,925	305	
2017	Czechia	herb	outdoors				3,467		
2018	Czechia	herb	outdoors				6,581		
2015	Denmark	herb	indoors/ outdoors				14,560	97	
2016	Denmark	herb	indoors/ outdoors				13,217	105	
2017	Denmark	herb	indoors/ outdoors				34,801	65	
2014	Dominican Republic	herb	outdoors	6.00 <sup>a</sup>	6.00	0.00	0.21	111	8
2016	Ecuador	herb	outdoors				224	34	
2017	Ecuador	herb	outdoors				397	10	
2018	Ecuador	herb	indoors				127	30	
2018	Ecuador	herb	outdoors				13,891	4	
2015	Egypt	herb/resin	outdoors		140.00				
2017	Egypt	herb/resin	outdoors		126.00				
2018	Eswatini	herb	outdoors	1,500.00	1,069.50	430.50		3,000,000	210
2017	Georgia	herb	indoors		0.01			186	91
2017	Georgia	herb	outdoors	0.02 <sup>a</sup>	0.02	0.00		93	19
2016	El Salvador	herb	outdoors			1.00		227	25
2014	France	herb	outdoors					158,592	837
2018	France	herb	outdoors					138,561	
2017	Georgia	herb	indoors		0.01			186	91

Year	Country / Territory	Product	Outdoors/ indoors	Area cultivated (ha)	Area eradicated (ha)	Harvestable area (ha)	Production (tons)	Plants eradicated	Sites eradicated
2017	Georgia	herb	outdoors	0.02	0.02	0.00		93	19
2018	Georgia	herb	indoors		0.05			927	443
2018	Georgia	herb	outdoors	0.10	0.10	0.00		406	98
2015	Germany	herb	indoors					135,925	786
2015	Germany	herb	outdoors					9,136	127
2017	Germany	herb	indoors					85,226	573
2017	Germany	herb	outdoors						95
2016	Greece	herb	indoors					16,554	
2016	Greece	herb	outdoors					39,151	
2017	Greece	herb	indoors					19,498	
2017	Greece	herb	outdoors					27,409	
2018	Greece	herb	indoors					6,913	
2018	Greece	herb	outdoors					43,684	
2016	Guatemala	herb	outdoors		9.00			3,138,298	427
2017	Guatemala	herb	outdoors	3.50 <sup>a</sup>	3.81		1.61	6,033,345	150
2018	Guatemala	herb	outdoors	129.00	129.00	0.00		5,189,422	368
2015	Guyana	herb	outdoors	20.00	9.40	10.60	1,000.00	419,700	19
2016	Honduras	herb	indoors					7	2
2016	Honduras	herb	outdoors					24,253	19
2017	Honduras	herb	outdoors	59.58 <sup>a</sup>	59.59	0.00			
2018	Honduras	herb	outdoors					720,426	67
2016	China, Hong Kong SAR	herb	indoors					329	1
2016	Hungary	herb	indoors					5,000	3
2016	Hungary	herb	outdoors					2,000	20
2013	Iceland	herb	indoors					6,652	323
2016	India	herb	outdoors		3,414.74				
2017	India	herb	outdoors		3,445.90			6,687,376	
2018	India	herb	outdoors		3,430.12				
2016	Indonesia	herb	outdoors	482.00 <sup>a</sup>	482.00	0.00			
2017	Indonesia	herb	outdoors	89.00 <sup>a</sup>	89.00	0.00		738,020	14
2018	Indonesia	herb	outdoors	76.23	76.23	0.00		1,455,390	13
2018	Iran (Islamic Republic of)	herb	indoors		0.04				
2016	Ireland	herb	indoors					7,273	

