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UNITED NATIONS OFFICE ON DRUGS AND CRIME
Vienna

WORLD DRUG REPORT 2024

UNITED NATIONS
New York, 2024

PREFACE

I am proud to present the 2024 edition of UNODC's flagship *World Drug Report*, which delves into the major developments in the manufacture and trafficking of drugs, and examines patterns of drug use and related harms.

This comprehensive report lays bare the ever-evolving challenges of the world drug problem, and paints a stark picture of suffering, death and violence linked to the illicit drug trade.

Organized criminal groups are exploiting instability and gaps in the rule of law to expand their drug trafficking operations, while damaging fragile ecosystems and perpetuating other forms of organized crime such as human trafficking. Cocaine production is reaching record highs, with production climbing in Latin America, coupled with drug use and markets expanding in Europe, Africa, and Asia. Synthetic drugs are also inflicting great harm on people and communities, caused by an increase in methamphetamine trafficking in South-West Asia, the Near and Middle East, and South-Eastern Europe, and fentanyl overdoses in North America. Meanwhile, the opium ban imposed by the de facto authorities in Afghanistan is having a significant impact on farmers' livelihoods and incomes, necessitating a sustainable humanitarian response.

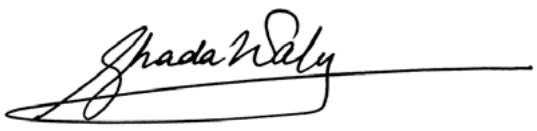
This year's report features special chapters dedicated to the impact of the opium ban in Afghanistan, the disproportionate use of synthetic drugs among women who face limited access to treatment, the nexus between drug trafficking and organized crime in the Golden Triangle, and an overview of regulatory and legislative changes concerning cannabis and psychedelics.

For the first time, the report also includes a chapter on the right to health and drug use, which we hope will provide a starting point for future discussions on fulfilling this right and assessing progress. Far too many people affected by the world drug problem are denied their right to health, particularly women who continue to face stigma and discrimination for drug use. The right to heath is universal to all, and people who use drugs must enjoy that right, along with all members of their communities. This means providing drug treatment, care, and services that are comprehensive, effective, voluntary, and available to all without discrimination, and that preserve people's dignity.

Alongside health interventions, the report calls for more strategic justice interventions that target the illicit drug market. The latest data shows that 7 million people were in contact with the law for drug-related offenses, yet two-thirds of them were for drug use or possession for use. Justice responses must focus on the top-level actors that are critical in fuelling the drug trade, looking to hold traffickers accountable while helping drug users with treatment.

In addition, long-term efforts to dismantle drug economies must provide socioeconomic opportunities and alternatives, which go beyond merely replacing illicit crops or incomes and instead address the root structural causes behind illicit crop cultivation, such as poverty, underdevelopment, and insecurity. They must also target the factors driving the recruitment of young people into the drug trade, who are at particular risk of synthetic drug use.

In shedding light on these patterns and trends, I hope this report will serve as a crucial resource and evidence-base for policymakers, researchers, and all stakeholders in shaping policy responses and mobilizing action to address the challenges posed by the world drug problem, as we work to safeguard the health, safety, and dignity of all.



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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.

For this edition of the *World Drug Report*, the Amazon Basin was defined as comprising the maximum area of the hydrographic basin, the Amazon biome and the administrative regions that are part of the Amazon, with boundaries provided by the Amazon Network of Georeferenced Socioenvironmental Information (RAISG).

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.

The term "seizures" is used in the *World Drug Report* to refer to quantities of drugs seized, unless otherwise specified.

All analysis contained in the *World Drug Report* is based on the official data submitted by Member States to UNODC through the annual report questionnaire, unless indicated otherwise. Sex-disaggregated analysis has been included wherever possible.

The data on population used in the *World Drug Report* are taken from: *World Population Prospects: The 2022 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:

ACLED	Armed Conflict Location & Event Data Project
ADHD	attention deficit hyperactivity disorder
alpha-PVP	*alpha*-pyrrolidinovalerophenone
ATS	amphetamine-type stimulants
BZP	N-benzylpiperazine
2C-B	4-bromo-2,5-dimethoxyphenethylamine
CBD	cannabidiol
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CND	Commission on Narcotic Drugs
COVID-19	coronavirus disease
DMT	dimethyltryptamine
EMCDDA	European Monitoring Centre for Drugs and Drug Addiction
GBL	*gamma*-butyrolactone
GDP	gross domestic product
GHB	*gamma*-hydroxybutyric acid
ha	hectares
HCV	hepatitis C virus
HIV/AIDS	human immunodeficiency virus /acquired immunodeficiency syndrome
INCB	International Narcotics Control Board
LSD	lysergic acid diethylamide
MDMA	3,4-methylenedioxymethamphetamine
MDPV	methylenedioxypyrovalerone
NGO	non-governmental organization
NPS	new psychoactive substances
OECD	Organisation for Economic Co-operation and Development
ONCB	Office of the Narcotics Control Board
ONDCP	Office of National Drug Control Policy
PCP	phencyclidine
P-2-P	1-phenyl-2-propanone
PTSD	post-traumatic stress disorder
PWID	people who inject drugs
SEZ	special economic zone
STI	sexually transmitted infection
THC	tetrahydrocannabinol
UNAIDS	Joint United Nations Programme on HIV/AIDS
UNDP	United Nations Development Programme
UNODC	United Nation Office on Drugs and Crime
WHO	World Health Organization
World WISE	The World Wildlife Seizures Database

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CONTENTS

AFGHANISTAN: THE 2022 TALIBAN BAN ON THE CULTIVATION AND PRODUCTION OF AND TRAFFICKING IN DRUGS AND ITS IMPLICATIONS

Context of the 2022 ban

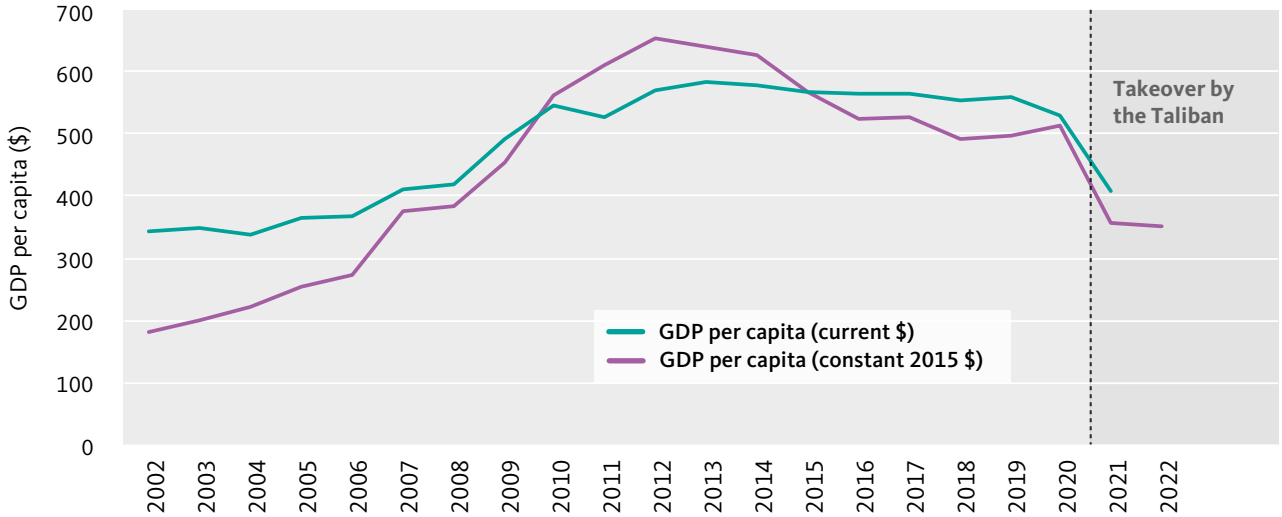
Until recently, the production and export of opiates has arguably been the largest illegal economic activity in Afghanistan since the 1980s. In 2022, opium production in Afghanistan accounted for around 80 per cent of global illicit opium production.[1] The income from opium poppy cultivation alone was equivalent to 29 per cent of the value of the country's entire agricultural sector, while for many years, the total value of exported opiates, includin g opium and heroin, exceeded the value of officially recorded licit exports of goods and services[2,3] For decades, the opiate sector thus provided a sizeable share of the income of the country's rural population. Estimates from prior to the Taliban takeover suggest that opium poppy cultivation took place in more than one third of all villages[4] and that the overall income of a farmer who cultivated opium poppy was, on average, about 50 per cent higher than that of a farmer who did not.[5]

Afghanistan has also been identified as an important source country for cannabis resin worldwide, second only to Morocco.[6] Moreover, in recent years, the expansion of methamphetamine manufacture has added another layer of complexity to the country's illicit drug economy, bringing with it new drug profits.[7]

Since the Taliban takeover in August 2021, both the licit economy and the drug economy have started to see drastic shifts. Until 2021, Afghanistan was benefiting from a significant influx of external development assistance, which helped raise the GDP per capita of the country by 54 per cent[8] over the period 2002–2020,[9] but the sudden contraction of development assistance and the introduction of restrictions on access to international banking and financial systems resulted in a sizeable squeeze on the national economy as a whole.[10] The country's GDP per capita fell by close to 30 per cent between 2020 and 2022,[11, 12, 13] but while the economic situation worsened after the Taliban takeover in August 2021, security improved and corruption dwindled. With the Taliban de facto authorities in charge, armed conflict ceased, resulting in a drastic reduction in the number of violent events and fatalities.[14, 15, 16] Moreover, some evidence suggests that in 2022 both corruption and the perception of corruption reached the lowest level in the past decade,[17, 18, 19, 20] although there might have been a moderate recurrence in 2023.[21]

Nonetheless, Afghanistan remains one of the poorest countries worldwide[22] and faces acute social challenges. Women's rights have been seriously curtailed since the Taliban takeover, including in relation to education, paid employment, freedom of speech, individual movement

FIG. 1 **GDP per capita in Afghanistan, 2002–2022**



Sources: World Bank, World Development Indicators database; and UNDP, *Two Years in Review: Changes in Afghan Economy, Households and Cross-Cutting Sectors (August 2021 to August 2023)*.

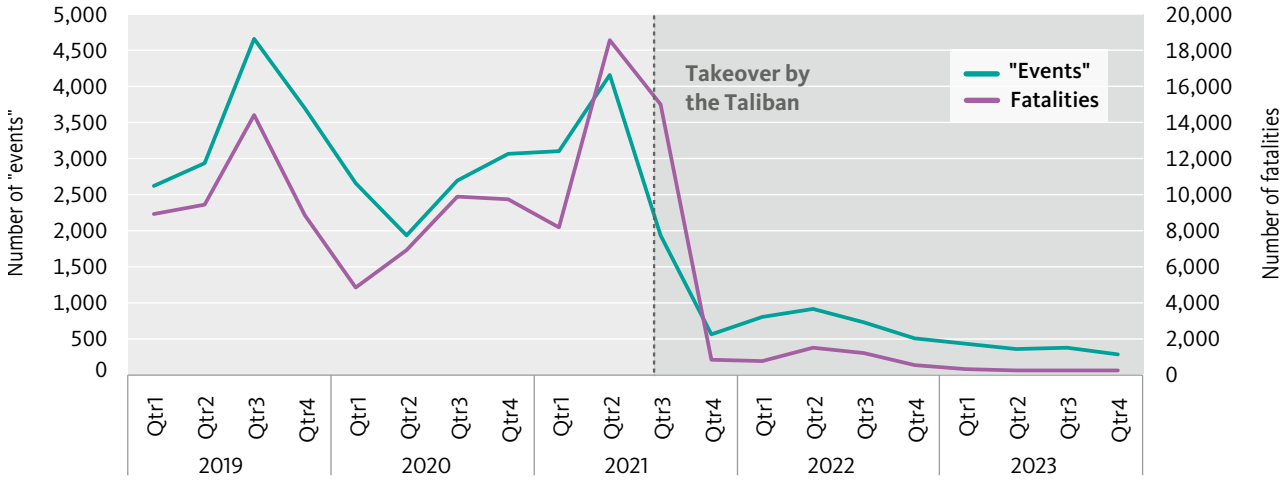
and political participation, and their situation has failed to improve ever since.[23, 24]

In April 2022, the Taliban de facto authorities announced a ban on the production of all drugs. The 2022 harvest was largely unaffected by the ban, but 2023 saw a dramatic decline in the opium economy in the country, with a drastic reduction in income available to farmers.

Ban on opium poppy cultivation

Less than a year after taking power, in April 2022, just as the 2022 opium harvest was about to begin, the Taliban officially announced a ban on the cultivation of opium poppy. The 2022 ban extends to using, transporting, selling, trading, importing and exporting all types of drugs, such as alcohol, heroin, shisha (methamphetamine), tablet K, hashish and all other types of drugs, as well as drug-producing plants. Anyone failing to adhere to the ban faces Sharia procedures.[25]

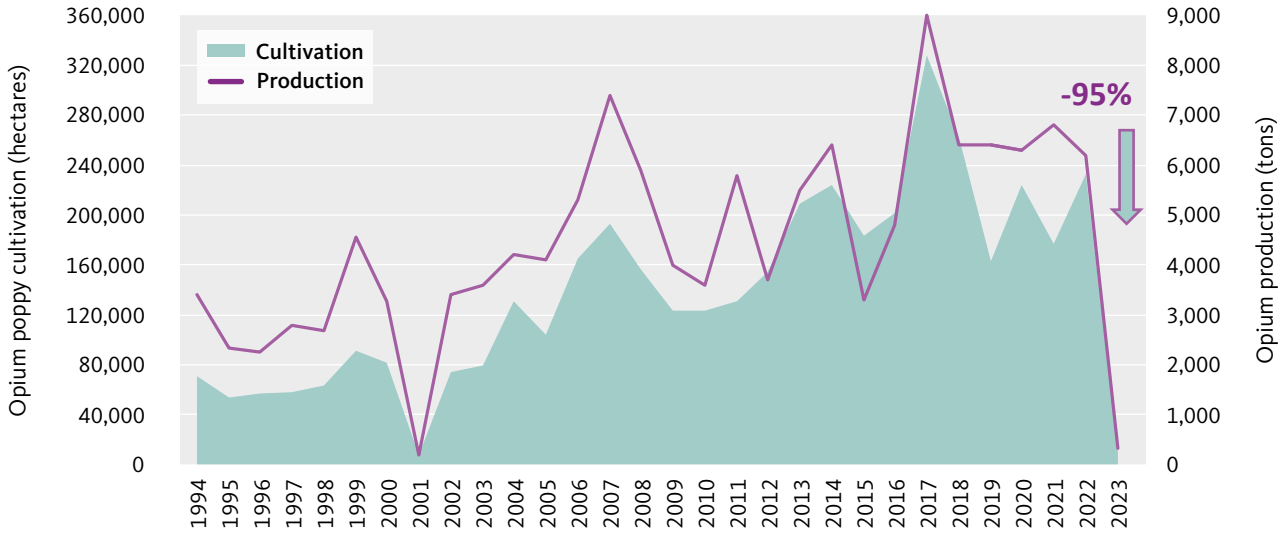
FIG. 2 **Number of reported "events" of armed conflict and related fatalities in Afghanistan, 2019–2023**



Source: ACLED database.

Note: Reported cases of "events" include battles, explosions/remote violence, violence against civilians, mob violence, violent protests and demonstrations.

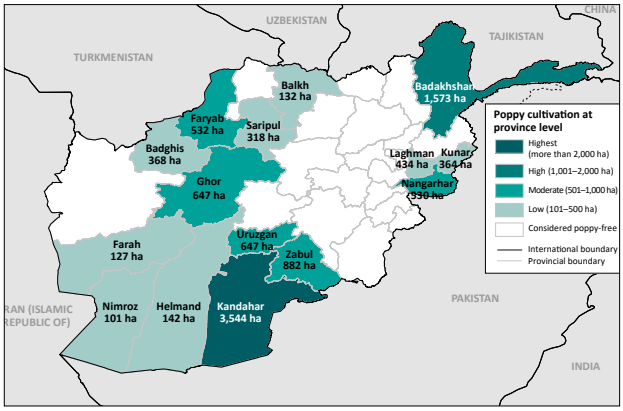
FIG. 3 **Opium cultivation and production in Afghanistan, 1994–2023**



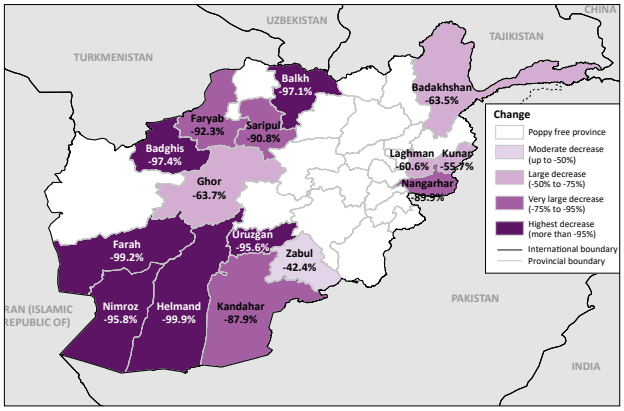
Source: UNODC, *Afghanistan Opium Survey 2023*, August 2023.

MAP 1 Opium poppy cultivation in Afghanistan, by province, 2023, and changes in the area under opium poppy cultivation by province, 2022 to 2023

Opium poppy cultivation, 2023



Changes in poppy cultivation, 2022–2023



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

Source: UNODC, *Afghanistan Opium Survey 2023*, August 2023

A subsequent grace period of two months left the 2022 harvest virtually unaffected by the ban, but by the 2023 harvest, the ban was in full effect and opium poppy cultivation and opium production declined dramatically across all parts of the country. Nationally, the area under poppy cultivation declined by 95 per cent, to a total of just 10,800 ha, indicating that farmers were largely adhering to the ban. As no indications signalled significant changes in yields per hectare, opium production is also estimated to have declined by 95 per cent, from 6,200 tons in 2022 to 333 tons in 2023. This decline was greater than the one following the Taliban's first opium ban during the season 2000–2001.

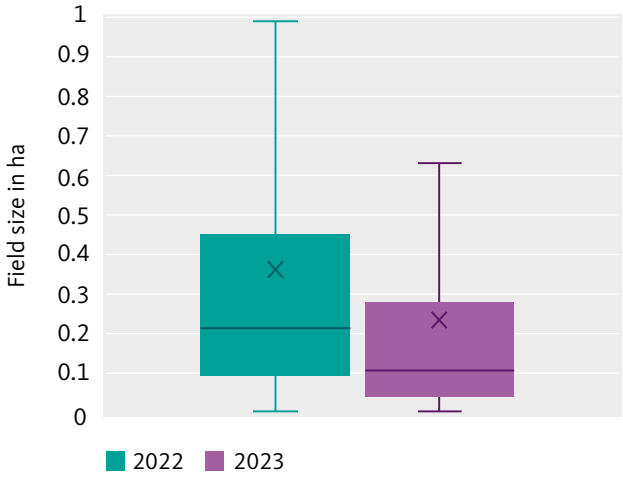
Besides a sharp decline in the number of fields under opium poppy cultivation, the average size of the remaining fields also decreased significantly (by 36 per cent), from 0.36 ha in 2022 to 0.23 ha in 2023.[26]

Remote sensing data and field reports indicate that opium poppy cultivation was moved to more remote and concealable locations in 2023, including yards and other confined areas, hidden from sight. Farmers may have done so to avoid eradication of their opium poppy and other potential repercussions. Additionally, some farmers may have attempted to spread the risk of eradication over multiple smaller fields.[27]

At the time of writing, it is too early to provide robust estimates of trends in opium production in Afghanistan in 2024. However, some anecdotal reports have been received of attempts by Afghan farmers to grow more opium poppy in 2024 than in the previous year.[28] There have also been reports of increasing opium poppy eradication efforts across the country in February and March 2024.[29]

Far from indicating a return to pre-2023 levels of opium cultivation and production in Afghanistan, preliminary information of this nature points to ongoing opium production remaining at low levels in the country, although

FIG. 4 Size of opium poppy fields in Afghanistan in 2022 and 2023



Source: UNODC, *Afghanistan Opium Survey 2023*, August 2023.

Note: The whiskers show the range of field sizes for each year. A total of 50 per cent of the values fall within the boxes, and the lines in the boxes indicate the median (50 per cent of values are larger and 50 per cent are smaller). Outliers have been omitted from the graph for clarity.

perhaps slightly higher than in 2023. With opium prices having skyrocketed due to scarcity and speculation, it is not inconceivable that some farmers will risk circumventing the ban and replant opium in 2024. Following a major hike in 2022 and 2023, dry opium prices at the trader level stabilized or even decreased slightly in 2024, from a peak of $802 per kg in December 2023 to just over $700 in January and February 2024,[30] yet remained many times higher than prior to August 2021, when they were consistently below $100 per kg.

It must be stressed, however, that all the above indications of trends remain tentative at the time of writing and are thus potentially subject to change once more reliable information becomes available later in 2024.

Implications of the 2022 ban within Afghanistan

Economic losses in the context of an already impoverished country

Despite a rise in opium prices of more than 60 per cent from May 2022 to May 2023, or a more than ninefold increase from July 2021 to December 2023,[31] the decline in opium production in Afghanistan meant that the aggregated income of farmers from opium production fell by 92 per cent from 2022 to 2023.[32] The decline in opium poppy cultivation was primarily met by an increase in the cultivation of wheat, other cereals and, to a far lesser extent, other crops, but this mitigated the overall loss of income only slightly.

The overall economic losses from not cultivating opium poppy in 2023 amounted to an estimated $1.25 billion in rural areas across Afghanistan. In the four provinces of Farah, Helmand, Kandahar and Nangarhar, where almost 75 per cent of illicit cultivation of opium poppy occurred in 2022, farmers lost some $1 billion upon switching from opium to wheat in 2023.[33]

The decline in farmers' incomes occurred in the context of a rather fragile economic situation. Despite the increased cultivation of food crops, some farmers engaged in negative coping mechanisms such as the sale of assets, including land, livestock and machinery,[34] as prior to the ban opium income was used mostly for food, medical expenses and debt repayment. According to media reports, violent clashes stemming from resistance to the 2022 ban, some resulting in deaths,[35, 36] have been sporadic to date,[37] but as savings and negative coping mechanisms run out, in combination with historically high opium prices, violence could spread, create instability, exacerbate basic humanitarian needs and hinder development efforts.

Final GDP estimates are not yet available for 2023, but preliminary assessment reports suggest that GDP per capita may have continued to shrink in 2023.[38, 39, 40] Moreover, the economic situation has been exacerbated by the consequences of several strong earthquakes in October 2023[41, 42, 43] and the repatriation from neighbouring countries of Afghan refugees without valid documents,[44, 45] with more than 500,000 Afghan refugees having already left Pakistan by mid-January 2024.[46] This may further exacerbate already high rates of unemployment and poverty in Afghanistan.[47]

A shift to methamphetamine manufacture?

The Taliban takeover came at a time when methamphetamine manufacture had been flourishing in Afghanistan. Seizures of methamphetamine in Afghanistan and neighbouring countries increased from some 2.5 tons in 2017 to 29.7 tons in 2021, with an increasing share originating in Afghanistan. Within Afghanistan, annual seizure totals rose rapidly from less than 100 kg in 2019 to nearly 2,700 kg in 2021, suggesting increased production,[48] even though the country's overall methamphetamine sector still seems to be relatively small compared with countries in South-East Asia and North America.[49]

In contrast to opium and heroin, it is not possible to estimate the size of methamphetamine production precisely, which makes it more challenging to understand trends in the manufacture of the drug. Seizure data give an incomplete picture and can always reflect law enforcement capacity more than actual supply, but when seizures are analysed across countries and in combination with other indicators, they can help to identify possible trends. The seizures made in and around Afghanistan between 2019 and the first quarter of 2023 suggest an expansion in methamphetamine manufacture in the country. A total of 17 countries in Africa, Asia and Europe reported seizures of methamphetamine originating in Afghanistan between 2019 and 2022.[50] In particular, Iran (Islamic Republic of) and Pakistan have reported that most of the methamphetamine seized on their territory in recent years had departed from Afghanistan.[51, 52]

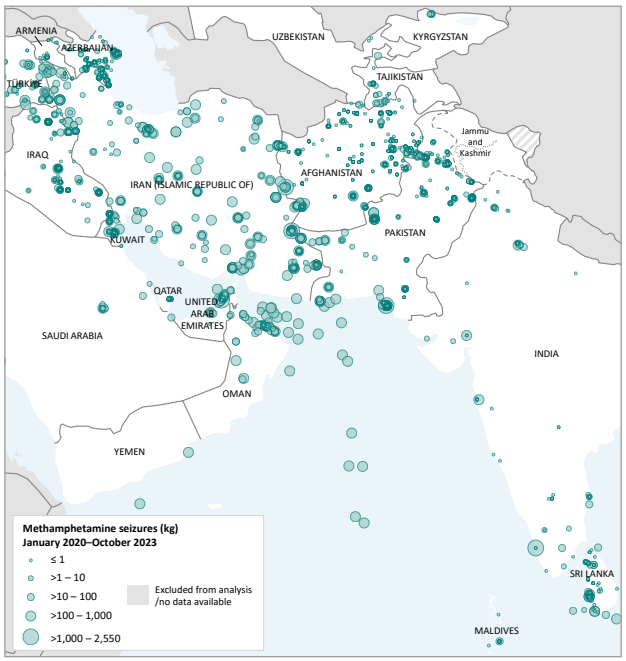
The trend in seizures of methamphetamine made in the countries in South-West Asia neighbouring Afghanistan, taken as an indication of the trend in the manufacture of the drug in Afghanistan, does not suggest that the 2022 ban in the country had much of an impact. Metham-

phetamine seizures reported by Iran (Islamic Republic of) and Pakistan continued rising in 2022, although those in Afghanistan fell.[53] Whether this was due to lower production, the relocation of manufacturing sites to avoid detection or lower law enforcement priorities is not entirely clear, however.

The *Ephedra* plant grows in the wild and the ephedrine it contains can be used as an inexpensive precursor in the manufacture of methamphetamine,[54] but it is not the only precursor substance that can be used. Others are ephedrines extracted from cold medicine, or bulk ephedrine of very high purity diverted from the pharmaceutical supply chain.[55] An analysis of costs and benefits of possible precursors used in the manufacture of methamphetamine in Afghanistan suggests that it is unlikely that the *Ephedra* plant will remain the main source of the methamphetamine trafficked in and around Afghanistan if production continues on a large scale. Cost is just one factor in the decision-making process of manufacturers, however, with seasonal variations in availability and the risk of detection also likely to play a role.[56]

The closure by the Taliban in mid-September 2023 of the Abdul Wadood bazaar in the province of Farah, which was reportedly one of the main hubs for the sale of wild-grown ephedra, together with actions taken by the authorities against ephedrine laboratories in the surroundings,

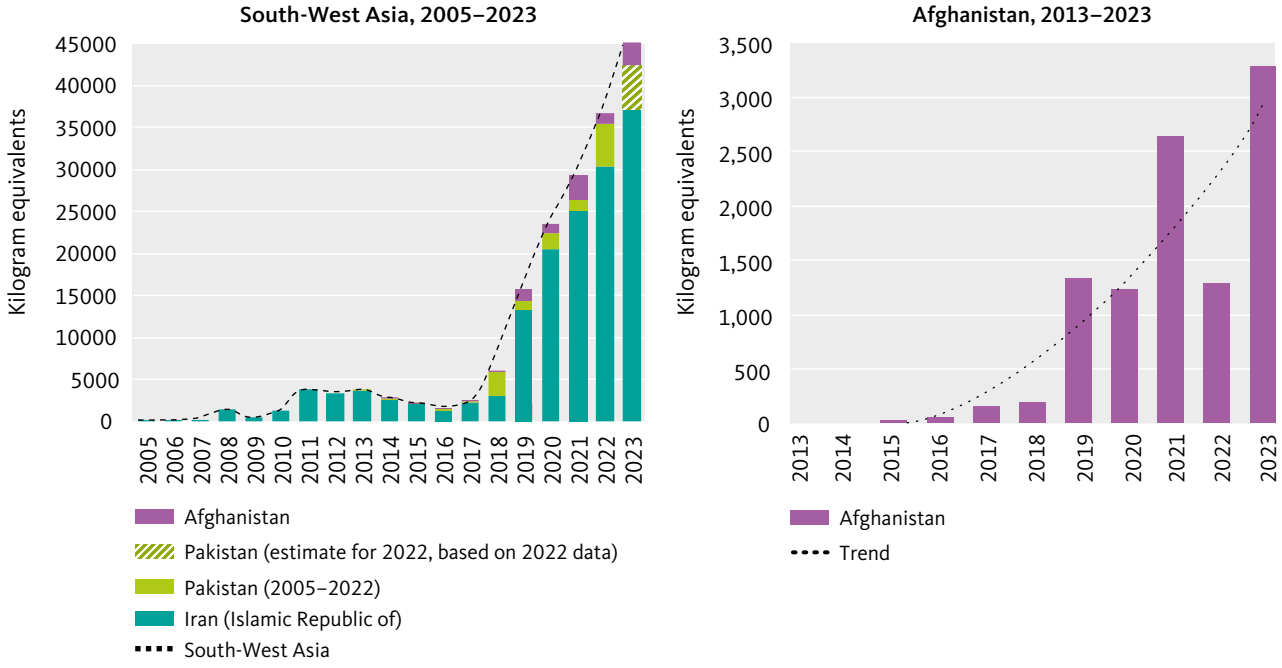
MAP 2 Significant individual seizures of methamphetamine in South-West Asia and neighbouring subregions, January 2020–October 2023



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

Source: UNODC, Drugs Monitoring Platform.

FIG. 5 Quantities of methamphetamine seized in South-West Asia, 2005–2023



Source: UNODC, *Afghanistan Opium Survey 2023*, August 2023.

methamphetamine laboratories across the country and to prevent ephedra harvesting, most notably in Bamyan, Herat, Ghor, Sar-e Pul, Uruzgan and Faryab,[57] suggest that there has been a will in the country to stop methamphetamine manufacture.[58]

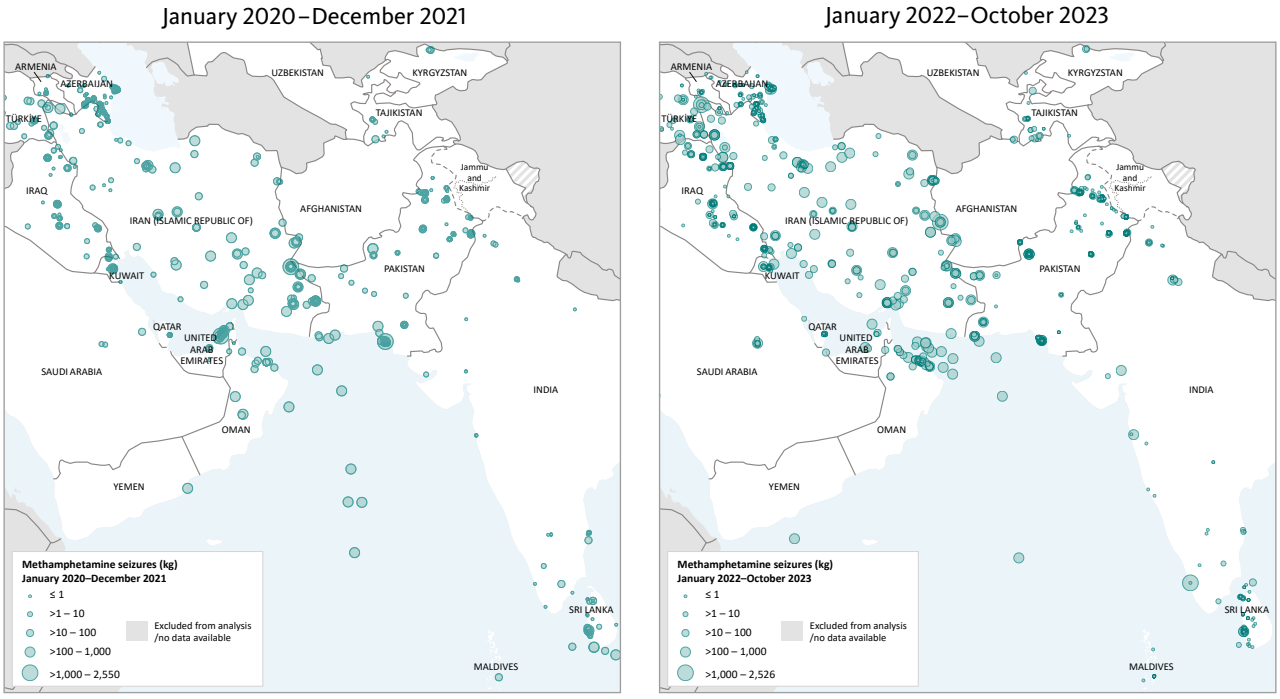
Methamphetamine seizures reported by the Afghan de facto authorities more than doubled in 2023 to 3.3 tons, a record high.[59] At the same time, there were indications, that methamphetamine manufacture continued, in more isolated areas than in the past,[60] and that the smuggling of methamphetamine out of Afghanistan also continued.[61]

High-purity methamphetamine, likely manufactured from precursor chemicals rather than the Ephedra plant,[62] has been increasingly reported outside the country. The Islamic Republic of Iran, one of the main transit countries for Afghan methamphetamine, reported an increasing occurrence of "illicit trafficking in high-purity methamphetamine originating in Afghanistan through its territory in 2023.[63] In parallel, there are reports that in Southern Africa, a key destination for Afghan methamphetamine in recent years, the quality of Afghan methamphetamine has improved and matched the quality of methamphetamine from Mexico, Nigeria and East and South-East Asia.[64]

The quantity of methamphetamine seized in the Islamic Republic of Iran continued to increase in 2023, from a national record high of 25 tons in 2021 and 30 tons in 2022[65] to a new record of 37 tons in 2023,[66] which is more than the total quantity of methamphetamine seized in South-West Asia in 2022. The drug was mainly intercepted in the eastern part of the country, near the border with Afghanistan.[67] In the case of Pakistan, an analysis of significant methamphetamine seizure events also shows a marked increase in 2023.[68]

An analysis of significant individual methamphetamine seizures reported in countries neighbouring Afghanistan in the periods 2020–2021 and 2022–2023 (before and after the drug ban) does not reveal any significant changes in seizure patterns. Individual methamphetamine seizures made in countries where there is a clear pattern of Afghan origin, also show a continued increase after the drug ban. Thus, the overall impact outside Afghanistan of the drug ban on methamphetamine manufacture within the country seems to have been quite limited so far. The overall

MAP 3 Significant individual seizures of methamphetamine in South-West Asia and neighbouring subregions, excluding Afghanistan, 2020–2023



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

Source: UNODC, Drugs Monitoring Platform.

FIG. 6 **Trend in the quantities of methamphetamine seized in significant seizure events in South-West Asia, Central Asia and the Gulf of Oman, 2020–2023**

Source: UNODC, Drugs Monitoring Platform.

Note: As reporting is ongoing, data on significant individual methamphetamine seizures made in the fourth quarter of 2023 may be still incomplete.

proportion of significant individual methamphetamine seizures made at sea (Indian Ocean, Arabian Sea and Gulf of Oman) out of all methamphetamine seizures potentially linked to clandestine methamphetamine manufacture in South-West Asia,[69] rose from 8 per cent in 2020 to 13 per cent in 2022 and 18 per cent in 2023, clearly indicating a rise in maritime trafficking of methamphetamine in recent years.[70]

It remains difficult, however, to determine with any degree of certainty the extent to which the increasing quantities of methamphetamine seized outside Afghanistan have been linked to methamphetamine manufactured within the country and whether methamphetamine exports from Afghanistan have thus continued to rise.

In Afghanistan, the impact of the 2022 drug ban and the drastic reduction in opium production on methamphetamine production remains to be seen. Continued enforcement of the ban on methamphetamine could eventually help reduce trafficking in methamphetamine, although it could also lead to the displacement of methamphetamine manufacture to other countries in the region, especially those where precursor chemicals are more readily available.

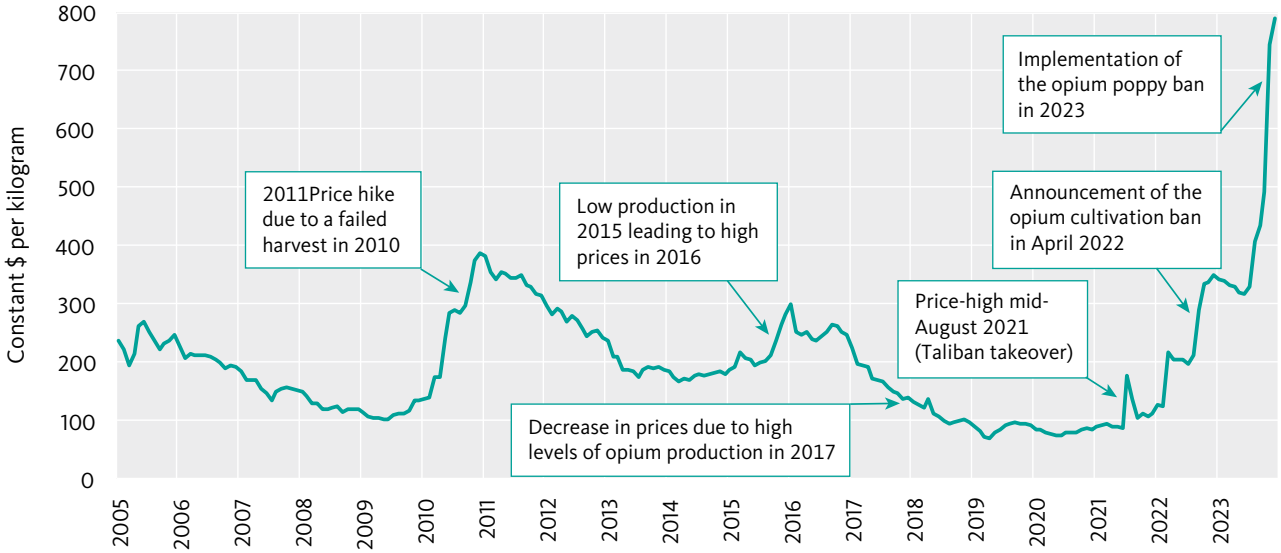
Impact of the 2022 ban: who has benefited and who has lost out?

Opium poppy farmers initially benefited from the Taliban takeover and the announcement of the opium ban in 2022. The 2022 opium harvest was slightly smaller than in 2021, but the opium price rose rapidly and as a result the aggregated income of farmers from the sale of opium more than tripled, from $425 million in 2021 to $1,360 million in 2022, the equivalent of 9 per cent of the country's overall GDP. In terms of the country's agricultural GDP, the value of opium production increased from 9 per cent in 2021 to 29 per cent in 2022.[71] Similarly, the overall income from Afghan opium and heroin exports of $1.7 billion to $2.5 billion in 2021[72] (12–18 per cent of overall GDP)[73] rose again in 2022.[74]

In 2023, despite further increases in opium prices, the aggregated income from the sale of opium at farm gate value fell by 92 per cent, from $1,360 million to $110 million, due to the actual reduction in opium poppy cultivation, or by 75 per cent compared with the average income in the period 2018–2021.[75] Most opium farmers subsequently switched to wheat cultivation, with great losses. In 2023, per-hectare income from wheat was $770, some 92 per cent less than per-hectare income from opium poppy ($10,000).[76,77]

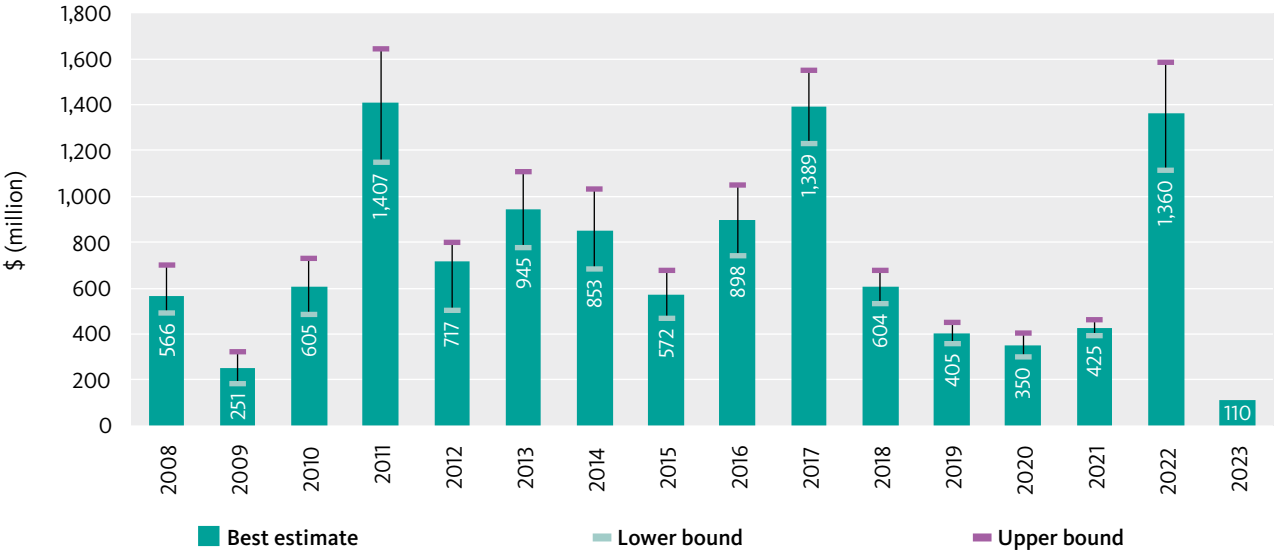
Some farmers may have benefited from rising prices when selling opium from previous harvests. Based on previous research, however, farmers may not have had large inventories, because some 80 per cent of the opium harvest is usually sold by farmers within the same year[78] to meet basic needs, such as food, medical expenses or debt repayment.[79] Thus, traffickers along the supply chain who had opium inventories probably gained the most from the sharp price increase triggered by the drastic decrease in illicit cultivation. Preliminary seizure data suggest that Afghan traders exported large amounts of opium in 2023, probably to clear their inventories and benefit from the extraordinarily high prices.[80]

FIG. 7 Monthly dried opium prices at farm gate level in Afghanistan, in constant $ per kilogram, January 2005–December 2023 (adjusted to December 2023)



Sources: UNODC, *Afghanistan Opium Survey 2023*; UNODC, Price Monitoring System; and United States Bureau of Labor Statistics, Consumer Price Index for All Urban Consumers (CPI-U).

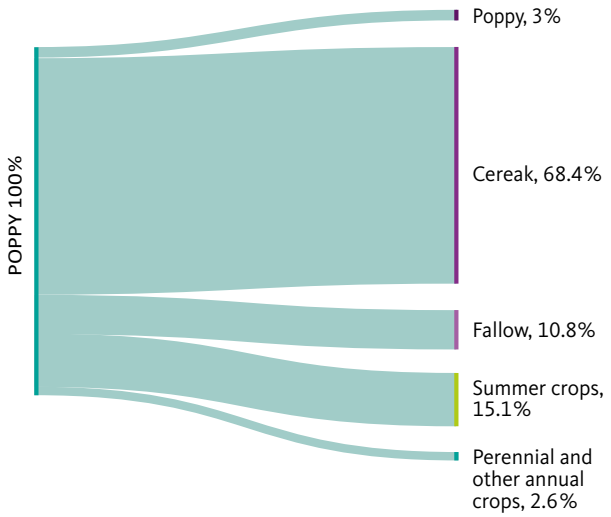
FIG. 8 Estimated income of farmers from the sale of the opium harvest to traders, 2008–2023



Source: UNODC, *Afghanistan Opium Survey 2023*.

Note: Farmers' income is calculated on the basis of the average sales price of opium during harvest time.

FIG. 9 **Crops cultivated on former opium poppy fields in Farah, Helmand, Kandahar and Nangarhar in 2023**



Source: UNODC, *Afghanistan Opium Survey 2023*.

Understanding who has benefited and who has lost out from changes in methamphetamine manufacture is more challenging. Compared with opium production, which can involve hundreds of thousands of farmers and opium harvesters, the workforce in the Afghan methamphetamine sector mostly comprises the labourers who collect wild-grown ephedra (a very time-consuming exercise),[81] while the subsequent manufacture of the drug, as is the case with other synthetic drugs, requires far fewer people.[82] It is therefore likely that the effects of changes in the production of methamphetamine could be less spread across large communities and more concentrated among fewer people.