Year	Country / Territory	Product	Outdoors/ indoors	Area cultivated (ha)	Area eradicated (ha)	Harvestable area (ha)	Production (tons)	Plants eradicated	Sites eradicated
2017	Ireland	herb	indoors					9,046	50
2018	Ireland	herb	indoors					7,186	
2014	Italy	herb	indoors					51,534	639
2014	Italy	herb	outdoors					70,125	1,134
2017	Italy	herb	indoors					56,125	1,161
2017	Italy	herb	outdoors					209,510	401
2012	Jamaica	herb	outdoors					456	382
2016	Kazakhstan	herb	outdoors	18.00 <sup>a</sup>	18.00	0.00		170,000	202
2017	Kazakhstan	herb	outdoors	12.30 <sup>a</sup>	12.30	0.00		930,774	91
2016	Kenya	herb	outdoors	12.00				8,747	46
2017	Kenya	herb	outdoors		0.10			4,662	
2018	Kenya	herb	outdoors		0.10			517	
2015	Kyrgyzstan	herb	outdoors	5,014.00		5,014.00			
2018	Kyrgyzstan	herb	outdoors	1,276.37	457.69	818.68		49,942	12
2016	Latvia	herb	indoors					557	35
2016	Latvia	herb	outdoors					78	6
2017	Latvia	herb	indoors					798	34
2017	Latvia	herb	outdoors					66	15
2018	Latvia	herb	indoors					152	17
2018	Latvia	herb	outdoors					1,152	34
2015	Lebanon	herb	outdoors	3,500.00		3,500.00			
2017	Lebanon	Kif	outdoors	40,772.00					
2018	Lebanon	herb	outdoors	4,205.70		4,205.70			
2016	Lithuania	herb	indoors						4
2017	Lithuania	herb	indoors						8
2017	Lithuania	herb	outdoors						7
2018	Lithuania	herb	indoors						3
2015	Madagascar	herb	outdoors		11.00			21,325	
2017	Madagascar	herb	outdoors		9.00			57,708	
2013	Malta	herb	indoors					27	
2016	Mexico	herb	outdoors	5,478.42			6,574.1		38,432
2017	Mexico	herb	outdoors	4,193.34			5,032.0		34,523
2018	Mexico	herb	outdoors	2,263.71			2,716.47		28,873
2013	Mongolia	herb	outdoors	15,000.00	4,000.00	11,000.00		4,000	4,000



Year	Country / Territory	Product	Outdoors/ indoors	Area cultivated (ha)	Area eradicated (ha)	Harvestable area (ha)	Production (tons)	Plants eradicated	Sites eradicated
2018	Mongolia	herb	outdoors	15,000.00	173.00	14,827.00			33
2016	Morocco	herb	outdoors				35,652.83		
2016	Morocco	plant	outdoors	47,000.00	395.00	46,605.00			
2016	Morocco	resin	outdoors				713.00		
2017	Morocco	herb	outdoors				35,702.90		
2017	Morocco	plant	outdoors	47,500.00	523.00	46,977.00			
2017	Morocco	resin	outdoors				714.06		
2018	Morocco	herb	outdoors				23,699.80		
2018	Morocco	plant	outdoors	47,500.00		47,500.00			
2018	Morocco	resin	outdoors				423.58		
2014	Myanmar	herb	outdoors	15.00	10.00	5.00		2,358,700	3
2018	Nepal	herb	outdoors	235.87	235.87	0.00	5,000.00	994,068	335
2016	Netherlands	herb	indoors					883,163	5,856
2017	Netherlands	herb	indoors					516,418	5,538
2018	Netherlands	herb	indoors					431	3,482
2018	Netherlands	herb	outdoors					18,903	431
2016	New Zealand	herb	indoors					104,725	607
2016	New Zealand	herb	outdoors					19,992	
2017	New Zealand	herb	indoors					19,559	
2017	New Zealand	herb	outdoors					19,313	
2018	New Zealand	herb	indoors					22,660	
2018	New Zealand	herb	outdoors					3,014	30
2014	Nicaragua	herb	outdoors		0.30		1,507.00	275,000	
2016	Nicaragua	herb	outdoors					994,787	
2017	Nicaragua	herb	outdoors						
2016	Nigeria	herb	outdoors		718.78				65
2017	Nigeria	herb	outdoors		317.12				
2018	Nigeria	herb	outdoors		3,660.64				
2015	Norway	herb	indoors		0.04			4,000	30
2017	North Macedonia	herb	indoors					168	
2017	North Macedonia	herb	outdoors					220	
2018	North Macedonia	herb	outdoors	2.51			0.00404	2,264	4,527
2016	Oman	herb	outdoors	0.50	0.50	0.00		5	3

Year	Country / Territory	Product	Outdoors/ indoors	Area cultivated (ha)	Area eradicated (ha)	Harvestable area (ha)	Production (tons)	Plants eradicated	Sites eradicated
2013	Panama	herb	indoors	0.50	0.50	0.00		37	2
2013	Panama	herb	outdoors	10.50	10.50	0.00		78,633	2
2016	Paraguay	herb	outdoors				1,298.50		
2016	Paraguay	plant	outdoors	1,298.50	1,298.50	0.00		5,656,266	4
2016	Paraguay	resin	outdoors				1.15		
2017	Paraguay	plant	outdoors		1,462.00			36,550,000	
2016	Peru	herb	outdoors		87.83			1,429,749	
2017	Peru	herb	outdoors		61.30			4,671,387	47
2018	Peru	herb	outdoors		91.80			1,716,751	46
2016	Philippines	herb	outdoors		8.67			24,635,153	337
2017	Philippines	herb	outdoors		4.82			221,035	27
2018	Philippines	herb	outdoors		12.39			869,682	186
2016	Poland	herb	indoors					146,755	1,403
2016	Poland	herb	indoors/ outdoors					4,585	219
2017	Poland	herb	indoors					448	10
2017	Poland	herb	indoors/ outdoors						54
2018	Poland	herb	indoors/ outdoors					118,382	1,274
2017	Portugal	herb	indoors/ outdoors					22,910	158
2018	Portugal	herb	indoors/ outdoors					8,706	139
2013	Republic of Korea	herb	outdoors					8,072	
2014	Republic of Moldova	herb	outdoors	100.00	59.00	41.00	10,000.00	200,548	
2017	Republic of Moldova	herb	outdoors	0.15	2.57			257,236	
2018	Republic of Moldova	herb	outdoors		0.71			86,926	61
2014	Republic of Moldova	herb	indoors		41.00				
2016	Romania	herb	indoors					1,433	41
2016	Romania	herb	outdoors		6.99				42

Year	Country / Territory	Product	Outdoors/ indoors	Area cultivated (ha)	Area eradicated (ha)	Harvestable area (ha)	Production (tons)	Plants eradicated	Sites eradicated
2017	Romania	herb	indoors					1,875	46
2017	Romania	herb	outdoors		1.90			4,905	32
2018	Romania	herb	indoors					3,903	39
2018	Romania	herb	outdoors		0.11			1,882	98
2016	Russian Federation	herb	indoors		0.66				788
2016	Russian Federation	herb	outdoors	7.61	7.61	0.00	68.64		1,143
2017	Russian Federation	herb	indoors		0.87				1,990
2017	Russian Federation	herb	outdoors	159.00	159.00	0.00	30.07		5,379
2018	Russian Federation	herb	indoors		1.87				
2018	Russian Federation	herb	outdoors	9.34	7.47	1.87			16,212
2015	Serbia	herb	outdoors				0.05		
2013	Sierra Leone	herb	outdoors	190.00		190.00		190	3
2016	Slovakia	herb	indoors					385	
2017	Slovakia	herb	outdoors	2.00	2.00	0.00		2,299	31
2014	Slovenia	herb	indoors					9,223	118
2014	Slovenia	herb	outdoors					1,844	
2017	Slovenia	herb	indoors					10,259	78
2015	Spain	herb	indoors					244,772	108
2015	Spain	herb	outdoors					135,074	44
2014	Sudan	herb	outdoors	8.00	8.00	0.00	345.00		
2017	Sudan	herb	outdoors	1,250.00	1,250.00	0.00	205.00		100
2018	Sudan	herb	outdoors	7,744.00	1,452.00	6,292.00	774,400.00	1,500,000	3
2014	Sweden	herb	indoors					10,000	56
2015	Sweden	herb	outdoors				182.00		
2017	Sweden	herb	indoors					5,100	44
2018	Sweden	herb	indoors					1,642	
2016	Switzerland	herb	indoors					11,386	83
2017	Switzerland	herb	indoors					71,750	