Implications for drug use in Afghanistan

Changes in opium and methamphetamine production are also likely to affect the domestic market in Afghanistan. Drug use has already diversified in the last decade, with higher levels of synthetic drug use than opiate use among young people.[83, 84] The use of synthetic drugs such as methamphetamine has been increasingly reported in different assessments as well as in people in treatment for drug use disorders in Afghanistan.[85, 86, 87, 88]

The most recent drug use survey in the country was conducted in 2018 among secondary school students aged 13–18 years. Some 12 per cent (14 per cent of boys and 8.5 per cent of girls) reported using any substance (including alcohol) at least once in the past 12 months.[89] In contrast to many other countries, there was no significant difference in the extent of drug use among people aged 13–18 years between urban and rural areas. The use of cannabis, heroin and opium was reported to be higher among boys than girls, whereas the use of tranquillizers or pharmaceutical opioids was at comparable levels. Past-year use of methamphetamine and tablet K was at the same level as heroin among adolescents. Overall, 1.3 per cent of the students reported using heroin, the same percentage as methamphetamine, while 1.8 per cent reported using tablet K.

An analysis of more than 500 samples of tablet K collected between September 2020 and March 2021 in Afghanistan revealed the presence of 26 different substances, but methamphetamine was identified in most samples analysed (74 per cent), either as the main substance (42 per cent), or in combination with opioids (mostly heroin or tramadol; 32 per cent), while only a smaller proportion contained mainly MDMA (23 per cent).[90]

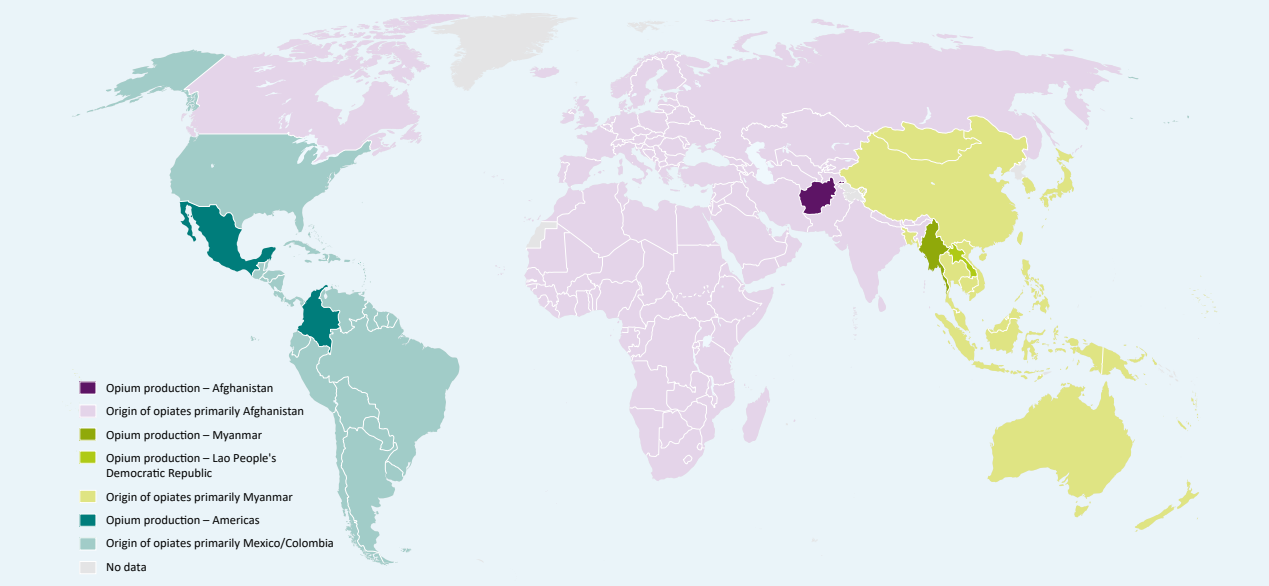
A drastic reduction in the availability of opiates could drive increases in the demand for other and possibly more potent synthetic opioids, particularly if evidence-based treatment services to support recovery do not become widely available. Changes in the supply of methamphetamine could also lead to increased use of other stimulant substances.

Implications of the 2022 ban outside Afghanistan

Up until 2022, Afghanistan accounted for a major share, often more than 80 per cent, of global illicit opium production. Therefore, the implementation of the April 2022 drug ban, if sustained over time, is likely to have a major impact on the global supply of opiates and on opiate demand in the markets supplied by opiates from Afghanistan. It has been estimated that around 80 per cent of all opiate users worldwide consumed opiates from Afghanistan in 2021,[91] the majority in Africa, Asia (except East and South-East Asia), Europe and one country in North America (Canada).

Recent comprehensive data on trafficking in opiates in transit countries and on their non-medical use in major consumer markets, which would provide information on the impact of the opium ban in Afghanistan, are not yet available.

MAP 4 Main identified source countries of opiates in consumer markets, 2018–2022



The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations. The final boundary between the Republic of Sudan and the Republic of South Sudan has not yet been determined. 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. A dispute exists between the Governments of Argentina and the United Kingdom of Great Britain and Northern Ireland concerning sovereignty over the Falkland Islands (Malvinas).

Sources: UNODC, responses to the annual report questionnaire; and UNODC, Drugs Monitoring Platform.

The first Taliban opium ban of 2000 and its consequences

On 27 July 2000, the Taliban supreme leader issued a decree imposing a total ban on opium poppy cultivation in Afghanistan, which became effective immediately and affected the harvest season of 2001.[a] As a consequence, opium production in Afghanistan declined by 94 per cent, from 3,276 tons in 2000 to 185 tons in 2001. Most of the remaining opium production in Afghanistan came from areas that were at the time controlled by the Northern Alliance.[b] The Taliban opium ban was short-lived, however, and opium production started to increase again the following year.[c]

Seizures of opium in South-West Asia, Central Asia and Türkiye declined by half over the first three quarters of 2001, while heroin seizures remained largely stable, pointing to the existence of opiate stocks along the supply chain.[b.] Afghan opium prices, however, reacted immediately to the ban and rose more than tenfold in one year, from $28 per kg in April/May 2000 to $300 per kg in April 2001, before rising further to around $700 per kg in the week prior to 11 September 2001.[b] Prices also increased, albeit less significantly, in neighbouring countries. Between early 2001 and mid-2002, opium prices increased five to sixfold in Iran (Islamic Republic of), Pakistan and Tajikistan, while heroin prices rose 2.5 to fourfold.[d] In contrast, heroin prices in Western Europe were not much affected by the price rises in Afghanistan; wholesale prices continued to decline (by some 10 per cent) in 2001 and remained stable in 2002, but reductions in heroin purity were reported in France, Türkiye and the United Kingdom of Great Britain and Northern Ireland, starting in 2001.[b] In the United Kingdom, purity-adjusted prices of heroin at retail level rose by some 70 per cent between the first quarter of 2001 and mid-2002.[d]

Given the short duration of the opium ban, the price hike did not last long. The overall impact of the shortage on treatment demand and deaths in Europe was not particularly pronounced;[e] it seems that most markets in the region bounced back after an initial shock, except in Estonia and Finland.[f, g]

Closer to Afghanistan, in the Islamic Republic of Iran, it seems that some users of opium shifted to heroin due to the shortage of opium in the market, and that some of them switched to the intravenous route, which was considered to be a more efficient form of administration, thereby increasing the risks of blood-borne disease transmission.[f, h, i]

a United Nations Office for Drug Control and Crime Prevention, *Global Illicit Drug Trends 2001* (New York: ODCCP Studies on Drugs and Crime, 2001).

b United Nations Office for Drug Control and Crime Prevention, *Global Illicit Drug Trends 2002*, ODCCP Studies on Drugs and Crime – Statistics (New York, 2002).

c William Byrd and Christopher Ward, *Drugs and Development in Afghanistan*, 18 vols. (World Bank, Social Development Paper, 2004).

d Thomas Pietschmann, "Price-Setting Behaviour in the Heroin Market", *Bulletin on Narcotics* LVI, Nos. 1 and 2 (2004).

e UNODC, responses to the annual report questionnaire.

f UNODC, *World Drug Report 2022*: Booklet 3 (Vienna, 2022).

g Jonathan P. Caulkins et al., "The Baltic and Nordic responses to the first Taliban poppy ban: implications for Europe & synthetic opioids today", *International Journal of Drug Policy*, 124 (1 February 2024).

h Afarin Rahimi-Movaghar et al., "Transition to injecting drug Uue in Iran: a Systematic review of qualitative and quantitative evidence", *The International Journal on Drug Policy*, 26, no. 9 (September 2015), pp. 808–19.

i Masoumeh Amin-Esmaeili et al., "Profile of people who inject drugs in Tehran, Iran", *Acta Medica Iranica* (2016), pp. 793–805.

While it can be argued that opiate inventories in Afghanistan and along the main trafficking routes from Afghanistan[92] can mitigate the impact of the opium ban in the first year, the exact locations of such inventories and their capacity to compensate for the 95 per cent reduction in opium production of 2023 remain unclear.

The total quantity of opiates seized (expressed in heroin equivalents) in countries supplied by Afghan opium production declined in 2022 (-30 per cent compared with 2021), a year after the Taliban takeover, when opium production was still high in Afghanistan. It was the strongest decline in a single year for the last three decades, although not all countries and subregions registered a decline.[93]

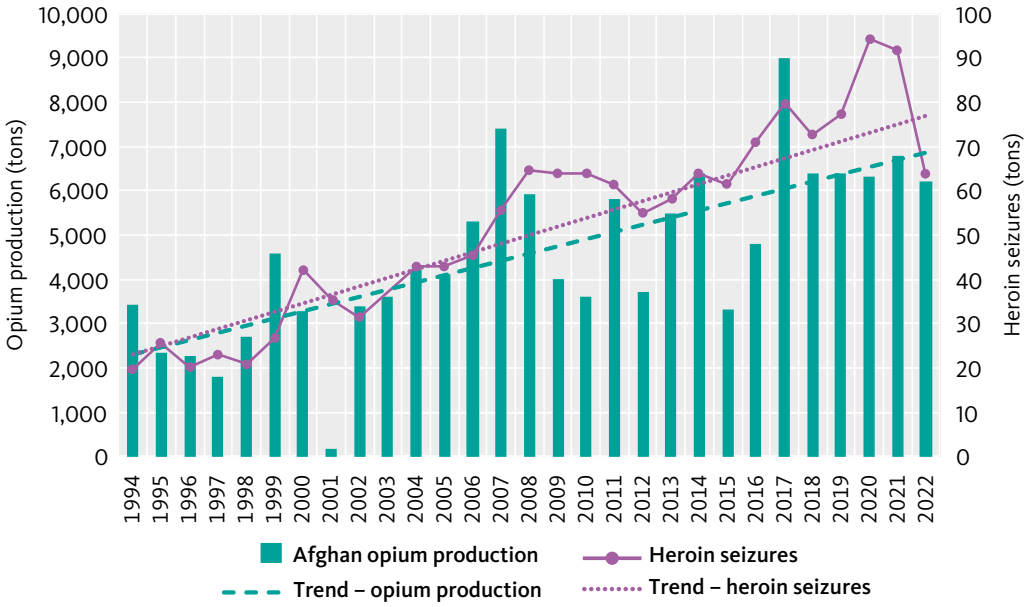
The year 2022 saw substantial declines in heroin seizures from the previous year in Afghanistan and many other countries and regions affected by Afghan opiates. In Western and Central Europe, however, heroin seizures remained rather stable, while a moderate increase was reported in Pakistan and a large increase was reported in the United Arab Emirates.[94]

It is challenging to interpret these changes and establish whether they reflect shifting routes, a lower level of supply and trafficking or the retention by traffickers of inventories in anticipation of the implementation of the 2022 ban and potential price increases.[95] Data on

CHANGES IN HEROIN SEIZURES 2021–2022

INCREASE	
United Arab Emirates	+334%
Pakistan	+24%
STABILITY	
Western and Central Europe	+1%
DECLINE	
Near and Middle East	-6%
Africa	-18%
South Asia	-20%
Iran	-32%
Central Asia and Transcaucasia	-42%
Afghanistan	-47%
Eastern Europe	-58%
South-eastern Europe	-66%

FIG. 10 **Estimated income of farmers from the sale of the opium harvest to traders, 2008–2023**



Correlation coefficient between Afghan opium production and heroin seizures related to Afghan opiates:
R = 0.75

Volatility: standard deviation of annual growth rates of Afghan opium production:
s = 3.30
Heroin seizures related to Afghan opiates:
s = 0.18

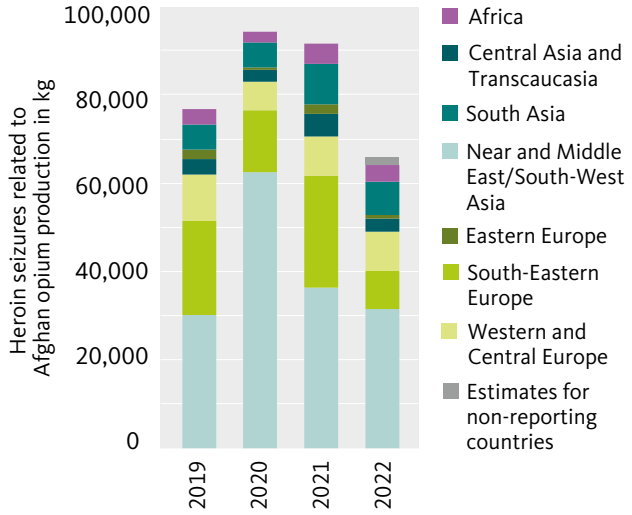
Sources: UNODC, *Opium Cultivation in Afghanistan*, 2023 and previous years; and UNODC, responses to annual report questionnaire.

Note: Heroin seizures primarily linked to Afghan opiates (based on information from the annual report questionnaire) refer to heroin seizures made in (a) South-West Asia and the Near and Middle East; (b) Central Asia and Transcaucasia; (c) South Asia; (d) Africa; and (e) Europe.

individual seizures suggest a shift towards trafficking in opiates via sea routes. The overall share of heroin seized on boats destined for markets in Western and Central Europe was 32 per cent in the period 2010–2019 and it increased to 59 per cent in the period 2021–2023.[96] The drop in seizures in Central Asia and the Russian Federation, on the other hand, fits the ongoing evolution of drug markets in that part of the world, with more people using synthetic drugs and NPS and fewer using opiates.[97] In addition, the strong decline in seizures in Eastern Europe in 2022 could be related to the armed conflict in Ukraine and subsequent readjustments in trafficking routes across the region.[98]

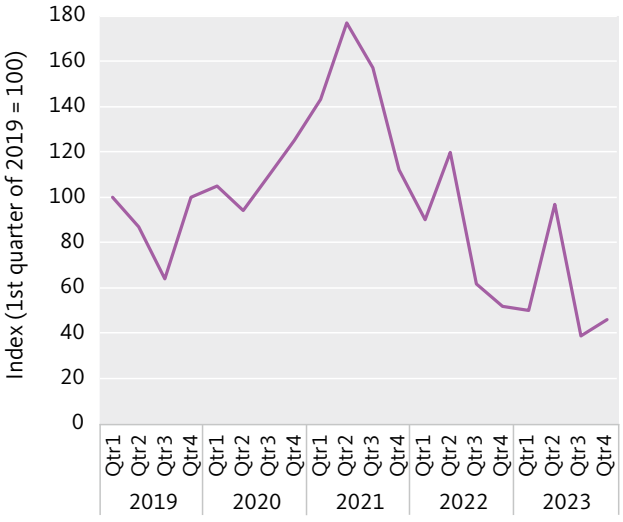
Past seizure data have shown that it can take between a few months and one and a half years for opiates originating in Afghanistan to reach final destination countries, depending on their distance from Afghanistan and the

FIG. 11 Heroin seizures in regions/subregions primarily supplied by Afghan opiates, 2019–2022



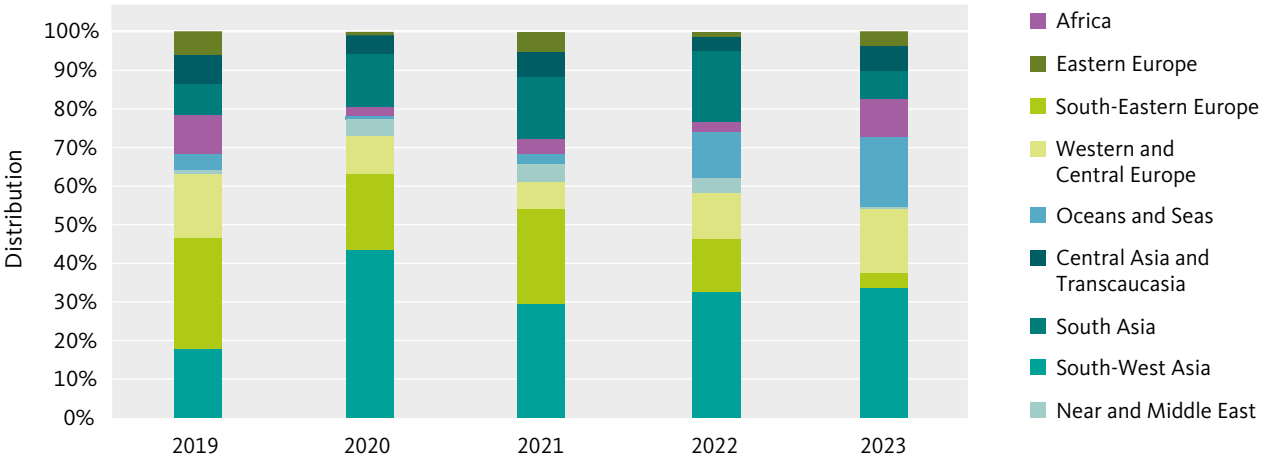
Source: UNODC, responses to the annual report questionnaire.

FIG. 12 Quarterly individual heroin seizures in regions/subregions primarily supplied by Afghan opiates in the period 2020–2023



Source: UNODC, Drugs Monitoring Platform.

FIG. 13 Distribution of quantities of heroin seized related to Afghan opium production, reported in significant individual heroin seizures, 2019–2023



Source: UNODC, Drugs Monitoring Platform.

Note: Oceans and Seas include the Gulf of Oman, Arabian Sea and Indian Ocean.

mode of transport used. Thus, a decrease in opium production in Afghanistan would result in a shortage of supply within a few months in South-West Asia, while the same shortage could take up to a year (or slightly longer) to be felt in destination markets in Western Europe in the case of trafficking by land.[99]

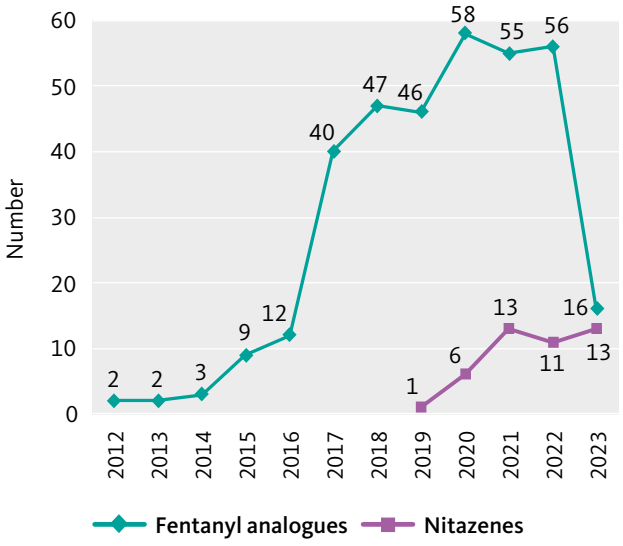
Global seizure aggregates for 2023 are not available, but data on individual heroin seizures suggest that the declines observed in 2022 continued in most subregions in 2023, with the exception of Central Asia and Transcaucasia and Eastern Europe, where individual seizures increased.[100] It is not clear if this increase, which is in contrast to the declines observed in most other subregions, is a sign that traffickers have been attempting to smuggle more opiates via the northern route (running from Afghanistan via Central Asia to Eastern Europe).

At the time of writing, there are no clear signs of shortages in heroin supply in large destination markets in Western Europe, but anecdotal information points to situations where the drop in Afghan opium production may already have had consequences.

In particular, nitazenes, a group of synthetic opioids that had already appeared on the market a few years ago in the United States of America[101] and Western Europe,[102] as well as in South America and Oceania,[103] seem to be spreading.[104] Some nitazenes are more potent than fentanyl[105, 106] and have led to fatal outcomes in Western and Central Europe and North America.[107] Since 2009, a total of 78 new uncontrolled opioids have been identified on the European market, including 13 highly potent benzimidazole (nitazene) opioids.[108] In parallel, a growing number of new nitazenes has been reported in recent years. The number of new unique nitazenes at the global level is now approaching the number of fentanyl analogues,[109] while the number of new unique nitazenes reported in Europe has been higher than the number of fentanyl analogues since 2021.[110]

Possibly as a consequence of less heroin being available on local markets in Ireland, etonitazepyne (N-pyrrolidino etonitazene) [111] and protonitazepyne (N-pyrrolidino protonitazene) started being sold as heroin on the streets of Dublin and Cork in late 2023, which led to a wave of overdoses according to media sources,[112, 113] totalling 77 cases in the two cities in November and December 2023.[114] Significant numbers of overdoses linked to etonitazepyne had previously only been reported in the United States[115] and, to a lesser extent, in Canada,[116] while it was also identified in Belgium, Slovenia and the United Kingdom.[117]

FIG. 14 **Number of unique fentanyl analogues and nitazenes reported to the UNODC Early Warning Advisory at the global level, 2012–2023**



Source: UNODC, Early Warning Advisory on New Psychoactive Substances, Nitazenes – a new group of synthetic opioids emerges (February 2024).

Note: Data for 2023 are still preliminary.

Reports from the United Kingdom suggested the emergence of high-potency nitazenes on the market in 2023.[118] Since these substances were sold as or mixed with other substances such as other opioids, benzodiazepines and synthetic cannabinoids,[119] many users were unaware that they were consuming nitazenes, leading to 54 deaths from 1 June to 7 December 2023.[120] The National Crime Agency, however, had not, as at December 2023, found evidence of a link between the current wave of deaths related to nitazenes and the opium ban in Afghanistan. Nonetheless, the Agency has warned that the further spread of nitazenes with fatal consequences remains a possibility in the future, once existing heroin inventories have been depleted.[121]

Data from the Baltic countries also show that the introduction of nitazenes can rapidly affect trends in drug-related mortality. Isotonitazene has been detected in Estonia since 2019, while other nitazenes have increasingly been identified in post-mortem analyses of drug deaths since 2022. In 2023, according to preliminary data, nitazenes had already been identified in 48 per cent of all drug deaths in Estonia, mostly linked to protonitazene, followed by metonitazene.[122] In Latvia, the proportion of nitazenes involved in drug-related deaths reached 29 per cent in 2023 and was mostly linked to the use of isotonitazene.[123]

In the Islamic Republic of Iran, it seems that the availability of heroin started to decline as a result of traffickers' strategies to export the drug to more lucrative markets abroad, and domestic heroin prices rose over the last few months of 2023. According to anecdotal reports, this led to increasing demand on the illegal market for an opium tincture that is used as an unofficial form of opioid substitution therapy in the Islamic Republic of Iran.[124]

Possible longer-term implications of the 2022 ban

Shifts in the supply of opiates to other countries

The reduction in opium production in Afghanistan could be compensated for, at least partially, by an increase in production elsewhere, in the same subregion or beyond, potentially in countries where opium is already being produced or has been produced in the past and where control of the territory may be challenging due to insurgency or conflict.

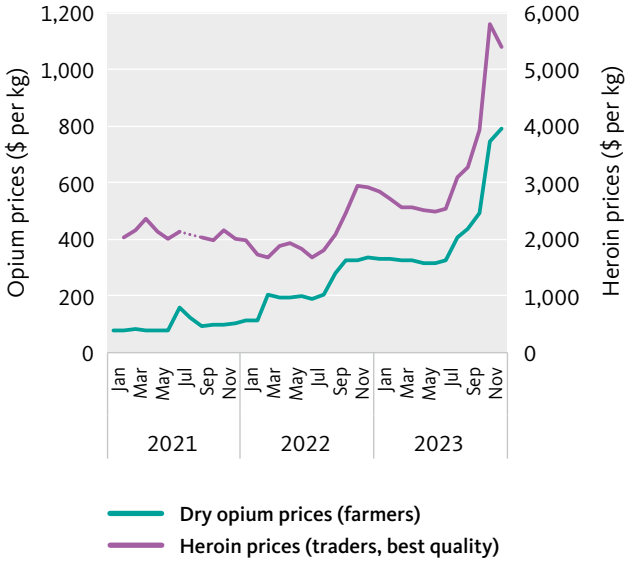
There could be, for example, some shifts involving a move of cultivation from eastern Afghanistan to adjacent regions in the tribal areas of Pakistan. Increases in opium production could also take place in Myanmar, where a series of conflicts are affecting different parts of the country (see chapter on the Golden Triangle). Opium production in Myanmar has already increased from 423 tons in 2021 to 790 tons in 2022 and 1,080 tons in 2023, a 2.5 fold increase in two years.[125] It is, however, unlikely that such production increases could compensate for the Afghan shortfall of some 6,000 tons of opium in the short term.

Changes in demand for opiates, including shifts to other drugs, decrease in heroin purity and increase in treatment demand

The impact of the shortage of Afghan heroin on drug use patterns in destination countries is unpredictable and is likely to vary in accordance with local market conditions and levels of provision of drug treatment and other services. An analysis of the impact in countries in Northern Europe of the 2001 opium ban in Afghanistan showed that the drastic shortage of heroin led to a shift to the use of different substances. For example, heroin was largely replaced by fentanyl and its derivatives in Estonia, and by buprenorphine in Finland. In Norway, the reduction in the high number of drug overdoses occurring before 2001 coincided with a fall in heroin purity in 2001, increased access to methadone treatment and a relative increase in methamphetamine use.[126]

One likely consequence of the heroin shortage will be an increase in opiate prices, which could reduce the demand for heroin. Afghan opium and heroin prices have already started rising and, while the opium price accounts for a very small percentage of the price of heroin sold at destination, increases may eventually also take place in the main consumer countries as a result of the shortage in the heroin supply.

FIG. 15 **National opium and heroin prices in Afghanistan, January 2021–December 2023**

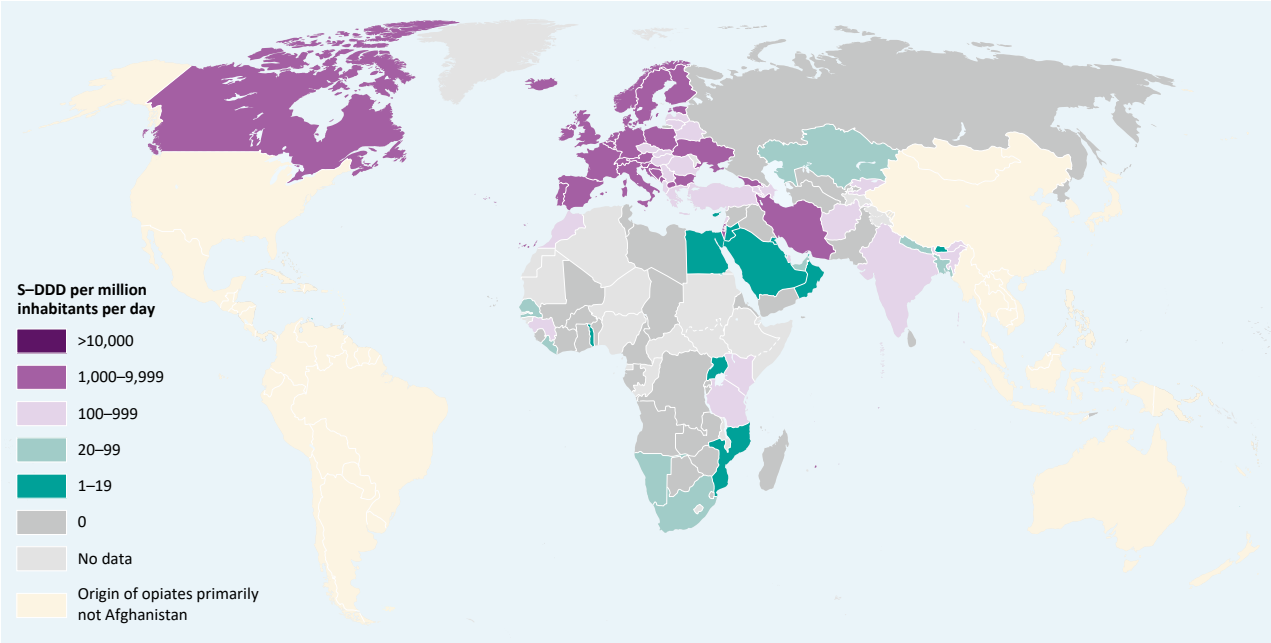


Source: UNODC, Price Monitoring System.

Higher prices can reduce opiate consumption, making it less attractive for new users to enter the market while prompting existing users to consume less or leave the market (for example, by entering substitution treatment instead, if available).[127] A systematic review in 2020 of heroin price elasticities (based on 19 studies carried out between 1995 and 2018 worldwide) found that a 10 per cent increase in the purity-adjusted price of heroin would reduce heroin consumption by, on average, 9.4 per cent (range: -2 to -21 per cent).[128]

Users transitioning to other substances is another possible outcome, given that the global market is increasingly complex and characterized by a number of drugs being offered in many places, some of them depressants like opioids or with similar effects to opiates.[129,130] The specific substances that may replace heroin will depend on the supply and demand dynamics in each country, including their availability on the licit or illicit markets.

MAP 5 Availability of methadone and buprenorphine for medical consumption, 2020–2022



The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations. The final boundary between the Republic of Sudan and the Republic of South Sudan has not yet been determined. 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. A dispute exists between the Governments of Argentina and the United Kingdom of Great Britain and Northern Ireland concerning sovereignty over the Falkland Islands (Malvinas).

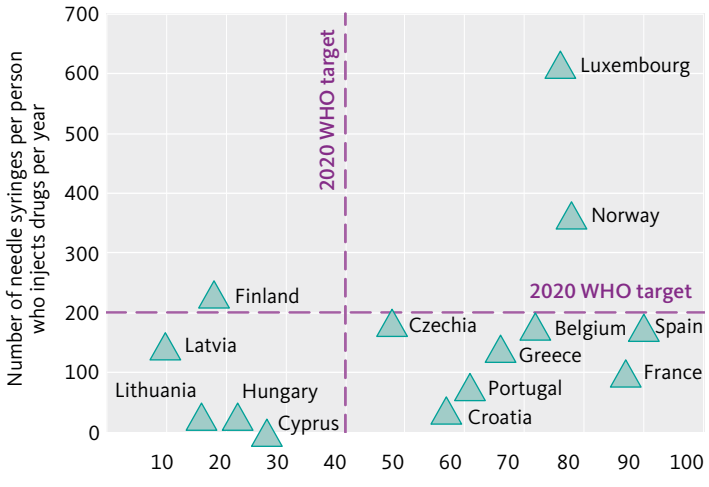
Source: INCB, Narcotic Drugs: Estimated World Requirements for 2024; Statistics for 2022 (E/INCB/2023/2).

Note: S-DDDs refers to "defined daily doses for statistical purposes" as defined by INCB. They are technical units of measurement for the purposes of statistical analysis and are not recommended daily prescription doses; actual doses may differ depending on treatments required and medical practices.

Purity levels are also likely to decline in consumer markets, notably at the retail level where traffickers often try to compensate for availability shortages by adding cutting agents and adulterants. Adulteration may not always be consistent, exposing users to sudden variations in purity and content that can lead to overdoses and even fatal outcomes.[131] As a consequence of a decline in purity, users may also switch to more efficient routes of administration such as injection,[132] which, in the absence of safe injection practices, may increase the risk of contracting blood-borne diseases such as HIV/AIDS or hepatitis C.[133]

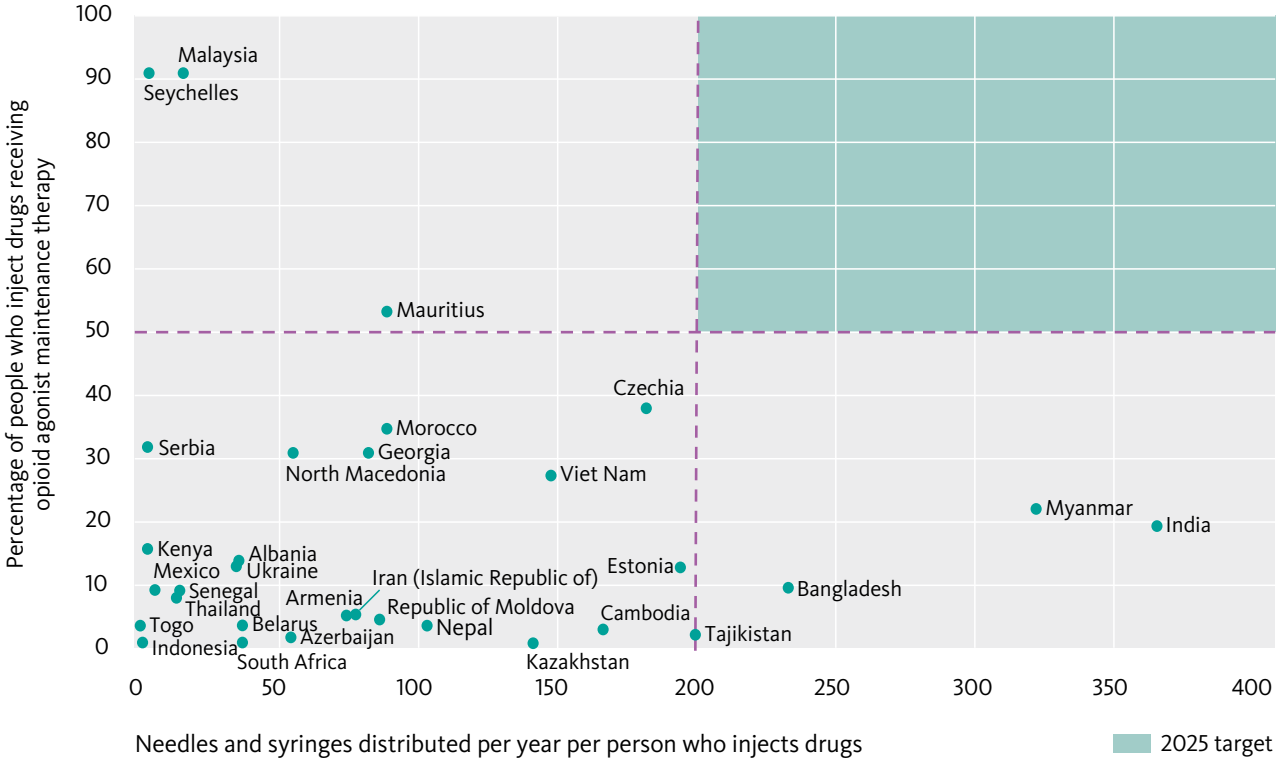
A shortage of opiates in consumer markets may also lead to an increase in the demand for drug treatment, including opioid substitution therapy. Data on the quantities of methadone and buprenorphine available for consumption suggest that opioid substitution therapy is largely available in many countries supplied by Afghan opiates in Western and Central Europe, as well as in the Islamic Republic of Iran, but less so in other countries that are used as either transit or destination countries for Afghan opiates.[134]

FIG. 16 Number of needle syringes distributed per person who injects drugs per year and proportion of high-risk users in opioid substitution treatment in Western and Central Europe, 2019 or latest year available



Sources: UNODC, *World Drug Report 2022*, Booklet 2, based on UNODC, responses to the annual report questionnaire and EMCDDA, Elimination barometer on viral hepatitis among people who inject drugs in Europe.

FIG. 17 Coverage of needle syringe programmes and opioid agonist maintenance therapy among people who inject drugs in countries other than the most advanced OECD countries, 2018–2022



Source: UNAIDS, "Global AIDS monitoring 2023".

One of the potentially most problematic outcomes of a shortage of opiates could be a shift from heroin to other opioids, some of which could be more potent, thus leading to more harmful consequences than heroin.[135] These substances could spread from existing licit or illicit markets or emerge from scratch, as seen in the case of nitazenes in Ireland.

In countries where the non-medical use of pharmaceutical opioids is more prevalent than of heroin, a heroin shortage could be compensated for by an increase in the non-medical use of pharmaceutical drugs. In many East African countries located along the southern route (running from Afghanistan eastward and southward to Asia, Africa, Europe and the Americas) for Afghan opiate exports, for example, the use of heroin generally seems to be rather limited in the subregion and lower than the use of pharmaceutical opioids. In Kenya, data from the latest national household survey (2022) show that the non-medical use of prescription drugs, including sedatives such as benzodiazepines and opioids (mostly codeine) was far more widespread than the use of heroin: 1.1 per cent versus 0.2 per cent of the population aged 15–64 reported non-medical use in their lifetime, and the differences were even more pronounced for annual and past-month use.[136]

In much of West Africa and parts of the Middle East, the non-medical use of tramadol is already widespread.[137] A shortage of heroin may well translate into further demand for tramadol, although such shifts may not be very large in magnitude as the use of heroin is rather limited. A national drug survey in Nigeria revealed, for example, that in 2018, 4.7 per cent of the population aged 15–64 misused pharmaceutical opioids (mostly tramadol, followed by codeine) compared with 0.1 per cent who used heroin.[138]

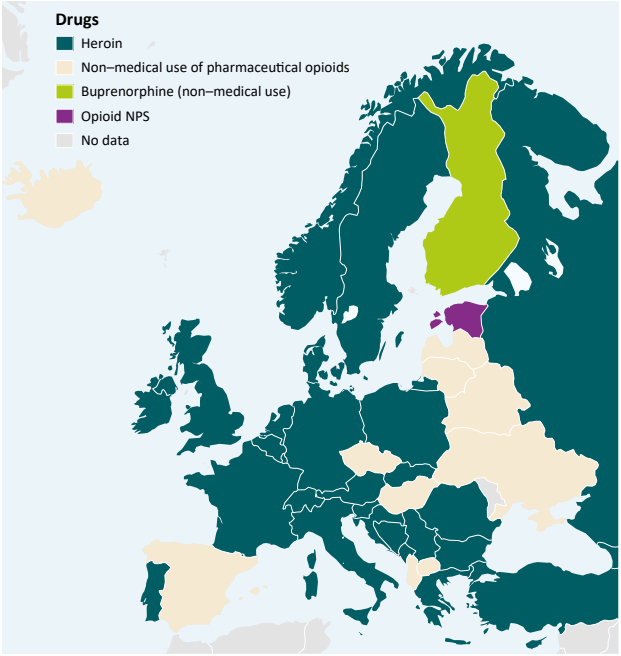
In India, one of the largest opioid markets worldwide,[139] which is supplied to a large extent by Afghan opiates, the non-medical use of pharmaceutical opioids has increased much more than the use of heroin in the past two decades and, in 2018, was almost at the same level as the use of heroin (0.96 per cent versus 1.14 per cent of the population aged 10–75).[140] However, despite similar prevalence of use rates, the reported "problem use"[141] of pharmaceutical opioids (0.23 per cent) is much lower than that of heroin (0.57 per cent).[142] Pharmaceutical opioids frequently

trafficked within India and used for non-medical purposes include codeine (typically contained in cough preparations),[143, 144] tramadol[145, 146] and buprenorphine.[147, 148]

Where heroin is predominantly used, a supply shock may trigger a different reaction. This is the case in Western and Central Europe, where heroin has so far remained the most commonly used opioid for non-medical purposes and is also responsible for a large share of the health burden attributed to drug use.[149, 150] There are exceptions, however, with other opioids dominating the opioid market in some countries.[151]

Indeed, the non-medical use of pharmaceutical opioids cannot be ignored in Western and Central Europe, some of which could provide the basis for overcoming a heroin shortage. In some countries in the subregion, a substantial proportion (20–40 per cent in 2018) of opioid users entering treatment seek help for drug use disorders related to the non-medical use of opioids other than heroin: buprenorphine (Czechia), methadone (Denmark and Germany), "kompot" (Poland) and oxycodone (Cyprus).[152] A multi-indicator analysis conducted in Germany, Italy, Spain and the United Kingdom to assess the extent of misuse among the general population found that codeine, followed by tramadol, morphine and oxycodone, were the most misused pharmaceutical opioids in the period 2015–2018.[153]

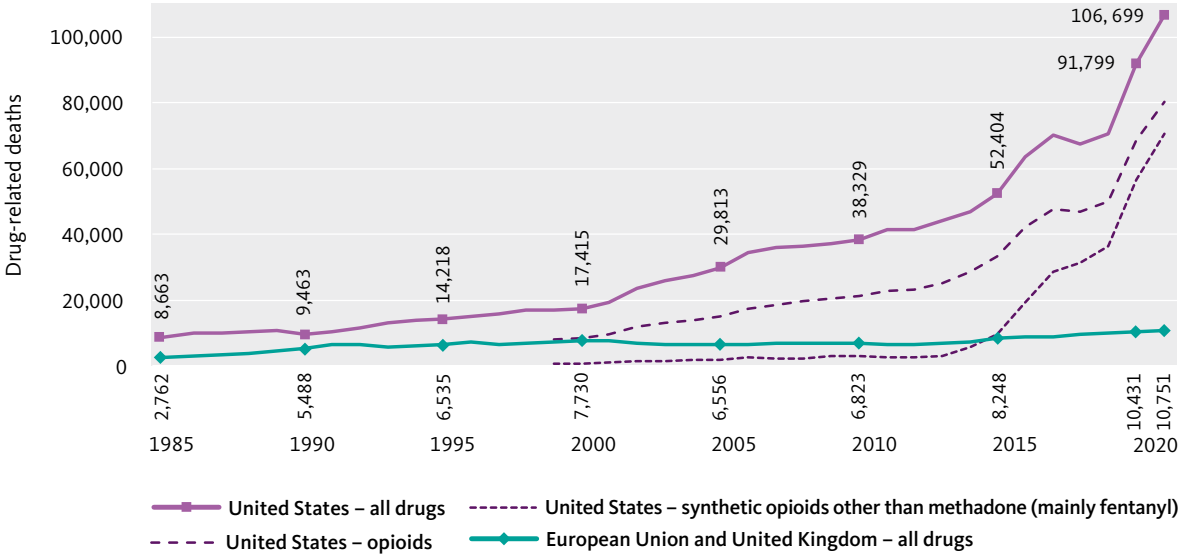
MAP 6 Opioids most used for non-medical purposes in Europe, by country, 2022 (or most recent year available)



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

Source: UNODC, responses to the annual report questionnaire.

FIG. 18 Drug-related deaths in the European Union and the United Kingdom compared with the United States, 1985–2021



Sources: EMCDDA, Statistical Bulletin; UNODC, responses to the annual report questionnaire; ONDCP; and National Institute on Drug Abuse, Drug Overdose Death Rates.

Note: Of the 106,699 people who died from a drug overdose in the United States in 2021, 80,411 cases (75 per cent) were opioid-related, and most of those opioid deaths (close to 88 per cent) were related to the misuse of fentanyl and its analogues. In the European Union, 74 per cent of all overdose deaths were related to the misuse of opioids in 2021.

Such substances can have less harmful health consequences than heroin, but new and potentially more harmful substances could also enter the market, such as fentanyls,[154] nitazenes[155] and various other opioid NPS that have already been identified in several countries worldwide.[156] The example in North America of the current opioid crisis, which has led to record numbers of deaths related to synthetic opioids, in particular fentanyls, illustrates the potential risks of such a shift.[157, 158]

Although the context and initial conditions that led to the development of the current opioid crisis in North America[159, 160] may not be present in other subregions, supply-driven changes in the illicit opioid market leading to the dominance of synthetic opioids could also occur quite quickly in the markets that used to be supplied by Afghan opiates, with both short- and long-term consequences.

In addition to harms to health, the replacement of heroin by synthetic opioids may also have important consequences in terms of drug markets, drug trafficking actors and routes. The production of synthetic opioids can be cheaper, faster and more profitable than of heroin[161] and can open up opportunities to new groups without links to the Balkan route or lead old groups to diversify and modify their supply chains. While these changes may only marginally affect retail distribution, their impact on wholesale and international trafficking may be greater, bringing with it new security challenges.

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ILLEGAL SUPPLY OF DRUGS IN THE GOLDEN TRIANGLE: CONFLUENCE WITH OTHER CRIMES AND IMPACTS

Introduction

The Golden Triangle is situated in the tri-border area of the Lao People's Democratic Republic, Myanmar and Thailand. Opium cultivation was introduced to the region in the late eighteenth century, and it gained its reputation as a major global producer of opium and its derivative, heroin, during the latter half of the twentieth century.[1, 2] The practice in South-East Asia of cultivating opium poppy as a cash crop and traditional medicine developed owing to the region's geographical suitability for opium production, namely, its temperate climate at altitudes above 1,000 metres and scattered, isolated villages.[3]

However, opium poppy's prominence as a major source of illegal income in the region has declined due to both internal and external factors. Within Myanmar, armed conflicts and the growth in demand for synthetic drugs in South East Asia have altered the dynamics of the drug economy in the last 30 years.[4, 5] These factors contributed to a need for criminal groups in the Golden Triangle to diversify their portfolios. The manufacture of synthetic drugs, particularly methamphetamine, and various illegal activities such as online financial scams, wildlife trafficking, illegal resource extraction, trafficking in persons and money-laundering now overshadow the illicit trade in opium.[6] Transnational organized criminal groups have sometimes employed strategies from drug production and trafficking while using casinos or special economic zones (SEZs) to legitimize or conceal the true sources of their proceeds.

The evolution of drug and crime landscapes in the Golden Triangle has often been closely associated with long-standing political and governance challenges, especially in Shan State in Myanmar, coupled with limited border management in lower Mekong countries.[7] Internal conflicts in Myanmar, which have been ongoing since the country's independence and have accelerated significantly since the military takeover in February 2021, have long been closely connected to illicit economies.[8, 9] Various armed groups[10] generate income from a range of illegal activities to advance their political or financial goals,[11] often with tacit support from within corrupt State institutions.[12] The situation undermines good governance, security and political stability, with significant implications for biodiversity, the environment and local communities. In turn, minimal State presence and rule of law facilitate an increasing array of illicit activities by armed and criminal groups.

This chapter builds on the *World Drug Report 2023* (chapter: "The nexus between drugs and crimes that affect the environment and convergent crime in the Amazon Basin"), extending the examination of the convergence of drug trafficking and other illicit activities and how they affect natural ecosystems and communities in the Golden Triangle. It also explores geographical and organizational dimensions, assessing the extent to which illicit drug production and trafficking are linked with other illicit economies that challenge the rule of law and continue to fuel conflicts.

The relationships between drug production and trafficking, crimes against the environment and other criminal activities in the Golden Triangle are intricate, evolving and often multidirectional. Acknowledging the challenges of monitoring active conflict zones, this chapter provides an overview of recent trends and patterns. It draws on official and open-source data, site visits, a review of research literature, official reports, analysis of open-source investigations and qualitative information collected through meetings with experts.[13]

The Golden Triangle

The Golden Triangle lacks agreed-upon or defined borders, but the term, popularized in the 1970s, generally includes Shan State in Myanmar, several northern Thai provinces between the Lao People's Democratic Republic and Myanmar, and northwestern provinces of the Lao People's Democratic Republic.[14] The tri-border region formed by the Mekong River where the Lao People's Democratic Republic, Myanmar and Thailand meet is the approximate epicentre of the Golden Triangle and is the focus of this chapter.

Within the Golden Triangle, there has been a consolidation of industrial-scale drug production in recent years in the special regions of Shan State, which are controlled by armed groups, with a strong presence of organized crime syndicates but virtually no State presence;[15] law enforcement authorities across South-East Asia and in connected markets have identified the Golden Triangle and the special regions as an increasingly important source of drug production.

The region is remote, sparsely populated, biodiverse and rich in natural resources, such as timber, gems and minerals, and rivers. Since the 1990s, the region has seen

Dynamics of armed groups involved in illegal markets in the Golden Triangle region of Myanmar

Many of the groups that control the drug trade in the Golden Triangle today emerged more than 30 years ago, when a number of armed groups established territories in strategically important parts of the Golden Triangle, especially in Shan State in Myanmar. Three of the arguably largest and most powerful groups are the United Wa State Army (UWSA), the National Democratic Alliance Army (NDAA) and the Myanmar National Democratic Alliance Army (MNDAA). These armed groups reached ceasefire agreements with the military Government of Myanmar by the 1990s, which granted them autonomy and permitted them to stay armed.[a] Additionally, the military Government designated special regions, allowing armed groups to engage in business activities, license resource extraction, raise taxes, recruit soldiers and administer the region with some autonomy from the central authority, including in some cases running schools, clinics and local government offices.[b, c, d] The armed groups controlling these special regions often engage in a wide variety of economic activities, including in economic free trade zones but also illegal activities such as drug production and resource extraction.[e] The internal decision-making and power-sharing arrangements of the different groups vary, with some governed by councils and others remaining dominated by a handful of founding individuals.[d, f]

The largest and most powerful non-State armed group is UWSA, which is estimated to have between 20,000 and 30,000 soldiers[g, h, d] and controls a large swathe of mountainous territory in eastern Shan State located between the Salween River and the border with China. More than any other armed group in Myanmar, UWSA has become almost synonymous with drug production and trafficking.[i, j] By the mid-1990s, UWSA diversified away from opium and heroin to the manufacture of methamphetamine.[k] More recently, UWSA, in joint ventures with transnational organized criminal groups, has expanded its drug portfolio to include the illicit manufacture of ketamine and other niche synthetic drugs. Since around 2020, the group has further diversified its illegal activities to include online criminality and cyberscamming operations, which have proved to be profitable and rapidly expanded during the coronavirus disease (COVID-19) pandemic.[l]

Another important armed group is NDAA, which is estimated to have more than 3,000 soldiers[m] based in Special Region 4, an area that is of critical strategic and logistical importance for NDAA and its allies in the Golden Triangle. Importantly, Special Region 4 provides UWSA with access to the Mekong River, and to the Lao People's Democratic Republic across the River and Thailand downstream.[k] Port facilities have developed considerably in recent years and have become a transit point for a wide variety of products, both licit and illicit, including drugs and precursor chemicals.[n] The "capital" of Special Region 4, Mong La, expanded in the 2000s with an economy based on a range of activities, most notably operating casinos and online gambling facilities and brothels, and wildlife trafficking, in addition to drug and precursor trafficking,[o] and more recently online fraud and cyberscamming centres.[l]

MNDAA comprises several thousand fighters[p] and operates in Special Region 1, an area north of Special Region 2 that is connected to both Special Region 2 and Special Region 4. Almost immediately after its founding in 1989, MNDAA began producing heroin and engaging in drug trafficking. The group soon expanded into gambling, turning the Kokang "capital" of Laukkai from a small border town into a thriving gambling metropolis, attracting investors and a growing clientele from China, as well as trafficking victims who often work in the casinos, hotels and other profit-generating centres.[l] Although MNDAA was forced out of Special Region 1 in 2009 by the rival Kokang Border Guard Force (BGF), a government-aligned militia, according to a number of sources including media it retook the area in January 2024.[q]

a Martin John Smith, *Burma: Insurgency and the Politics of Ethnicity* (London: Zed Books, 1999).

b Hélène Le Bail and Abel Tournier, "From Kunming to Mandalay: The New 'Burma Road'", *Asie, Visions* 25 (2010).

c International Crisis Group, "Fire and Ice: Conflict and Drugs in Myanmar's Shan State" (Brussels, Belgium, January 8, 2019).

d Bertil Lintner, "The United Wa State Army and Burma's Peace Process" (United States Institute of Peace, April 29, 2019).

e Lintner, *Burma in Revolt: Opium and Insurgency since 1948*; Smith, *Burma: Insurgency and the Politics of Ethnicity*.

f John Buchanan, *Militias in Myanmar* (Asia Foundation Yangon, 2016).

g Agence France-Presse, "'Masters of Our Destiny': Myanmar's Wa Rebels in Show of Force", *South China Morning Post*, April 17, 2019.

h Myanmar Peace Monitor, "United Wa State Party (UWSP/UWSA)", *Myanmar Peace Monitor* (blog), June 6, 2013. Available at https://mmpeacemonitor.org/1600/uwsa/.

i For instance, in 2008 the U.S. Treasury sanctioned 26 individuals and 17 companies tied to the UWSA as Specially Designated Narcotics Traffickers pursuant to the Foreign Narcotics Kingpin Designation Act (Kingpin Act).

j US Department of the Treasury, "Treasury Action Targets Burmese Drug Cartel", U.S. Department of the Treasury, November 13, 2008.

k UNODC interview with Mekong region intelligence official, June 2021.

l Kyu, Myint Myint. "Gambling as Development: A Case Study of Myanmar's Kokang Self-Administered Zone." Chiang Mai, Thailand: International Development Research Centre, 2018.

m Myanmar Peace Monitor, "National Democratic Alliance Army-Eastern Shan State (NDAA-ESS)", *Myanmar Peace Monitor* (blog), June 6, 2013.

n UNODC interview with Mekong region intelligence official, February 2021.

o Vincent Nijman and Chris R. Shepherd, "Emergence of Mong La on the Myanmar–China Border as a Global Hub for the International Trade in Ivory and Elephant Parts", *Biological Conservation* 179 (2014): 17–22.

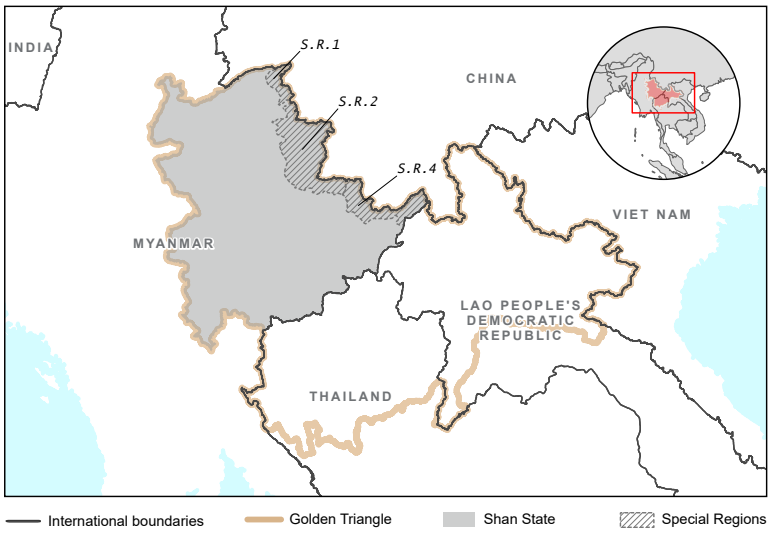
p Myanmar Peace Monitor, "Myanmar National Democratic Alliance Army (MNDAA)", *Myanmar Peace Monitor* (blog), June 6, 2013.

q Peck, Grant. "Armed Ethnic Alliance in Northern Myanmar Is Said to Have Seized a City That Was a Key Goal." *Associated Press*, January 5, 2024.

an explosion in domestic and cross-border infrastructure development that has enhanced regional market linkages and trade.[16, 17, 18] In recent years, several border locations across the Golden Triangle have established casinos and SEZs with the aim of facilitating economic growth and trade.[19] However, a number of these facilities are suspected hubs of criminal activity and, in some cases, were established with the intention of further facilitating illegal activities.[20, 21]

There are several key examples of these zones across the region, including Special Region 2 and Special Region 4 in Shan State and the parts of Bokeo Province in the Lao People's Democratic Republic. The zones often feature casinos, hotels and businesses allegedly involved in a range of illegal activities, including drug trafficking, wildlife trafficking, human trafficking and financial fraud.[22, 23]

MAP 7 Golden Triangle region



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

Source: UNODC, Drugs Monitoring Platform.

Role of special economic zones

Many privately funded SEZs have been established in the region's borderlands to promote trade and investment through the granting of preferential tax agreements (e.g. duty-free customs), unique administrative and labour regulations to attract specific commercial or industrial sectors (e.g. manufacturing, tourism and gambling), the provision of key infrastructure (e.g. ports, warehouses and highways) and other rules and procedures that reduce documentation requirements and are aimed at facilitating trade or economic activity that is not available in the rest of the country.[a] However, SEZs in the Golden Triangle region are, in general, privately funded and poorly regulated, and several are located in border and port regions that are known to be used by trafficking groups to facilitate the illegal trade in drugs and precursor chemicals and the movement of other contraband.[b]

One of the largest and most notorious SEZs and casino facilities in the Golden Triangle is the Kings Romans Casino complex, located in the Golden Triangle SEZ on the east bank of the Mekong River in the Lao People's Democratic Republic, adjacent to the borders of Myanmar and Thailand. The Golden Triangle SEZ was founded in 2007 by the government and a private Chinese business to promote a number of economic activities including tourism.[c] Kings Romans Casino has been identified by regional and international law enforcement and financial intelligence officials as a hub for a variety of criminal activities, including trafficking in precursors into Myanmar and drugs into the Lao People's Democratic Republic and Thailand, trafficking in persons for cyberscamming and online gaming operations and the smuggling of wildlife products.[d, e] In addition to their close association with the Golden Triangle SEZ, UWSA and NDAA also oversee SEZs or similar mechanisms in Myanmar, where cyberscamming and illegal online gambling are sources of revenue.[f]

The rapid development of sophisticated online gaming has necessitated underground banking and money-laundering solutions capable of transacting and moving large quantities of money. Armed groups and associated transnational organized criminal groups in East and South-East Asia have also diversified their business portfolios, launder money and cover their criminal activities, often through casinos or adjunct industries that service SEZs.[b]

a Gokhan Akinci and James Crittle, "Special Economic Zone: Performance, Lessons Learned, and Implication for Zone Development" (The World Bank, 2008).

b UNODC, "Casinos, Money Laundering, Underground Banking, and Transnational Organized Crime in East and Southeast Asia: A Hidden and Accelerating Threat".

c Investment Promotion Department, "Golden Triangle Special Economic Zone", accessed February 22, 2024.

d UNODC communication with intelligence officials in the Mekong region, February 2021.

e US Department of the Treasury, "Treasury Sanctions the Zhao Wei Transnational Criminal Organization".

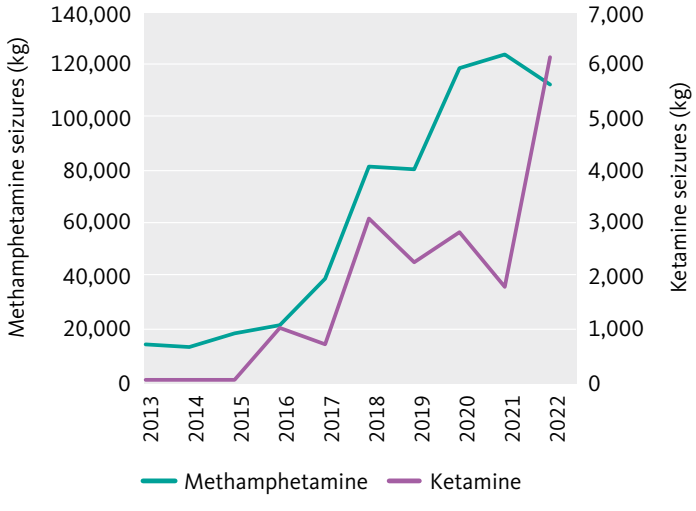
f For instance, SR 2 has two economic development zones (EDZs), in Mōung Ping in its southeastern border with China, and Nam Deng in its northern area, and these EDZs also host casinos. SR 4 hosts the Yongbang SEZ, located along the border with China.

Drug production and trafficking in the Golden Triangle

Historically, opium and heroin were the mainstays of the Golden Triangle's drug economy. Until the 1990s, before Afghanistan became the world's leading producer, much of the opium that was consumed as heroin in global markets came from the Golden Triangle.[24] Although opium poppy and heroin production remain important parts of the illicit economic portfolios of many armed and criminal groups in the Golden Triangle, methamphetamine manufacture began to gain importance in the 1990s and has become a valuable revenue stream in recent years.[25] While regional heroin and opium demand generally declined during the 1990s, methamphetamine markets throughout East and South-East Asia, extending to Oceania and South Asia, continued to grow, making the drug another lucrative commodity for the region.[26] Traditionally, limited central State control over vast areas,[27] the proximity to large quantities of accessible precursor chemicals, ongoing internal conflicts and growing methamphetamine consumption patterns in the broader South-East Asian region[28] contributed to the Golden Triangle's entry into and later dominance of regional methamphetamine production.

By 2010, drug production in Shan State in Myanmar had shifted mostly to methamphetamine, with the large-scale production of methamphetamine tablets (also known as "yaba") for regional consumption and, a few years later, crystal methamphetamine both for the region and markets elsewhere.[29] Seizure amounts, events and purity increased in subsequent years, especially after authorities in neighbouring China focused their efforts on reducing the clandestine domestic production of methamphetamine in around 2013 and 2014.[30] Taken together, these indicators of supply point to growing methamphetamine manufacture in the region. Since then, suppliers in the Golden Triangle, and South-East Asia more broadly, have continued to expand into the manufacture of other synthetic drugs, including MDMA and ketamine,[31, 32] with the chemicals needed for drug production being sourced from neighboring countries, including China and India and, to a lesser extent, Thailand and Viet Nam.[33]

FIG. 19 **Seizures of methamphetamine and ketamine in the Lao People's Democratic Republic, Myanmar and Thailand, 2013–2022**



Sources: UNODC, responses to the annual report questionnaire; Drug Abuse Information Network for Asia and the Pacific (DAINAP).

This has resulted in large increases in seizures that are reflective of greatly increased flows of methamphetamine, and recently ketamine, trafficked from the Golden Triangle to South-East Asia and beyond, with countries across the region (e.g. Indonesia and the Philippines) and in other regions (e.g. Australia, Bangladesh, India, Japan, New Zealand and the Republic of Korea) reporting sharp increases since the mid-2010s in seizures of the drugs originating from the Golden Triangle.[34] Between 2013 and 2022, seizures of methamphetamine in East and South-East Asia increased nearly four-fold, from 39 tons to 150 tons. During the same period, seizures of the drug originating in the broader region, such as Australia, Bangladesh, India and New Zealand, also increased significantly from 7.2 tons to 20.4 tons.[35]

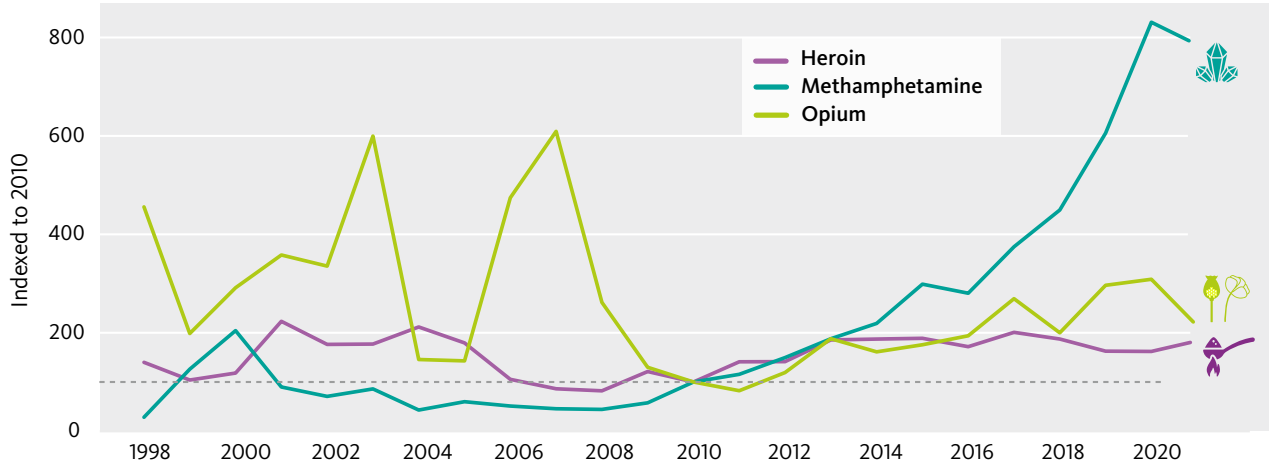
The rapid increase in methamphetamine and ketamine seizures is in part due to the fact that synthetic drug production can be moved and does not rely on geographical or time-bound inputs or seasonal conditions, unlike plant-based drugs.[36] Seizure data for countries in the immediate region in the period 1998–2022, show a rapid increase for methamphetamine after 2016, while heroin seizures remained comparatively stable.

Analysis of individual seizure events within 750 km of the epicentre of the Golden Triangle[37] shows a similar upward trend in the size of methamphetamine seizures, which grew almost twelvefold between 2015 and 2023 (from a median weight of 10 kg to 120 kg), while the median size of heroin seizures decreased over that period (from a median weight of 12 kg to 8.4 kg). However, it is also important to note that the average wholesale price of heroin in Thailand (per 700 g) increased from about $8,000 in 2015 to $11,400 in 2022.[38] From the beginning of the twenty-first century, seizure totals and events related to methamphetamine began to surpass those

related to opium and heroin for the first time, pointing to the rapid scalability of clandestine synthetic drug manufacture and the potential willingness of suppliers to adapt to external circumstances and market signals despite deep historical roots in opium poppy.

Price, purity and other indicators related to methamphetamine also point to a greater and more varied supply of the drug. In recent years, prices have generally declined across the region, with the biggest decline in retail prices for tableted methamphetamine occurring in Myanmar, from roughly $2.50 per tablet in 2020 to about $1 in 2022.[39] Prices of wholesale quantities of tablets (e.g. 2,000 tablets) in Thailand recently declined from about $900 in 2020 to $350 in 2022. These price declines were not driven by fluctuations in purity, however, which remains generally stable in the region.[40, 41] The increased quantities and number of seizures, decreasing prices and stable purities point to sustained increases in the overall supply and availability of methamphetamine in local drug markets, which remain largely unaffected by high rates of seizures in the region.[42]

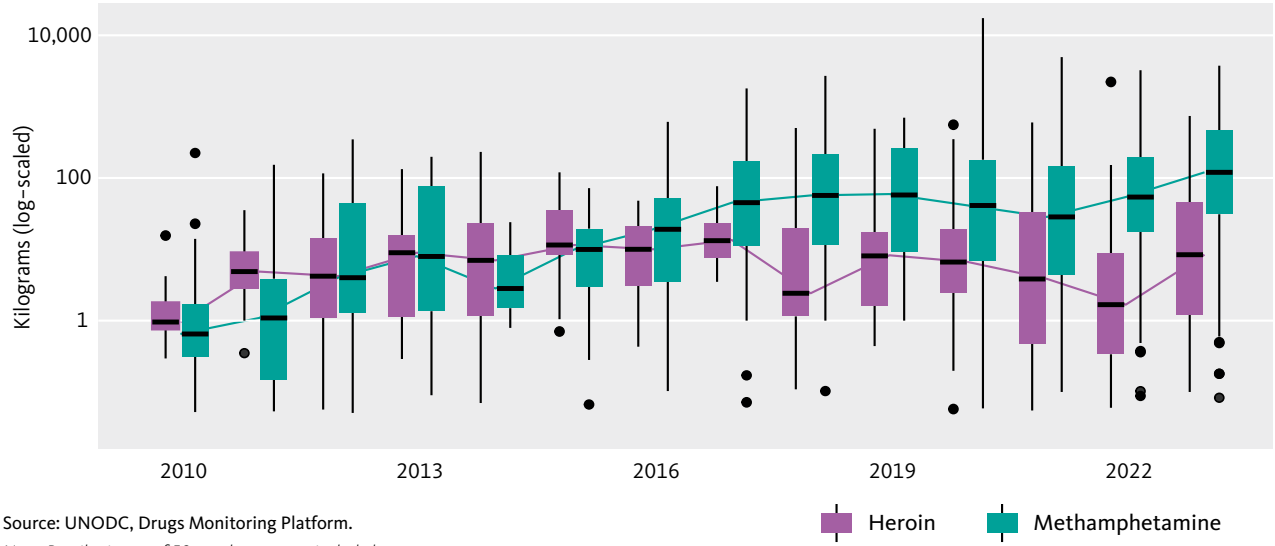
FIG. 20 Trends in quantities of heroin and methamphetamine seized in countries and territories in and around the Golden Triangle, indexed to 2010, 1998–2021



Source: UNODC, responses to the annual report questionnaire.

Note: The data relate to Cambodia, China, Hong Kong, China, Macao, China, Taiwan Province of China, Lao People's Democratic Republic, Malaysia, Myanmar, Thailand and Viet Nam. Data for 2022 are not complete for all countries and territories.

FIG. 21 Trends in size distribution of individual heroin and methamphetamine seizures within 750 km of the tri-border epicentre, 2010–2023



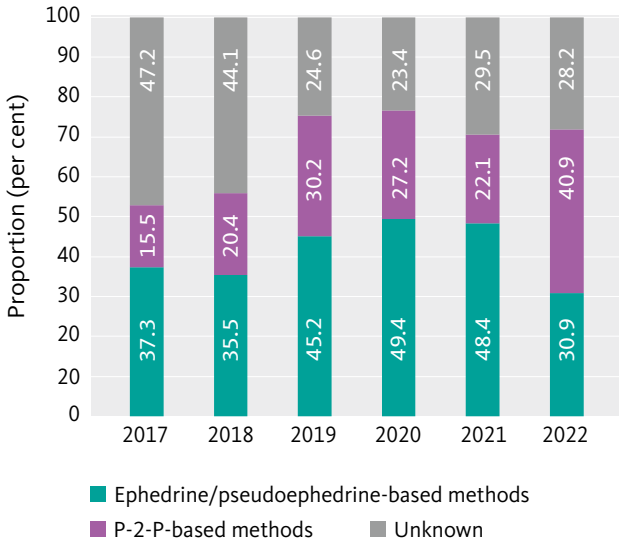
Source: UNODC, Drugs Monitoring Platform.

Note: Retail seizures of 50 g or less are not included.

Forensic analysis of methamphetamine seizures in recent years in Thailand shows greater shares of P-2-P-based inputs (including not just P-2-P but a variety of related chemicals, some of which are not controlled), which suggests greater sophistication and diversity in production means.[43] Taken together, the relative stability in purity and decline in prices coupled with a growing share of package labelling or "brands" indicate that more producers may be entering the market. These shifts have been exacerbated with the military takeover in Myanmar, causing a governance crisis within large parts of the country, which traditionally is a major source of clandestine methamphetamine manufacture in the region.

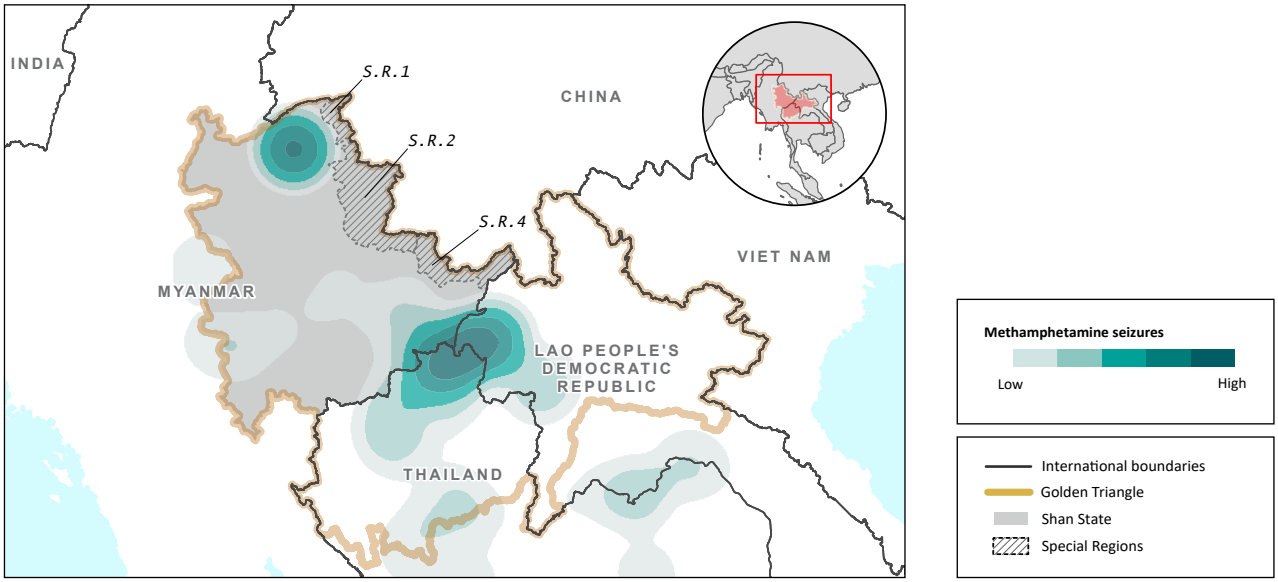
In terms of geography, drug production in the Golden Triangle is largely concentrated in Shan State, based on the high frequency of seizures in the State. No reliable data exist for quantifying the production of synthetic drugs, unlike the cultivation of opium poppy, which can be estimated from satellite imagery. The challenges related to data quality are more pronounced in Shan State than elsewhere in the Golden Triangle, as large swathes of territory are under the de facto control of armed groups. However, a number of clandestine methamphetamine laboratories have been detected in the Golden Triangle region, including large tableting facilities in southern Shan State and in Bokeo Province in the Lao People's Democratic Republic near the border with Thailand.[44] These developments suggest there is consolidation of methamphetamine manufacture in the Golden Triangle. This has been extended to other synthetic drugs as well. For example, the quantity of ketamine seized in Myanmar more than tripled between 2021 and 2022, from 762 kg to 2,329 kg; both the Lao People's Democratic Republic and Thailand have also reported increasing quantities of ketamine originating from Myanmar.[45]

FIG. 22 Proportion of crystalline methamphetamine samples analysed in Thailand, by main precursor, 2017–2022



Source: ONCB, Thailand.

MAP 8 Concentration of methamphetamine seizures in the Golden Triangle, 2020–2023



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

Source: UNODC, Drugs Monitoring Platform.

Note: Concentration of methamphetamine seizures based on observed seizure events reported on the UNODC Drugs Monitoring Platform. These are general areas where drug seizures most frequently occur.

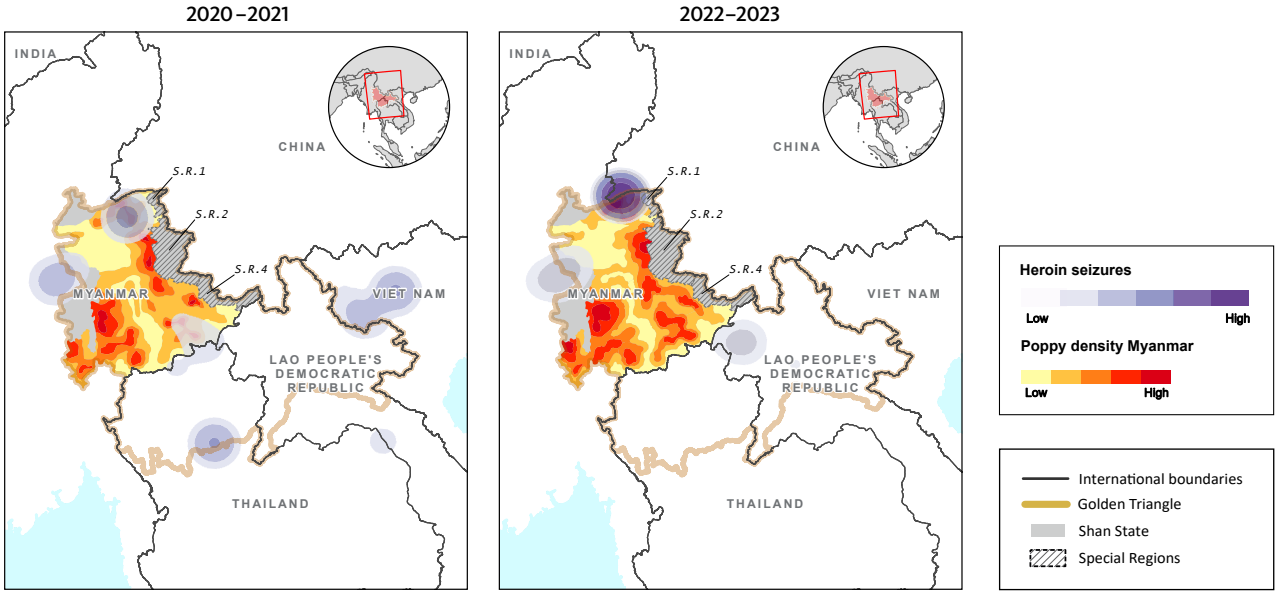
In the last few years, there also has been an increase in the frequency and amount of methamphetamine seizures in the north of the Lao People's Democratic Republic, not far from the tri-border epicentre, suggesting a shift in trafficking operations and pointing to the geographical connectivity between trafficking networks in the region.[46] The mapping of individual seizures shows that methamphetamine seizure events dramatically increased in the tri-border epicentre in the period 2021–2023, that is, roughly after the military takeover in Myanmar in February 2021, but also expanded into northern parts of the Lao People's Democratic Republic near the border with Thailand.

Since 2021, UNODC satellite-based estimates of opium poppy cultivation and ground-verified estimates of opium production have increased annually in the Golden Triangle, driven principally by increases in Shan State, which in 2023 was estimated to account for 87 per cent of the area under cultivation and 83 per cent of the opium harvest for the entire country.[47] The increased production seen in recent years in Myanmar is mainly the result of an increase in opium yields. The area under cultivation has increased modestly, suggesting that farmers are growing more intensively instead of extensively, through improved cultivation practices such as increased plant density, the use of irrigation systems and the application of fertilizers.[48] This has pushed UNODC estimates of the yield of opium from a hectare of poppy in Myanmar from about 14 kg in 2020 to almost 23 kg in 2023, a record high since the monitoring of yields began in 2002. This increase was most pronounced in eastern Shan State, where yields increased by 58 per cent from 2022 to 2023 alone.[49] The use of more sophisticated inputs and practices could involve greater coordination by armed and criminal groups eager to generate more revenue.[50] It is hard to decipher the effects that the 2021 military takeover has had on drug production in Shan State, which shows increases in several measures of poppy cultivation and opium production.

Opium poppy cultivation is carried out in the Lao People's Democratic Republic, but accounts for a small share of the region's illicit cultivation.[51] The most productive areas of poppy cultivation and opium production in the country are in the Golden Triangle, in the northern provinces that border China and Myanmar, principally Phôngsali Province, which has long been an important centre for the country's opium harvest.[52]

A spatial analysis of individual seizure events[53] shows that there is a downward relationship between distance traveled away from the tri-border epicentre and seizure weight, further supporting evidence of the Golden Triangle's importance for drug production and trafficking. This relationship is significant even after controlling for seasonality.

MAP 9 Concentration of heroin seizures and opium poppy cultivation, 2020–2023

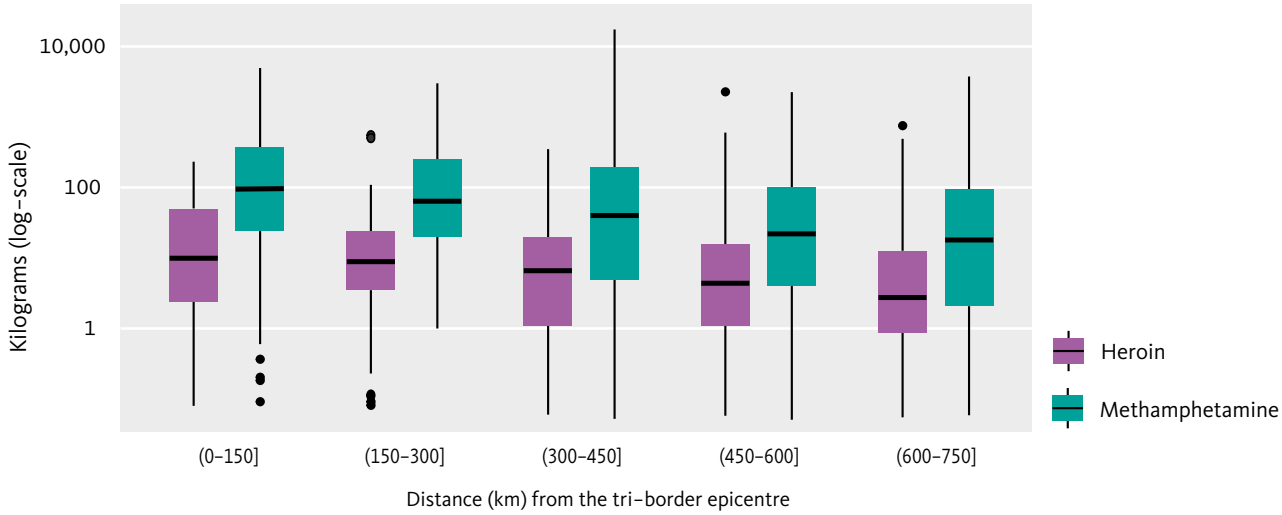


The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.

Sources: UNODC, Drugs Monitoring Platform; and UNODC, Illicit Crop Monitoring Programme.

Note: Concentration of heroin seizures based on observed seizure events reported on the UNODC Drugs Monitoring Platform. These are general areas where drug seizures most frequently occur. UNODC crop monitoring is not carried out in the Shan State Special Regions.

FIG. 23 Declining seizure weights as distance increases from the tri-border epicentre, 2010–2023



Source: UNODC, Drugs Monitoring Platform. *Note: Retail seizures of 50 g or less are not included.*

Developments in the drug economy in Myanmar since the military takeover in 2021

Historically, many actors involved in conflict, including both State and non-State entities, have earned income from levies on the illicit manufacture of and trade in drugs, or directly from the proceeds of their sales.[a] This applies to the internal conflict in Myanmar, which has further intensified since the military takeover in February 2021. As at December 2023, an estimated 2.3 million people (or about 4 per cent of the country's population) had been displaced by clashes and insecurity following the takeover.[b] Since the takeover, the production of opium in the country, especially in terms of crop yields, has risen. In 2023, estimated opium production in Myanmar was 1,080 tons – the highest amount in the last two decades.[c] Increases were observed in areas outside the control of the central authority, mostly in Shan State.

Another notable development is the growing variety of "brands" of methamphetamine tablets manufactured in the Golden Triangle. In 2020, two major brands known to be manufactured by armed groups in Myanmar accounted for over 96 per cent of all seizure events in Thailand. By 2022, that share had fallen to about 6 in 10 seizure events, while the share of "other" labels rose from just under 3 per cent in 2020 to over 25 per cent in 2022, indicating increased diversity of suppliers following the military takeover in Myanmar.[d]

Recent intensification of the conflict in Myanmar may have resulted in the interruption and displacement of law enforcement operations or drug trafficking in the country. On 27 October 2023, several armed groups in the country initiated a joint military campaign against the Myanmar military and its allies in several areas, including northern Shan State. Known as Operation 1027, the campaign resulted in over 600 different instances of armed clashes and explosions in northern Shan State from its inception to the end of 2023.[e, f] Northern Shan State, home to many established armed groups, is suspected to be the location of large-scale drug production sites that are known to be clustered together.[g, h] However, during that same period, there was only one reported drug seizure in northern Shan State, involving the seizure of less than 30,000 methamphetamine tablets.i In contrast, there were 41 cases of either drug or related chemical seizures in northern Shan State during the same period of 2020, when there were markedly fewer armed clashes.[i]

It is too early to determine what effect the conflict on the ground will have on the future of drug trafficking, as it may depend on the outcome of the country's internal conflict.

a Svante E. Cornell, "The Interaction of Narcotics and Conflict", *Journal of Peace Research* 42, no. 6 (2005): 751–60.

b UNOCHA, "Myanmar Humanitarian Update No. 35 | 2023 Year in Review", January 12, 2024.

c UNODC, "Southeast Asia Opium Survey 2023", 2023.

d UNODC, "Synthetic Drugs in East and Southeast Asia: Latest Developments and Challenges", 2023.

e Communications ACLED, "Myanmar: Momentum from Operation 1027 Threatens Military Rule", *ACLED* (blog), February 1, 2024.

f ACLED, "Conflict Watchlist 2024 | Myanmar: Resistance to the Military Junta Gains Momentum", *ACLED* (blog), January 17, 2024. Available at https://acleddata.com/conflict-watchlist-2024/myanmar/.

g For instance, a series of law enforcement operations were conducted in the course of early 2018 in Kutkai township in northern Shan, resulting in seizures of approximately 193 million tablets and 500 kg of crystalline methamphetamine together with laboratory equipment·

f ACLED, "Conflict Watchlist 2024 | Myanmar: Resistance to the Military Junta Gains Momentum", *ACLED* (blog), January 17, 2024. Available at https://acleddata.com/conflict-watchlist-2024/myanmar/.

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Confluence with other illicit activities

Participation in other illegal activities and markets

In general, criminal organizations and armed groups can form a symbiotic relationship where they rely upon each other and their overlapping political and economic goals tied to the illicit economy.[54] At times, these goals also converged with those of the Myanmar military government, which traditionally employed paramilitary groups to bolster national security against ethnic insurgent organizations and help with State-building by proxy in remote areas. In exchange, armed groups are often permitted to engage in a range of illicit activities so long as they acquiesce to Government demands when called upon.[55, 56, 57]

From the 1990s onwards, armed groups and criminal organizations started to diversify their revenue generation strategies. In addition to the manufacture of various synthetic drugs, in the mid-2000s armed groups began to engage in unlicensed or unregulated natural resource extraction and agribusiness to generate revenue and acquire strategic land.[58, 59, 60] An example of the nexus between armed groups, which have a stated political goal or ideology, and criminal groups, which have no outward political leaning, in the Golden Triangle is the Kings Romans Casino, located in the Golden Triangle SEZ, in northwestern Lao People's Democratic Republic along the Mekong river. The group that owns the Golden Triangle SEZ has close ties to powerful armed groups in Myanmar, including UWSA and NDAA, through mutual business interests, and is reportedly engaged in trafficking in drugs, humans and wildlife, money-laundering and bribery.[61]

The involvement of criminal organizations and armed groups in illicit resource extraction intensified during the 2000s as cross-border markets and infrastructure expanded. Extensive logging along the border regions of Shan State in Myanmar turned some armed groups into what were essentially businesses with armies.[62] Other resource extracting activities, particularly the mining of jade, rubies, gold and rare earth metals, also became a critical source of revenue among the more prominent armed groups and criminal organizations that had the capital and political clout to orchestrate mining concessions. For instance, a group formerly known as the New Democratic Army-Kachin, or NDA-K, in Special Region 1 in Kachin State along the Yunnan border supplies large quantities of rare earth elements to Chinese buyers; there are also reports of the group being involved in logging and jade mining.[63]

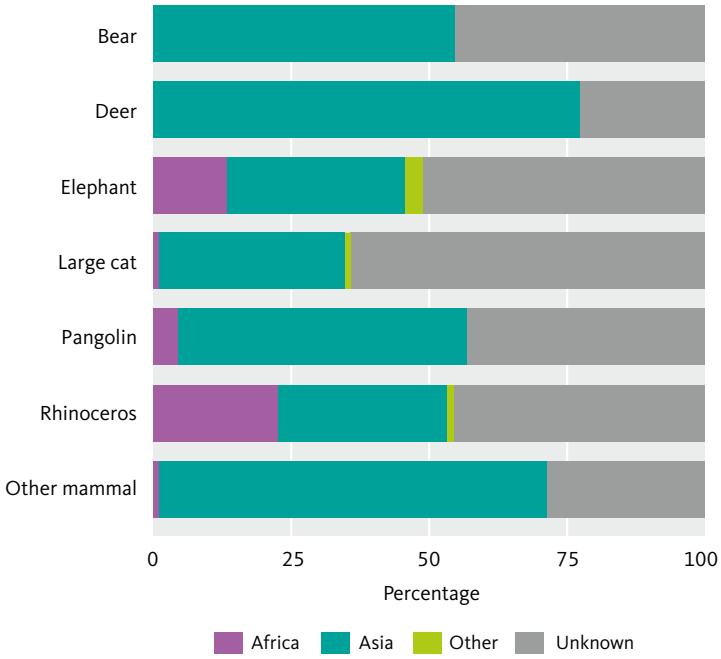
The rising global scarcity of endangered species is increasingly attractive to organized criminal groups diversifying into the lucrative business of wildlife trafficking alongside traditional smuggling activities; this has been increasingly reported in the Golden Triangle. There have been several large and unprecedented seizures of live wildlife or wildlife parts in the Golden Triangle, including endangered animals originating from Africa.[64] The scope and extent of such seizures point to the sophistication of organized criminal groups able to bring substantial quantities of wildlife products from Africa deep into the interior of the Golden Triangle, where they are seized on their way to other markets in Asia.

Studies suggest that most high-level criminal groups in the Golden Triangle are involved in the smuggling of high-value wildlife, such as endangered species from Africa, rather than poaching or distribution to buyers downstream.[65, 66] Wildlife seizure data indicate that in cases where country of origin was reported, most wildlife seized comes from Asia, followed by Africa.

Transnational criminal organizations, which operate across the region, generally outsource the poaching and transportation of locally sourced wildlife to smaller local criminal groups or individual entrepreneurs.[67] The intersection between drug activities and wildlife trafficking is less direct and interlinked. Although the same criminal groups or individuals may be involved in separately trafficking drugs and wildlife in the same or similar locations, it appears more of an opportunistic relationship. Wildlife trafficking does not appear to be supplanting drug trafficking in the Golden Triangle, but indicates a diversification of activities that sometimes adopt strategies and tactics applied in drug trafficking. Such tactics involve using similar border crossings or routes to move contraband.[68] On the other hand, for some criminal actors, in some instances, a shift to wildlife trafficking might be a strategy to reduce the risk of arrest and prosecution for involvement in the drug economy, given the steady demand for wildlife products in the region and the strong focus on counter-narcotics by law enforcement authorities, which may sometimes overlook shipments of animal parts.[69]

In other instances, criminal groups reportedly collaborate with public officials or armed groups and traders across the region. According to studies that interviewed actors involved in the illegal wildlife trade, there appears to be a mutual relationship between transnational criminal

FIG. 24 **Regional distribution of the origin of mammal seizures made in the Golden Triangle, 2006–2022**



Source: World WISE data.