Year	Country / Territory	Product	Outdoors/ indoors	Area cultivated (ha)	Area eradicated (ha)	Harvestable area (ha)	Production (tons)	Plants eradicated	Sites eradicated
2012	Tajikistan	herb	outdoors					2,180,121	
2016	Thailand	herb	outdoors	1.00	1.00	0.00	7.50		1
2015	Trinidad and Tobago	herb	outdoors		0.31			375,925	58
2012	Uganda	herb	outdoors	150.00	88.00	62.00			5
2016	Ukraine	herb	outdoors	91.00	91.00	0.00			
2017	Ukraine	herb	outdoors		166.90			483,000	
2016	United States of America	herb	indoors					406,125	1,865
2016	United States of America	herb	outdoors					4,940,596	5,513
2017	United States of America	herb	indoors					303,654	1,399
2017	United States of America	herb	outdoors					3,078,418	4,062
2018	United States of America	herb	indoors					596,149	1,618
2018	United States of America	herb	outdoors					2,221,837	3,847
2016	Uruguay	herb	indoors					661	
2017	Uruguay	herb	indoors					1,926	
2016	Uzbekistan	herb	outdoors	0.20	0.20	0.00			586
2017	Uzbekistan	herb	outdoors	0.20	0.20	0.00			618
2018	Uzbekistan	herb	indoors	0.13	0.13	0.00			519
2015	Viet Nam	herb	outdoors		1.00				
2018	Venezuela	herb	outdoors					13,891	4

Source: United Nations Office on Drugs and Crime annual report questionnaire, government reports and international narcotics control strategy reports of the United States of America.

<sup>a</sup> Area identified by the authorities for eradication.

# GLOSSARY

*amphetamine-type stimulants* — a group of substances composed of synthetic stimulants controlled under the Convention on Psychotropic Substances of 1971 and from the group of substances called amphetamines, which includes amphetamine, methamphetamine, methcathinone and the “ecstasy”-group substances (3,4-methylenedioxy-methamphetamine (MDMA) and its analogues).

*amphetamines* — a group of amphetamine-type stimulants that includes amphetamine and methamphetamine.

*annual prevalence* — the total number of people of a given age range who have used a given drug at least once in the past year, divided by the number of people of the given age range, and expressed as a percentage.

*coca paste (or coca base)* — an extract of the leaves of the coca bush. Purification of coca paste yields cocaine (base and hydrochloride).

*“crack” cocaine* — cocaine base obtained from cocaine hydrochloride through conversion processes to make it suitable for smoking.

*cocaine salt* — cocaine hydrochloride.

*drug use* — use of controlled psychoactive substances for non-medical and non-scientific purposes, unless otherwise specified.

*fentanyls* - fentanyl and its analogues.

*new psychoactive substances* — substances of abuse, either in a pure form or a preparation, that are not controlled under the Single Convention on Narcotic Drugs of 1961 or the 1971 Convention, but that may pose a public health threat. In this context, the term “new” does not necessarily refer to new inventions but to substances that have recently become available.

*opiates* — a subset of opioids comprising the various products derived from the opium poppy plant, including opium, morphine and heroin.

*opioids* — a generic term that refers both to opiates and their synthetic analogues (mainly prescription or pharmaceutical opioids) and compounds synthesized in the body.