Note: Seizures within 750 km of the tri-border epicentre.

groups that operate across the region and leaders of armed groups in northern Myanmar. For example, in relation to trafficking and illicit trade in wildlife products, armed groups tax large volumes of wildlife smuggled into China by levying fees on locals engaged in poaching or the smuggling of other high-value wildlife products originating from outside the region, such as African elephant tusks or rhinoceros horns.[70]

Geographical confluence

In the Golden Triangle, there is a strong geographical overlap between places where drugs like heroin and methamphetamine are produced and places where contraband is trafficked. This is most obvious in the territories controlled by armed groups in Shan State, but also extends to other border towns and SEZs. Several armed groups are directly or indirectly involved in activities in the illicit drug economy, which they are able to conduct from within their respective territories as they have relative autonomy over their economic pursuits.[71] Similarly, trafficking in other contraband is carried out in some parts of the Golden Triangle where the national Government has limited reach. Many of these territories are tucked up against the national borders, which offers strategic advantages. Firstly, traffickers can evade arrest by traversing informal border crossings. Some border towns, particularly those featuring SEZs, offer robust transport and logistical infrastructure that feeds major regional transport routes, including river ports, airports and highways. Regionally, the proximity of the Golden Triangle to major chemical producers offers traffickers access to many required inputs, such as precursor chemicals.[72, 73] Furthermore, border regions are also located near end markets for drugs, wildlife products and extracted resources. That is, there is a robust intraregional drug market within South-East Asia, which, for example, contrasts with the much more distal large markets that involve cocaine from the Americas.

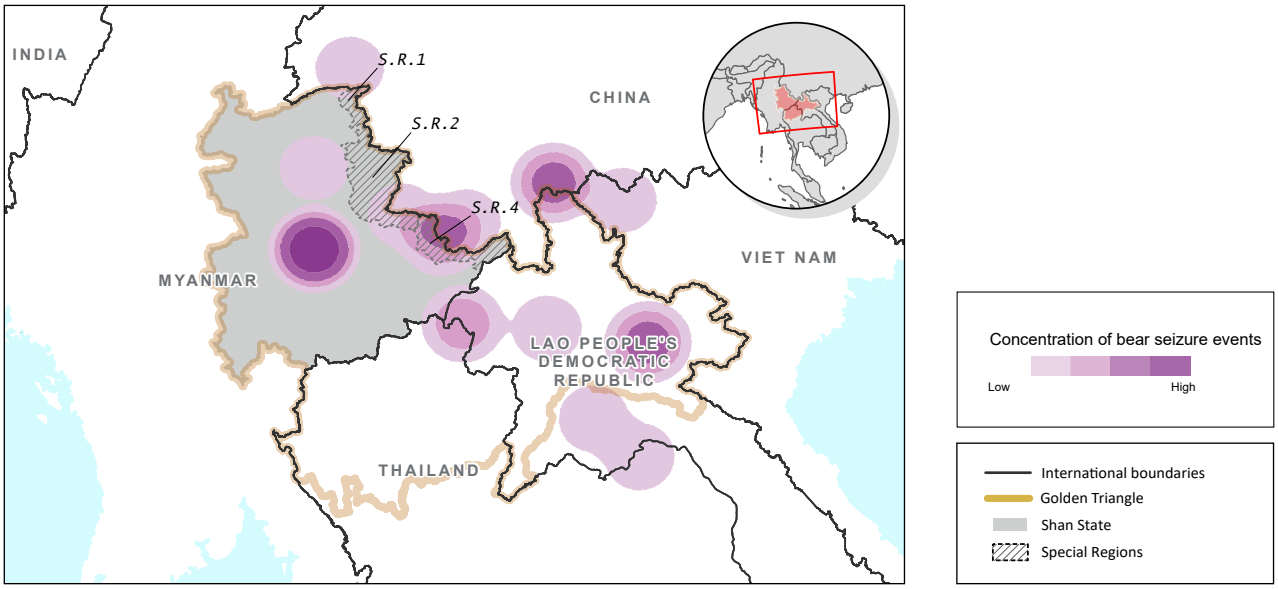
Trafficking groups also at times have access to State infrastructure and trade routes, facilitating the smuggling of or trafficking in various illicit commodities.[74] There are concerns that infrastructure projects funded by criminal organizations' illegal proceeds or by national Governments could further intensify illicit economies through improved connectivity and trade. For example, the privately owned and operated Golden Triangle SEZ is known to have been constructed with illegal proceeds from drug trafficking.[75] The zone continues to reinvest in major infrastructure projects, including the building of highway connections and an airport capable of receiving large commercial passenger planes. Several other SEZs and border industrial zones are located in or pass through armed groups' territory in Kachin State, Shan State and Rakhine State, where armed conflict, transnational crime and illicit economies play a strong role.[76]

The illicit drug economy of the region converges geographically with other illicit economies driven by transnational criminal groups and armed groups in multiple ways and directions. While most of the illicit economic pursuits take place within territories controlled by armed groups, in some cases resource extraction is carried out elsewhere. For instance, the development of a resource concession includes the building of roads deep into forests, which has at times resulted in greater accessibility to wildlife for poaching and trafficking, as well as the ability to cultivate fields of opium poppy in areas even further from the reach of authorities.[77] In the Lao People's Democratic Republic, approximately 44 per cent of detected poppy plots were found inside or within a 10 km distance of protected areas and reserves,[78] suggesting that remote areas are used to conceal illicit activities.

Wildlife trafficking data show that products made from high-value species, such as bears and elephants, were

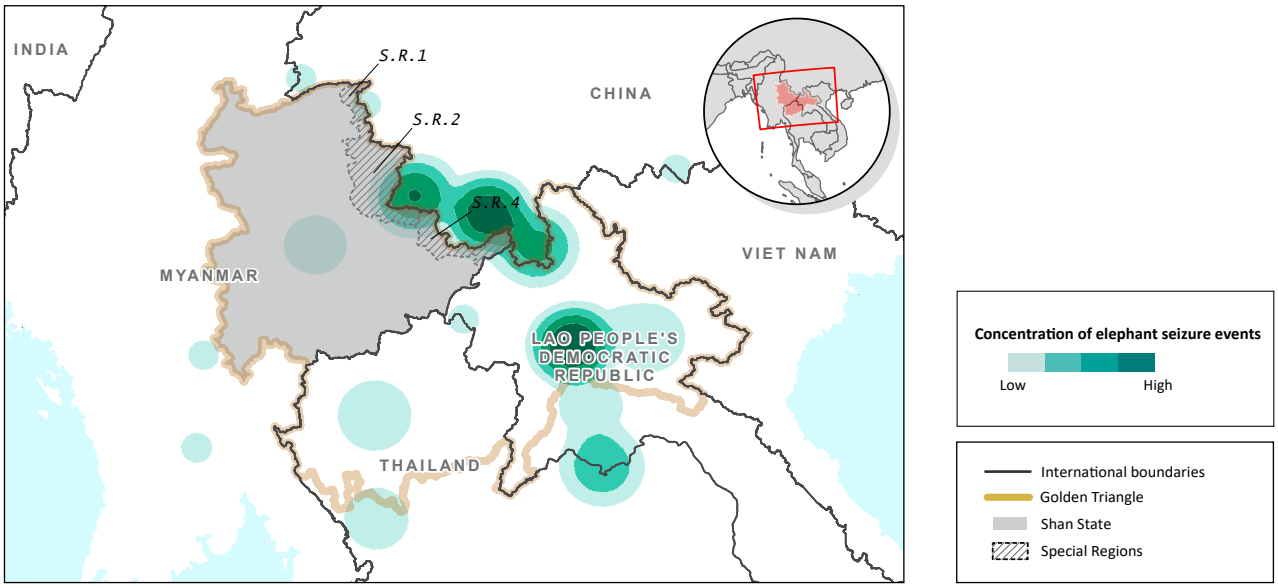
more frequently reported closer to the tri-border region at the centre of the Golden Triangle and along the border with southern Yunnan Province in China. Several of these products may be aimed at meeting various demands within the region, such as bear bile and elephant parts and tusks.[79, 80] Overall, this generally aligns with findings reported in the literature, apart from seizures of large cats and their parts, including of tigers, which are often reported to be trafficked into and out of the Golden Triangle SEZ.[81]

MAP 10 Concentration of wildlife seizures involving bear parts, 2006–2022



The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.
Source: CITES World WISE Data.

MAP 11 Concentration of wildlife seizures involving elephant parts, 2006–2022



The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.
Source: CITES World WISE Data.

Impacts on communities and the environment

The drug economy and the diversification by armed and criminal groups into other illicit economies in the Golden Triangle have enhanced the role of transnational criminal networks and armed groups in the regional economy, in some cases directly worsening human security and health, as well as destabilizing communities. The internal conflict in Myanmar entraps communities in cycles of poverty and contributes to illegal production of drugs or harmful resource extraction. In parts of the region, criminal groups may often co-opt or capture parts of the State apparatus through coercion, corruption or violence.[82, 83]

In several cases, as in Myanmar, there is a stronger and direct relationship between illegal economies and conflict. Decades of fighting among armed groups and against the military in Myanmar have caused widespread population displacement. Refugees suffer from endemic poverty and are at greater risk of being preyed upon by armed groups and criminal organizations, often being forced into resource extraction or turning to opium poppy cultivation merely to subsist.[84, 85] In some ways, poppy cultivation creates economic dependence between rural communities and armed groups, which grant the "right" to cultivate poppy, often for a fee, and sometimes link farmers to opium traders who extend usurious credit to them, further entrapping them in debt.[86] Rural households engaged in poppy cultivation in Shan State have reported that cycles of debt drive them to continue to cultivate it.[87, 88, 89]

In other ways, the drug phenomenon, particularly drug use, has negatively affected rural communities.[90, 91] Methamphetamine use in remote parts of Myanmar is associated with proximity to drug production.[92] Labourers sometimes report using the stimulant to enhance resource extraction through longer working hours. Its use is also linked to other forms of exploitation, such as prostitution.[93, 94] In turn, this is connected with other harms, including the transmission of infectious diseases.[95] UNODC surveys of households engaged in poppy cultivation in Shan State reveal greater rates of drug use, especially opium and heroin, compared with households in Shan State that are not engaged in poppy cultivation, suggesting a close relationship between drug use and proximity to point of production.[96]

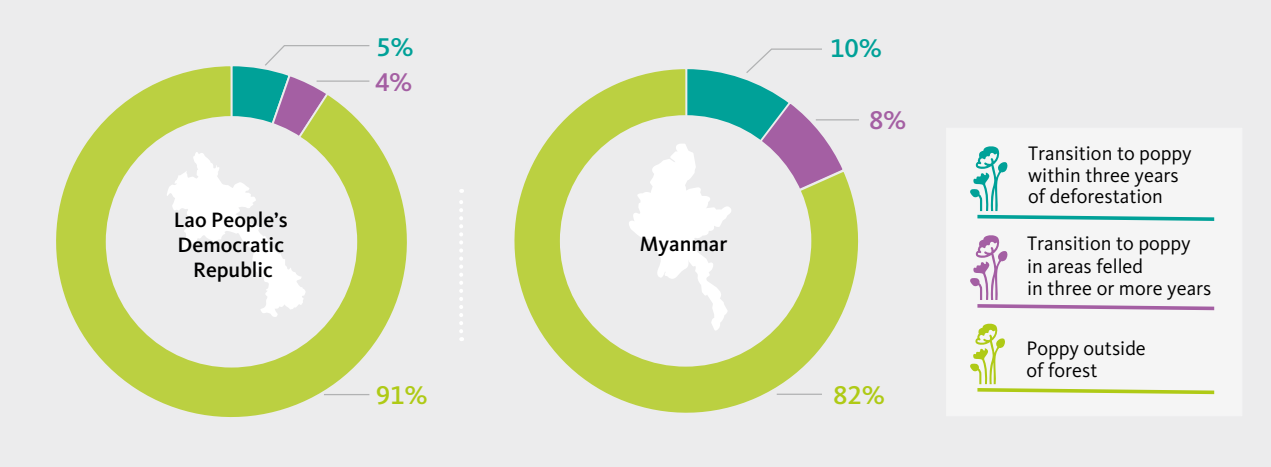
Increasingly, armed groups in Myanmar have explored a range of economic activities, including resource extraction, to finance their causes.[97] Natural resource extraction hotspots are coincidently epicentres of drug use. Mining and logging camps create a surge in demand among migrants for controlled drugs as part of the boomtown culture, the long work hours, the onerous working conditions and the disposable income earned.[98] Drug use and addiction often spread beyond encampments, leading to drug sales and use in nearby villages and towns, as well as the transmission of diseases such as HIV and HCV.[99, 100]

The increase in illicit or unregulated resource extraction and drug cultivation is often related to conflict. The economic concessions awarded to armed groups and other large-scale development interventions have a history of forcibly displacing local communities.[101] In some cases, villagers have been relocated to nearby resettlement villages, which offer few on- or off-farm livelihood opportunities. Villagers who are displaced by concessions or who have gone into debt from cash cropping have responded with a range of coping mechanisms. Migrating in search of on-farm wage labour or work in the informal resource extraction sector, in this case artisanal jade and gold mining and logging, is a popular strategy among younger male household members. But in other cases near opium producing areas, villagers have resorted to cultivating opium poppy as one of their last viable livelihood options.[102, 103] Improved infrastructure and greater accessibility to opium poppy cultivating areas, in part through resource extraction, is increasingly making this an attractive option.[104]

The lack of sufficient alternative livelihood options, a reliable State presence and safety and security might place members of rural communities at greater risk of being trafficked, labouring in dangerous mines and logging operations and partaking in wildlife poaching and drug smuggling orchestrated by criminal gangs. Conflict within Myanmar has been associated with an increase in displaced and trafficked persons in the region, some of whom are forced to work in a growing range of illicit or illegal activities, including online scam centres.[105]

Besides these negative effects on communities, the environment has also been damaged by the drug economy and the diversification into other illicit or unregulated activities. This includes environmental harms such as the dumping of chemicals used in drug production. Additionally, diversification by traffickers into other activities, such as wildlife trafficking or poaching, can have serious and direct negative consequences for endangered species. Most of these are animals from the region, but a modest share of seizures involve elephant and rhinoceros parts from Africa. Unregulated mining also harms local ecosystems through the dumping of toxic

FIG. 25 **Distribution of opium poppy plots by deforestation status since 2000 (percentage of hectares)**



Source: UNODC analysis using Global Forest Change data and opium survey data from M. C. Hansen et al., "High-Resolution Global Maps of 21st-Century Forest Cover Change", Science 342, No. 6160 (November 15, 2013): 850–53.

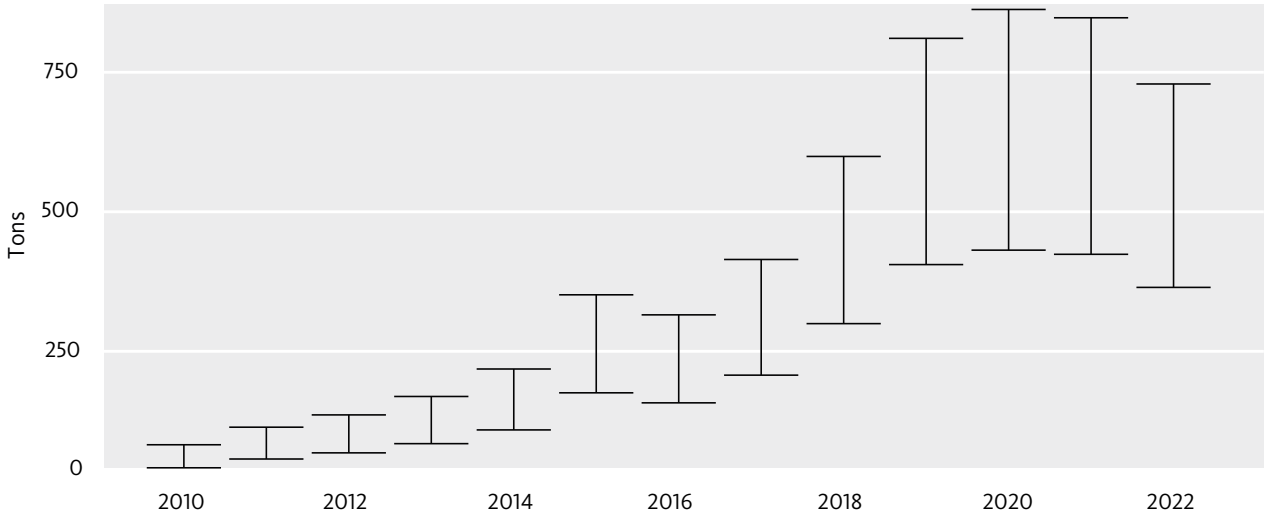
chemicals into the environment, negatively affecting local communities.[106, 107]

The cultivation of opium poppy in the Golden Triangle region is often carried out in areas that have already been cleared or were being used for some other agricultural activity. Since 2000, in the case of the Lao People's Democratic Republic, about 9 per cent of detected poppy plots have been situated in deforested areas, with the remaining plots located in areas that were being used for other agricultural purposes. Since 2000, in Myanmar, that share was close to double, at 18 per cent, with much of the country's deforestation occurring in Shan State.[108, 109] Poppy cultivation is concentrated in a relatively small geographical areas and does not appear to be a major driver of national deforestation in either country, but more than half of the poppy plots that did require the clearing of forests were cleared less than three years before the sowing of opium poppy, suggesting a relationship between deforestation and the emergence of new plots. Over the past two decades, deforestation in Myanmar has been extensive, and land has primarily been cleared for agriculture and mining.[110] The increase in deforestation could leave plenty of land available for the establishment of new poppy crops. The trend in the intensification of opium poppy cultivation through the increased application of fertilizers and pesticides can similarly cause harm to the surrounding environment and to the health to those directly involved in the application and storage of the chemicals.[111]

However, the environmental impact of drug production and manufacture extends beyond deforestation or clearing of land for illicit crops. While less is known about the extent of the environmental impacts of clandestine synthetic drug production, such activity generates large amounts of hazardous waste. It is unlikely that waste is properly disposed of; instead it is probably dumped or discharged into the environment. There are no systematic studies that measure the environmental impacts of clandestine synthetic drug production in the region. However, based on estimates of the amount of waste generated from methamphetamine production in other regions, the quantities of waste and byproducts are likely to be large.

According to the available literature, some 5–10 kg of toxic waste are generated for each kilogram of finished product based on most common synthesis routes and precursors (generally ephedrines and P-2-P).[112] Waste includes byproducts, catalysts, precursors and other solvents. Assuming that such chemicals are not recycled or reused, some 365–729 tons of waste could have been generated in 2022 for the manufacture of the 83 tons of "yaba" and 68 tons of crystal methamphetamine that were seized in East and South-East Asia in that year alone, using an average purity value of 15 per cent for tablets and 90 per cent for crystal methamphetamine based on recent seizure data.[113] Considering the existence of undoubtedly large quantities of unseized methamphetamine that makes its way to market, the actual amount of toxic waste produced in the Golden Triangle as a result of methamphetamine manufacture is likely to be larger than these estimates, which are based on seizures alone. The most recent annual consumption estimate for methamphetamine consumed in the immediate and neighboring regions[114] that is likely to originate from the Golden Triangle came to nearly 308 pure metric tons.[115, 116] The

FIG. 26 **Estimated chemical waste generated in the Golden Triangle relative to methamphetamine seized in East and South-East Asia, 2010–2022**



Source: DAINAP.

Note: Assumed average purity of 15 per cent for tablets and 90 per cent for crystal methamphetamine. Upper and lower bounds are plotted based on adjustments for average purity by formulation and using an estimated 5-10 kg range of waste per 1 kg of methamphetamine. Purity information is based on average purity-adjusted methamphetamine seizures in the Lao People's Democratic Republic, Myanmar and Thailand. Countries in the region include Brunei Darussalam, Cambodia, China, Hong Kong, China, Indonesia, Japan, Lao People's Democratic Republic, Malaysia, Mongolia, Myanmar, Philippines, Republic of Korea, Singapore, Thailand, and Viet Nam.

manufacture of this amount would result into 1,500-3,100 metric tons of waste and byproduct. Taking the last five-year average of seizures and adding it to this most recent consumption estimate, the amount of chemical waste from methamphetamine production in the Golden Triangle could range between 1,900 and 3,800 tons a year.[117]

Several chemicals used in the manufacture of methamphetamine can harm the environment, especially in the immediate area where production occurs, but also other environments if they are discharged into waterways or incinerated. No formal regulations or safeguards are in place due to the illegal nature of methamphetamine manufacture. The environmental harm can be short-lived or persistent and generate additional indirect effects. For example, soil acidification from the leaching of chemicals can kill off vegetation, resulting in erosion and an increased risk of landslides. The discharge of waste into waterways could contaminate drinking water, bathing water and crop irrigation systems, resulting in bioaccumulation in the food chain.[118]

Several direct and immediate environmental harms, such as contamination of local waterways and soil erosion, have been documented as resulting from the clandestine manufacture of methamphetamine in parts of Mexico, for example,[119] and in other parts of the world.[120] UNODC was unable to document direct environmental impacts from improper disposal of the chemicals used in clandestine methamphetamine manufacture in the Golden Triangle, which is not surprising given the limited visibility of methamphetamine manufacture in the region, especially in Shan State.[121] It is highly unlikely that illegal groups dispose of waste in environmentally friendly ways when manufacturing synthetic drugs, and it may be only a matter of time before such harms are detected. According to the UNODC field offices, the safe disposal of seized chemicals also remains a challenge as authorities do not always have the proper facilities and training needed to safely dispose of chemicals that could harm the environment. For example, in 2022 alone, some 277 tons of chemicals and chemical compounds used in the illegal manufacture of ketamine were seized across a handful of sites in a coordinated counter-narcotics operation in Cambodia.[122] The proper disposal of large amounts of sometimes volatile chemicals may take years and leaves open the possibility of their diversion back to illegal markets or the contamination of local environments due to their improper handling or storage.

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114 This includes countries in East and South-East Asia.

115 UNODC, "Transnational Organized Crime in Southeast Asia: Evolution, Growth and Impact."

116 These estimates take most recent past-year prevalence estimates reported by countries, which in some cases is outdated and in most cases likely inflates total consumption estimates since volume consumed is driven by past-month users. However, without more timely and accurate data on past-month use, these estimates represent the most reasonable quantities consumed for the regions.

117 A note of caution is required as some of the countries included in this estimate may not only source methamphetamine from the Golden Triangle, although most of it would originate in the Golden Triangle, while some countries in neighbouring regions not included in the calculation may among other sources, also source methamphetamine from the Golden Triangle.

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GENDER, AGE AND SYNTHETIC DRUGS

GENDER, AGE AND SYNTHETIC DRUGS

Introduction

Since the start of the twenty-first century, synthetic drugs have drawn increasing attention. The nature of their manufacture and ability to be designed makes controlling them more challenging compared with many traditional plant-based drugs. They can often be produced cheaply and rapidly anywhere there is access to the necessary precursor chemicals. Furthermore, their varied nature and recent prominence means less is known about their potential risks compared with traditional plant-based drugs that have been studied for much longer. The *World Drug Report 2023* explored several of these dynamics and described the ways in which the synthesis of drugs may continue to expand drug markets and increase resulting harms.[1]

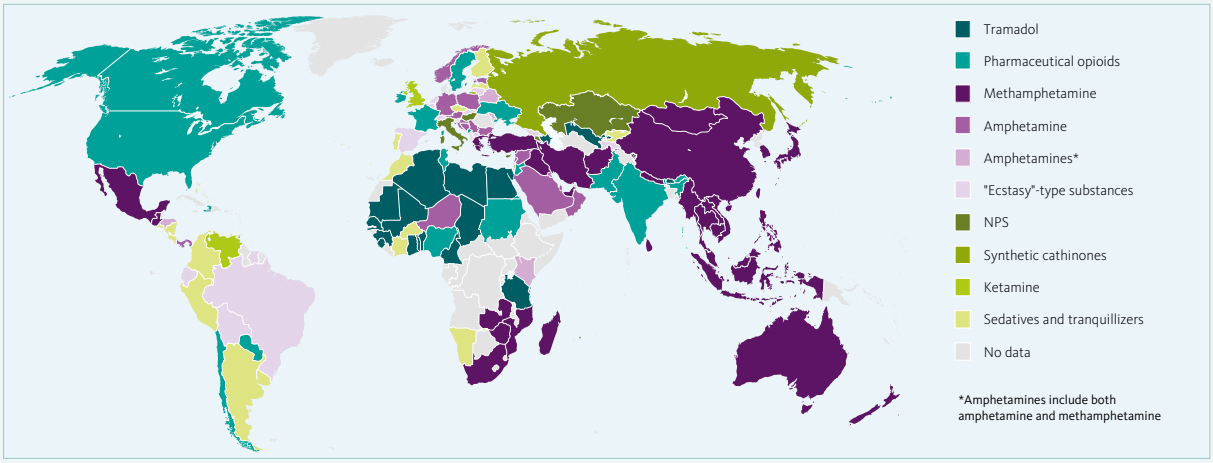
Building on that work, this year's chapter aims to analyse how the dynamics of demand for and supply of synthetic drugs might vary when the gender and age[2] of market participants are considered. The epidemiological literature has documented variations in the initiation of and pathways to harmful use of synthetic drugs, and the drug consumption patterns for men and women. Notwithstanding the fact that many of the gender differences in drug use behaviours are common to all drugs, there are also notable differences, with distinct patterns observed between men and women concerning the acquisition of synthetic drugs and their associated risks. While variations in gender have been examined in relation to the illegal drug supply chain,[3] there has been little analysis of such differences with a particular focus on synthetic drugs. As synthetic drugs expand into new regions and change the dynamics of drug markets, this chapter reviews contemporary trends and variations in sex and age (young people and adolescents) specifically when it comes to the use and supply of synthetic drugs, at times comparing such dimensions with plant-based drugs.

One of the key findings across the various streams of analysis is that men are overwhelmingly represented in measures of drug supply and use irrespective of whether the drug is plant-based or synthetic. Although there are some important gender-specific differences, men most often make up the larger share when it comes to arrestees involved in trafficking, distribution and possession for use. They also comprise a larger share of those self-reporting drug use in many surveys.

Synthetic drugs

Synthetic drugs in this chapter mainly include amphetamine-type stimulants (amphetamine, methamphetamine and MDMA), synthetic cathinones, synthetic cannabinoid receptor agonists and a wide range of pharmaceutical drugs, such as benzodiazepines, tranquillizers and synthetic opioids (including pharmaceutical opioids), which may be falsified or diverted from legal channels and are used non-medically. The prominence of the various classes of synthetic drugs varies across countries and regions.

Most commonly used synthetic drugs (non-medical use), by drug type, 2022 or latest year for which data were reported



The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations. The final boundary between the Republic of Sudan and the Republic of South Sudan has not yet been determined. 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. A dispute exists between the Governments of Argentina and the United Kingdom of Great Britain and Northern Ireland concerning sovereignty over the Falkland Islands (Malvinas).

Source: UNODC, responses to the annual report questionnaire.

Note: The most common synthetic drug ranked for a country is based on the group, class of a drug or a specific drug that was reported by a country. The category amphetamines includes methamphetamine and amphetamine, and the term was used where a country did not specify or reported equal ranking for methamphetamine and amphetamine as the most commonly used synthetic drug.

This chapter draws on official and open-source data, interviews with 92 key informants, purposively selected, across seven countries, a review of scientific literature, mostly from high-income countries but also from middle- and low-income ones, and official reports to describe gender and age differences in the demand for and supply of drugs. All the information has been triangulated to present gender and, in places, age differences in the various dimensions of synthetic drugs discussed in the chapter.

The interviews with 92 key informants, who included officials from law enforcement agencies, health service providers (in both the private and public sectors), representatives of NGOs working with people who use drugs and people with lived experience of drug use, were part of qualitative research conducted in seven countries as case studies. The key informants were purposively selected for their experience and knowledge of the drug phenomenon in their respective countries. The opinions expressed by the key informants may not necessarily represent the situation in their entire country, cannot be extrapolated to other countries and regions and are used to illustrate the different manifestations of synthetic drugs in different regions.

Qualitative research conducted in 2023

REGION	COUNTRY	DRUG
Caribbean	Trinidad and Tobago	Pharmaceutical stimulants
Central Asia	Kazakhstan	*alpha*-PVP, mephedrone, synthetic cannabinoids, synthetic opioids
Middle East	Jordan	"Captagon"
South America	Chile	Ketamine, MDMA, novel tryptamines
South-East Asia	Thailand	Methamphetamine
West Africa	Nigeria and Senegal	Tramadol

Gender differences in the extent of synthetic drug use and drug acquisition

While overall drug use remains lower among women than men, differences between the two vary substantially by region and by drug type. Globally, nearly a third of people who use cannabis, cocaine or heroin are women, but the share of women is nearly equal to men when it comes to the non-medical use of pharmaceutical drugs, in particular opioids, sedatives and tranquillizers, and stimulants.[4]

Qualitative information collected by UNODC in different countries and subregions also confirms the higher extent of drug use in men, but the experts indicate that the gender gap is shrinking.[5] In Chile, for example, in line with the national data, the interviewed national demand reduction experts indicated that the prevalence of synthetic drug use in some age cohorts is higher among women than among men,[6] and synthetic drugs are seen as a driver of recent growth in drug use by women.[7] Similarly, an expert from the health sector in Senegal raised concerns about the "feminization of addiction" in the country, noting that while the prevalence of drug use was much higher among men, the rate of growth in female use seemed to have recently been notably higher than in men.[8] Also in Senegal, the head of a treatment service noted that compared with the use of other drugs, the non-medical use of tramadol appeared to be more prevalent among women.[9] Similarly, in Kazakhstan and Nigeria, interviewees observed that the gap in the extent of use among men and women was much smaller for at least some types of synthetic drugs (synthetic stimulants in Kazakhstan and tramadol in Nigeria) than for more traditional, plant-based drugs.[10] One interviewee in Kazakhstan even suggested that people using synthetic drugs were predominantly women.[11]

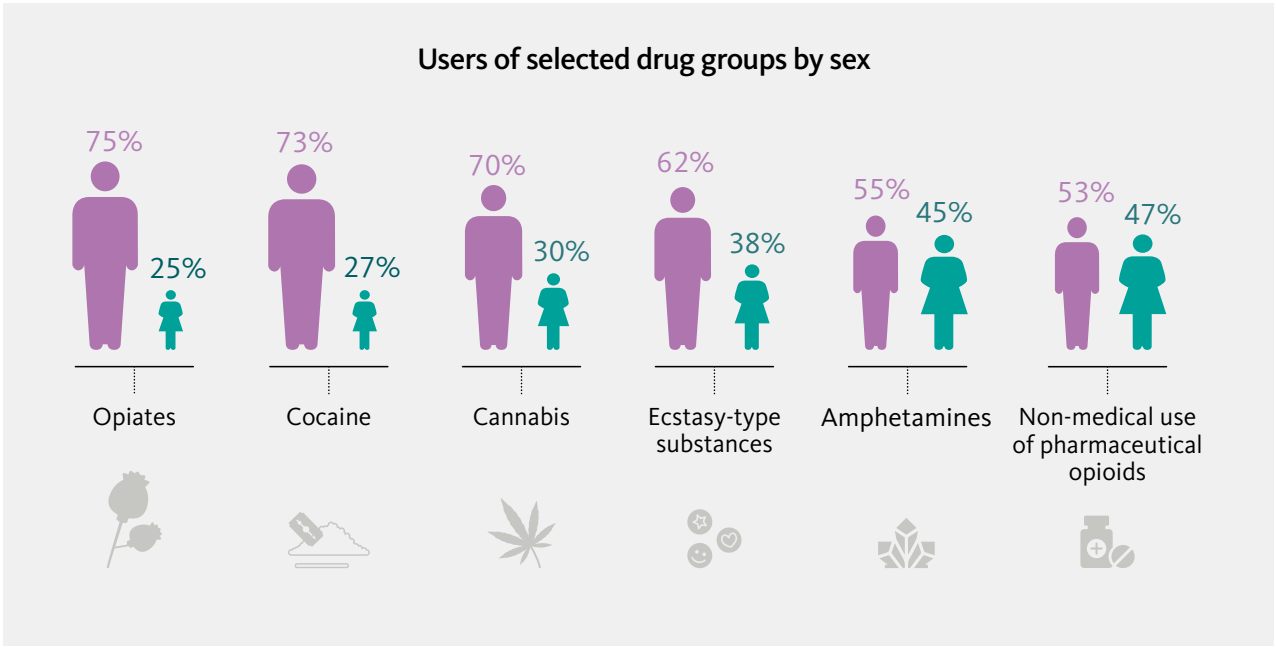
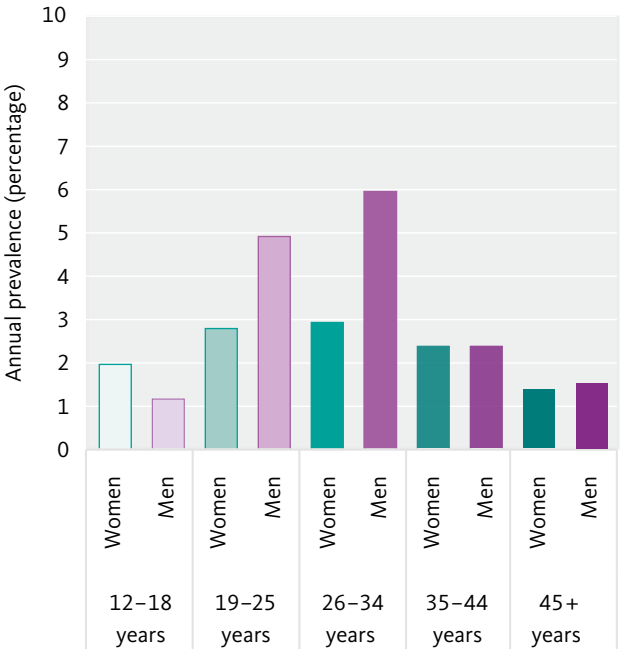


FIG. 27 **Extent of synthetic drug use in Chile, by gender and age, 2022**



Source: Fifteenth National Study on Drugs in the General Population (ENPG) of the National Service for the Prevention and Rehabilitation of Drug and Alcohol Consumption (SENDA).

Note: The synthetic drug category includes tranquillizers without a prescription, pain relievers without a prescription, fentanyl, synthetic marijuana, "ecstasy", synthetic cathinones or MDPV, DMT or "foxy", kratom (Mitragyna speciosa), "burundanga", stimulants without a prescription, methamphetamines, "poppers", LSD, "angel dust", 25B-NBOMe or 25C-NBOMe, 2C-B or "tuci", other drugs without a prescription, ketamine, GHB, PCP, BZP and GBL.

Gender differences in the initiation of synthetic drug use and motives for continued use

Neurobiological and intrinsic factors and a history of physical and/or sexual abuse may influence the initiation and continued use of drugs

Differences have been observed between men and women in the initiation of drug use and in their motives for continuing to use drugs. Research has shown that there may be differences in the factors that influence drug use by sex, namely, neurobiological factors (e.g. neuroendocrine adaptations to stress and rewards), as well as intrinsic factors (such as personality and psychiatric comorbidity).[12, 13, 14] It has also been shown that ovarian hormones (oestrogen and progesterone), and their changing levels during the menstrual cycle, for instance, may possibly be a factor in women being more sensitive than men to the "rewarding" effects of stimulants,[15, 16] and the analgesic effects of opioids.[17] Socially gendered roles also interact in modulating the use of drugs and treatment outcomes among people who use drugs. Extrinsic factors such as a history of abuse (e.g. adverse childhood experiences and intimate partner violence), substance use by family members, friends and peers may also differently influence drug use between the genders.

Self-medication and the need to boost energy for performance may lead to synthetic drug use

In general, women are more sensitive to pain and are more likely to suffer from chronic pain than men; they are thus more likely to be prescribed opioids or engage in the

non-medical use of opioids for self-medication (without a prescription), even when men and women report similar levels of pain.[18] Women are also more likely to misuse pharmaceutical opioids to self-medicate for issues such as anxiety or tension.[19, 20] Men, on the other hand, report more frequent use of heroin, suggesting that women may be more averse to sourcing drugs from illegal markets, to avoid risk of violence or engaging in criminal activity.[21] This is supported by information provided by health personnel interviewed in Senegal on whether a greater incidence of non-supervised or non-medical use of tramadol is attributed to the difference in gender sensitivity to pain, as well as to the ease of access to pharmaceutical drugs through formal and informal pharmacies and vendors.[22]

Both men and women may use stimulants with the expectation that such use will increase their energy levels. In particular, women may use stimulants (methamphetamine) to overcome exhaustion resulting from the combination of work with household chores, childcare and other family responsibilities.[23, 24] Weight loss is another motive, especially among women, for using stimulants, including non-supervised and non-medical use of amphetamines (including pharmaceutical stimulants).[25, 26, 27] Lastly, there is considerable scientific literature on the non-medical use of amphetamine among young men and women, especially students, that suggests that amphetamines are used by them to enhance academic performance and increase physical energy and productivity.[28, 29, 30]

These findings were also reflected in the interviews conducted across different countries for this chapter. While a range of reasons relevant to both genders were offered for the initiation and continuation of drug use, including synthetic drugs, reasons that were more frequently highlighted as applicable to women included pain management and self-medication to address anxiety, depression and household issues.[31, 32] In contrast, motivations for drug use more typically associated with men included increasing their job and sexual performance and coping with stress surrounding the expectation to provide for their families.[33] A notable exception to these observations were testimonies from Thailand indicating that enhanced job performance was an important motive for methamphetamine use among women.[34] In Senegal, interviewees noted that women sex workers' non-medical use of tramadol was motivated by a desire to cope with their work, while in Nigeria the respondents from law enforcement agencies mentioned the desire to cope with trauma, especially in regions affected by Boko Haram, as another motive for misusing tramadol.[35] Furthermore, in Kazakhstan, interviewees highlighted the use of synthetic drugs to enhance sexual experiences ("chemsex") as an impor-tant motive for both men and women.[36] Interviewees across the countries suggested that several synthetic drugs, including tramadol or amphetamines, were used to improve performance and may thus be more commonly used by individuals seeking to work longer hours, enhance certain experiences or lessen the negative impact of other life experiences.

Young people's motivations for using synthetic drugs that were mentioned by interviewees, some of whom were people with lived experience of drug use, included a desire to enhance their school or job performance, a desire for euphoria and entertainment, and drug use by peers.[37] These motivations stand in contrast with motives that are typically associated with older people, such as self-medication for pain management and a desire to overcome fatigue.[38] One interviewee also pointed out that as young people use more social media, they are more likely to be knowledgeable about new synthetic drugs.[39]

> *"Mostly it's relaxation, recreation, fashion. Some people just want to dance, have fun."*
> *(Interview #27, private drug treatment service provider, November 2023)*

Peer and parental substance use and adverse childhood experiences are major risk factors for the initiation and harmful use of drugs

Several studies that have looked at risk factors for and predictors of drug use in general and methamphetamine use in particular among adolescents, including in North America and South-East Asia, found that externalizing behaviours (such as aggression, delinquency and hyperactivity) mostly among boys, as well as parental substance use and affiliation with deviant peers (normative substance use) were among the strongest predictors of methamphetamine use during adolescence and its regular use in adulthood. Same-sex peers who use drugs are considered more of a risk factor for drug use for boys than girls during adolescence, while romantic partners or intimate partners who use drugs increase the risk of girls and women initiating and engaging in harmful drug use. Girls tend to initiate methamphetamine use later than boys, and first use often occurs in the context of a recreational venue, a club setting or sexualized drug use with a partner.[40, 41, 42, 43, 44] Being in a relationship with a person who uses drugs has also been shown to be significantly associated with a woman's initiation into and continuation of drug use, and intimate male partners frequently shape the pattern of a woman's drug use, such as in the case of injecting drugs.[45]

Adverse childhood experiences among women are associated with the initiation and use of opioids and methamphetamine

One major factor related to the initiation and continued use of drugs is the association, or mediation effect, of externalizing symptoms (conduct disorders – aggression, antisocial personality disorder, delinquency – and hyperactivity and ADHD) and internalizing symptoms (depression, anxiety and traumatic distress) with the harmful pattern of drug use (including synthetic drugs) and its outcomes among men and women.[46] In the case of adolescents, for example, internalizing symptoms are observed more commonly among girls than among boys.[47]

Adverse childhood experiences leading to either internalizing symptoms (depression, anxiety and traumatic distress) or externalizing symptoms (aggression, delinquency and hyperactivity) have been shown to be an important predictor of opioid initiation, opioid use disorders and lifetime experiences of opioid overdose.[48, 49, 50] Several studies have shown a higher likelihood of multiple adverse childhood experiences for women than men and the association of such experiences with opioid use initiation and opioid use disorders and psychiatric comorbidity, as well as with the initiation of methamphetamine use and later dependence.[51, 52, 53] Studies published in the scientific literature have also reported that the use of methamphetamine among people who have had adverse childhood experiences, especially women, may affect or mediate the association of such experiences with an increased risk of psychosis and suicidal ideation.[54, 55]

Drug use is more common in younger populations

Interviewees across all countries tended to view young people as being more inclined than older people to use synthetic drugs, a pattern that is commonly observed in relation to all drugs.[56] Furthermore, consistent with the gender differences discussed above, young men were considered to be much more likely than other population groups to use synthetic drugs.[57] One interviewee from a civil society organization representing people who use drugs in Nigeria added that while tramadol, a synthetic opioid long present in the national market, has been used by all age groups, young people are much more likely to use "newer" synthetic drugs, such as various synthetic cannabinoids.[58]

Some considerations specific to synthetic drugs

While the preceding discussion identifies a number of cross-cutting themes pertaining to gender and age differences regarding synthetic drugs, it is important to recognize that the majority of these observations are not specific to synthetic drugs. For instance, higher levels of drug use among men, greater stigmatization of women and increased risk behaviours among young people apply equally to plant-based drugs. From this perspective, synthetic drugs differ little from plant-based drugs when it comes to existing gender and age dynamics regarding drug demand, or even supply. However, there are many factors that make synthetic drugs particularly attractive to women and young people who use drugs.

A number of points related to the "attractiveness" or appeal of synthetic drugs were made by interviewees. Firstly, some interviewees noted that there may be less risk of attracting stigma for women to acquire and use, unsupervised or for non-medical purposes, synthetic drugs that are commonly found in formal or informal points of distribution or "pharmacies".[59] To illustrate, women entering pharmacies or other distribution sites that offer falsified or diverted pharmaceuticals are seen as having an acceptable explanation for their behaviour and would not automatically be stigmatized as people who use drugs. Two interviewees from the health sector in Senegal echoed this sentiment, pointing out that women in particular prefer products that allow them to use drugs discreetly without being perceived as a person who uses drugs.[60]

> *"When you look at cocaine and heroin ... [there] is more abuse by men, but there are very few females taking them. But if you come on the side of tramadol... it's actually a prescribed drug that people can actually abuse, so then it's much easier for women to access."*
> *(Interview #2, psychiatrist, November 2023)*

A somewhat related observation pertaining to the fact that some synthetic drugs have legitimate pharmaceutical uses was made by an interviewee from a law enforcement agency in Senegal. The key informant noted that the sentences imposed by judges for trafficking in tramadol tend to be lower than those imposed for trafficking in traditional plant-based drugs such as cannabis. A reason for this is that judges tend to view illegal tramadol distribution as illegal trade in medicines or operating as an "unauthorized pharmacy", rather than drug trafficking. The comparatively low penalties contribute, in turn, to the attractiveness of trafficking in synthetic pharmaceuticals.[61]

Secondly, a few interviewees highlighted synthetic drugs (in particular tablets or capsules) as a more discreet alternative to traditional, plant-based drugs. Some key

informants in Nigeria and Senegal, from drug treatment services and those with lived experience of drug use, were of the view that synthetic drugs (e.g. tramadol) offer people who use them an inconspicuous, odour-free way to achieve the desired euphoric effects, which make those substances particularly attractive to young people who are worried about being seen in public actively using drugs.[62] Two interviewees in Kazakhstan, a psychologist and an individual from a network of people with lived experience of drug use, suggested that synthetic drugs may be preferable to some, particularly young people, because they perceive them as being more difficult to detect using conventional drug tests.[63] Echoing this line of reasoning, another interviewee in Kazakhstan, from a law enforcement agency, noted that synthetic drugs can be smoked or inhaled without much preparation, in contrast with "traditional" drugs such as heroin, which require a dedicated injection space.[64]

> *"So, if you want to take a tablet, let's say a tablet of tramadol, nobody will know what you have taken, but you have taken something which works as much as alcohol. If I take a glass of alcohol and you just come into my apartment, you will know that I have taken something because of the smell. But if I take a tablet of tramadol... you wouldn't even notice I've taken anything (Interview #3, researcher in law enforcement agency, November 2023)"*

Thirdly, several interviewees mentioned contactless distribution, which is the norm for synthetic drugs in some countries, as being more appealing to young people and women. This can be understood as a reflection of the fact that traditional, in-person distribution in street markets is dominated by (older) men and is thus not inviting to either young people or women. However, while non-contact distribution was highlighted as a feature of synthetic drug markets, there is no reason it could not apply to traditional plant-based markets as well.

Women face more severe adverse health outcomes and social consequences of synthetic drug use

Owing to the higher number of men who use drugs, irrespective of whether they are plant-based or synthetic, the interviewed experts noted that overall, the aggregated burden of disease and the adverse health and social consequences of drug use were higher among men.[65]

Experts also stated that the range of novel synthetic drugs currently on the market, the little-known or little-researched nature of their pharmacology and the potential intensity of their psychoactive effects may present more challenges for treating men and women suffering from acute adverse effects of their use or drug use disorders.[66]

Nevertheless, women who use drugs face more severe adverse health and social consequences, as they tend to increase the amount of drugs they consume (e.g. opioids and amphetamines) more rapidly than men, thus experiencing an accelerated onset of substance use disorders – this is the "telescoping effect" observed among women in treatment for opioid and stimulant drug use disorders.[67, 68] Women in treatment for drug use disorders generally have a higher risk than men of experiencing psychiatric comorbidity and of exposure to intimate partner violence, as well as the associated elevated risks to sexual and reproductive health that women who use drugs experience.[69, 70, 71]

In a study on people in treatment for methamphetamine use disorders, women reported experiencing problems related to methamphetamine use at a younger age than men; women also reported more severe problems associated with their use of methamphetamine and were more likely than men to have injected methamphetamine in the past year. Furthermore, women experienced a greater psychological burden, reported greater use of emotional coping strategies – using skills for processing and dealing with feelings caused by stressful situations –[72] and had greater levels of adverse childhood experiences than men.[73] Women who are mothers and suffer from drug use disorders are further stigmatized and are also at risk of losing custody of their children, therefore accumulating more adverse life events.[74]

> *"There is a certain sociological reality which confers on men liberties that are not accorded to women" (Interview #83, awareness and information centre service provider, December 2023)*

Social stigma, the lower economic power of women and patriarchal societal arrangements give rise to a host of negative repercussions for women who use drugs

The key informants interviewed, representing different sectors, offered several reasons for which women were thought to be disproportionately affected by drug use in general. Foremost, there was agreement among the key

informants across the seven countries that women were much more affected by stigma related to drug use.[75] Along with social stigma, other factors such as the lower economic power of women and patriarchal societal arrangements were reported to give rise to a host of negative repercussions for women who used drugs. Firstly, compared with men, women were considered by the experts interviewed to be at greater risk of physical, including intimate partner violence, sexual and psychological abuse as a result of their drug use, their drug-seeking behaviour or drug use by their partners and acquaintances.[76] Physical abuse followed by sex or during sex is also commonly reported in the scientific literature in the context of transactional sex for drugs or money.[77, 78] Many impoverished women who are homeless, particularly those who are drug dependent, also rely upon men for economic support and may trade sex for drugs such as methamphetamine, and thus face abuse on multiple levels.[79]

Some synthetic drugs are considered to have a shorter duration of action in the body (e.g. fentanyl compared with heroin);[80] others, such as methamphetamine when it is smoked compared with cocaine when it is snorted or smoked, have a longer duration of action.[81] However, the relatively shorter duration of the rush and the "pleasurable effects" of methamphetamine and fentanyl necessitate frequent intake or injecting, with the associated harms of unsafe injecting practices.[82, 83]

The vulnerability of women stemming from conventional gender roles and gender power structures and relations may also increase their vulnerability to risky sexual and injecting behaviours, thereby increasing their risk of infection HIV, viral hepatitis and other STIs.[84, 85, 86, 87] Gender-based violence also significantly increases the risk of HIV and other STIs among women and girls who use drugs.[88] Moreover, the increased accessibility of synthetic drugs may further compound several of these vulnerabilities and problems for women who use drugs.

Discrimination, violence and physical abuse may also prevent women from seeking health care

Many of the interviewees, both those with lived experience of drug use and those providing services, stressed that the increased risk to which women were exposed as a result of involvement in drug use also extended to instances of abuse by authorities (e.g. the police arresting women for drug possession or sex work) or abuse by other service providers (e.g. health-care workers) who are supposed to help people.[89] This may, in particular, deter some women from seeking help or exacerbate the impact of prior physical or sexual abuse. As an example, in one study in North America, street-based women who use opioids commented that in addition to the street-level violence and abuse they faced, criminalization and stigma surrounding their use of drugs and involvement in sex work made them reluctant to report overdoses, potentially increasing the risk of overdose-related harms, including death.[90] In other studies in North America, vulnerable people who used opioids reported that fear of violence and sexual abuse prevented them from making use of services.[91, 92] In addition, in settings where street-based sex work intersects with drug markets, sex workers can face an increased risk of harm due to the criminalization of both activities, especially when drug use is part of the interactions between sex workers and clients.[93]

Greater stigmatization of drug use by women often means a greater likelihood of them being rejected by their families and/or communities.[94] In that regard, some interviewees representing mental health services spoke in terms of "social" or "relational" consequences for women (e.g. a family break-up), as opposed to the "economic" impact on men (e.g. a job loss), of their drug use.[95] The combination of stigma and the lower economic power of women can also lead to their need to engage in sex work and in exchanging sex for drugs.[96] Furthermore, some interviewees, including some with lived experience of drug use, mentioned the greater likelihood of engaging in risky sexual practices as a health consequence disproportionately affecting women.[97] Lastly, one interviewee in Kazakhstan with lived experience of drug use noted that women who inject drugs may be at a disproportionately high risk of HIV infection if they share needles with their partners.[98] Data also show that women are less likely than men to inject drugs, but that the women who do inject drugs are more likely than men who inject drugs to be living with HIV.[99]

> *"There is a big gender component. The man's opinion is as follows: 'I take the dose first, since I'm sicker compared to my female partner. And she is always the second'. If that happens, the woman has a higher risk of getting HIV."*
> *(Interview #28, person with lived experience of drug use, November 2023)*

Young people are more likely to be involved with the criminal justice system due to their drug use

With respect to age, interviewees noted two consequences of drug use disproportionately affecting young people. Firstly, young people were seen as much more likely to be involved with the criminal justice system as a consequence of their drug use.[100] This was primarily attributed to antisocial, aggressive and destructive behaviour observed among young men who use drugs (externalizing symptoms), although one interviewee suggested that drug withdrawal may often be a driver of disruptive or problematic behaviour among young people.[101] Secondly, young people were thought to be more likely to engage in risky sexual behaviours, which carried with it a concomitant increased risk of contracting sexually transmitted diseases. This observation was applicable across most countries, but was particularly pronounced in Kazakhstan, where interviewees repeatedly highlighted the practice of "chemsex" in which young people were engaging.[102] Interviewees in Senegal also mentioned young people getting kicked out of their homes as another consequence of drug use, which in turn makes it more difficult for the young people to address their drug use or seek professional help.[103]

"Chemsex" and use of synthetic drugs in a sexual context

One behaviour involving the use of synthetic drugs in a sexual context, particularly among groups of men who have sex with men, is often referred to in the scientific literature as "chemsex" or "sexualized drug use"; it has been described as the use of specific substances during sexual activity to sustain, enhance, disinhibit or facilitate the sexual experience.[a, b, c, d, e, f] As part of "chemsex", the use of three type of synthetic drugs, either alone or in combination, has been reported in the scientific literature. These include methamphetamine, mephedrone and GHB or GBL, which are often used with MDMA, ketamine or cocaine and sildenafil, tadalafil or vardenafil (drugs that are used to treat erectile dysfunction disorders), as well as amyl nitrites.[g, a, b,]

Besides the motives of enhanced sexual performance and increased sexual pleasure, other motives for the use of synthetic drugs in a sexual context include the feeling of destigmatization (of the sexual behaviour), the feeling of belonging, feelings of emotional openness, oneness, empathy or sympathy (entactogenic effects), as well as its help in establishing relationships and facilitating sexual intercourse with multiple partners over a longer period of time.[h, g]

Sexualized drug use is also seen beyond the realms of "chemsex" among men who have sex with men. The use of GHB and methamphetamine, for example, has also been reported among heterosexual couples and partners. In this context, GHB is used intentionally, as opposed to earlier reports of its use as a "date-rape drug", in order to enhance socializing and sex among partners.[i, j]

The use of drugs in a sexual context has been associated with high-risk sexual behaviours, including unprotected sex with multiple partners, and with an increased risk of contracting sexually transmitted infections, including HIV and viral hepatitis. For instance, the odds of engaging in risky sex for heterosexual methamphetamine users is much higher than for non-methamphetamine users.[k] Moreover, compared with men, women who use methamphetamine have a higher propensity for engaging in sex, especially risky sexual behaviour, and have an increased chance of getting infected with HIV, viral hepatitis, and other STIs.[l, m, n]

a Hélène Donnadieu-Rigole et al., 'Complications Related to Sexualized Drug Use: What Can We Learn From Literature?', *Frontiers in Neuroscience* 14 (27 November 2020): 548704.

b Steven Maxwell, Maryam Shahmanesh, and Mitzy Gafos, 'Chemsex Behaviours among Men Who Have Sex with Men: A Systematic Review of the Literature', *International Journal of Drug Policy* 63 (January 2019): 74–89.

c Carol Strong et al., 'HIV, Chemsex, and the Need for Harm-Reduction Interventions to Support Gay, Bisexual, and Other Men Who Have Sex with Men', *The Lancet HIV* 9, no. 10 (October 2022): e717–25.

d Sharful Islam Khan et al., 'The Effects of Methamphetamine Use on the Sexual Lives of Gender and Sexually Diverse People in Dhaka, Bangladesh: A Qualitative Study', *Archives of Sexual Behavior* 50, no. 2 (February 2021): 479–93.

e T. Charles Witzel et al., 'Hi-Fun among Men Who Have Sex with Men in Bangkok: A Scoping Study Exploring Key Informants' Perspectives on Hi-Fun Contexts, Harms and Support Strategies', ed. Siyan Yi, *PLOS Global Public Health* 3, no. 8 (25 August 2023): e0002295.

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l Kiersten L. Johnson et al., 'Correlates of Risky Heterosexual Behaviors Among Women Who Use Methamphetamine', *Journal of Drug Issues* 46, no. 2 (April 2016): 148–60.

m Jennifer Lorvick et al., 'Sexual Pleasure and Sexual Risk among Women Who Use Methamphetamine: A Mixed Methods Study', *International Journal of Drug Policy* 23, no. 5 (September 2012): 385–92.

n Mostafa Shokoohi et al., 'Crystal Methamphetamine Use and Its Correlates in Women Engaged in Sex Work in a Developing Country Setting', *Drug and Alcohol Dependence* 185 (April 2018): 260–65.

Opioid crisis in North America – gender and overdose risks related to synthetic opioids

In North America, the opioid crisis attributed to the use of opioids, including more potent illicitly manufactured fentanyl and fentanyl analogues, has resulted in an unprecedented number of overdose deaths.[104] In 2022, there were 7,525 opioid overdose deaths reported in Canada (age-adjusted rate of 19.6 deaths per 100,000 population) – an increase from 2,831 opioid overdose deaths in 2016 (age-adjusted rated of 7.8 per 100,000 population);[105] the majority of opioid deaths reported in Canada involved fentanyls (82 per cent) and were among men (70 per cent).

In the United States, out of the total of more than 100,000 drug overdose deaths in 2022, 81,806 were attributed to opioids (age-adjusted rate of 25.0 per 100,000 population). This is nearly a fourfold increase in opioid overdose deaths since 2010, although the number of overdose deaths has stabilized since 2021. Also in the United States, more than 70 per cent of opioid overdose deaths were among men.[106] While overdose deaths attributed to pharmaceutical opioids remained stable from 2010 to 2022, from 2014 onwards, opioid overdose deaths attributed to synthetic opioids (primarily fentanyl) increased considerably, with more than a 24-fold increase between 2010 and 2022. The increase in synthetic opioid overdose deaths among men was nearly 2.5 times greater than among women over this period. The overdose deaths attributed to psychostimulants (primarily methamphetamine) also increased 18-fold over the same period, although more than 60 per cent of overdose deaths attributed to psychostimulants included synthetic opioids (fentanyl).[107] The overdose deaths attributed to psychostimulants (primarily methamphetamine) only increased ninefold between 2010 and 2022, however.

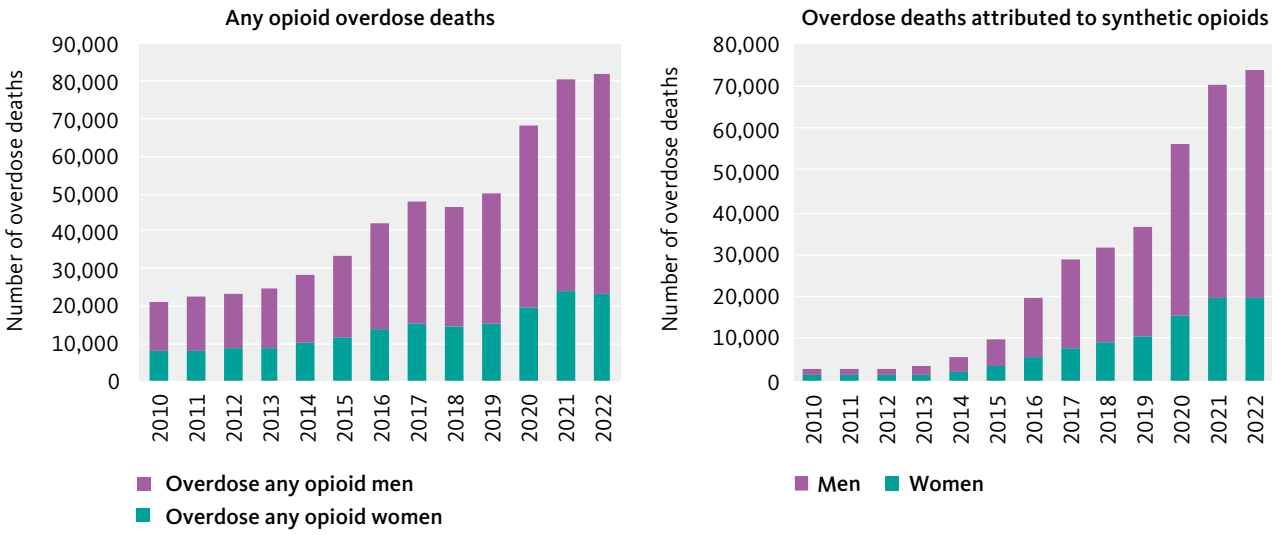
Social, structural and interpersonal factors affect population groups differently in terms of their vulnerability to health risks

There are social factors (e.g. racializing practices, poverty and gender norms), structural factors (e.g. policies and criminalization) and interpersonal factors (e.g. gender-based violence) that affect different population groups differently in terms of their vulnerability to intersecting health risks (such as overdose) and limited access to health services.[108]

In the United States, the rates of overdose deaths attributed to opioids have increased differently for different races and genders. Between 2013 and 2020, the national overdose rates for synthetic opioids increased by 2,209 per cent for men and by 991 per cent for women. However, the crude rates of synthetic opioid overdose increased by 6,890 per cent among black men and by 2,140 per cent among black women, which surpassed the rates of synthetic opioid overdose deaths among white women (840 per cent) and white men (2,022 per cent).[109]

There are also marked differences between men and women in vulnerability to drug-related harm, as well

FIG. 28 **Opioid overdose deaths, by gender, United States, 2010–2022**



Source: Centre for Disease Control, National Drug Overdose Deaths, CDC WONDER system, Multiple Causes of Death, 2024.

as in the risk of non-fatal and fatal overdose, in North America. For instance, in a study of community-based people who use drugs, compared with men, women who use opioids were reportedly more than twice as likely to self-report unintentional exposure to fentanyl and a risk of overdose.[110] Women who used or injected heroin daily were less likely to report unintentional exposure to fentanyl, as presumably they expected the heroin to contain fentanyl.[111] Similarly, in another study, both women and men described overdosing as a "chronic" condition and were apparently desensitized to the risk. Women and men described other risks related to health, safety and access to treatment services that often supplanted their fear or concern of overdose. Women feared physical and sexual violence more than the risk of overdose, and they prioritized caring for children and maintaining relations with child protection services, while men feared violence arising from obtaining and using street drugs and incarceration over the risk of overdose.[112] Fear of violence and abuse also prevented women from utilizing health services. Therefore, women who use opioids may perceive a heightened risk of opioid-related harm within the marginalized spaces they occupy in local drug scenes.[113]

Women face disproportionately high obstacles in accessing treatment and other services

Among the key informants interviewed in seven countries, there was universal agreement that women in general face disproportionately high obstacles in accessing and benefiting from health and social services offered to people who use drugs. The reasons attributed to this gender disparity, as mentioned by interviewees, fell into four general categories. Firstly, there is often a lack of awareness about available drug treatment services, particularly among women.[114] Secondly, there is often a lack of gender-specific facilities and services.[115] This means that women are unable to find services that correspond to their needs and may need to use services that were not designed with their needs in mind and therefore may not be appropriate or suitable for them. Thirdly, stigma associated with drug use, which disproportionately affects women who use drugs, as discussed above, contributes to women's reluctance to come forward and present at existing services.[116] For that reason, one interviewee suggested that it can be highly misleading to derive estimates of women who use drugs from data on treatment seekers, since that would likely result in an underestimation of women who use drugs or suffer from drug use disorders. A fourth contributing factor that was highlighted was the cost of services, which women, owing to their likely weaker economic and social situation or capital, may find difficult to cover.[117] Acknowledging cost as a barrier, one interviewee in Senegal did, however, mention that sex workers seeking treatment services were offered discounted or even free-of-charge services in polyclinics.[118]

> *"There is a certain tolerance regarding men [and their use]. But where women are concerned, there is no tolerance at all, and women internalize this." (Interview #83, awareness and information centre service provider, December 2023)*

> *"They [women] fear going to health facilities, they fear stigmatization, they fear hearing something that they do not like, they fear being judged... it's a fear that prevents them from going there." (Interview #84, representative of women's civil society organization, December 2023)*

Importantly, as observed by a few interviewees, the reasons for the gap in accessing services relate not only to the lack of services that specifically address drug use disorders. They also relate to a wide variety of services that people who use drugs may wish to avail themselves of, such as domestic violence shelters, because of the stigmatization of drug use. To illustrate, two interviewees in Kazakhstan with lived experience of drug use pointed out that women who use drugs are not allowed to use crisis centres for victims of violence.[119] This is validated by research findings that outline gender differences and barriers in access to and the availability of a range of drug treatment services.[120, 121, 122]

> *"In our country, if a woman has a behavioural disorder, she is not entitled to receive social assistance in crisis centres or to receive counselling about violence." (Interview #32, representative of network of people who use drugs, December 2023)*

Drug treatment services for adolescents are generally lacking

With respect to age differences, young people, especially minors, were seen as facing similar disproportionately high barriers as women. These included a lack of age-appropriate or age-specific services, a lack of awareness

about existing services and the cost, which is often unaffordable, of available services.[123] Also similarly to women, the role of stigma and the associated reluctance to seek help were mentioned as factors hindering young people's access to treatment, for instance in situations where parents would be notified if their child was to come forward as a person who uses drugs.[124] Minors, that is, those aged under 18, cannot access drug treatment or other health services without parental consent in many countries.[125, 126, 127] A few interviewees also mentioned the need to obtain parental consent and the need for legal documents for minors with drug use disorders to start treatment, which can act as a major barrier to accessing services.[128] According to some interviewed experts, parental consent may not be forthcoming if parents are worried about the societal stigmatization associated with having a child who uses drugs and about the legal processes for registration as a drug user, or if they themselves have a stigmatizing attitude towards drug use. Some experts from countries where national "narcotics departments" are responsible for the provision of drug treatment services reported that when adolescents are arrested on charges related to the use and possession of drugs, they are kept in "juvenile correctional services" but, if needed, are provided with treatment in adult treatment facilities.[129]

> *"A teenager or young person thinks 'I will come to talk to a narcologist, but they will immediately notify my parents'."*
> *(Interview #32, representative of network of people who use drugs, December 2023)*

Differences in drug acquisition

Interviewees generally observed that a common method for women to obtain drugs was through members of their immediate social circles, such as partners and friends.[130] Where women would directly purchase drugs themselves, modes of acquisition highlighted by interviewees included home deliveries, club-based purchases and, for sex workers, their procurers.[131] Therefore, it was considered less common for women to frequent street markets or known hotspots than men, who often buy from strangers or dealers in street markets.[132] The chief reason for this difference was the fact that street purchases were thought to be associated with notable safety risks for women.[133] Another reason put forward by interviewees from health services and pharmacies in Senegal was the existence of cultural expectations and social norms that would make it unusual for women, particularly young women, to go to certain public places such as bars, at least without a male companion.[134] The acquisition of synthetic drugs, including pharmaceutical drugs for unsupervised or non-medical use, through mail, drop boxes, informal networks and distribution points (such as informal pharmacies in West and Central Africa) therefore offered advantages to women.

Trading in sex for drugs, or in money to buy drugs, has been studied extensively in the context of synthetic drug use.[135] The acquisition of methamphetamine or other synthetic drugs by women, including adolescent girls, through transactional sex has also been discussed in the scientific literature, especially in the context of gendered power dynamics and culturally emphasized femininity, that is, the socially approved model of femininity that positions women as complementary and inferior to men.[136, 137, 138]

With regard to age differences related to the acquisition of synthetic drugs, interviewee testimonies suggest that young people are most inclined to depart from the traditional model of in-person sales, especially in street markets or hotspots. They instead prefer methods such as home delivery (arranged either online or over the telephone) and obtaining drugs from their friends and acquaintances.[139] In Kazakhstan, and to a lesser extent in Senegal and Thailand, social media platforms were also highlighted as an important channel for obtaining drugs.[140] Reasons for this offered by interviewees included young people's familiarity with new technologies, as well as the fact that traditional markets were dominated by older people and therefore might not be very inviting for young people.[141]

> *"Now you don't have to go to a drug dealer like with opioid distribution. It was all through one person, you had to have access to that dealer. Now it's all through Telegram."*
> *(Interview #32, representative of network of people who use drugs, December 2023)*

Gender differences in arrests and contact with the criminal justice system for drug law offences

An examination of data related to the supply of drugs (e.g. numbers of arrests for drug law offences by gender and individual event-level seizures where the gender of the offender is reported) shows several differences between men and women.

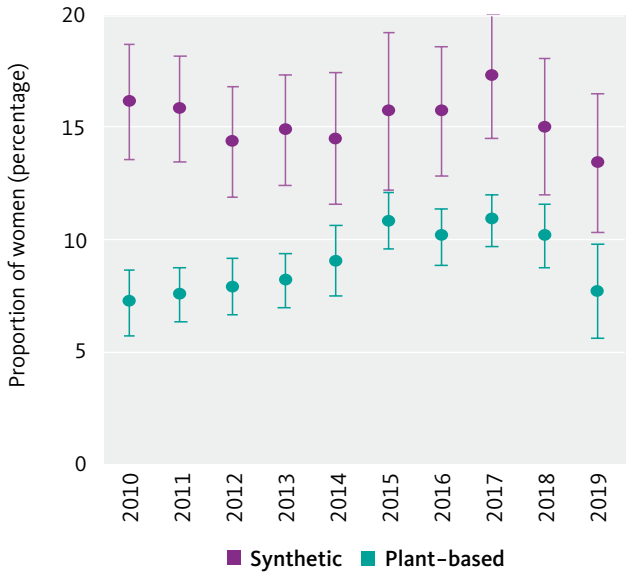
Global data reported by Member States[142] show that the large majority of those in contact with the criminal justice system for drug law offences are men. Between 2010 and 2022, close to 90 per cent of all arrests for drug law offences (including both offences of drug production and trafficking and offences of possession for personal use) were committed by men. While the proportion of women ranged from 0 to 37 per cent in different countries around the world between 2010 and 2022, in no country did women outnumber men in terms of formal contact with the police for drug-related offences. Over time, there has been a slight upward trend in the proportion of women involved in drug-related offences, rising from 8.6 per cent in 2010 to 10.8 per cent in 2022. However, gaps in data collection and reporting call for caution in interpreting those global estimates. Data gaps may be even more relevant for synthetic drugs given how quickly new synthetic drugs may enter or, in the case of NPS, exit a market or may be misidentified by those collecting or reporting arrest or seizure data.

Data on people who had formal contact with the police for drug law offences show that the proportion of women in such contact is higher overall for synthetic drugs (15.1 per cent in the period 2015–2019) than plant-based drugs (10 per cent in the same period). This applies to both possession and trafficking. At the same time, data also show that the proportion of women arrested for possession of drugs is higher overall than for drug trafficking, irrespective of the drug category.[143]

There are differences, however, within each category of drug, namely, plant-based and synthetic. The average proportion of women arrested for drug law offences varies depending on the specific drug, from 1.1 to 15.6 per cent for plant-based drugs and from 3.7 to 27.5 per cent for synthetic drugs (in the period 2015–2019).[144]

There are also differences between countries. In the period 2015–2019, in North America, Oceania, Europe and East Asia, a higher proportion of women were arrested for synthetic drug offences compared with offences involving plant-based drugs, while in several countries in Latin America, Africa, the Near and Middle East, Central Asia, South Asia and South-East Asia the opposite was reported.[145]

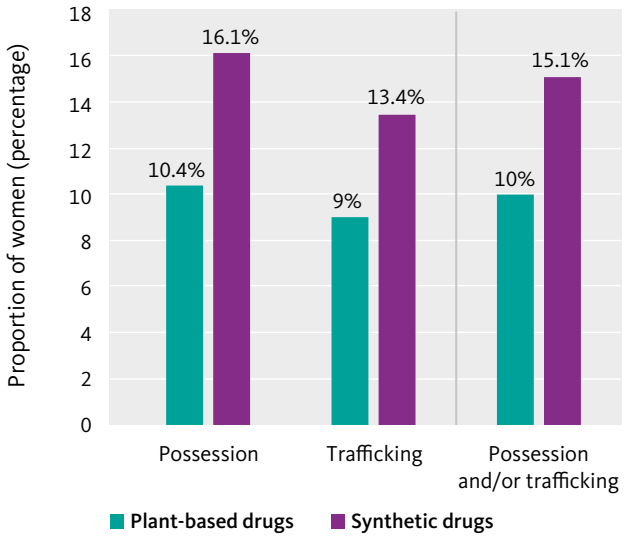
FIG. 29 **Proportion of women among people who had formal contact with the police for drug law offences, 2010–2019**



Source: UNODC, responses to the annual report questionnaire.

Note: Data cover 98 countries and proportions are calculated as raw averages.

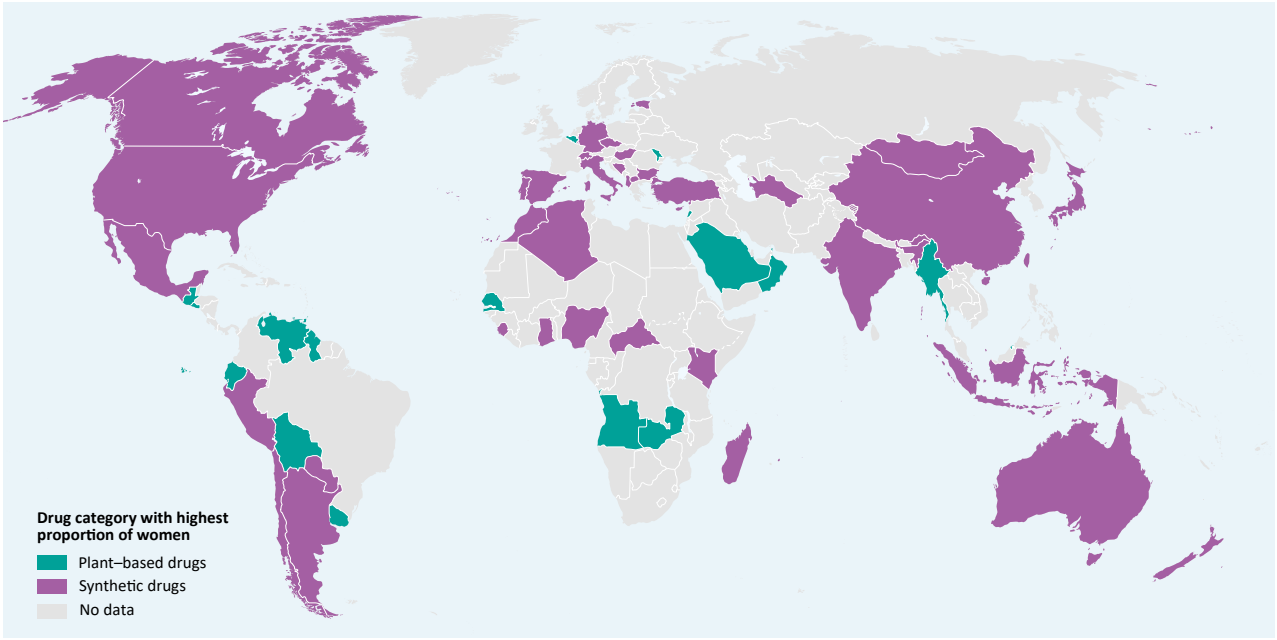
FIG. 30 **Proportion of women among people who had formal contact with the police for drug law offences, by drug offence category, 2015–2019**



Source: UNODC, responses to the annual report questionnaire.

Note: Information based on data reported in the period 2015–2019 by 64 countries and territories, including 13 in Africa, 15 in Asia, 15 in the Americas, 19 in Europe and 2 in Oceania.

MAP 12 Drug categories with the highest proportion of women for drug law offences*, 2019 or latest year available (2015–2018)



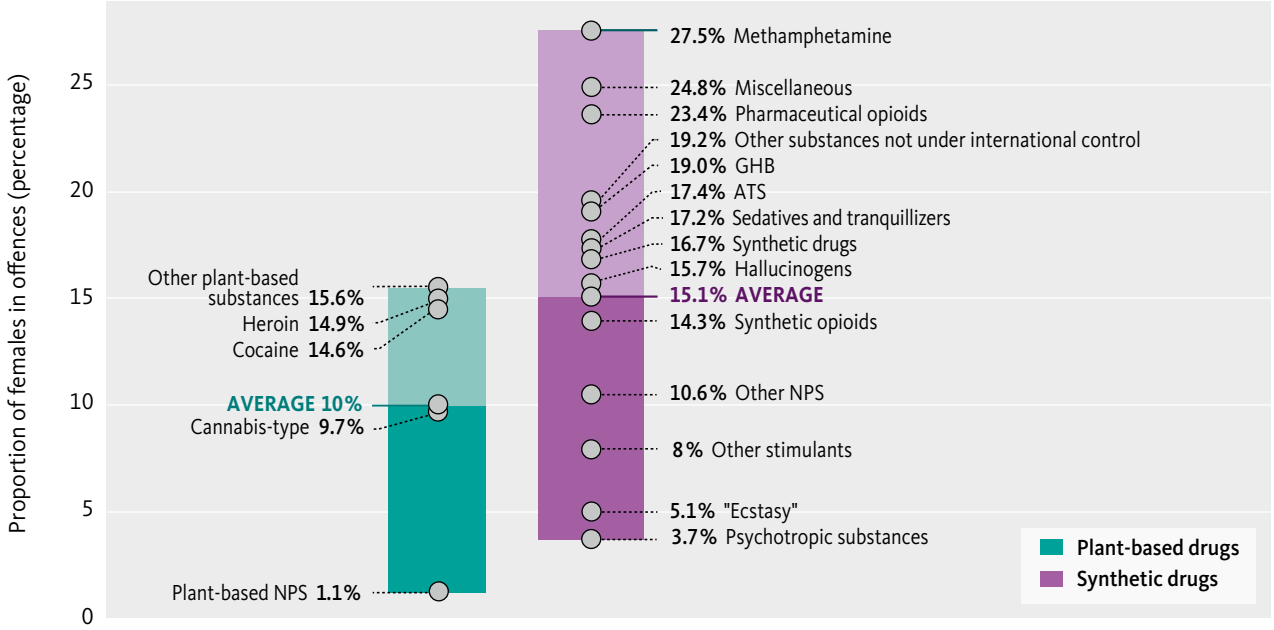
The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations. The final boundary between the Republic of Sudan and the Republic of South Sudan has not yet been determined. Dotted line represents approximately the Line of Control 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. A dispute exists between the Governments of Argentina and the United Kingdom of Great Britain and Northern Ireland concerning sovereignty over the Falkland Islands (Malvinas).

Source: UNODC, responses to the annual report questionnaire.

Note: The map is based on information received from 61 countries and territories, including 12 in Africa, 14 in Asia, 15 in the Americas, 18 in Europe and 2 in Oceania. Overall, the proportion of women was higher for synthetic drugs than plant-based drugs in 44 countries and territories, while in 17 countries and territories the proportion was higher for plant-based drugs than synthetic drugs.

**Drug categories with highest proportion of women among people who had formal contact with the police for drug law offenses (possession and trafficking).*

FIG. 31 Proportion of women among people who had formal contact with the police for drug law offences, by drug, 2015–2019



Source: UNODC, responses to the annual report questionnaire.

Information reported by Member States[146] indicates that the proportion of women prosecuted, convicted or sentenced for drug-related offences is lower than the proportion of men, possibly because a higher proportion of women are prosecuted, convicted or sentenced for drug possession-related offences than for drug trafficking-related ones. To what extent these differences are also related to the kind of drugs trafficked by men and women remains, however, difficult to determine as relevant data are not available by drug type. Nevertheless, women who come into contact with the criminal justice system for drug-related offences often have a history of abuse and mental health issues, may have been victims of trafficking in persons or sex trafficking and forced to carry drugs, and while in custody often suffer further violence and abuse.[147]

Differences in participation in the supply of synthetic drugs

Research, including previous editions of the *World Drug Report*, has found important distinctions between the role played by men and women in the illegal distribution and acquisition of drugs.[148] Men are often overrepresented in the more visible and high-risk aspects of drug supply, such as trafficking and distribution. They may be more likely to engage in activities associated with organized crime, large-scale drug production and distribution operations, and commit acts of violence.[149] In contrast, women are thought to occupy lower-profile roles in the drug supply chain, acting as couriers, hiding drugs or operating within smaller, less conspicuous networks.[150] The motivations for involvement in drug supply also differ between the genders, with men often influenced by economic factors and hierarchical structures, while some women may be drawn into the trade due to interpersonal relationships, coercion or economic vulnerability. Paradoxically, some women involved in the illicit drug trade highlight the economic autonomy or empowerment they can sometimes achieve through the illegal production or distribution of drugs.[151, 152]

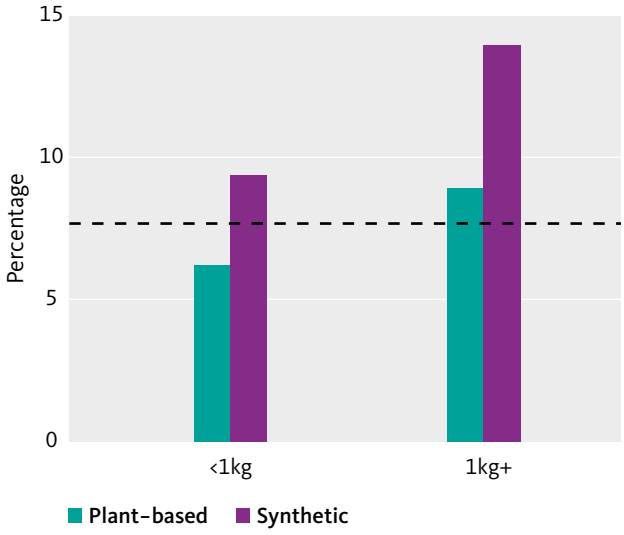
Synthetic drug manufacture is not geographically fixed and may involve distribution channels (e.g. the postal system, social media or informal markets that sell diverted medications) that reduce the involvement of violent actors.[153] It is still not clear whether these features could explain the greater participation by women in the illegal supply of synthetic drugs (especially if individuals are motivated by economic incentives, autonomy or empowerment), compared with illegal economies that are dominated by traditional plant-based drugs and that more often rely on armed or violent actors at several levels of the supply chain.

Differences in trafficking patterns

An examination of several hundred thousand significant individual drug seizure events[154] confirms the large dominance of men in the supply of drugs, supporting earlier findings based on aggregated data reported by Member States. Information on those arrested during drug seizure events shows some gender- and age-based variation when it comes to synthetic versus plant-based drugs. Overall, those arrested with synthetic drugs are slightly younger, and the size of the shipment varies depending on the type of synthetic drug in question, with women representing a larger share of arrestees for synthetic drugs than plant-based drugs.

Between 2013 and 2023, men were involved in almost 92 per cent of total seizure events. However, across all three weight categories considered (seizures below 1 kg, those above 1 kg and those reported in units or as items), data show that a higher proportion of women were reported as being involved in seizure events for synthetic drugs than plant-based drugs. This proportion was highest for seizures of 1 kg or more (14 per cent for synthetic drugs versus 9 per cent for plant-based drugs).

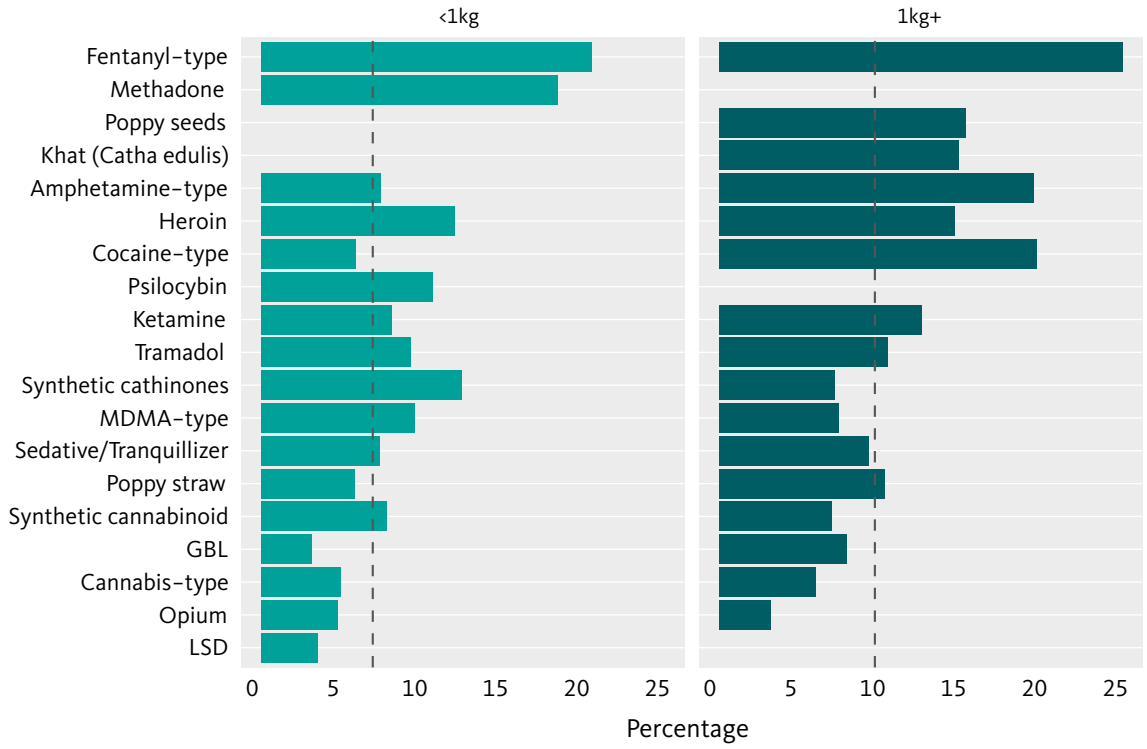
FIG. 32 Share of women arrestees by weight class and drug category for significant individual seizures worldwide, 2013–2023



Source: UNODC, Drugs Monitoring Platform.

Note: The dashed horizontal line is the overall average share. A 1 kg seizure weight was used to broadly separate high-level trafficking and lower-level supply and possession.

FIG. 33 **Share of women involved in significant individual seizures worldwide, by drug and weight class, 2013–2023**



Source: UNODC, Drugs Monitoring Platform.

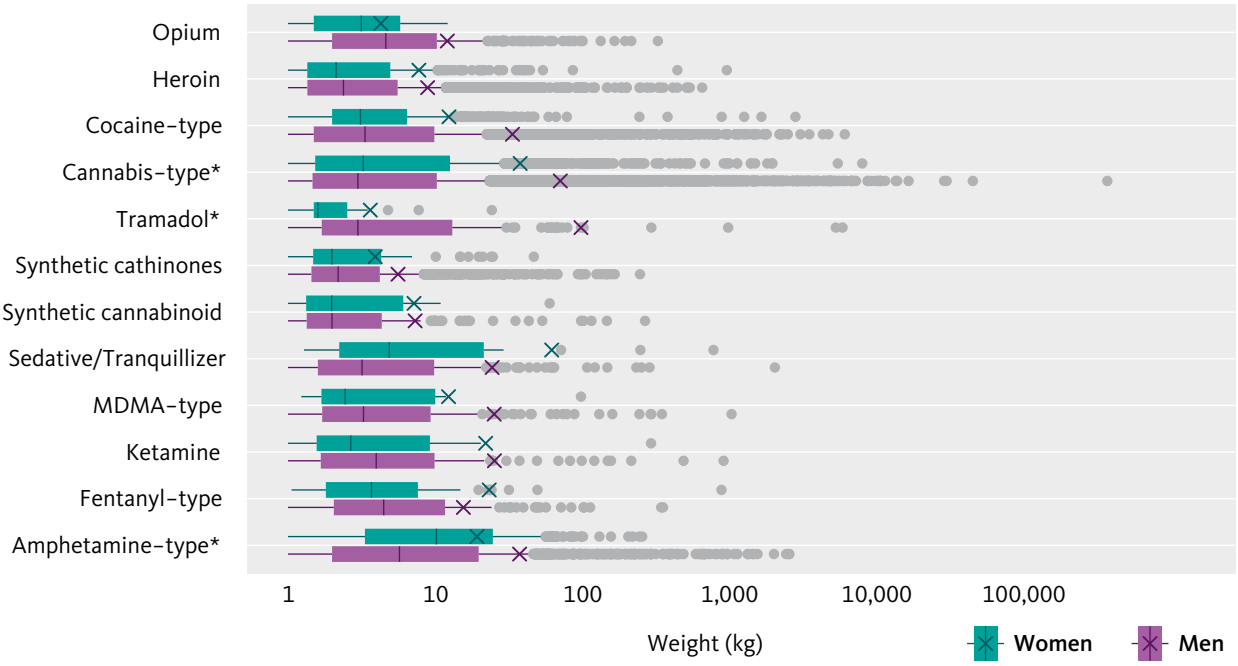
Note: Drug categories for which at least 30 or more observations are included. The dashed line plots the mean share for each seizure size category. Fentanyl-type are fentanyl and fentanyl analogues as reported in the annual report questionnaire. Amphetamine-type includes amphetamine and methamphetamine. MDMA-type includes MDMA and MDA as well as other analogues.

As with data on drug law offences from aggregate reporting by Member States,[155] the share of female arrestees varies by drug. Although men dominate overall, women represent the largest share of those involved in trafficking in several synthetic opioids, such as fentanyl and methadone. The highest share of arrests involving women was for kilogram and sub-kilogram amounts of fentanyl-type substances. In this case, almost one in five of those arrested in relation to sub-kilogram amounts of fentanyl and one in four of those arrested in relation to amounts greater than 1 kg were women. This was approximately double the average proportion for these quantity categories. No women were reported in arrests involving less common plant-based NPS like kratom (Mitragyna speciosa), other opiates or desomorphine.

In general, men and women were arrested with similar weights of seizures. However, women were involved in the shipment of larger quantities of amphetamine-type stimulants (a median weight of 10.3 kg for women versus 5.76 kg for men) and of cannabis or cannabis-derived products (3.26 kg versus 3 kg). Men were arrested in relation to seizures involving significantly larger shipments for tramadol (a median shipment weight of 3 kg versus 1.6 kg). For seizures weighing between 50 g and 1 kg, weights were only significantly higher for women when seizures involved cannabis (200 g versus 178 g) and cocaine (243 g versus 150 g), while for men seizure weights of opium were statistically significantly higher (350 g versus 132 g). In this category, the weight of synthetic drugs did not differ between the sexes.