*problem drug users* — people who engage in the high-risk consumption of drugs. For example, people who inject drugs, people who use drugs on a daily basis and/or people diagnosed with drug use disorders (harmful use or drug dependence), based on clinical criteria as contained in the *Diagnostic and Statistical Manual of Mental Disorders* (fifth edition) of the American Psychiatric Association, or the *International Classification of Diseases and Related Health Problems* (tenth revision) of WHO.

*people who suffer from drug use disorders/people with drug use disorders* — a subset of people who use drugs. Harmful use of substances and dependence are features of drug use disorders. People with drug use disorders need treatment, health and social care and rehabilitation.

*harmful use of substances* — defined in the *International Statistical Classification of Diseases and Related Health Problems* (tenth revision) as a pattern of use that causes damage to physical or mental health.

*dependence* — defined in the *International Statistical Classification of Diseases and Related Health Problems* (tenth revision) as a cluster of physiological, behavioural and cognitive phenomena that develop after repeated substance use and that typically include a strong desire to take the drug, difficulties in controlling its use, persisting in its use despite harmful consequences, a higher priority given to drug use than to other activities and obligations, increased tolerance, and sometimes a physical withdrawal state.

*substance or drug use disorders* — referred to in the *Diagnostic and Statistical Manual of Mental Disorders* (fifth edition) as patterns of symptoms resulting from the repeated use of a substance despite experiencing problems or impairment in daily life as a result of using substances. Depending on the number of symptoms identified, substance use disorder may be mild, moderate or severe.

*prevention of drug use and treatment of drug use disorders* — the aim of “prevention of drug use” is to prevent or delay the initiation of drug use, as well as the transition to drug use disorders. Once a person develops a drug use disorder, treatment, care and rehabilitation are needed.



# REGIONAL GROUPINGS

The *World Drug Report* uses a number of regional and subregional designations. These are not official designations, and are defined as follows:

- East Africa: Burundi, Comoros, Djibouti, Eritrea, Ethiopia, Kenya, Madagascar, Mauritius, Rwanda, Seychelles, Somalia, South Sudan, Uganda, United Republic of Tanzania and Mayotte
- North Africa: Algeria, Egypt, Libya, Morocco, Sudan and Tunisia
- Southern Africa: Angola, Botswana, Eswatini, Lesotho, Malawi, Mozambique, Namibia, South Africa, Zambia, Zimbabwe and Reunion
- West and Central Africa: Benin, Burkina Faso, Cabo Verde, Cameroon, Central African Republic, Chad, Congo, Côte d'Ivoire, Democratic Republic of the Congo, Equatorial Guinea, Gabon, Gambia, Ghana, Guinea, Guinea-Bissau, Liberia, Mali, Mauritania, Niger, Nigeria, Sao Tome and Principe, Senegal, Sierra Leone, Togo and Saint Helena
- Caribbean: Antigua and Barbuda, Bahamas, Barbados, Cuba, Dominica, Dominican Republic, Grenada, Haiti, Jamaica, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Trinidad and Tobago, Anguilla, Aruba, Bonaire, Netherlands, British Virgin Islands, Cayman Islands, Curaçao, Guadeloupe, Martinique, Montserrat, Puerto Rico, Saba, Netherlands, Sint Eustatius, Netherlands, Sint Maarten, Turks and Caicos Islands and United States Virgin Islands
- Central America: Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua and Panama
- North America: Canada, Mexico and United States of America, Bermuda, Greenland and Saint-Pierre and Miquelon
- South America: Argentina, Bolivia (Plurinational State of), Brazil, Chile, Colombia, Ecuador, Guyana, Paraguay, Peru, Suriname, Uruguay, Venezuela (Bolivarian Republic of) and Falkland Islands (Malvinas)
- Central Asia and Transcaucasia: Armenia, Azerbaijan, Georgia, Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan
- East and South-East Asia: Brunei Darussalam, Cambodia, China, Democratic People's Republic

of Korea, Indonesia, Japan, Lao People's Democratic Republic, Malaysia, Mongolia, Myanmar, Philippines, Republic of Korea, Singapore, Thailand, Timor-Leste, Viet Nam, Hong Kong, China, Macao, China, and Taiwan Province of China