As for age, individuals involved in the trafficking of synthetic drugs as measured by seizures are slightly younger than those arrested for supplying plant-based drugs. Differences were modest but statistically significant (the median age of those arrested for supplying synthetic drugs was 30, compared with a median age of 32 for those supplying plant-based drugs). When considering sex and age, female arrestees in individual seizures were on average older than male arrestees. However, these differences are not significant for all drugs. When comparing plant-based versus synthetic drug seizure events, median age differences were larger between the sexes for synthetic drugs than for plant-based drugs. The median ages of women are statistically significantly higher than men

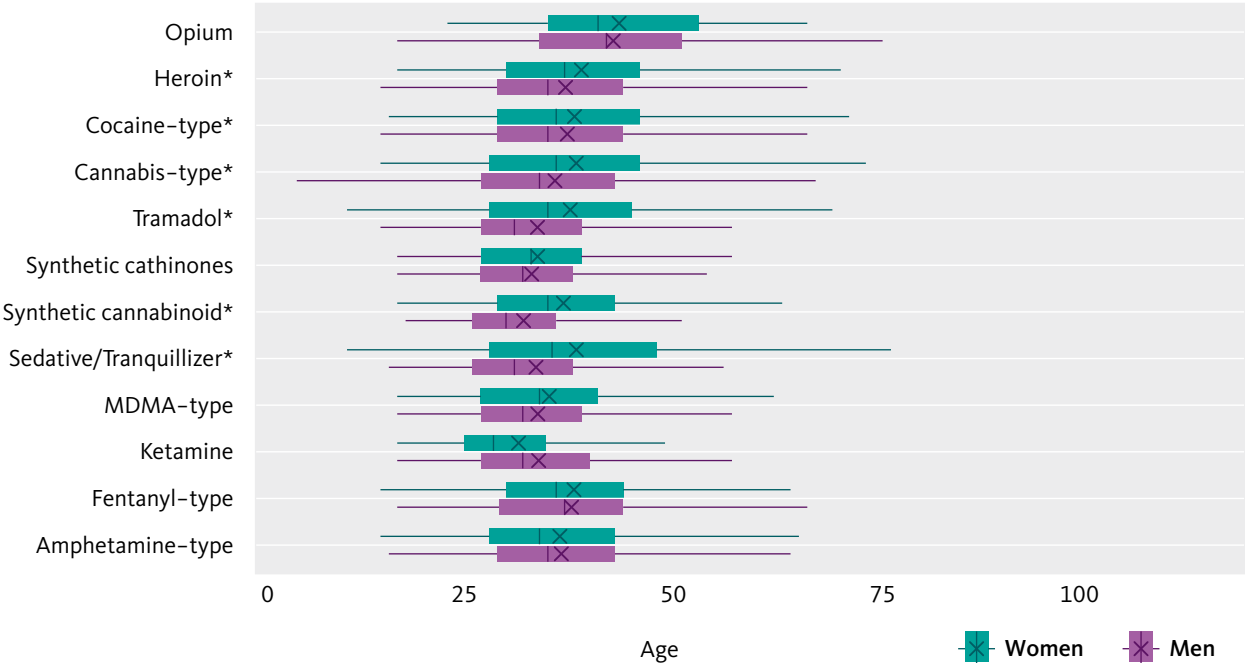
FIG. 34 Weight distribution of significant individual seizures of more than 1 kg worldwide, by drug category and sex of individual involved, 2013–2023



Source: UNODC, Drugs Monitoring Platform.

*Note: Means are plotted with a cross. * indicates a significant difference in median weights at p<0.05 using a Wilcoxon test. Fentanyl-type are fentanyl and fentanyl analogues as reported in the annual report questionnaire. Amphetamine-type includes amphetamine and methamphetamine. MDMA-type includes MDMA and MDA as well as other analogues.*

FIG. 35 Age distribution by drug category and sex of individuals involved in seizure events indicative of trafficking, worldwide, 2013–2023



Source: UNODC, Drugs Monitoring Platform.

*Note: Means are plotted with a cross. * indicates a significant difference in median weights at p<0.05 using a Wilcoxon test. Fentanyl-type are fentanyl and fentanyl analogues as reported in the annual report questionnaire. Amphetamine-type includes amphetamine and methamphetamine. MDMA-type includes MDMA and MDA as well as other analogues.*

when involving heroin (34 years for women versus 32 years for men), cocaine (33 years versus 32 years), cannabis (33 years versus 31 years), tramadol (32 years versus 28 years), synthetic cannabinoids (32 years versus 27 years) and sedatives/tranquillizers (33 years versus 28 years). The age difference between men and women was greater for synthetic drug seizure events than for plant-based drugs.

The key findings of low involvement by women in drug trafficking compared with men and greater shipment size for male arrestees discussed above are largely in line with the interviews undertaken in seven countries. No testimonies were offered of notable female involvement in synthetic drug manufacture (e.g. synthesis) and interviewees across the board considered trafficking in synthetic drugs to be very male-dominated, although a few interviewees in Kazakhstan suggested that it was not uncommon for women to be involved in distribution.[156] Where women are involved in the distribution of drugs, interviewees stated that they usually occupy very low-ranking positions near or at the end of the supply chain.[157] Examples of activities performed by women mentioned by interviewees included the distribution of drug stashes, sales from private homes, the organization of pickups by customers, and client recruitment and advertising.[158] In some cases, the strategy of having women serve as keepers of large drug caches may reflect instances in which women, who make up less than 10 per cent of those arrested according to data on both individual seizures and drug law offences, are found with higher weights of synthetic drugs.

> *"There are no women shopkeepers, there are no women at the top of the high-paying chain. Women fulfil the role of those who get you hooked on drugs. They are like network managers, advertising agents. The lowest paying, most unpleasant jobs are for women." (Interview #31, prevention specialist, December 2023)*

There was agreement among interviewees that women are typically recruited for distribution roles through family networks and acquaintances.[159] In some cases, women may be coerced into performing these roles or may be unaware that drugs are involved;[160] alternatively, as pointed out by an interviewee in Senegal, cultural and societal expectations in some societies may make it impossible for a woman to disobey an instruction from her male partner to distribute drugs.[161] Precariousness and low socioeconomic status were also highlighted as factors contributing to female involvement in trafficking.[162]

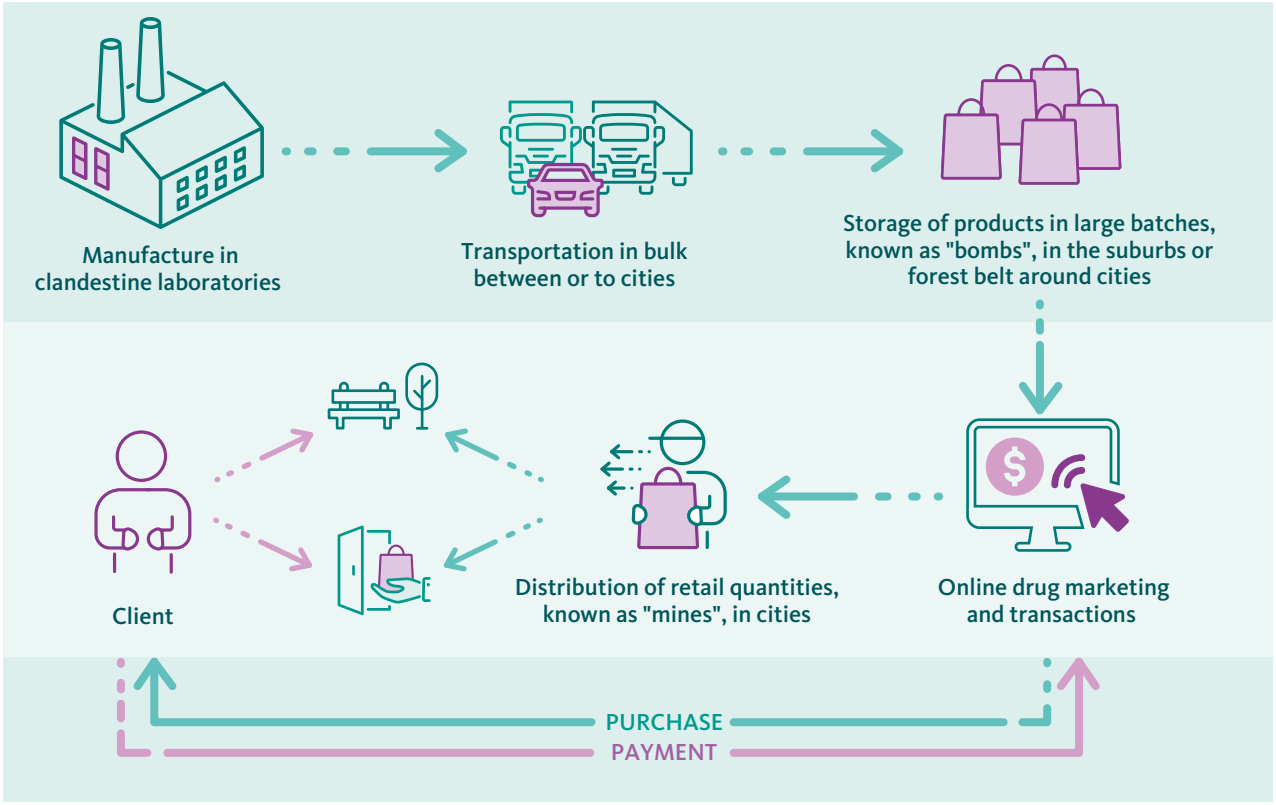
> *"It's necessary to obey the husband so that you are not perceived as a 'bad wife'." (Interview #80, law enforcement agency, December 2023)*

Interviewees in multiple countries suggested two reasons why women may be a more attractive option than men for organizing distribution networks. Firstly, women may be viewed as more likely to avoid apprehension by the police. This is because the police may be primed to look for men as part of their interdiction activities and women can use concealment and evasion strategies (e.g. faking a pregnancy) that men cannot.[163] Secondly, traffickers may want to involve women in their distribution schemes because women may be treated more leniently by the authorities, although the point raised previously about the heightened risk of abuse from authorities that women face still stands.[164] A qualitative study on women who use and sell drugs in China concluded that women who sold drugs limited sales to their social circles, maintaining an intimate circle of people who use drugs.[165] Rather than making large profits, women who sold drugs aimed to help friends and, in the process, acquired drugs for their own use.

Increasing demand for methamphetamine has also led to the development of individualized, low-cost, low-tech home-based processes for manufacturing the drug. This is the case in the United States, where it is commonly referred to as the "shake and bake method".[166] While some women may work alongside men in "traditional caretaking or supporting roles" in methamphetamine manufacture, other women reportedly work independently or in a lead role. This has given women using or selling drugs relative independence both financially and in terms of being less reliant on exchanging sex for drugs or of experiencing less sexual violence.[167, 168]

One interviewee even suggested that, similar to treatment data as discussed above, criminal justice data may underestimate the true extent of female involvement in drug trafficking.[169] Along similar lines, another interviewee suggested that women who use drugs may be underrepresented in police data because they take greater care to hide their drug use given the disproportionately higher stigma they face than men.[170]

FIG. 36 Example of a synthetic drug supply and acquisition scheme



Source: Interviews in Kazakhstan.

With respect to age, the picture regarding the involvement of young people in trafficking in synthetic drugs is very similar to that observed for women. No interviewee thought there was notable involvement of young people in manufacture, and their involvement in trafficking was generally seen as limited.[171] Where young people are involved in the supply chain, this would be at the low-ranking end, with them performing roles such as final distribution to customers and stash drop-off.[172] As was the case with women, families were noted as an important channel of recruitment into drug distribution,[173] although one interviewee in Kazakhstan also mentioned the recruitment of young people via social media.[174] People in Thailand with lived experience of drug use who were in recovery commented that the involvement of children and teenagers in the distribution of drugs, typically in an exploitative arrangement overseen by adults, was not uncommon.[175] On that note, two interviewees in Thailand raised the possibility that children may not always know what they are being instructed to transport.[176] Relatedly, one interviewee in Thailand mentioned the role of children and adolescents in selling to their peers.[177] Testimonies from Kazakhstan referred to the involvement of young people in drug distribution as a notable phenomenon, with quick and good earnings from the drug trade compared with legal employment cited as a chief motivator.[178] The income motivation was echoed in Jordan.[179] Furthermore, in Jordan and Thailand, interviewees explicitly mentioned the lower penalties applicable to children/youths found guilty of drug trafficking as an important factor driving their recruitment by drug trafficking networks.[180] In Kazakhstan, lower criminal penalties were also cited as a contributing factor to underage persons' interest in drug distribution.[181] In that regard, one interviewee from a law enforcement agency added that young people might be deliberately misled by their recruiters into believing that their underage status exempts them completely from criminal liability.[182] Lastly, in Thailand, a person with lived experience of drug use suggested that young people perform well as retail drug distributors because they are able to outrun and escape the police when necessary.[183]

Conclusions and implications

Research has long documented gender differences in demand for drugs. Men represent a larger share of those consuming drugs. They also experience elevated risks and harms associated with drug use, as they are often more likely to engage in risky behaviours, such as the injecting or intensive consumption of drugs. However, when women engage in drug use, they experience higher levels of health and social harm than men as they are more likely to contract HIV when injecting, develop drug use disorders more quickly, experience higher levels of stigma, abuse and violence, and have more limited access to treatment and care services than men. The synergistic association of gender-based violence, HIV and other sexually transmitted infections among women and girls who use drugs has also been well documented.[184] Moreover, women have been documented to consume drugs in the form of the non-supervised or non-medical use of pharmaceutical drugs at rates similar to those of men. The reasons behind these differences are myriad and may involve social attitudes or intrinsic differences between the sexes. Online platforms offer young people in particular greater access to and opportunities to use synthetic drugs.

Gender differences in the supply of drugs may be driven by a variety of factors, including gendered roles and expectations. Overall, the illegal supply of drugs is a male-dominated activity. Men are found at all levels of the supply chain and are generally thought of as being more likely to engage in violent behaviour when it comes to drug trafficking and distribution and as being motivated by economic pursuits and social hierarchies.[185, 186] Women involved in the illegal supply of drugs are often seen as having been coerced into criminality, and are often exposed to greater risks of violence and abuse, although research has documented the fact that some women may use illegal economies to achieve economic autonomy or empowerment.[187]

Responses given in interviews and analysis of data on people with formal contact with the police for drug law offences generally show similar patterns. Men dominate overall numbers, but women are also involved in the supply of drugs and the extent of that involvement may vary by drug type. A higher proportion of women are often found to be involved when it comes to synthetic drugs compared with plant-based drugs. The analysis of seizure events by sex of traffickers show that for men engaged in trafficking, shipment size does not differ significantly according to whether the drug is synthetic or plant-based. This stands in contrast to women engaged in trafficking, who are estimated to be involved in significantly larger shipment sizes in terms of weight for synthetic drugs compared with plant-based drugs. Young people in the drug supply chain are often involved in low-level distribution and sales or in online sales. Moreover, compared with adults, young people are seen as having less contact with the criminal justice system for drug-related offences, other than for offences related to the possession of drugs for personal use.

These differences are hard to explain without further research. Several hypotheses may explain larger shipments. For example, differences in shipment size by drug category may be due to the role that women play in supply networks, often acting as couriers or guardians of larger stashes, or perhaps due to the focus of law enforcement on men. Greater stigmatization of drug use in women may also contribute to women using illegally sourced or diverted medications, most of which are synthetic, to conceal their drug use behaviours.

As global drug markets continue to develop and synthetic drug manufacture becomes more common across new and emerging markets, and as women increasingly participate in economic activities, the role that women play in the drug phenomenon may become increasingly important. For one, a shift away from plant-based drug production may affect many women in rural households involved in opium poppy and coca bush cultivation. Additionally, the synthesis of drugs could in some cases shorten the supply chain and reduce reliance on trafficking groups that employ violence. This might attract more women to the illegal supply of drugs should they be able to obtain them through online channels or directly synthesize them near end markets.

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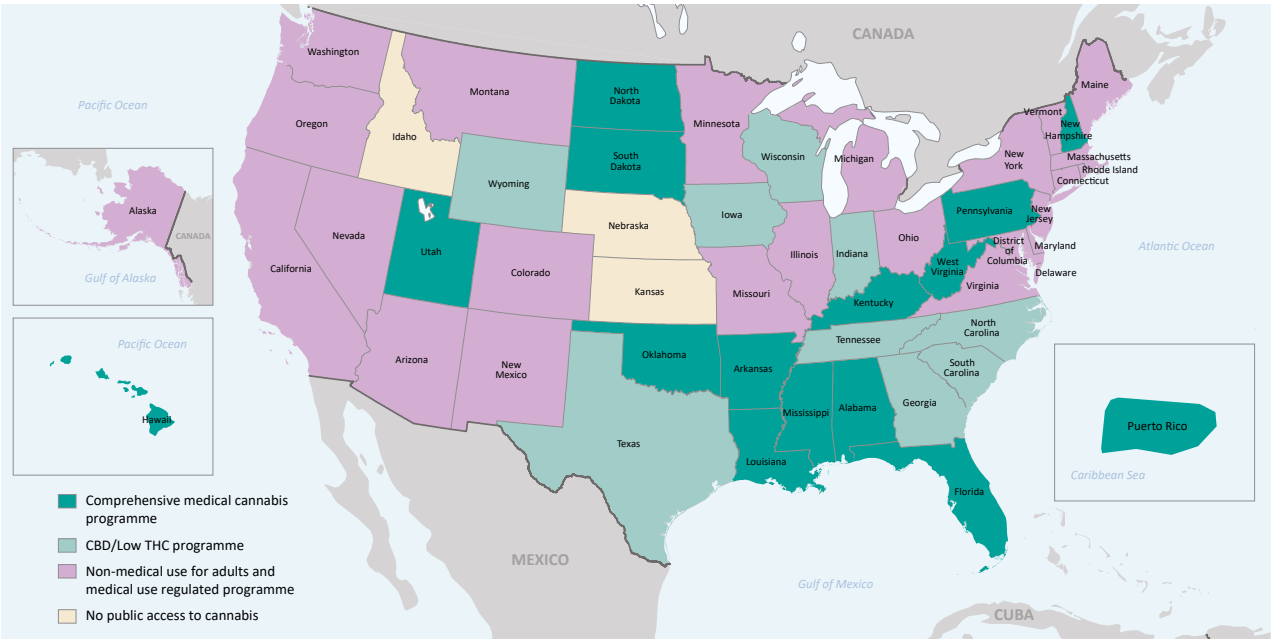
CANNABIS AND PSYCHEDELICS: DEVELOPMENTS IN REGULATORY CHANGES AND IN THE ENVIRONMENT ENABLING NON-MEDICAL USE OF CONTROLLED SUBSTANCES

The past decade has seen policy changes in Canada, Uruguay and several jurisdictions in the United States, which have legalized the development of the full supply chain (cultivation, production and sale) for cannabis for non-medical use by the adult population. Since the policy changes in these jurisdictions, there have been policy developments in other regions as well.

In North America, policy changes took place in the context of a spillover of the medical cannabis market and lobbying by advocacy groups, which have led to lower public perception of the risk of cannabis use. Commercial interests in both industry and some jurisdictions are also likely to have played a role in driving the policy changes.[1]

In the past two decades, there has also been a renewed interest, after the hiatus in the 1970s, in the therapeutic use of psychedelic substances and investment in clinical research for their use in the treatment of a range of mental health conditions.[2] Some of these scientific developments are quite advanced but have not yet resulted in scientific standard guidelines for medical use. The encouraging results of the ongoing medical research have, however, already led to policy changes that have allowed access to psychedelics for "quasi-therapeutic" use [3] in a couple of jurisdictions in the United States,[4] and for medical use in Australia and in one jurisdiction in Canada.[5] In addition, within the broader "psychedelic renaissance",[6, 7, 8] there are developments that have the potential to outpace the scientific therapeutic evidence and the development of guidelines for medical use, and to create an enabling environment that encourages broad access to the unsupervised, "quasi-therapeutic" and non-medical use of psychedelics that, according to the Convention on Psychotropic Substances, 1971, are only allowed for scientific and very limited medical purposes by duly authorized persons.[9] Together with increasing commercial interest in psychedelics, these developments mirror those that have led to broad access to non-medical cannabis in some jurisdictions, although they seem to be faster and greater in the case of psychedelics.

MAP 13 Jurisdictions in the United States that allow non-medical use of cannabis and medical use of cannabis and those that do not allow access to cannabis, December 2023



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

Source: National Conference of State Legislatures, December 2023.

Note: At the Federal level, cannabis remains an illegal substance in the United States of America.

Medical cannabis

As at 2020, 64 countries had provisions in their national legislation, or had developed guidelines, allowing for the medical use of cannabinoid pharmaceutical preparations and/or cannabis-based products for a range of medical conditions.[a] The regulatory approaches providing access to medical cannabis-based products to patients vary by country. At one end of the spectrum are approaches whereby patients with very specific medical conditions can access only cannabis products that have market authorization – this is the process that reviews and assesses the evidence, based on quality, efficacy and safety criteria, to support a medicinal product in relation to its marketing, and that grants a licence for the product to be sold under specific circumstances, defined dosages and indications for use. At the other end of the spectrum are approaches whereby any person with a self-declared condition can access cannabis-based products (including products with high THC and low CBD content), manufactured with limited quality oversight, through a medical dispensary on the recommendation of a physician or the discretion of a budtender, or by means of home cultivation of cannabis plants for medical use.[a]

The renewed interest in the potential therapeutic use of cannabis and cannabis extracts followed the discovery of the endocannabinoid system in the mid-1980s and a growing understanding of that system throughout the 1990s.[b, c] However, evidence of the effectiveness of cannabinoids in treating certain conditions remains limited, and typically cannabinoids are recommended for use after a patient has failed to respond to conventional treatment for those conditions or as an adjunctive therapy.[d, e] There is conclusive or substantial evidence that cannabis or cannabinoids are effective in the treatment of chemotherapy-induced nausea and vomiting, chronic pain in adults, those with multiple sclerosis spasticity symptoms, and epilepsy.[f, g, h] The evidence of the effectiveness of cannabis in the treatment of other conditions is, for the moment, only moderate, insufficient or inconclusive.[f]

a UNODC, *World Drug Report 2023*, Booklet 2, Contemporary Issues on Drugs, 2023.

b Roger G Pertwee, "Cannabinoid Pharmacology: The First 66 Years: Cannabinoid Pharmacology", British Journal of Pharmacology 147, No. S1 (January 2006): S163–71.

c Vincenzo Di Marzo and Stefania Petrosino, "Endocannabinoids and the Regulation of Their Levels in Health and Disease", Current Opinion in Lipidology 18, No. 2 (April 2007): 129–40.

d Adjunctive treatment of therapy means that certain medications are added to other medical treatment rather then used on their own.

e European Monitoring Centre for Drugs and Drug Addiction, Medical Use of Cannabis and Cannabinoids: Questions and Answers for Policymaking (Luxembourg: Publications Office of the European Union, 2018).

f National Academies of Sciences, Engineering, and Medicine and Board on Population Health and Public Health Practice, The Health Effects of Cannabis and Cannabinoids: The Current State of Evidence and Recommendations for Research, The National Academies Collection: Reports Funded by National Institutes of Health (Washington D.C.: National Academies Press, 2017).

g Anne Katrin Schlag, "An Evaluation of Regulatory Regimes of Medical Cannabis: What Lessons Can Be Learned for the UK?", Medical Cannabis and Cannabinoids 3, No. 1 (15 January 2020): 76–83.

h Penny F. Whiting et al., "Cannabinoids for Medical Use: A Systematic Review and Meta-Analysis", JAMA 313, No. 24 (23 June 2015): 2456.

In exploring these issues, this chapter reviews the growing landscape of regulatory changes beyond the legalization or regulation of the full supply chain for non-medical cannabis, and provides an update on selected indicators measuring the impact of the legalization of the full supply chain for non-medical cannabis in Canada, the United States and Uruguay. Drawing parallels with developments in access to cannabis for non-medical use, the last part of the chapter looks into the various developments in an enabling environment driven by commercial interests, beyond clinical trials and medical research, that may further open avenues of access to psychedelic substances in unsupervised and non-medical settings.

Regulatory changes allowing access to non-medical cannabis

As at January 2024, Canada[10] and Uruguay,[11] through legislative processes, and 27 jurisdictions of the United States (23 states, 3 territories and the District of Columbia),[12, 13] through either popular ballot or legislative measures, had enacted legal provisions that allow the production and sale of cannabis for non-medical use. In addition to these jurisdictions, 15 other state-level jurisdictions in the United States have provisions for medical cannabis programmes with varying degrees of permissibility, and 9 jurisdictions allow "low THC, high CBD" products for medical use in limited circumstances. Most of the jurisdictions

Summary of recent policy developments in countries permitting varying levels of cannabis cultivation and sale for non-medical use

	Summary measures for regulating non-medical use of cannabis
Germany	The Cannabis Act came into force in April 2024; it regulates the controlled access to non-medical cannabis among adults, allowing home cultivation for personal consumption and non-commercial cultivation of cannabis within cannabis associations or clubs. Pillar 2 of the Act envisages setting up regional pilot projects for commercial supply chains for cannabis for non-medical use.
Luxembourg	Since June 2023, legalization of the non-medical cultivation and possession of cannabis at home and reduced penalties for small amounts of cannabis possession in public.
Malta	Since 2021, legalization of the non-medical use, home cultivation and cultivation by licensed non-profit associations of cannabis for adults.
Netherlands (Kingdom of the)	The controlled cannabis supply chain experiment in 10 municipalities starting with the municipalities of Breda and Tilburg, allowing the cultivation of non-medical cannabis with formalized and controlled supply. Aimed at examining the possible decriminalization of good-quality cannabis supply, reviewing the most suitable implementation methods, and assessing the ensuing effects of such decriminalization on public health and safety.
South Africa	The Cannabis for Private Purposes Bill of 2023, setting forth legal provisions for the cultivation, possession and consumption of cannabis by adults in private dwellings: approved by the National Assembly and now with the upper body of the Parliament, where it is expected to be discussed during 2024.
Switzerland	Since 2021, collaborative pilot trials by local-level organizations to assess the impact of alternative regulatory strategies on non-medical cannabis use and to inform decision-making with evidence on the possibilities and limitations of regularizing the Swiss cannabis market.
Thailand	Lack of clarity regardingthe legal status of cannabis use and supply for non-medical purposes following recent legal notifications. The removal of cannabis from the list of prohibited substances has created a legal vacuum, followed by multiple notifications to regulate its non-medical use.

in Canada and the United States where the non-medical use of cannabis was legalized allow for production and sale by for-profit industry, while in Uruguay there is a partially controlled, State-regulated retail market with limited commercialization.[14] In Canada and in the different jurisdictions within the United States where the supply chain for non-medical cannabis was legalized, legalization was preceded by measures that allowed, with varying degrees of control and regulations, the medical use of cannabis for a broad range of conditions. The different approaches in regulations, implementation modalities[15] and management of the supply chain in different jurisdictions have had varying impacts on the non-medical cannabis market, especially in relation to public health and public safety outcomes.[16, 17, 18, 19]

In addition to the developments that have legalized or regulated the full supply chain for non-medical use of cannabis in Canada, the United States and Uruguay, other legislative approaches have also emerged in other countries, permitting varying levels of cannabis cultivation and sale for non-medical use of the drug under different circumstances. These modalities offer varying degrees of regulated access to cannabis for non-medical use.

Germany

In Germany, the Cannabis Act (*Cannabisgesetz, CanG*) came into force on 1 April 2024, while the regulation on the non-commercial communal cultivation of cannabis in cannabis clubs comes into force on 1 July 2024.[20] Pillar 1

of the Act allows for private self-cultivation by adults for personal use, as well as for the non-commercial cultivation of cannabis in cannabis clubs or associations. Pillar 2 of the Act envisages regional pilot projects setting up commercial supply chains for cannabis for non-medical use.[21]

The key objectives of the legislation focus on protecting health, especially of children and young people; education and prevention; and curbing the illicit cannabis market. Under the provisions of the law, adults are permitted to possess 25 grams of cannabis in public places, to grow up to three cannabis plants at their residence as home cultivation and to possess 50 grams at home for personal use.

Non-commercial cannabis clubs are allowed to cultivate and distribute cannabis to their members for personal use. The cultivation associations will be limited to a membership of 500 individuals who are 18 years or older and residents of Germany for at least 6 months. Members of a cultivation association can receive a maximum of 25 grams of cannabis per day and a maximum of 50 grams of cannabis per month for personal consumption. Specific provisions for members of non-commercial cannabis clubs aged between 18 and 21 are enforced. The amount of cannabis that may be dispensed to such persons is limited to 30 grams per month, with admissible THC content limited to 10 per cent. Cannabis clubs are not allowed within a distance of 200 metres from schools, children's and youth facilities or playgrounds. Cannabis cultivation areas must not be publicly visible and must be protected against external access.

Cannabis use is not permitted in the immediate presence of children and adolescents and within exclusion zones around institutions and places regularly frequented by children and adolescents. Moreover, advertising and sponsoring is strictly prohibited both for cannabis products and clubs. Additionally, awareness campaigns and prevention efforts targetting people using cannabis and specific groups will be initiated. The impact of the Cannabis Act will undergo gradual evaluation, with an interim report expected after two years and a final report after four years of implementation.

Luxembourg

In Luxembourg, new legislation from June 2023 legalized the cultivation and possession of non-medical cannabis at home. Bill No. 8033, the first stage of the Pilot Project for Legal Access to Cannabis for Non-Medical Use,[22] aims to regulate the cultivation of up to four cannabis plants per household for personal use by amending the act on the sale of medications and the combating of drug addiction of 19 February 1973. Strict guidelines are in place to ensure compliance and prevent unauthorized cultivation. Plants must be kept out of public view and personal use is strictly limited to private spaces. Any violations of these regulations will result in the applicable criminal penalties.[23]

Amidst these efforts to regulate personal cultivation, Luxembourg has introduced new regulations that change the penalties associated with the possession of small quantities of cannabis (less than 3 grams) in public.[24] While cannabis use in public remains prohibited, adults found in possession of or transporting fewer than 3 grams now face less complex and swifter criminal proceedings. Fines are reduced to between €25 and €500, with the option of a €145 police warning.[25] The legalization of self-cultivation and reduced penalties for small amounts of cannabis in public represent a set of initial measures of the pilot project, the goal of which is to curb the illicit market and its effects on public health and safety, and to regulate the supply of cannabis for non-medical purposes. However, this pilot project remains subject to ongoing evaluation and adaptation. To further safeguard public health and prevent the emergence of an unregulated parallel market for potentially unsafe cannabis products, the pilot project is intended to be used to implement regulations on the packaging and physical sale of cannabis seeds with a future THC content of more than 0.3 per cent for private and personal use, as recommended by the interministerial working group of the pilot project. These measures aim to ensure the quality and safety of non-medical cannabis products while facilitating controlled access.[26]

Malta

In 2021, Malta passed an Act to establish the Authority for the responsible use of cannabis and amending existing legislation concerning cannabis, thereby legalizing the non-medical use and home cultivation of the drug.[27] Possession of up to 7 grams of cannabis for personal use and the personal cultivation of up to four plants in a safe and discreet place by a person over the age of 18 no longer constitute a crime. Consumption of cannabis, however, is limited to private spaces, and public consumption can lead to an administrative fine. Personal possession of more than 7 grams up to 28 grams of cannabis is now considered an infraction subject to an administrative fine of between €50 and €100.[28] In addition, any excessive possession beyond the personal limit of 7 grams, or if there is suspicion of trafficking or sale, is liable to lead to

the seizure of the cannabis by the police. Finally, the maximum possession is limited to 50 grams of dried cannabis and 4 plants for personal use by a person over the age of 18 within one's own registered residence, regardless of the number of residents, although the plants cannot be visible to the public.[29]

Individuals are also authorized to establish or join Cannabis Harm Reduction Associations (CHRAs) specifically dedicated to cultivating cannabis for their members' exclusive non-medical use. These licensed associations must adhere to stringent regulations, including registration with the Authority for the Responsible Use of Cannabis. The Authority is responsible for regulating any private association that cultivates and possesses cannabis for distribution to its members, as well as for advising the Government on its national policy on cannabis and putting in place a mechanism to monitor the use of cannabis for non-medical purposes. These associations for cannabis cultivation must operate on a not-for-profit basis and adhere to the guidelines of Malta's Voluntary Organizations Act. Cannabis distribution is strictly limited to members, and each assocation is prohibited from exceeding a membership of 500 individuals, while cannabis users are restricted to membership in a single such association. To ensure traceability and accountability, each shipment distributed by the association must bear distinctive markings. Additionally, they are mandated to maintain a register of their members and adhere to a daily distribution limit of up to 7 grams per member and a monthly limit of 50 grams per member.[30]

The Kingdom of the Netherlands

The possession and sale of cannabis for non-medical use are criminal offences in the Kingdom of the Netherlands, but they are nonetheless tolerated under Dutch law for amounts that do not exceed 5 grams of cannabis (marijuana or hashish) or 5 cannabis plants.[31] Similarly, production and distribution remain prohibited in the

TABLE 1 The five phases of the experiment in the the Kingdom of the Netherlands

Phase	Date/duration	Description
Preparatory phase	From July 2020	› Selection and designation of growers for licit cannabis cultivation.
Start-up phase	15 December 2023; expected to last six months maximum.	› A minimum of two cannabis growers will supply regulated cannabis to coffee shops in Tilburg and Breda. › Cannabis offered in the participating municipalities will come from legal and illegal sources.
Transitional phase	End of Q1 2024; expected to last for six weeks following the start-up phase	› The phase will start once it has been established that the quantity, quality and diversity of the cannabis produced are sufficient. › All the conditions that are important for a closed coffee shop supply chain will be met. › Both legally and illegally sourced cannabis will be available.
Experimental phase (including an evaluation period)	Expected to last a minimum of four years	› Growers will supply the regulated cannabis to all coffee shops in the 10 participating municipalities. › The coffee shops will be expected to sell only the regulated cannabis to ensure uniformity in the experiment and its results. › Coffee shop owners will also be expected to reach agreements with growers regarding the assortment of products that will be offered for sale. › A monitoring mechanism is to be established to record the effects of the experiment.
Completion phase	Following previous phase	› A return to the application of existing Dutch laws and regulations in the 10 municipalities unless the Government decides otherwise.

Source: Ministerie van Algemene Zaken, 'Aanleiding en opzet experiment gesloten coffeeshopketen - Experiment gesloten coffeeshopketen (wietexperiment) - Rijksoverheid.nl', onderwerp (Ministerie van Algemene: Zaken).

Kingdom of the Netherlands, but cannabis coffee shop retailers (where cannabis can be consumed on the premises by residents only) have been sourcing their cannabis supply from the illicit market, a phenomenon often referred to as the "back door problem". Recently, the Dutch Government has initiated a controlled cannabis supply chain experiment, whereby it allows the cultivation of cannabis for non-medical use with a formalization and control of its supply in 10 municipalities starting with the municipalities of Breda and Tilburg.[32] The experiment's purpose is to examine the possibility of decriminalizing the supply of good-quality cannabis, review the most appropriate way such decriminalization could be implemented and assess the ensuing effects of decriminalizing the supply chain on public health and safety. More specifically, the experiment aims to evaluate "whether and how production and distribution of quality-controlled cannabis can be realized and decriminalized, from the entire chain from production to sale, as well as evaluating whether the closed supply chain is effective".[33]

Coffee shops in the participating municipalities will continue to observe a number of existing rules during the experiment, such as the ban on advertising, the maximum allowance of 5 grams per person per day, the prohibition of any public nuisance and the ban of alcohol and hard drugs.[34] The coffee shops will be obliged to buy, stock and sell cannabis only from the approved growers; they will also have to keep records of the varieties and quantity of cannabis both stocked and sold, their source and information on the carrier involved in the transportation of the drug. Coffee shops will also have to ensure that the sale of cannabis is to residents of the Kingdom of the Netherlands only, and their staff will have to be trained to provide information on non-medical cannabis use and the associated risks to their customers.[35]

South Africa

In South Africa, a 2018 decision by the Constitutional Court determined that national legislative provisions that prohibit the possession, use and cultivation of cannabis by adults in private dwellings were in contravention of the Constitution of the country.[36] The Court, however, suspended the application of its order for a period of 24 months to allow the Parliament to deliberate on ways in which those constitutional violations in the relevant Acts would be corrected.[37] During the period of suspension, the possession, use and cultivation of cannabis by adults in private were not considered as criminal offences, while the consumption of cannabis in public or in the presence of minors and non-consenting adults continued to be prohibited.[38]

To address the issues raised by the Constitutional Court, a new Cannabis for Private Purposes Bill was approved in 2023 by the National Assembly; this legislation is now with the National Council of Provinces, the upper body of the Parliament. The Bill sets forth the legal provisions for the cultivation, possession and consumption of cannabis by adults in private dwellings. It sets no limit on the quantity of seeds and seedlings used for cultivation, while cultivation itself is limited to four flowering plants or their equivalent per adult, or eight flowering plants or their equivalent per dwelling occupied by two or more adults.[39] Personal possession of cannabis in a public place is limited to 100 grams of dried cannabis or its equivalent, or to one flowering plant or its equivalent. In private dwellings, the maximum quantity allowed is 600 grams of dried cannabis per adult or 1,200 grams per dwelling occupied by two or more adults. The sale of cannabis remains prohibited under the Bill, but gifting cannabis is allowed under certain provisions; the prescribed quantity for gifting is, for cultivation materials, 30 seeds or seedlings or a combination that does not exceed the limit, that is, one flowering plant or its equivalent, or 100 grams of dried cannabis or its equivalent. In addition, the Bill also criminalizes activities pertaining to cultivation, possession, provisioning and dealing in products derived from dried cannabis, and cannabis plants and cultivation materials outside the limits set by the aforementioned provisions. The penalties for violating the provisions range from fines (for example, for smoking in public) to imprisonment of 6–15 years for possessing trafficable or commercial amounts of dried cannabis products.[40]

Switzerland

Since 2021, Switzerland, through its Ordinance on Pilot Trials under the Narcotics Act (BetmPV) allows cantons, municipalities, universities and other organizations to collaborate and conduct pilot trials to assess the impact of alternative regulatory strategies on the non-medical use of cannabis and to use evidence to inform decision-making regarding the possibilities and limitations of regulating the cannabis market in Switzerland.[41, 42] The pilot trials will run for a maximum of five years with the possibility of a one-time extension of two years. The number of participants in each pilot trial may not exceed 5,000 and only adult individuals who can prove that they already use non-medical cannabis are eligible to participate. Each pilot trial aims to investigate priorities specific

to the Swiss context; these include measures to promote individual and public health, to foster public order and reduce criminality associated with cannabis, to protect minors from the non-medical use of cannabis and build support mechanisms for young people at risk, and to ensure the effective and equitable governance of cannabis that seeks to establish regulatory oversight and a controlled supply chain.[43]

There are currently seven approved cannabis pilot trials in Switzerland; overall, they are designed to allow for a comparative understanding of the different distribution and regulatory models in order to better understand the effects of regulating the cannabis market on improving health and public safety outcomes. In the Canton of Basel, the pilot study Weed Care investigates how the regulated sale of non-medical cannabis through pharmacies compares with the current situation (in which cannabis is sourced from the illicit market) in terms of patterns of use and the health of the study participants.[44] In the areas of Liestal and Allschwil, Grashaus projects are designed to investigate whether the structured and controlled sale of "high-quality, organically grown cannabis" by trained sales personnel in cannabis shops can lead to a shift in consumption patterns, reducing the harm caused by non-medical cannabis use, minimizing the use of illicitly sourced cannabis and associated problems, and promoting overall health and well-being from physical, psychological and social perspectives.[45] In Geneva, La Cannabinothèque aims to assess the extent to which a programme providing regulated access to non-medical cannabis can enhance understanding of the substance and its associated concerns, contributing to a reduction in the health and social harms commonly associated with the non-medical use of cannabis.[46] In Zurich, the pilot trial Züri Can looks into the effects, on use patterns and on the participants' health, of sourcing selected non-medical cannabis products from controlled cultivation that are distributed under regulated conditions through different outlets, including the Zurich Drug Information Centre, 10 participating pharmacies and 10 social clubs in the city.[47] Based on the Quebec model of regulating the non-medical cannabis market, Cann-L in Lausanne is designed to assess the feasibility and potential effects of a non-profit cannabis sales approach as an alternative to the supply from the illicit market.[48] Finally, SCRIPT is a pilot project that assesses the impact of regulated, non-profit cannabis sales in pharmacies, along with associated advisory services, on non-medical cannabis use in the cities of Lucerne, Biel and Bern.[49]

Thailand

In Thailand recent legal notifications have left unclear the legal status of cannabis use for non-medical purposes. The removal of cannabis from the list of prohibited substances has created a legal vacuum that has been followed by multiple notifications aimed at regulating the non-medical use of cannabis. Along with these new notifications or regulations, many offences related to the non-medical use of cannabis are still bound to legislation from the 1990s.

Pursuant to the Protection and Promotion of Thai Traditional Medical Knowledge Act B.E. 2542, Thailand subjects the flowering tops of the cannabis plant to regulatory oversight by classifying it as a controlled herb. Formal authorisation is therefore required for research, exportation, sale, or processing of such controlled herb. Those granted permission must adhere to statutory conditions, including, but not limited to, the prohibition of sales to individuals below the age of twenty years old, pregnant or lactating women, and students, unless prescribed by a medical practitioner. Moreover, the distribution of controlled herb via vending machines, electronic platforms, or digital networks, as well as commercial advertisement of cannabis products are prohibited. Cannabis extracts are regulated as narcotics which require authorization for their manufacture, distribution, and use, under the Narcotics Code. This regulatory framework aims to control their use for medical purposes and in certain health products, ensuring that manufacturers obtain necessary permission and comply with established standards as outlined in various notifications to ensure consumer safety and prevent misuse.[50]

However, legislation around cannabis may evolve rapidly in Thailand. The Ministry of Public Health has submitted a draft Cannabis and Hemp Act for the consideration of the Cabinet. This draft Act intends to introduce comprehensive regulatory and oversight mechanisms for cannabis and hemp, covering their cultivation, production, distribution, importation, and exportation, with an aim to harness medical benefits, enable industrial application (for hemp), and promote scientific research of cannabis and hemp. Such regulatory measures aim to safeguard public health and shield vulnerable population from the potential adverse effects associated with the consumption of cannabis and hemp. The draft Act also seeks to deter misuse, prohibit consumption for recreational purposes, and imposes conditions to seek permission for cultivation of these plants.[51]

Oregon's brief experience with the decriminalization of drugs

There are countries around the world that have removed criminal penalties (or never imposed them) for the unauthorized possession or use of controlled substances beyond cannabis. In the United States, although federal law retains criminal penalties for the possession or distribution of drugs, drug policy changes, in this regard, at the municipal and state levels have mostly addressed legalization of the supply of cannabis for certain purposes or have decriminalized or depenalized its possession or use. One state whose actions have been widely watched, Oregon, aimed to extend the decriminalization of possession for non-medical use to any drug. Although that effort was at the forefront of drug policy changes in the United States, it was not new to other countries in parts of Western Europe and Latin America. Developments in Oregon, with its recent reversal of such efforts, together with a recent change in British Columbia, Canada, where drug possession in public spaces has been recriminalized,[a] underscore the importance of understanding that the outcomes of drug policy reforms can be highly dependent on the specific context in which drug policy implementation takes place but also of understanding the nature of drug dependence and the deterrent effect criminalization of certain behaviours might have in a particular setting, when attempting to draw inferences about causal effects of policy changes.

Oregon's Measure 110, also known as the Drug Addiction Treatment and Recovery Act, was a popular ballot initiative passed by nearly 60 per cent of Oregon voters in November 2020[b] to reclassify criminal penalties for the possession of all controlled drugs as civil violations. The manufacture and distribution, as well as the possession of large amounts, of controlled drugs remained criminal acts subject to penalties. Measure 110 decriminalized the possession of small amounts of controlled drugs, including cocaine, heroin and methamphetamine. Instead of being a misdemeanour offence, with those in possession of small amounts facing arrest, criminal charges and potential incarceration, individuals found in possession of smaller amounts of these substances (e.g. 1 gram of heroin, 2 grams of cocaine or 2 grams of methamphetamine) were henceforth to be subject to a civil citation and be expected to pay a fine of up to $100 that would be waived if the individual completed a health assessment.[c]

The Measure also established the Drug Treatment and Recovery Services Fund, which was to be financed by revenue from cannabis taxes and savings generated by reduced law enforcement and incarceration costs. The Fund was to support expanded access to drug addiction treatment services through the provision of grants to private service providers that offered detoxification services, counselling, low-barrier substance use disorder treatment, harm reduction services, housing support and peer support programmes. The reclassification of possession offences went into effect in February 2021, with the state legislature passing laws later in 2021 to implement other components of the Measure that required the provision of treatment services and expanded access to other services and outreach.[d]

From the outset, the services side of the initiative faced serious challenges due to delayed legislative implementation, poor grant management and limited funding for treatment. Internal auditing by the state found that service delivery fragmentation and a lack of stakeholder collaboration imperilled much of the initiative's effort to deliver treatment and provide services to those who were to be screened.[e] That was concerning given that Oregon already had the second highest rate of substance use disorders in the the United States and ranked last in terms of providing access to treatment.[e] In terms of numbers of arrests, early studies have indicated that the policy shift has resulted in declines in drug possession arrests in Oregon, with no significant increase in overall arrests, non-drug arrests, or arrests for violent crimes.[f]

In early 2024, the Oregon legislature voted overwhelmingly to reverse parts of Measure 110, making possession of controlled drugs a misdemeanour offence subject to a term of up to six months in prison and encouraging law enforcement to refer individuals to drug treatment.[g] As the legal changes were reversed after a few years, it is hard to accurately assess the effects of the policy that decriminalized drug possession in Oregon. Drug overdoses have increased in the past few years in Oregon; however, drug use and overdose deaths have also risen in neighbouring states that did not change their drug laws, pointing to underlying changes in the drug market as fentanyl has spread to the western half of the United States.[h, i] Preliminary analysis has found no association between decriminalization in Oregon and fatal drug overdose rates after adjusting for the rapid increase in the availability of illegally manufactured fentanyl.[j, k]

Compared with other places that have decriminalized drug possession, Oregon faces additional challenges that may have undermined the Measure's efficacy and resulted in its reversal. Unlike many places in Europe that maintain

access to universal health-care services and have lower economic inequality, Oregon relies on the granting of public funds to private providers to carry out screening and treatment. The rules governing and the funding of those services were delayed by several years and, according to internal state audits, were not effective due to redundancies in contracting and the "siloed nature" of substance use disorder treatment.[l]

It remains to be seen whether recriminalizing drug possession for non-medical use will have any effect on drug use, including public use and related disorders, and overdose deaths in Oregon. Additionally, efforts will be needed to monitor how recriminalization affects levels of incarceration and police-citizen interaction.

a Office of the Premier, "B.C. Moves to Ban Drug Use in Public Spaces, Taking More Steps to Keep People Safe | BC Gov News," April 26, 2024.

b Secretary of State of Oregon, "November 3, 2020, General Election Abstract of Votes Measure 110," n.d., https://sos.oregon.gov/elections/Documents/results/november-general-2020.pdf.

c Secretary of State of Oregon, "Drug Addiction Treatment and Recovery Act," August 15, 2019, https://sos.oregon.gov/admin/Documents/irr/2020/044text.pdf.

d Oregon Health Authority, "Oregon Health Authority : Drug Addiction Treatment and Recovery Act (Measure 110) : Behavioral Health Division : State of Oregon," n.d., accessed April 25, 2024.

e Oregon Secretary of State, "Oregon Health Authority: Too Early to Tell: The Challenging Implementation of Measure 110 Has Increased Risks, but the Effectiveness of the Program Has Yet to Be Determined," January 2023.

f Corey S. Davis et al., "Changes in Arrests Following Decriminalization of Low-Level Drug Possession in Oregon and Washington," *The International Journal on Drug Policy* 119 (September 2023): 104155, https://doi.org/10.1016/j.drugpo.2023.104155.all U.S. states have long criminalized most drug possession. In early 2021, both Oregon and Washington became exceptions to this rule when they fully (Oregon

g Oregon Health Authority, "HB4002 Factsheet," March 10, 2024.

h FB Ahmad et al., "Provisional Drug Overdose Death Counts," National Center for Health Statistics, April 17, 2024.

i Julie O'Donnell et al., "Drug Overdose Deaths with Evidence of Counterfeit Pill Use-United States, July 2019-December 2021," *MMWR. Morbidity and Mortality Weekly Report* 72, no. 35 (2023): 949–56.

j Michael Zoorob et al., "Drug Decriminalization, the Introduction of Fentanyl to Drug Markets, and Fatal Overdose in Oregon," *MedRxiv*, 2024, 2024.04.08.24305508.

k Spruha Joshi et al., "One-Year Association of Drug Possession Law Change with Fatal Drug Overdose in Oregon and Washington," *JAMA Psychiatry* 80, no. 12 (2023): 1277–83.

l Oregon Secretary of State, "Oregon Health Authority: Too Early to Tell: The Challenging Implementation of Measure 110 Has Increased Risks, but the Effectiveness of the Program Has Yet to Be Determined."

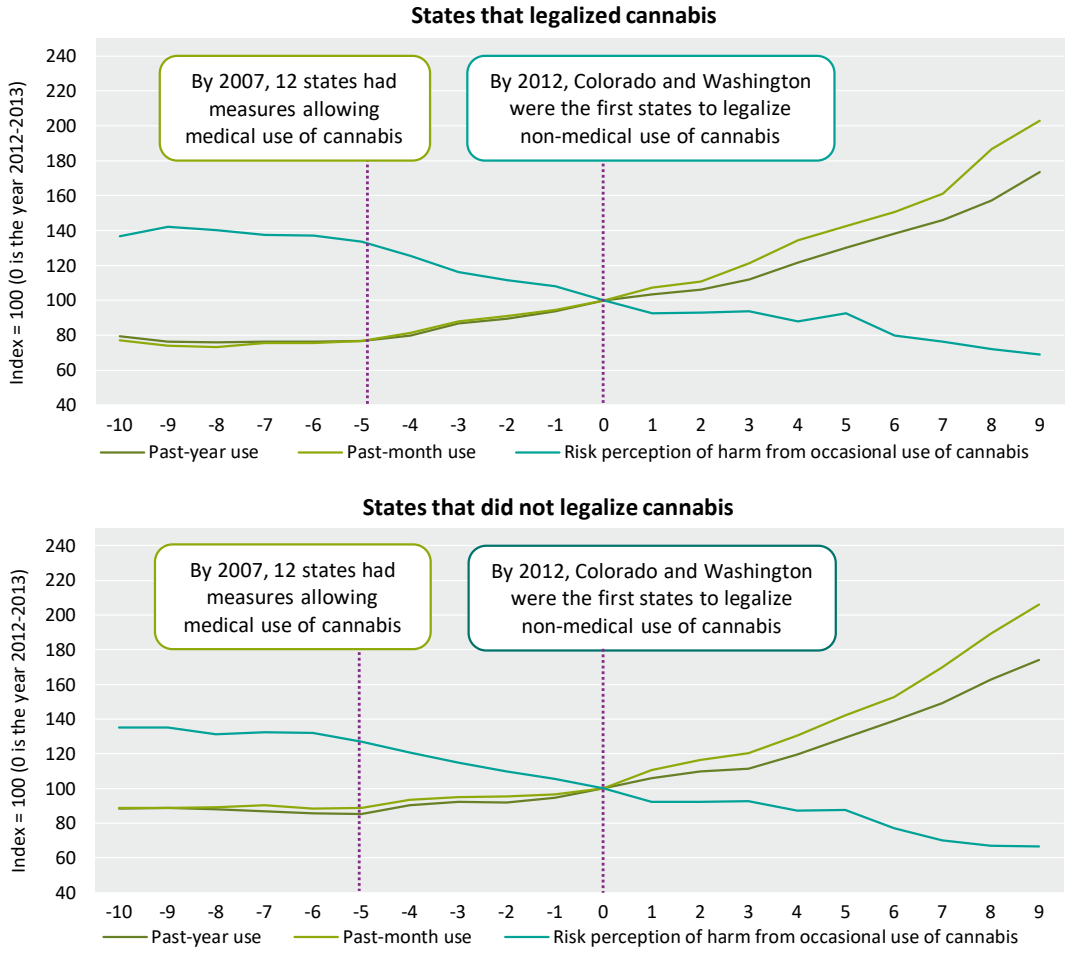
Update on the impact of cannabis legalization

A combination of drivers emanating from public policy concerns, including public health and safety concerns, and ambitions driven by profits and tax revenues, have led Canada and Uruguay and state-level jurisdictions in the United States to legalize the cannabis supply chain and adopt measures allowing the production and sale of cannabis for non-medical use. Notwithstanding the fact that assessing cannabis legalization is a complex undertaking, there have been efforts from both proponents and opponents of such policy changes to look at the outcome of different measures, often selecting indicators or a combination of them to focus exclusively on outcomes whose trends favour their pre-existing conclusions.

While it may take years for the full effects of legalization to accumulate, and years of rigorous monitoring of selected indicators to fully assess the impact of any policy change, including its unintended consequences, there are opportunities in the interim to observe short-term changes in those indicators as an intermediary outcome measure of the policy change. The *World Drug Report*, in its 2020 and 2022 editions, presented an extensive review of the outcome of policy changes that had permitted the for-profit production and sale of cannabis for non-medical use, in terms of public health, public safety and the criminal justice system. One concern highlighted was that implementing a policy that results in cannabis legalization is not an "on/off switch", but rather something that occurs along a continuum, although a typical research study design would consider that to be the case. It is also important to underscore the existence of systematic differences and different contexts between jurisdictions that have legalized cannabis, making it difficult to compare outcomes of cannabis policies between those jurisdictions. Thus, comparing outcomes across jurisdictions does not offer an ideal natural experiment and does not fully inform about the differential impact of cannabis legalization. Looking at changes in an indicator relative to before and after cannabis legalization in jurisdictions that have legalized it versus those that have not can also be misleading because trends in an indicator can be independent of legalization status; the effects of legalization in one state are likely to spill over into other states that may not have legalized the non-medical use of cannabis.

With these caveats in mind, and building on the early analysis of the impact of policy changes regarding cannabis legalization in the Americas presented in the *World Drug Report 2022*, this section briefly presents an update

FIG. 37 Trends in cannabis use among the population aged 18 and older in the states that legalized and those that did not legalize the non-medical use of cannabis, United States, 2002–2022



Source: United States, Substance Abuse and Mental Health Services Administration, Results from the 2022 National Survey on Drug Use and Health: Detailed Tables (Rockville, Maryland: Center for Behavioral Health Statistics and Quality, 2023).

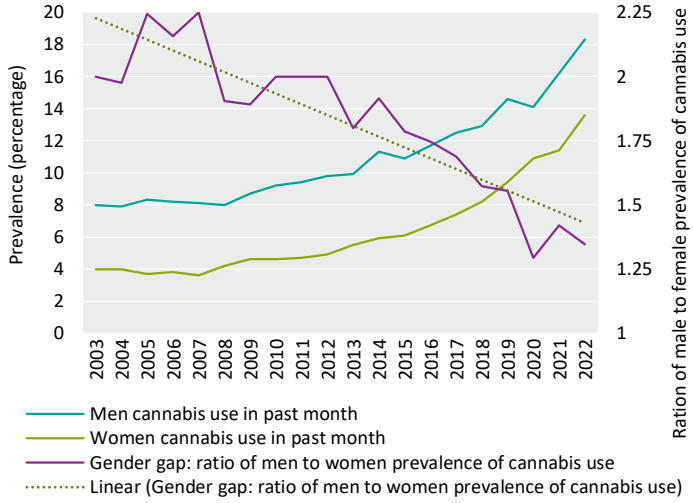
on the impact of cannabis policy changes on public health outcomes and on the existence of illegal markets in the jurisdictions that have legalized the production, sale and consumption of cannabis.

Public health outcome: cannabis use among the adult population shows increasing trends

Non-medical cannabis use among the adult population shows an increasing trend that is more pronounced in the frequent or daily use of cannabis, especially among young adults. This increasing trend in cannabis use can be seen in Canada, Uruguay and the United States.

In Canada and the United States, an increase in cannabis use was observed long before the full legalization of commercial cannabis. In the case of the United States, the expansion of the cannabis market was evident in 2007 and 2008, around the time that brick and mortar "dispensaries" were selling medical cannabis to all in Colorado and Washington (de facto legalization), and therefore before 2012, when the first two states legalized the commercial supply chain for and the non-medical use of cannabis.[52] The main increase in cannabis use in the United States can be observed in its past-month use and in its daily/near-daily use among those aged 18 years or older, which increased by nearly three times between 2002 and 2022. While cannabis use measures in the states that legalized non-medical use remains significantly higher

FIG. 38 Gender gap in past-month use of cannabis among the population aged 18 and older, United States, 2003–2022



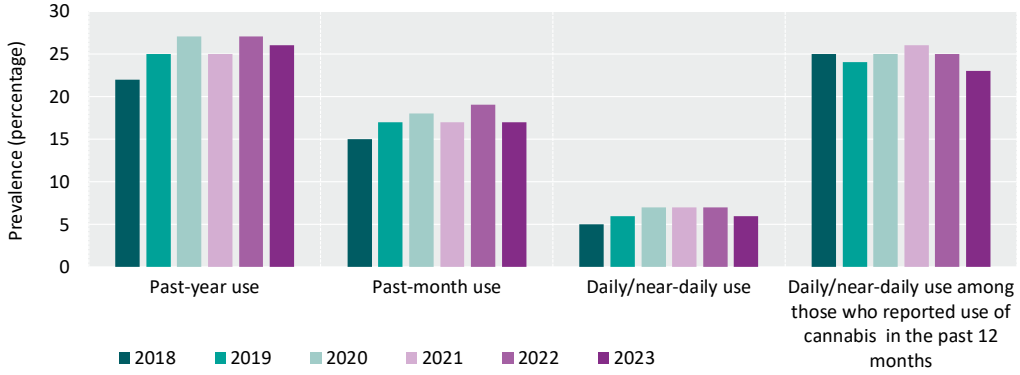
Source: United States, Substance Abuse and Mental Health Services Administration, Results from the 2022 National Survey on Drug Use and Health: Detailed Tables (Rockville, Maryland: Center for Behavioral Health Statistics and Quality, 2023).

than in those that did not, the trends in the two groups of states are very similar. The legalization of non-medical use of cannabis in itself does not account for the increase in cannabis use in the states that legalized it, as cannabis use in some of the early-adopter states such as Colorado was traditionally higher than the national average. Therefore, legalization may have simply accelerated a dynamic that had begun earlier and could in part be the result rather than the cause of the expansion of the cannabis market.

While cannabis use remains higher among men than women, the gender gap in past-month cannabis use has also been declining in Canada and the United States, and less so in Uruguay.[53] In the case of the United States, past-month cannabis use among women increased by more than three times between 2003 and 2022, which is a significantly higher rate of increase than among men.[54]

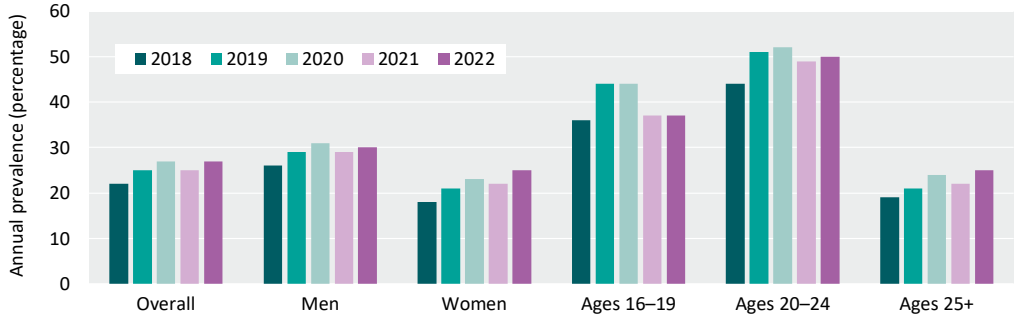
In the case of Canada, notwithstanding year-to-year changes in cannabis use, there was a significant increase in the past-year use, past-month use and daily/near-daily

FIG. 39 Trends in cannabis use, Canada, 2018–2023



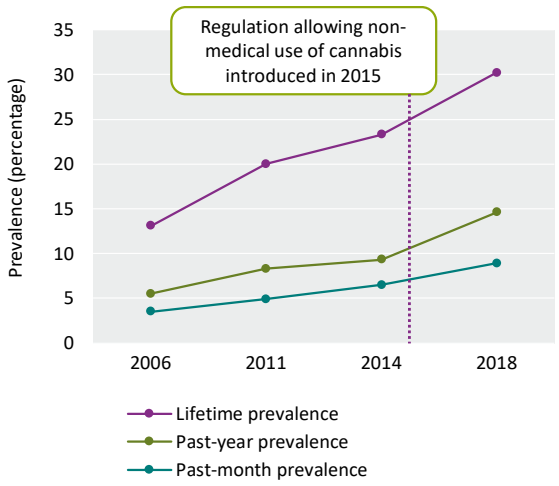
Source: Canadian Cannabis Survey. Cannabis use for non-medical purposes among Canadians (aged 16+). Ottawa: Health Canada; January 2024.

FIG. 40 Cannabis use by demographics, Canada, 2018–2023



Source: Canadian Cannabis Survey. Cannabis use for non-medical purposes among Canadians (aged 16+). Ottawa: Health Canada; January 2024.

FIG. 41 Cannabis use in the general population, Uruguay, 2006–2018



Source: 'VII Encuesta Nacional Sobre Consumo De Drogas En Población General' (Observatorio Uruguayo de Drogas, Junta Nacional de Drogas (JND) - Uruguay, 2019).

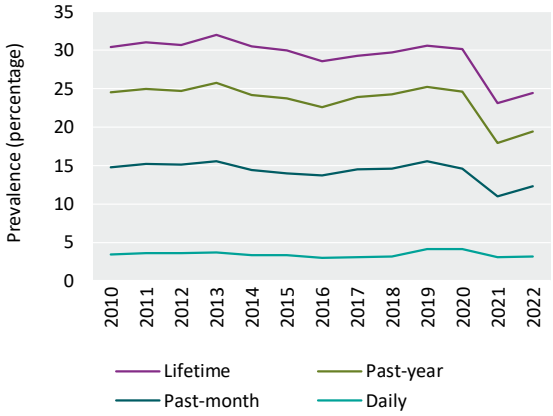
use of cannabis in the first few years after legalization especially among young adults aged 20–24, but with some stabilization after 2020.[55] However, the daily/near-daily use among those using cannabis decreased in 2022. A similar trend can be seen in Uruguay, where, between 2006 and 2018, the past-year and past-month use of cannabis increased 2.5-fold among the general population.

Each country and jurisdiction that has legalized cannabis started with a different level of cannabis use. Therefore, the outcome of legalization on the extent of use among adults may differ. In Canada and Uruguay and in jurisdictions in the United States, cannabis use started to increase long before cannabis was legalized. The increase measured in cannabis use among the adult population may thus be only partially due to changes in policies, which may have merely accelerated a dynamic that had begun earlier. In North America, the movement towards legalization has been a generational and continuous evolution. In Canada and in most jurisdictions of the United States, the path towards legalization came through initiatives allowing the medical use of cannabis, and those initiatives had varying degrees of permissiveness and restriction. Thus, the legal supply of cannabis predated de facto formal legalization, and that earlier legal supply could have had a greater impact on the extent of cannabis use than the subsequent formal legalization.

Cannabis use among adolescents appears to be rather stable

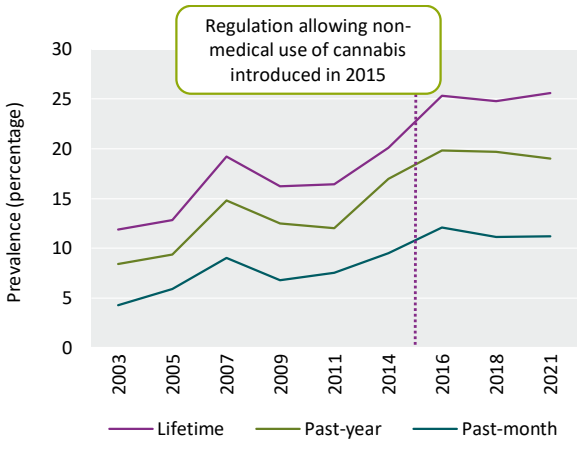
It would seem that cannabis legalization in Canada and the United States has not so far affected use of the drug in adolescents. While cannabis use remains much higher among adolescents in those two countries than in other countries, it has generally been stable, notwithstanding the decline in reported use during the years of the COVID-19 pandemic.[56, 57] The daily use of cannabis has also remained unchanged, while the regular vaping of cannabis has increased among adolescents in North America.[58] It should be noted that access to cannabis by people under a specific age (18 to 21, depending on the jurisdiction) continues to be prohibited by the new regulations.

FIG. 42 Cannabis use among high school students (combined), United States, 2010–2022



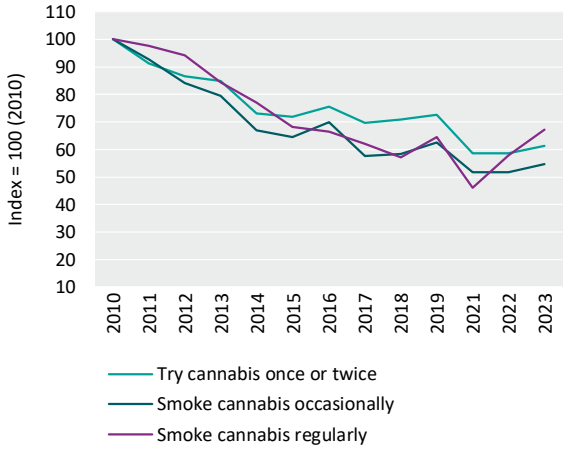
Source: The Monitoring the Future Study, University of Michigan, 2023.

FIG. 43 Cannabis use among middle school students (13–17 years), Uruguay, 2003–2021



Source: Junta Nacional de Drogas, IX Encuesta Nacional Sobre Consumo De Drogas En Estudiantes De Enseñanza Media Informe De Investigación, Uruguay, 2022.

FIG. 44 Trends in risk perception of harm from cannabis use, 12th grade students, United States, 2010–2023



Source: The Monitoring the Future Study, University of Michigan, 2023.
Note: Data for 2020 was not reported.

Cannabis use among adolescents did, however, increase in Uruguay, with a doubling of all measures of prevalence between 2003 and 2021. Nonetheless, it seems to have stabilized since 2016, suggesting that the new policy from 2015 may have halted the increase in cannabis use among adolescents.[59]

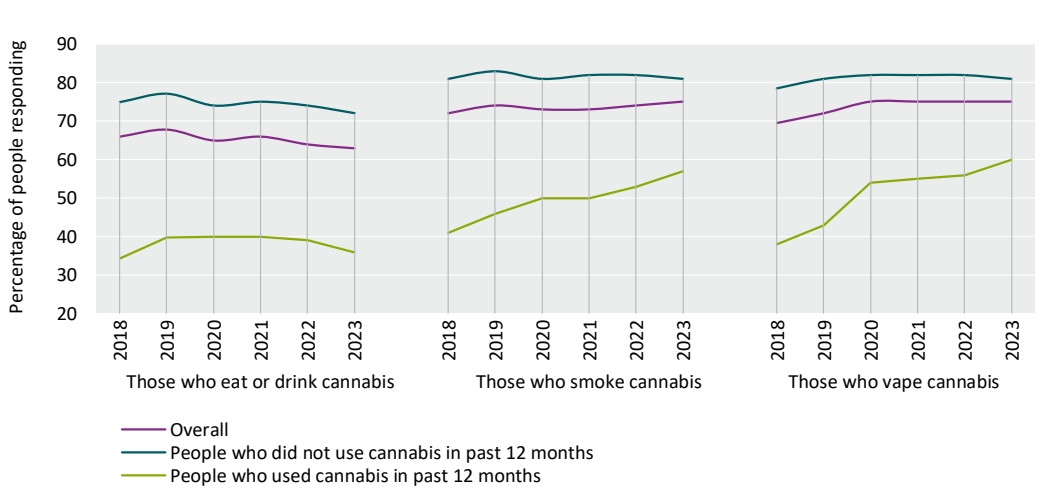
It has been shown that there is an inverse association between risk perception and the use of a substance. In the case of adolescents in the United States, however, where the risk perception of occasional and regular use of cannabis among adolescents has been declining overall, it seems that the decline in risk perception has not yet had an impact on cannabis use among adolescents, when measured through the prevalence of use in the past year.[60] It should be noted, however, that the trend in the risk perception of harm from regular cannabis smoking has changed recently, with more students who smoke the drug regularly perceiving its use as risky in the last two years. If this trend continues in the next few years, it could ultimately impact future cannabis use patterns among adolescents.

In Canada, different trends are observed in the perception of harm from moderate or regular use of cannabis after legalization, which has increased in the case of smoking or vaping cannabis, but stablilized and, more recently, declined in the case of edible cannabis. The perception of harm is significantly lower among those who report cannabis use in the past 12 months than among those who do not report cannabis use in the past 12 months.[61]

Harmful use of cannabis and health consequences

The harmful, non-medical use of cannabis, as reflected in daily use and the frequent use of products, especially those with high levels of THC and low or nearly no CBD content,[62] has been associated with the risk of developing drug use disorders and psychiatric comorbidities, especially psychotic disorders.[63, 64, 65, 66] There is also evidence from experimental and observational studies that people who are regular cannabis users are less likely to adjust

FIG. 45 Proportion of people perceiving "great" or "moderate" risk of using cannabis regularly, by method of use, Canada, 2018–2023



Source: Canadian Cannabis Survey. *Cannabis use for non-medical purposes among Canadians (aged 16+)*. Ottawa: Health Canada; January 2024, and data from previous years.

their doses when using cannabis products with higher levels of THC than those who are occasional users to achieve the same desired psychoactive effect.[67]

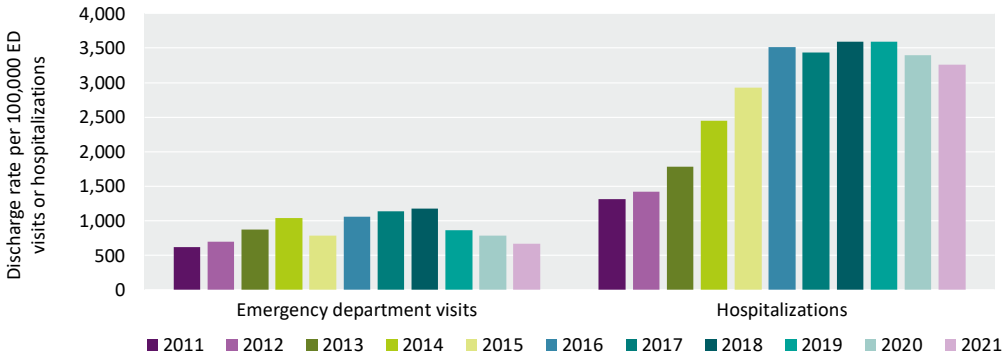
A study that mapped cannabis potency across the United States reported that, in many jurisdictions, a large majority of products on the cannabis market contained in excess of 15 per cent THC.[68, 69, 70] There is also a diversity of cannabis products available, which range from flowers to high-THC concentrates (with an average of 50 per cent or more THC), inhaled products and edibles, in the various state-level jurisdictions that have legalized the non-medical use of cannabis in the United States.[71] Diversification of cannabis products can also be observed in Canada, with the exception of Quebec, which has implemented regulations restricting product forms and THC content. In Quebec, edibles are not allowed and other products can contain a maximum of 30 per cent THC.[72] In Uruguay, the THC content, and the range of cannabis products, have largely remained stable at lower levels than in Canada and the United States. The maximum THC content of cannabis flower sold through pharmacies in Uruguay is 9 per cent, but these restrictions do not apply to cannabis clubs or home cultivation;[73] cannabis clubs may sell products with up to 15 per cent THC.[74]

In relation to health consequences linked to cannabis legalization, in Colorado, cannabis-related emergency room visits and hospitalizations (including treatment of cannabis use disorders and dependence) have increased considerably since 2013, but have shown a general stabilization since 2018. Emergency room visits related to edibles have had the largest increase, especially for children. In addition, a study that used administrative data from hospital emergency room visits between 2013 and 2018 in Colorado concluded that there was a significant average increase of 24 per cent in the rate of psychosis-related emergency room visits across counties, which was associated with the opening of cannabis retail stores in Colorado.[75] Severe intoxication, hyperemesis, psychiatric symptoms and severe cardiovascular events have been reported as the main reasons for cannabis-related visits to emergency departments in Colorado.[76] Notwithstanding the recent decline in the rates of cannabis-related hospitalizations, those rates doubled between 2011 and 2021. It has been argued that COVID-19 pandemic-related restrictions reduced treatment seeking and increased the barriers to treatment access during the pandemic years (2020–2021).[77]

There is also an increasing trend in cannabis use disorders that likely started in the years before the legalization of supply for non-medical use in the United States. Furthermore, there has been an increase in the proportion of people with psychiatric disorders and suicidal ideation, in suicide attempts and in deaths by unintentional overdose and homicide through regular cannabis use, especially among young adults.[78, 79, 80]

In Canada, age- and sex-standardized rates of hospitalizations related to cannabis use increased 1.6 times between January 2015 and March 2021 (6.46 per 100,000 individuals). The largest relative increase in hospitalizations was for cannabis-induced psychosis, followed by hospitalizations for cannabis withdrawal, harmful use and dependence. One third of hospitalizations were among those aged 15–24.[81] The increase in the availability of vapes, concentrates and edibles suggests that legalization has opened access to more harmful cannabis products that have increased the overall health harm of cannabis, as seen in hospitalization owing to cannabis use disorders and cannabis-induced psychosis.[82]

FIG. 46 Colorado: cannabis-related emergency department visits and hospitalizations, United States, 2011–2021



Source: Colorado Department of Public Health and Environment, "Colorado Hospital Association data", 2023.

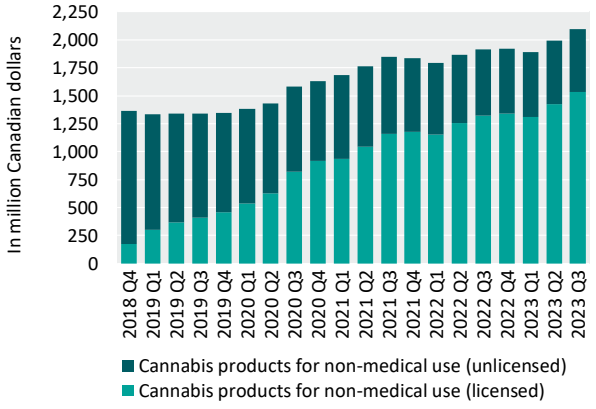
The increasing prevalence of cannabis use among adults, increasing intensity of use (in terms of both frequency and quantities), increasing THC content of cannabis products, and increasing hospitalization owing to cannabis use and cannabis use disorders all likely interact multiplicatively, making cannabis use more harmful.[83]

Persistence of the illicit market

The legalization of cannabis supply for non-medical use occurred in a context in which a strong demand for cannabis already existed and was being satisfied through illegal channels. Thus far, those channels have not been completely displaced by the legal market, although the space for the illegal market is reportedly decreasing in some jurisdictions.

The reported extent of the illegal market that remains after legalization varies in the different jurisdictions. In Canada in the third quarter of 2023, more than a quarter of people reporting cannabis household expenditures were purchasing cannabis products from unlicensed sources, a percentage that has continued to decline since the legalization of cannabis.[84, 85] The average monthly expenditure per user on cannabis declined between 2018 and 2023, although it remained generally stable from 2021 to 2023; in 2023, 73 per cent of people in Canada who used cannabis in the past 12 months reported that they usually purchased their cannabis from a legal source.[86]

FIG. 47 **Household expenditure on cannabis products for non-medical use, Canada, 2018–2023**



Source: Statistics Canada. Table 36-10-0124-01. Detailed household final consumption expenditure, Canada, quarterly.

In Uruguay, as at January 2023, over 90,000 people had accessed cannabis through one of the three sources of supply available in the country, that is, from pharmacies, through home cultivation or from cannabis clubs. This represents between 30 and 35 per cent of the estimated number of adults using cannabis in the country, suggesting a substantial gap in the capacity of the legal market to meet the demand from regular users.[87, 88, 89]

In the United States, the illegal market for cannabis also exists in different forms in California, Colorado, New York, Oregon and Washington, among other states,[90, 91] although in some of these states a majority of residents obtain cannabis from legal sources.[92] In the state jurisdictions where illegal markets persist, people may sell so-called "illegal cannabis" at prices lower than on the legal market.[93, 94] In addition, some retail outlets in states such as California may choose not to acquire a legal licence in order to avoid submitting an application and the payment of an annual renewal fee "while still operating out of a storefront and presenting themselves as a licensed dealer".[95] In Colorado, for instance, unlicensed cultivation, cultivation in national forests and smuggling of cannabis to neighbouring states where cannabis is illegal are other ways in which the illegal market has thrived.[96] Moreover, the illegal market, often operating alongside the legal and quasi-legal markets (termed the "grey market"), may remain attractive to consumers and suppliers for reasons related to, inter alia, price, quality, accessibility, licensing, taxation, regulations and overproduction.[97, 98]

Other outcomes of cannabis legalization

Arrests for possession of cannabis use among adults have declined considerably

In the United States, including in the states that have legalized or decriminalized cannabis use, the general trend since 2000 is a substantial decline in the absolute number and the rate of people arrested for possession of cannabis. This trend started long before states began to allow medical or non-medical use of cannabis. In the states that have decriminalized cannabis possession, there has been a more significant reduction in the rate of arrests than in states that have legalized non-medical use of cannabis.[99, 100] Despite these declines, however, racial disparities have persisted in arrests for cannabis-related offences.[101]

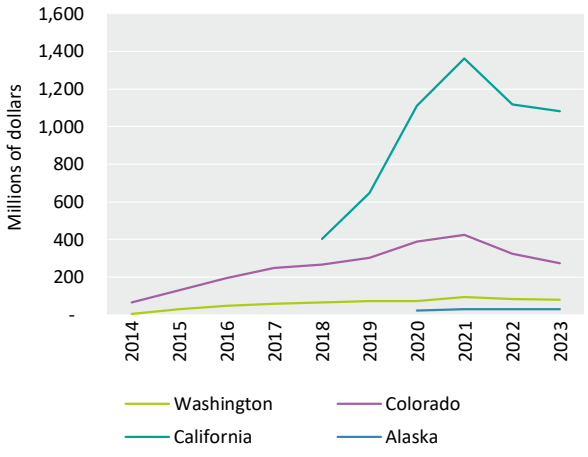
While decriminalization or legalization of cannabis prevent future criminalization, many issues remain that may contribute to ongoing racial disparities, including the expungement of current records. Among state-level jurisdictions that have decriminalized or legalized cannabis and offer the expungement of criminal records for cannabis-related offences, the majority of states require record holders to petition for relief together with the payment of fees; only a few states have automated expungement of records.[102] Most of the states also have

a waiting period, which may extend to years, before an indivual's record is expunged.[103] Such requirements disproportionately effect economically disadvantaged groups.[104, 105]

Revenues and taxes from cannabis increased as result of legalization but have remained stable in recent years

The legalization of the supply chain for non-medical cannabis, including the for-profit production of a range of cannabis products, has generated substantial revenues for corporations investing in the cannabis industry and for the jurisdictions that have legalized non-medical cannabis. Legalization of non-medical cannabis has had a clear impact in terms of the amount of taxes collected from the cannabis market and has added a new resource to the budgets of jurisdictions that have legalized non-medical cannabis. However, the revenue collected from cannabis taxation, while it may appear substantial in terms of dollar amounts, remains relatively small as a percentage of a state's overall revenues and constitutes less than 2 per cent or less of the revenues of states that have legalized non-medical cannabis.[106, 107]

FIG. 48 State revenue from cannabis sales, United States, 2014–2023



Source: Alaska Department of Revenue – Tax Division; California Department of Tax and Fee Administration; Office of Research and Analysis, Colorado Department of Revenue; Washington Department of Revenue, 2023.

Developments around psychedelics

Most of the currently known psychedelic substances, such as LSD, MDMA, mescaline and psilocybin, are controlled substances under Schedule I of the 1971 Convention, to account for the possibility of their use for scientific purposes, and of very limited medical use.[108] In recent decades, driven in part by the globally increasing burden of disease attributed to mental health disorders,[109] there has been a renewed interest[110] in the therapeutic use of different psychedelic substances for the treatment of a range of mental health disorders.[111, 112] A relatively recent wave of clinical trials, mainly in high-income countries, is showing early and somewhat promising results on the potential use of some psychedelics to treat a range of mental health disorders that are resistant to conventional treatment, in combination with psychotherapy.[113, 114] As yet, there is no medical market authorization[115] for psychedelics in any country and many clinical trials do not generally result in a market authorization. As at February 2024, there were more than a thousand registered clinical trials for various psychedelic therapies involving MDMA, psilocybin, LSD and ketamine in different phases of development. Despite initial results, however, there is still a long way to go before therapeutic guidelines, including for the screening of people and for the facilitation and supervision of psychedelic intake, are developed and such therapies are regulated and integrated into medical practice.[116] Nevertheless, the Food and Drug Administration of the United States granted breakthrough therapy designation for MDMA-assisted psychotherapy for the treatment of PTSD in 2017,[117] and, in 2024, for a psilocybin analogue for adjunctive treatment of major derpressive disorder[118] and for a form of LSD to treat generalized anxiety disorder.[119]

It should be noted that two recent literature reviews of clinical trials involving psychedelics have identified some challenges and expressed concerns about the implementation of such clinical trials. These concerns include small sample size, absence of control groups, biases in the selection of study participants, short duration of the study, and missing information on adverse events, among others.[120, 121]

Recently an expert advisory committee of the US Food and Drug Administration also expressed similar concerns on the recent Phase 3 trials of MDMA highlighting issues about possible biases in the trials, including the issue of double blinding, and not being transparent about abuse, safeguards or efficacy of the follow-up therapies. Another concern that has also arisen recently relates to whether

TABLE 2 Summary of psychedelic clinic trials, 2024

	STAGE OF CLINICAL TRIALS				FUNDED BY			
	Phase 1	Phase 2	Phase 3	Phase 4	United States National institute of Health	United States federal agency	Industry	Individual universities, organizations
LSD	20	20	3	0	1	0	15	21
MDMA	30	34	6	1	0	5	24	21
Psilocybin	54	82	5	0	7	0	27	112
Ketamine	176	275	214	383	48	35	121	821

Source: ClinicalTrials.gov.

Note: The table includes trials being conducted in various countries, mostly in high-income countries.

a drug regulatory body can approve medication-assisted psychotherapy beyond its purview of approving medicines and medicinal products. This highlights the complexity and constraints of a medical therapy that could eventually come out of experimentation and have the potential to open up parallel markets of psychedelics used for alleged medical benefits outside of a formal medically-approved context.

Potential therapeutic use of psychedelics has also kindled commercial interest and investment, whereby venture capital firms see opportunities for investment and profits, which can be observed in the increasing number of clinical trials funded by individual organizations and the industry. The commercial interest in psychedelics is also seen in other areas as part of a broader development – the "psychedelic renaissance"[122, 123] – which is creating an enabling environment for unsupervised access to psychedelics.

Although the promise of a therapeutic benefit from psychedelics may be appealing, it has been argued that overly rapid developments in terms of commercialization, regulatory changes in some jurisdictions and non-medical use practices may short-circuit the prudent therapeutic use of psychedelics, including adequate screening, facilitation and supervision, and have the potential to adversely affect the quality and rigour of clinical research that is usually associated with the development of therapies with a "new" class of drugs.[124, 125]

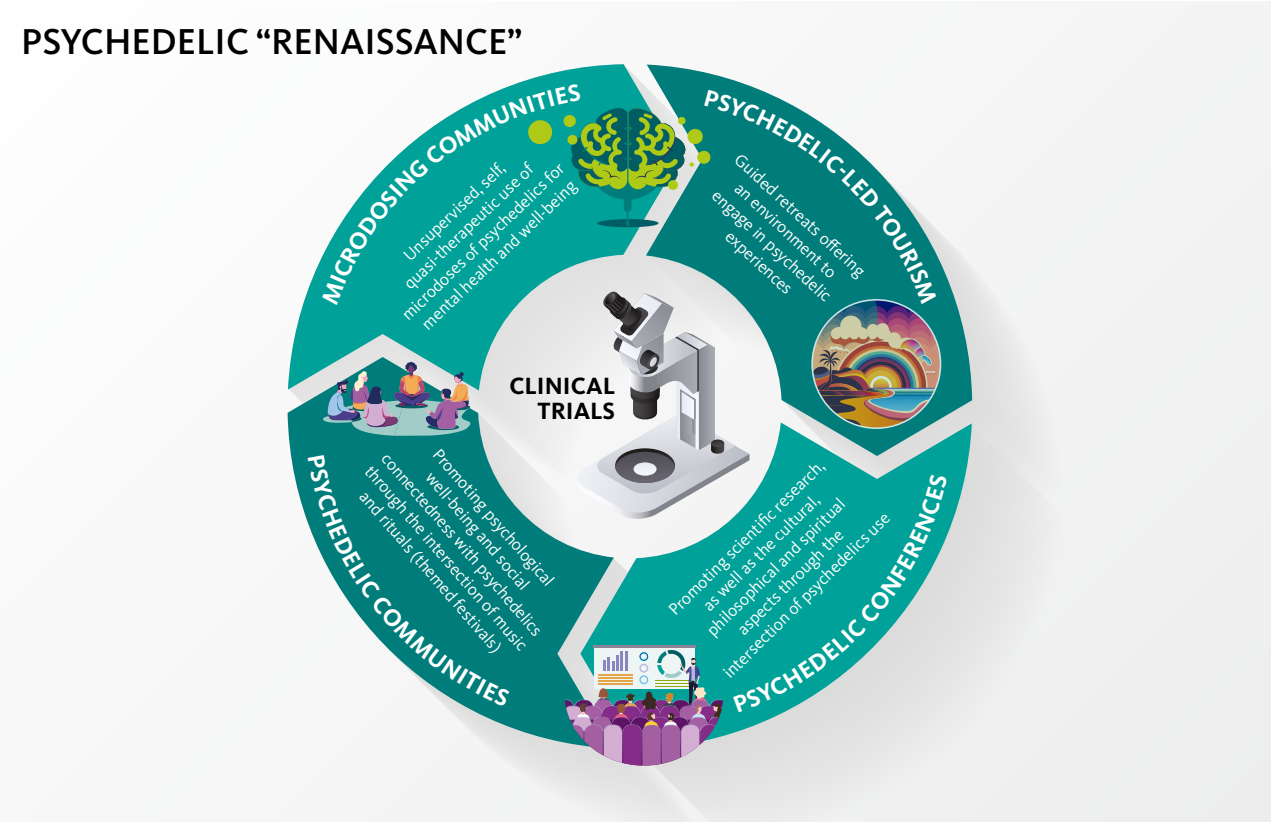
Regulatory changes around psychedelics

Recent changes in policies have facilitated access to psychedelic substances for medical use in Australia and Quebec, Canada, and in two jurisdictions in the United States. Australia is now the first country where the medical use of psilocybin and MDMA is allowed; as of July 2023, authorized psychiatrists can access MDMA for the supervised treatment of PTSD and psilocybin for the treatment of treatment-resistant depression.[126] However, as yet no supply chain mechanism has been developed and many stakeholders in Australia have opined that there is insufficient evidence to support the widespread clinical implementation of psychedelics in the country.[127] Also, in 2022, health coverage for the treatment of psilocybin-assisted psychotherapy was approved in Quebec, Canada.[128]

In 2020, Oregon approved "quasi-therapeutic" use of psilocybin, including the regulation of the supply chain and the retail sale and purchase of psilocybin products. As a result, anyone over the age of 21, with or without a diagnosis of a mental health condition, can consume psilocybin in a "supervised" setting; a prescription or a referral is not required for a person to access psilocybin services, but they do need to complete a preparatory session with a trained facilitator[129] before consuming psilocybin at a facility licensed by the state for the provision of psilocybin services.[130, 131, 132] In 2022, Colorado "decriminalized" the personal possession, growing, sharing and use, but not the sale, of five natural psychedelic substances by individuals aged 21 and over, and approved their use in "licensed" facilities with a plan to expand the types of substances permitted in order to include DMT, ibogaine and mescaline by 2026.[133]

Environments enabling the use of psychedelics, beyond supervised medical use

Within the "psychedelic renaissance", there are other developments that go beyond clinical trials and that are distinct from traditional use by Indigenous communities. Microdosing[134] communities, psychedelic conferences,



festivals and retreats are all contributing to the development of an enabling environment for the non-medical use of psychedelics. Most of these developments are unprecedented in their scope and reach and seem to outpace scientific developments and the evidence of their effectiveness when administered as part of supervised psychedelic-assisted therapy in a controlled environment.