- South-West Asia: Afghanistan, Iran (Islamic Republic of) and Pakistan
- Near and Middle East: Bahrain, Iraq, Israel, Jordan, Kuwait, Lebanon, Oman, Qatar, Saudi Arabia, State of Palestine, Syrian Arab Republic, United Arab Emirates and Yemen
- South Asia: Bangladesh, Bhutan, India, Maldives, Nepal and Sri Lanka
- Eastern Europe: Belarus, Republic of Moldova, Russian Federation and Ukraine
- South-Eastern Europe: Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Montenegro, North Macedonia, Romania, Serbia, Turkey and Kosovo<sup>222</sup>
- Western and Central Europe: Andorra, Austria, Belgium, Cyprus, Czechia, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Liechtenstein, Lithuania, Luxembourg, Malta, Monaco, Netherlands, Norway, Poland, Portugal, San Marino, Slovakia, Slovenia, Spain, Sweden, Switzerland, United Kingdom of Great Britain and Northern Ireland, Faroe Islands, Gibraltar and Holy See

Oceania (comprised of four sub-regions):

- Australia and New Zealand: Australia and New Zealand
- Polynesia: Cook Islands, Niue, Samoa, Tonga, Tuvalu, French Polynesia, Tokelau and Wallis and Futuna Islands
- Melanesia: Fiji, Papua New Guinea, Solomon Islands, Vanuatu and New Caledonia
- Micronesia: Kiribati, Marshall Islands, Micronesia (Federated States of), Nauru, Palau, Guam and Northern Mariana Islands

<sup>222</sup> All references to Kosovo in the *World Drug Report* should be understood to be in compliance with Security Council resolution 1244 (1999).



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Presented in six separate booklets, the *World Drug Report 2020* provides a wealth of information and analysis to support the international community in implementing operational recommendations on a number of commitments made by Member States, including the recommendations contained in the outcome document of the special session of the General Assembly on the world drug problem, held in 2016.

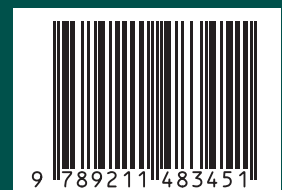
Booklet 1 provides a summary of the five subsequent booklets by reviewing their key findings and highlighting their policy implications. Booklet 2 focuses on drug demand and contains a global overview of the extent of and trends in drug use, including drug use disorders, and its health consequences. Booklet 3 deals with drug supply and presents the latest estimates and trends regarding the production of and trafficking in opiates, cocaine, amphetamine-type stimulants and cannabis. Booklet 4 addresses a number of cross-cutting issues, including the macrodynamics that are driving the expansion and increasing complexity of the drug markets, and describes some of the rapidly evolving drug-related concerns: the latest, multifaceted global opioid crisis; rapid market changes; the market for new psychoactive substances; the use of the darknet for supplying drugs; and developments in jurisdictions that have measures allowing the non-medical use of cannabis. Booklet 5 looks at the association between socioeconomic characteristics and drug use disorders, including at the macro-, community and individual levels, with a special focus on population subgroups that may be impacted differently by drug use and drug use disorders. Finally, booklet 6 addresses a number of other drug policy issues that all form part of the international debate on the drug problem but on which in-depth evidence is scarce, including access to controlled medicines, international cooperation on drug matters, alternative development in drug cultivation areas, and the nexus between drugs and crime.

As in previous years, the *World Drug Report 2020* is aimed at improving the understanding of the world drug problem and contributing to fostering greater international cooperation in order to counter its impact on health, governance and security.

The accompanying statistical annex is published on the UNODC website:  
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