Underpinning the "psychedelic renaissance" is an impetus for the commercialization, especially through financial investments, of psychedelic developments with a view to promoting the use of psychedelics under supervised or unsupervised care, in anticipation of the outcome of scientific research.[135, 136, 137] By March 2020, there were more than 50 publicly traded companies related to the development or administration of psychedelics in the United States.[138] By 2027, the psychedelics industry in the United States is projected to rise five times from the 2020 valuation of the companies, signalling a persistent investment interest in the field of psychedelic substances.[139] Some of the early non-profit organizations funding or undertaking research on psychedelics have become public companies and are now accepting external investment.[140]

Another example of the increasing commercial and public interest in psychedelics in recent years is the upsurge of psychedelic integration training programmes, workshops and referral networks, as well as the high number of people who are volunteering to be enrolled in clinical trials on psychedelics.[141]

Unsupervised (or non-medical) use of psychedelics: microdosing communities

Microdosing – the practice of using low sub-perceptual doses of psychedelics substances – has garnered increasing attention in recent years owing to its perceived potential benefits for mental health and well-being, prompted by early accounts from users about its perceived positive effects and by preliminary findings in clinical research.[142]

Research on the benefits of microdosing has shown mixed results, however. Whereas observational or qualitative studies of people's self-reports have indicated their satisfaction with the effectiveness of microdosing, randomized controlled studies have not shown clinically significant effects.

Some studies have shown that microdosing could potentially lead to improved moods, reduced stress and enhanced creativity,[143] but recent large-scale randomized control trials involving the microdosing of LSD and psilocybin have either not demonstrated anti-depressant, anxiolytic or pro-cognitive effects, or they have shown suboptimal results.[144 145 146]

Recent research has also highlighted the potential for bias in microdosing studies, particularly in those involving self-blinding citizen science initiatives, where participants randomly assign themselves to the placebo or control group; such participants may inadvertently influence their own assessments of the effects of the treatment, as they are susceptible to "expectancy" bias and are more at risk of giving false positive findings and thus influence the study outcomes.[147, 148] Altogether, the practice of using repeated minimal doses of psychedelic substances is still underresearched, and there is limited clinical evidence of its effectiveness or safety.[149, 150, 151, 152]

Despite the mixed findings, the practice of microdosing seems to have become increasingly popular. An online survey based on a convenience sample of more than 110,000 people, characterized by an overrepresentation of Internet users in Europe, the Americas and Oceania, found that 5.6 per cent of the respondents had microdosed using either LSD or psilocybin in the past 12 months in 2020. The results showed an increase of 80 per cent in those reporting microdosing with LSD compared with 2018 (3.9 per cent in 2018 as compared with 2.2 per cent in 2020).[153] The majority of the respondents who had microdosed in 2020 (55 per cent) reported that they had microdosed specifically for the self-treatment of a diagnosed psychiatric condition or a specific worry or concern (emotional distress), while the remaining respondents reported microdosing only to improve general well-being.

The research into the nature of microdosing has called for a cautious approach to the practice, especially to differentiate between the potential risk associated with prolonged and repeated microdosing and the more limited physiological safety risk posed by a few "macrodoses" administered weeks or months apart in the context of either supervised use or psychedelic-assisted therapy.[154]

Psychedelic conferences

The large number of conferences on topics relevant to psychedelics, including on the experiences of participants, also points to a growing diversity of and interest in psychedelics. The conferences not only encompass scientific research but also the broader cultural, philosophical and spiritual aspects of the use of psychedelics. The increase in the number of conferences dedicated to these topics signifies a shift away from the stigma and marginality that psychedelics once faced[155] and towards an open dialogue about their potential impact on people's well-being. This burgeoning interest is prompting further mainstreaming and exploration of the potential benefits of psychedelics for individuals and communities, beyond their supervised therapeutic use.[156]

In 2023 alone, UNODC identified a total of 35 major conferences on psychedelics, of which 14 were aimed at an expert audience, usually academic in nature. Eight were motivated by commercial interests in psychedelics, often organized under the themes psychedelic "entrepreneurship", or new psychedelic drug development and its economic impact.

Thirteen other conferences were aimed at a much wider audience whose common interest was psychedelics and their potential therapeutic benefits. One such conference had the participation of over 12,000 people, including 500 educators from 52 countries that offered 30 workshops focused on the "promise of psychedelics in cultural, medical and traditional environments".[157] A review of the content of the psychedelic conferences suggests that many of these conferences have been defined using themes such as "psychedelic consciousness and its communal aspects", "mindfulness", "self-realization" and "self-care", while others were gender-focused or meeting points for people with mental health disorders to learn about the potential therapeutic effects of psychedelics. Central to the conferences aimed at the general public are the experience-driven groups, whose identity is often derived from their psychedelic substance use and their contemplative practices.

Psychedelic communities

Psychedelic rituals and retreats emphasize the importance of contextual elements (the so-called "set and setting") in modulating the psychoactive effects of psychedelics.[158] Psychedelic communities reportedly promote psychological well-being and social connectedness through the use of psychedelics and the influence of music and rituals, based on the premise that group settings can enhance the effects of psychedelics by promoting feelings of interconnectedness and shared experience.[159, 160, 161] These communities are not a new phenomenon, but the rationalization of psychedelic substance use through a reliance on emerging clinical research that is taken out of context – a decontextualization that is often motivated by broader commercial interests – has emerged recently.[162, 163, 164]

Psychedelic-themed festivals: transformational festivals

Beyond the conferences and communities, psychedelic-themed festivals serve as other venues for psychedelic communities to come together, which have the aim of "trans-personalism", "collective ecstasies", "mindfulness" and "spiritual health".[165, 166, 167] While psychedelic-themed festivals have a long history, dating back at least to the 1960s, there is a new variety of festivals that emphasizes the perceived positive impact of psychedelic substances as their defining character. Centred around community-building over shared interests and beliefs, transformational festivals offer an intersection between music, arts and psychedelic substances, alongside workshops and events aimed at increasing knowledge of spirituality among participants.[168] What sets transformational festivals apart from the earlier psytrance festivals – which focused mainly on psychedelic music, art and community – is their professed holistic approach, which incorporates spiritual practices, meditation, well-being and mindfulness, along with the primary elements of music and use of psychedelics.[169]

Psychedelic-led tourism and retreats

Spanning North America, Latin America and Europe, the festivals' reach has been expanding and attracting more participants and attendants, contributing to psychedelic tourism. This form of tourism is advertised as a type of travel whereby individuals embark on journeys to specific locations or engage in structured retreats to explore the spiritual, recreational and therapeutic elements of psychedelic substances in a "supportive environment defined by common beliefs and interests".[170]

Psychedelic tourism encompasses guided retreats, which are structured programmes or organized events that offer individuals a supportive, albeit clinically unsupervised, environment to engage in psychedelic experiences. These retreats typically combine the use of psychedelics with "quasi-therapeutic" or spiritual practices such as meditation, group therapy or shamanic ceremonies, with the purported goal of promoting personal growth, self-exploration and healing under the guidance of facilitators.[171, 172]

At the centre of these retreats is *ayahuasca*, a psychoactive brew indigenous to the Amazon and Orinoco basins and facilitated by "shamans and folk healers".[173] However, these retreats are often implemented in forms that are divorced from their Indigenous origins. Moreover, *ayahuasca* retreats and other Indigenous retreats have become subject to commercialization and the colonization or appropriation of Indigenous cultures in attempts to adapt the ceremonies to a non-Indigenous audience, whose focus is the psychoactive elements of the ceremonies, rather than the Indigenous spiritual dimensions and settings.[174, 175] Accordingly, these retreats tend to function as a means to establish the unsupervised, "quasi-therapeutic" use of psychedelics with psychotherapeutic modalities that favour some aspects of Indigenous spiritualities and abandon others according to the needs of participants.[176, 177]

Towards risks of misuse and abuse of an unregulated practice

While it is key to promote the medical use of psychedelics when it is supported by rigorous scientific evidence, many questions about the potential health risks and benefits of using psychedelics remain unanswered. The discussion surrounding access to and the use of psychedelics embedded in the "psychedelic renaissance" is advancing beyond the realms of their demonstrated therapeutic use and the outcomes of clinical research. It seems that public interest in and private sector attention to this issue are greater than shown in the current scientific evidence regarding the effectiveness of psychedelics in improving mental health and cognitive functions. The conditions of the therapeutic setting for psychedelic therapy that effective medical use seems to require are also more demanding than those offered in "psychedelic renaissance" events. The risk is that the perception of psychedelics as the "silver bullet" for mental health disorders and overall mental or spiritual well-being, which is advocated for by a growing number of advocacy groups and commercial interests, will move faster than scientific evidence, opening up the market to unsupervised, "quasi-therapeutic" or spiritual and recreational use before supervised therapeutic use, including adequate screening and facilitation, can be established. This may trigger the development of unsafe markets for psychedelic use in different settings, in turn carrying the inherent risks of misuse and abuse of an unregulated practice. Those risks have been observed in the initial development of many psychoactive substances, such as heroin or cocaine, in relation to their marketing, unsupervised self-medication and non-medical use over the past century and beyond.[178, 179]

Most of the developments related to psychedelics are taking place in Western countries or have participants who are mostly from Western countries. As with any other drug, the non-medical use of psychedelics may start to expand in affluent communities, but once it becomes more established and spreads to impoverished, marginalized and minority groups, it may increase the aggregated harm. Such groups often face an issue of equity, they may not have the necessary social capital and resources to prevent

harmful consequences and thus may end up bearing the brunt of high rates of harmful substance use, substance use disorders and a limited access to drug services.[180]

There are some similarities and differences in the way developments for psychedelics and cannabis appear to be evolving outside the medical realm. For cannabis, the impetus for regulatory changes for both medical and non-medical use, which started in North America, has expanded to Western Europe and other regions, albeit slowly. For both cannabis and psychedelics, commercial interests and the media have facilitated the increasing perceptions of their benefits or decreased risk perceptions among the general population in many countries, which has, together with pressure from advocacy groups, most likely influenced regulatory changes for both substances. However, the overall interest in the potential therapeutic benefits of psychedelics and developments promoting an overall enabling environment seem to be growing at a fast pace. Overlooking the apparently unlinked initiatives discussed in this chapter is likely to accelerate the development of commercial, for-profit supply chain mechanisms for psychedelic substances, similar to the development of commercial cannabis markets.[181, 182, 183, 184, 185, 186]

One major difference seems to be that, while the processes to legalize or regulate cannabis for non-medical use have mostly been driven by normalizing recreational use, the impulse to legalize psychedelics or to deregulate psychedelics seems to be motivated more by the desire for unsupervised therapeutic use within the overall realm of mental health, mindfulness, spirituality and overall well-being.

The pressure imposed by commercial interest and advocacy groups that emphasize psychedelics as the solution to major mental health disorders and well-being may also influence the outcome of current and future clinical trials and could undermine the authority of rigorous scientific research for determining therapeutic benefits, uses and practices.[187, 188] An unregulated or poorly regulated non-medical, commercial supply of psychedelics may also compromise the public health objectives of improving health, social well-being and quality of life while mimimzing the health risks associated with the use of psychedelics.

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Annex

TABLE 3 Regulations for the legalization of the non-medical use of cannabis in Canada

	Federal law	Alberta	British Columbia	Manitoba
Legal process	Government legislation			
Title	Cannabis Act and Cannabis Regulations	Gaming, Liquor and Cannabis Act and Gaming, Liquor and Cannabis regulation	Cannabis control and licensing Act (CCLA) Cannabis distribution Act (CDA)	Safe and Responsible Retailing of Cannabis Act
Date implemented	17 October 2018			
Regulatory authority	Health Canada	Alberta Gaming Liquor and Cannabis (AGLC)	Liquor and cannabis regulation branch	Liquor, Gaming and Cannabis Authority of Manitoba (LGCA) Manitoba Liquor and Lotteries (MBLL)
Minimum age	18	18	19	19
Personal public possession limit	30 g dried or equivalent, i.e., 150 g of fresh cannabis 450 g of solid products 17,100 g of cannabis beverages (48 standard 355 ml cans) 2,100 g of non-solids other than cannabis beverages 7.5 g of concentrates (solid or liquid) 30 cannabis plant seeds 4 cannabis plants not budding or flowering	30 g or equivalent legal cannabis product	30 g or equivalent legal cannabis product	30 g or equivalent legal cannabis product
Home cultivation	Grow 4 cannabis plants per residence for personal use; Prepare cannabis products such as food and drink at home if organic solvents are not used	Maximum 4 plants per household	Maximum 4 plants per household; Plants must be grown at home without being visible from a public place	Home cultivation not permitted
Interpersonal sharing	30 g or equivalent of legal cannabis product between adults			
Retail transaction limit		30 g dried cannabis or equivalent	30 g dried cannabis or equivalent	30 g dried cannabis or equivalent
Maximum THC content	Dried cannabis/fresh cannabis: No THC or THCA can be added to dried or fresh cannabis products. Edible cannabis: 10 mg of THC per package. Cannabis extract (for ingestion or nasal, rectal or vaginal use): 10 mg of THC per unit (such as a capsule) or dispensed amount, 1000 mg of THC per package. Cannabis topical (for applying externally): 1000 mg of THC per package		Edibles may contain up to a total of 10 mg per package, inhalable extracts (vapes/concentrates) and ingestible extracts (oils) may contain up to 1 g of THC per package, with a maximum of 10 mg of THC per unit in the case of capsules.	
Commercial production	Federal processing licence is required in order to produce cannabis products and to package and label these products for sale to consumers via medical sales licence holders or provincial/territorial authorized distributors and retailers. Each province has an Excise stamp that needs to be fixed on the cannabis products.			
Commercial distribution	Distribution is the responsibility of provincial and territorial governments. Selling cannabis through self-service displays or vending machines is prohibited.	Distribution: public In-person retail: private Online retail: private	Distribution: public In-person retail: hybrid Online retail: public	Distribution: public In-person retail: private Online retail: private

	Federal law	Alberta	British Columbia	Manitoba
Restrictions on edibles	Edible cannabis, extracts and topicals became legal for sale 17 October 2019. Edible cannabis products must be shelf-stable and can only contain food and food additives as ingredients. If any components have a pH> 4.6 and water activity> 0.85 at a temperature of 22 ± 2°C, they must not be packaged in hermetically sealed containers. Edible cannabis must not contain meat, poultry or fish products as ingredients unless they are dried products produced in accordance with the Safe Food for Canadians Act or applicable provincial or territorial law and have a water activity equal to or less than 0.85 at a room temperature of 22 ± 2°C. Edible cannabis products must not contain any food described in a Temporary Marketing Authorization Letter under the FDR, vitamin or mineral fortification, poisonous or harmful substances, or anything considered unsafe that would cause the sale of a food to be prohibited under the Food and Drugs Act. Caffeine, ethyl alcohol and nicotine are prohibited additives except for ingredients with naturally occurring caffeine (such as chocolate, tea or coffee) provided the total amount of caffeine per package does not exceed 30 mg, and ethyl alcohol does not exceed 0.5% w/w (e.g. that might be present as a by-product in certain ingredients).			
Promotion, Packaging, and Labelling	No promotion, packaging or labelling that could be considered appealing to young people, and ensuring that important product information is presented clearly. Labelling of edible products needs to have a standardized cannabis symbol for products containing THC; Health warning message; THC/CBD content; Equivalency to dried cannabis to determine public possession limit; Ingredient list, allergens; nutrition facts table, intended use.	No promotion, packaging or labelling that could be considered appealing to young people, and ensuring that important product information is presented clearly. No advertising containing testominials or representing a way of life containing glamour, recreation, excitement, vitality, risk, or daring. Advertising allowed inside cannabis stores.	Prohibited to advertise oneself as a licensed retailer without a license from the Liquor and Cannabis Regulation Branch. Prohibited to market, advertise or promote a location to consume cannabis or to go after consuming cannabis.	
Taxation Cannabis excise duty rates in provinces and territories (Department of Finance, Canada)	Flower $0.25/g Trim $0.75/g Seed $0.25/seed Seedling $0.25/seedling Federal Ad Valorem Rate 2.5% of dutiable amount of cannabis product when delivered to purchaser	Flower: $ 0.75/g plus 16.8% of base amount Trim: $0.225/g plus 17.8% of base amount Seed: $0.75/seed plus 16.8% of base amount Ad Valorem Additional Rate 7.5% plus 16.8% of deductible amount when delivered (total applicable rate 24.3%)	Flower $0.75/g Trim $0.22/g Seed and seedling: $0.75/seed or seedling 7% provincial sale tax in addition to Federal taxes 20% provincial sale tax to liquid marijuana vaping products	Wholesale mark-up on non-medical cannabis, a $0.75/g mark- up plus 9% per cent mark-up applied on top of the $0.75/g 6 per cent social responsibility fee
Restriction on use	Provinces and territories can tailor certain rulesin their own jurisdictions, such as: Licensing the distribution and retail sale in their respective jurisdictions and conducting associated compliance and enforcement activities; Setting additional regulatory requirements to address areas of local concern, such as setting more restrictive requirements than federal provisions for minimum age limits, limits on possession or personal cultivation; Establishing provincial zoning rules for cannabis-based businesses; Restricting where cannabis may be consumed; and Amending traffic safety laws to address driving while impaired by cannabis.	In cars, areas frequented by children, or tobacco-restricted areas.	In cars, areas frequented by children, or tobacco restricted areas.	Smoking and vaping cannabis are illegal in public places (including enclosed public places), unless the consumption is permitted by regulation or under The Smoking and Vapour Products Control Act.

	New Brunswick	New Foundland and Labrador	Northwest Territories
Legal process			
Title	Cannabis Control Act Cannabis Management Corporation Act Cannabis Retailers Licensing Act	Newfoundland and Labrador Cannabis Regulations Control and Sale of Cannabis Act	Cannabis Legalization and Regulation Implementation Act
Date implemented			
Regulatory authority	Cannabis NB	Newfoundland and Labrador Liquor Corporation (NLC)	North West Territories Liquor & Cannabis Commission (NTLCC)
Minimum age	19	19	19
Personal public possession limit	30 g or equivalent legal cannabis product	30 g or equivalent legal cannabis product	30 g or equivalent legal cannabis product
Home cultivation	Maximum 4 plants per household; If cultivated outdoors, plants must be surrounded by a locked inclosure with a height of at least 1.52 m, and if cultivated indoors must be cultivated in a separate locked space	Maximum 4 plants per household	Maximum 4 plants per household
Interpersonal sharing			
Retail transaction limit	30 g dried cannabis or equivalent	30 g dried cannabis or equivalent	
Maximum THC content			
Commercial production			
Commercial distribution	Distribution: public In-person retail: hybrid Online retail: public	Distribution: public In-person retail: private Online retail: public	Distribution: public In-person retail: private Online retail: public
Restrictions on edibles			
Promotion, Packaging, and Labelling	Advertising and promotion of cannabis is prohibited except in very limited circumstances (much like tobacco).		
Taxation **Cannabis excise duty rates in provinces and territories (Department of Finance, Canada)**	Flower: $0.75/g Trim:$0.225/g Seed/seedlings $0.75 7.5% of the dutiable amount when delivered to purchaser	Flower: $0.75/g Trim:$0.225/g Seed/seedlings $0.75 7.5% of the dutiable amount when delivered to purchaser	Flower: $0.75/g Trim:$0.225/g Seed/seedlings $0.75 7.5% of the dutiable amount when delivered to purchaser
Restrictions on use	Illegal to smoke everywhere except private property or residence.	Illegal to smoke everywhere except private property or residence.	Illegal to smoke everywhere except private property where smoking tobacco is allowed; and on trails, roadways (when not operating a motor vehicle), and parks when not in use for a public event.

	Nova Scotia	Nunavut	Ontario
Legal process			
Title	Cannabis Control Act	Cannabis Act Cannabis Statutes Amendments Act	Cannabis, Smoke-Free Ontario, and Road Safety Statute Law Amendment Act, 2017 Cannabis Statute Law Amendment Act, 2018
Date implemented			
Regulatory authority	Nova Scotia Liquor Corporation	Nunavut Liquor and Cannabis Commission	Alcohol and Gaming Commission of Ontario
Minimum age	19	19	19
Personal public possession limit	30 g or equivalent legal cannabis product	30 g or equivalent legal cannabis product	30 g or equivalent legal cannabis product
Home cultivation	Maximum 4 plants per household	Maximum 4 plants per household	Maximum 4 plants per household
Interpersonal sharing			
Retail transaction limit		30 g dried cannabis or equavalent	30 g dried cannabis or equavalent
Maximum THC content			
Commercial production			
Commercial distribution	Distribution: public In-person retail: public Online retail: public	Distribution: public In-person retail: private Online retail: private	Distribution: public In-person retail: private Online retail: public
Promotion, Packaging, and Labelling	The Cannabis Act has strict rules around the promotion of cannabis (similar to those for tobacco). It is prohibited to promote cannabis or a cannabis accessory or any service related to cannabis.	All cannabis products, online stores and accessories must comply with the Cannabis Act (Canada) and all applicable Nunavut and Federal legislation, regulations and by-laws pertaining to label standards, promotions, advertising, package sizes and case marking.	All cannabis products must comply with the Cannabis Act (Canada) pertaining to label standards, promotions, advertising, package sizes and case marking.
Taxation **Cannabis excise duty rates in provinces and territories (Department of Finance, Canada)**	Flower: $0.75/g Trim: $0.225/g Seed/seedlings $0.75 7.5 % of the dutiable amount when delivered to purchaser	Flower: $0.75/g plus 19.3% of base amount Trim: $0.225/g plus 19.3% of base amount Seed/seedling: $0.75 seed plus 19.3% of base amount 7.5% plus 19.3% of the dutiable amount of a cannabis product when delivered to a purchaser (total applicable rate of 26.8%)	Flower: $0.75/g plus 3.9% of base amount Trim: $0.225/g plus 19.3% of base amount Seed/seedling: $0.75 seed plus 19.3% of base amount 7.5% plus 19.3 % of the dutiable amount of a cannabis product when delivered to a purchaser (total applicable rate of 26.8 %)
Restrictions on use	Illegal everywhere except for areas where tobacco may be smoked.	Illegal everywhere except for areas where tobacco may be smoked.	Illegal everywhere except for areas where tobacco may be smoked.

	Prince Edward Island	Quebec	Saskatchewan	Yukon
Legal process				
Title	Cannabis Control Act Cannabis Management Corporation Act	Cannabis Regulation Act Act to constitute the Société québécoise du cannabis (SQDC)	The cannabis control (Saskatchewan) Act The cannabis control (Saskatchewan) regulations	Cannabis control and regulation act
Date implemented				
Regulatory authority	Provincial cannabis committee Cannabis management corporation	Société québécoise du cannabis	Cannabis Authority under the Saskatchewan Liquor and Gaming Authority	Yukon Liquor Corporation Cannabis Licensing Board (2019)
Minimum age	19	21	19	19
Personal public possession limit	30 g or equivalent legal cannabis product	30 g or equivalent legal cannabis product	30 g or equivalent legal cannabis product	30 g or equivalent legal cannabis product
Home cultivation	Maximum 4 plants per household	Home cultivation not permitted	Maximum 4 plants per household	Maximum 4 plants per household
Interpersonal sharing				
Retail transaction limit		30 g dried cannabis or equavalent per visit at Société québécoise du cannabis	30 g dried cannabis or equavalent	30 g dried cannabis or equavalent
Maximum THC content		The THC concentration present in cannabis must not exceed 30% per weight. An edible cannabis product in solid form may not contain a quantity of THC greater than 10 mg per package and a maximum of 5 mg of THC is fixed per distinguishable portion unit. An edible cannabis product in liquid form may not contain a quantity of THC greater than 5 mg per container.		
Commercial production		Licensed producers	Licensed growers	
Commercial distribution	Distribution: public In-person retail: public Online retail: public	Distribution: public In-person retail: public Online retail: public	Distribution: private In-person retail: private Online retail: private	Distribution: private In-person-retail: private Online retail: private
Restrictions on edibles		An edible cannabis product offered in Québec may not be sweets, confectionery, dessert, chocolate or any other product attractive to persons under 21 years of age.		
Promotion, Packaging, and Labelling		No direct or indirect advertising to promote cannabis, a brand of cannabis, a cannabis producer or the SQDC. Advertising disseminated by signage may be visible only from the inside of an SQDC outlet.	Operators of cannbis retail stores on indgenous reserves are exempt from the requirements of The Cannabis Control (Saskatchewan) Amendment Regulations, provided that they can develop their own framework of oversight.	
Taxation **Cannabis excise duty rates in provinces and territories (Department of Finance, Canada)**	Flower: $0.75/g Trim: $0.225/g Seed/seedlings $0.75 7.5 % of the dutiable amount when delivered to purchaser	Flower: $0.75/g Trim: $0.225/g Seed/seedlings $0.75 7.5 % of the dutiable amount when delivered to purchaser	Flower: $0.75/g plus 6.45% of base amount Trim: $0.225/g plus 6.45% of base amount Seed/seedling: $0.75 seed plus 6.45% of base amount 7.5% plus 6.45% of the dutiable amount of a cannabis product when delivered to a purchaser (total applicable rate of 13.95%)	Flower: $0.75/g Trim: $0.225/g Seed/seedlings $0.75 7.5% of the dutiable amount when delivered to purchaser
Restrictions on use	Illegal to smoke everywhere except private property, some exceptions for certain public spaces.	Illegal to smoke everywhere except for areas where tobacco may be smoked, excluding university and CEGEP campuses.	Illegal to smoke everywhere except private property or residence.	Illegal to smoke everywhere except private property or residence.

TABLE 4 Regulations for the legalization of the non-medical use of cannabis in jurisdictions in the United States

	Alaska	Arizona	California	Colorado	Connecticut
Legal process	Voter initiative, state statute	Voter initiative	Voter initiative	Voter initiative, amendment to state constitution	Legislative
Title	Ballot Measure 2	Proposition 207	Proposition 64	Amendment 64	SB1201
Date passed	November 2014	December 2020	November 2016	November 2012	June 2021
Date implemented /required date of rule adoption	February 2015: Personal possession, consumption, cultivation. October 2016: Retail sales.	Licences issued from 22 January 2021. Allow for cannabis deliveries beginning sometime between 1 January 2023 and 1 January 2025.	Licences issued 11 January 2018	December 2012: Personal possession, consumption, cultivation. January 2014: Retail sales.	On 17 June 2021, the Connecticut Legislature passed the bill. The law was signed on 22 June 2021.
Regulatory authority	Alcohol and Marijuana Control Office	Arizona Department of Health Services	Department of Cannabis Control	Marijuana Enforcement Division (Department of Revenue)	Connecticut Social Equity Council
Minimum age	21	21	21	21	21
Residency requirement	None	None	Licences not issued to non-residents	None	None
Personal possession limit	28.5 g (1 oz or less) of cannabis	28.5 g (1 oz or less) of cannabis or 5 g or less of concentrate	28.5 g of cannabis plant material and 8 g of concentrated cannabis.	28.5 g	No more than 1.54 oz (44 g) of cannabis on their person, and no more than 5 oz (142.5 g) in their homes or locked in their car, truck or glove box.
Home cultivation	6 plants, 3 of which can be flowering; not subject to public view; within property with lawful possession or with consent of the person in lawful possession.	6 plants, as long as cultivation takes place within an enclosed area with a lock and is not visible from public view.	Plant, cultivate, harvest, dry, or process plants in accordance with local ordinances: Plants are in a locked space, and are not visible by normal unaided vision from a public place. 6 living plants may be planted, cultivated, harvested, dried, or processed within a single private residence. Living plants and any cannabis produced by the plants in excess of 28.5 g are kept within the person's private residence, or upon the grounds of that private residence.	6 plants, 3 of which can be flowering; As of 1 January 2018, all residences are limited to a maximum of 12 plants unless certain requirements are met; The area for growing plants must be enclosed and locked in a separate space that minors cannot access.	As of 1 July 2023, all adults age 21 and over will be permitted to grow up to 6 cannabis plants (3 mature, 3 immature) indoors within their homes.
Interpersonal sharing	28.5 g	Yes, same as personal possession limits plus six plants	Yes	28.5 g	Allowed for people with a bona fide social relationship to one another. Not permitted if in exchange for payment or other goods.
Retail transaction limit	28.5 g In addition, a store may not sell in a day: - More than 1 oz of usable cannabis - More than 7 g of cannabis concentrate for inhalation; or - More than 5,600 mg of THC in combined sales of marijuana and cannabis products.	Not specified	28.5 g of cannabis plant material and 8 g of concentrated cannabis	Residents: 28.5 g Non-residents: 7 g	Retail sales of cannabis planned to begin by the end of 2022 under a limited licensing structure determined by a lottery
Retail pricing structure	Market	Market/commercial	Market/commercial	Market	Market structure

	Alaska	Arizona	California	Colorado	Connecticut
Maximum THC content	The THC limit in cannabis products is 10 mg per serving. The new rules raise the allowable amount of THC per package to 100 mg.	The potency of edible cannabis products are to be kept "at reasonable levels upon consideration of industry standards", but no more than 10 mg of THC per serving, 100 mg of THC per package, or packages with scored servings within the limits.	Standardized concentration of cannabinoids not to exceed 10 mg THC per serving and 100 mg per package.Topical cannabis products or a cannabis concentrate shall not contain more than 1,000 mg of THC per package.	The amount is 8 g total of concentrate (except vape cartridges) and 800 mg of THC in any edible product.	30% THC by weight for cannabis flower and all other products except pre-filled vape cartridges at 60% THC.
Registration requirements	None	None	Not specified	None	Not specified
Commercial production	Licensed cannabis producers	Licensed producers	Licensed cultivators and manufacturers, varying types	Licensed cannabis cultivation facilities	Licensed cannabis producers
Commercial distribution	Licensed retail cannabis stores	Licensed stores with limitations; for example, one cannabis establishment licence per 10 pharmacies or no more than two cannabis establishment licences in counties that contain no registered non-profit medical cannabis dispensaries.	Limits on market concentration	Licensed retail cannabis stores	Not specified
Restrictions on edibles	5 mg of THC for single serving, no more than 50 mg of homogenous THC allowed per package. Child-resistant packaging required. Separate warnings on risks, not appealing to children.	The potency of edible cannabis products are to be kept "at reasonable levels upon consideration of industry standards" (see above).	10 mg THC per serving and 100 mg per package.Topical cannabis products or a cannabis concentrate shall not contain more than 1,000 mg of THC per package. Warning and potency labels. List of ingredients and cannabinoid content.	Maximum of 10 mg of THC in each individually packed serving; warning labels "keep out of reach of children"; THC symbol on labels and not attractive to children. Every single standardized serving (10 mg of THC) of an edible retail cannabis product must be individually marked, stamped or imprinted with the universal symbol. Edibles cannot be shaped like a human, animal or a fruit.	Edible cannabis products are limited to 5 mg of THC per serving.
Advertising	Logo or advertisement for licensed marijuana may not promote excessive consumption, depiction appealing to a person under 21 years of age. Restrictions on advertisements in school areas, public transport, and contain prescribed warning.	Prohibits the advertisement of cannabis products to children and prohibits the advertisement or sale of cannabis products with names that resemble or imitate food or drink brands marketed to children.	Restricted to those over 21. Restrictions on false advertisement or claims of untrue health benefits. Products cannot appeal to children. Products cannot imitate candy packaging or labelling, or alcoholic products. Advertising of free cannabis goods or accessories is prohibited.	Restricted to media with no more than 30% of the audience under the age of 21. When advertising concentrate, four warning statements are required to be included.	Is not legal to advertise cannabis in Connecticut. Cannabis products cannot be advertised in print, television, radio or on the internet or billboards unless there is “reliable evidence” that at least 90% of the audience is 21 years or older.
Taxation	$50 excise tax per oz on sales or transfers from cultivation facility to retail store or product manufacturer; 1 January 2019, sales and transfers of marijuana are subject to new tax rates. Mature bud/flower are taxed at $50 per oz; immature or abnormal bud is taxed at $25 per oz; trim is taxed at $15 per oz; and clones are taxed at a flat rate of $1 per clone.	Excise tax of 16% on price of cannabis and cannabis products. Cannabis products are also subject to transaction privilege tax which in 2020 was 5.6% – different jurisdictions also levy TPT retail taxes.	15% excise on retail, $9.25 per dry weight ounce on flower after harvest. $2.75 per drug weight ounce on leaves. Cultivation tax of $2.87 per ounce of flower. Tax rates for cannabis leaves to be adjusted annually to reflect fluctuations in the relative price of cannabis flowers to cannabis leaves.	State sales tax (2.9%) on cannabis sold in stores; state retail cannabis sales tax (15%) on retail cannabis sold in stores; state retail cannabis excise tax (15%) on wholesale sales/transfers of retail cannabis.	35% state sales tax, 3% sales tax dedicated to the city or town where the sale occurs. A state cannabis tax based on the amount of THC in the cannabis product: 2.75 cents per mg of THC for cannabis edibles 0.625 cents per mg of THC for cannabis flower 0.9 cents per mg of THC for all other product types

	Alaska	Arizona	California	Colorado	Connecticut
On site consumption	In-store consumption is allowed; stores can sell cannabis and cannabis products, excluding concentrates, to patrons for consumption on the licensed premises at the time of purchase only in a designated area with further conditions stipulated in the regulation.	Not specified	Not specified although they may exists in the form of microbusiness that allow on-site consumption.	Not allowed	Not specified
Restrictions on use	Cannabis use in public is unlawful; violation punishable by a fine of up to $100.	Cannabis smoking is illegal in public places and open spaces.	Cannabis use is prohobited in a public place unlicensed for such use, including near schools and other areas where children are present.	Not permitted in public places.	It is prohibited to smoke in state parks, workplaces, hotels and within 25 feet of an entrance. Communities with a population of 50,000 or more, will have to set up one public place for individuals to be able to smoke/use cannabis.
Medical cannabis	1998: Patient registry with a card, no dispensaries registration; out-of-state patients recognized for approved conditions but not for dispensary purchases; adults over 21 may also purchase at retail adult dispensaries.	2010: adult patients and those under 18. For patients under 18, the patient's custodial parent or legal guardian must be designated as his/her caregiver. Patients require a qualifying patient card which is based on diagnosis with one of the debilitating medical conditions, and a written certification from a physician (medical doctor, osteopath, naturopath, or homeopath licensed to practice in Arizona) with whom the person has a physician-patient relationship.	1996 and 2003: Patient registry - voluntary registration; cooperatives and collectives; State-wide licensing of dispensaries began 2018.	2000: Patient registry, dispensaries already existed; out-of-state patients not recognized; possession, consumption; 2010: commercial production and sales.	Connecticut General Statutes, Chapter 420f, Section 21a-408, An Act Concerning the Palliative Use of Marijuana, was signed into law on May 31, 2012. To qualify for a medical cannabis registration certificate, a patient must be diagnosed by a physician as having one of the debilitating medical conditions set out in the law; 18 years of age; a Connecticut resident; and not an inmate in a Department of Corrections institution or facility.

	Delaware	District of Columbia	Illinois	Maine	Massachusetts
Legal process	Legislative	Voter initiative	Approved by legislature in May 2019	Voter initiative June 27, 2019, Governor signed into law 129th LD 719	Voter initiative
Title	HB 1 & HB 2	Initiative 71	Bill HB 1438 (Public Act 101-0027)	Question 1 (H.P. 1199 - L.D. 1719)	Question 4 Mass. General Laws c.94G
Date passed	11 and 14 April 2023, respectively	November 2014	Signed by Governor 25 June 2019	November 2016	November 2016
Date implemented /required date of rule adoption	23 April 2023	February 2015: Personal possession, consumption, cultivation.	Effective 1 January 2020	Took effect on 7 January 2017; regulation for business in place August 2017. On 27 January 2017, the legislature approved a moratorium on implementing parts of the law regarding retail sales and taxation until at least February 2018. Law finally took effect on 19 September 2019.	15 September 2017. Licences issued starting 1 October 2017. Law updated on 20 June, 2019.
Regulatory authority	Division of Alcohol & Tobacco Enforcement	Not applicable; separate legislation to regulate commercial production and sale to adults still not passed	Department of Agriculture	Department of Administrative and Financial Services (Office of Marijuana Policy)	1) Cannabis Control Commission and Cannabis Advisory Board

	Delaware	District of Columbia	Illinois	Maine	Massachusetts
Minimum age	21	21	21	21	21
Residency requirement	None	None	Partially required	Not specified	Not specified
Personal possession quantity	1 oz or less of cannabis flowers, 12 g of concentrated cannabis, or products with 750 g or less of delta-9 THC	2 oz (57 g) 6 plants (no more than 3 mature)	30 g of cannabis flower; no more than 500 mg of THC contained in cannabis infused product; 5 g of cannabis concentrate. Half of these amounts allowed for non-residents.	71.25 g (2.5 oz) concentrates up to 5 g	1 oz flower (28.5 g) 5g concentrate or 10 oz at home
Home cultivation	Illegal	6 plants per person, 12 plants per household, 6 of which can be flowering	Cultivation is allowed for qualifying persons under "Compassionate Use of Medical Cannabis Pilot Programme Act" Plants, with a limit of 5 plants that are more than 5 inches tall, per household without a cultivation centre or craft grower licence. The Illinois court has ordered a temporary freeze on the issuance of craft grower licenses as of 22/11/2022. Cannabis cultivation must take place in an enclosed, locked space. Adult registered qualifying patients may purchase cannabis seeds from a dispensary for the purpose of home cultivation. Seeds may not be given or sold to any other person. Cannabis plants shall not be stored or placed in a location where they are subject to ordinary public view.	3 flowering marijuana plants, 12 immature plants and unlimited seedlings. An adult may possess all of the cannabis produced by the plants. Property owners can prohibit home cultivation. Cultivation for medical purposes not subject to same restrictions. Plants must be tagged with the cultivator's name, driver's licence or ID number, and — if the plants are not on land owned by the cultivator — the name of the property owner.	6 plants, 12 in a single residence away from view; 10 oz of dried marijuana permitted at home.
Interpersonal sharing	Gifting is prohibited, but sharing within the possession limit is allowed without advertisement	28.5 g or less (transfer without payment)		Same as personal possession limits; in addition no more than 6 seedlings or immature plants	1 oz of cannabis
Retail transaction limit	Not applicalbe	Not applicalbe	Not applicable	28.5 g (1 oz); 12 seedlings	Up to 1 oz can be given to another adult 21 or older.
Retail pricing structure	Market	No retail market	Market	Market/commercial	Market/commercial
Maximum THC content	10 mg of THC per serving	Not set initially	Initially 100 mg of THC per package; Department of Agriculture may change maximum level of THC contained in each serving of cannabis infused product. Allow possession of cannabis infused products such as capsules, consumables, tinctures, and other edibles that contain no more than 500 mg of THC.	Edible marijuana products: may not contain more than 10 mg of THC per serving; may not contain more than 100 mg of THC per package	Not set initially
Registration requirements	None	None	Non-residents are allowed half the amounts allowed for residents.	A retail tobacco license is needed for a license to sell pre-rolled cannabis cigarettes, electronic smoking devices and liquid concentrates, which requires a licensee to have a physical storefront.	Personal data collection not required

	Delaware	District of Columbia	Illinois	Maine	Massachusetts
Commercial production	Cultivation facilities, product manufacturers and laboratories	None	Licensed cultivators and craft growers (who cultivate, dry, cure and package cannabis for sale)	Licensed cultivators; two types based on size. Dispensaries can now grow an unlimited number of mature cannabis plants.	Licensed establishments
Commercial distribution	Licensed retail cannabis stores	None	Licensed dispensers both for medical and non-medical use	State authority may not limit total number of stores; localities may regulate number and location of establishments.	Licensed establishments; localities can regulate, limit or prohibit the operation of businesses.
Restrictions on edibles	Edible cannabis products are also limited to 10 mg per serving.	Currently not allowed	Allowed but with information and warning on consumption	Edibles may not contain more than 10 mg of THC per serving of the product and may not contain more than 100 mg of THC per package of the product.	Edibles are limited to 5 mg of THC per single serving. The entire package cannot have more than 20 servings for a combined total of 100 mg of THC.
Advertising	Restricted, especially mass marketing campaigns that can potentially reach minors.	Not applicable, no commercial market	Businesses cannot place advertisements that have false or misleading claims; or advertisements that promote overconsumption; depict actual consumption; depict a person under 21 consuming; make health, medicinal or therapeutic claims; contain images that can be appealing to minors or children; advertisements are not allowed within 1,000 feet of school or playground, public park or library, public transport or public property; no sales promotions are allowed; similar restrictions apply on packaging and labelling. Health warnings to be legibly displayed.	Restricted to those over 21. Restrictions on false advertisement or claims of untrue health benefits. Products cannot appeal to children.	Restricted advertising for medical and adult-use cannabis licences, prohibiting television, radio, podcast, internet, mobile app, social media, billboard and print ads unless at least 85% of the audience is reasonably expected to be 21 years of age or older.
Taxation	15% retail tax on cannabis sold commercially	Not applicable, no commercial market	10% sales tax on cannabis flower or products with less than 35% THC; 20% tax on cannabis-infused products such as edibles; 25% tax on products with a THC concentration higher than 35%; Illinois municipalities and counties are able to levy additional local sales taxes. 6.25% State Retailers' Occupation Tax; Consumers may pay between 19.55% and 34.75% depending on a product's potency.	10% excise tax on retail; 15% excise tax on sale or transfer from a licensed commercial cultivation to licensed retail store.	10.75% excise tax on retail sales. 6.25% state sales tax applies to retail purchases of all cannabis products. Up to 3% local excise tax, optional, on retail purchases of all products.
On site consumption	Not specificed	Not allowed; currently under investigation by city task force.	Local jurisdictions and retail outlets may or may not allow; designated cannabis-centred businesses lounges.	State-licensed clubs	Not allowed, although they may exist in establishments that allow on-site-consumption.
Restrictions on use	Consuming cannabis in public or in a moving vehicle remains illegal	Not permitted in public places (use on private property is permitted)	Smoking cannabis is not allowed in any place where smoking is prohibited under the Smoke Free Illinois Act.	Not permitted in public places (permitted use in private property or smoking in a state-licensed marijuana social club).	Cannot use cannabis in a place where smoking tobacco is prohibited

	Delaware	District of Columbia	Illinois	Maine	Massachusetts
Medical cannabis	2011: Patient registry and ID cards, dispensaries already exist, physician certification is required from a state- licensed practioner, residency requirement.	1998/2010: Patient registry; dispensaries allowed. Any adult, whether a resident or visitor of the city, can self-certify as a medical marijuana patient.	Compassionate use of medical cannabis pilot programme act, began in August 2013. Eligible patients with a doctor's recommendation, with a recognized debilitating condition, after registering with the state, may legally consume medical marijuana. Purchase limit is 2.5 oz of cannabis flower every 14 days. New law also allows school nurses or administrators to give cannabis products to students who are registered medical patients and permits students to medicate under the supervision of those officials.	1999: Patient registry or identification card; dispensaries, recognizes patients from other states but not for dispensary purchases.	2012/2013: Patient registry or identification cards; dispensaries, out-of-state patients not recognized.

	Michigan	Minnesota	Montana	Nevada	New Jersey
Legal process	Voter initiative	Legislative process	Voter initiative	Voter initiative	Voter initiative
Title	Proposal 18-1	HF100	Initiative 190	Question 2 Title 56 Nevada Revised Statutes 678	Question 1 New Jersey Cannabis Regulatory, Enforcement Assistance, and Marketplace Modernization Act (A-21 (P.L.2021,c.16)
Date passed	6 December 2018	24 April 2023	November 2020	November 2016	November 2020
Date implemented/ required date of rule adoption	Commercial licences application began by 6 December 2019.	01 August 2023	Application for licensure by 1 January 2022.	Took effect on 1 January 2017 and regulations were in place by 1 January 2018. Cannabis regulation effective 1 July 2020.	The Cannabis Act was signed on 22 February 2021 and went into immediate effect.
Regulatory authority	Marijuana Regulatory Agency	Minnesota Office of Cannabis Management	Department of Revenue	Cannabis Compliance Board	Cannabis Regulatory Commission
Minimum age	21	21	21	21	21
Residency requirement	Not specified	Not specified		Not specified	None
Personal possession limit	2.5 oz (70.8 g) on person with no more than 15 g in the form of concentrate and 10 oz (283 g) at home	2 oz of cannabis flower in public, 2 lbs of cannabis flower in a private residence and 8 g of concentrate	28.5 g (1 oz) or 8 g in concentrated form	28.5 g (1 oz) flower 1/8 oz or 3.5 g concentrate or edible	28.5 g (1 oz) of cannabis or its equivalent or 4 g of concentrate
Home cultivation	Up to 12 plants per household not visible from a public place.	Up to 8 cannabis plants with no more than 4 being mature. Must be in an enclosed, locked space that is not open for public view.	4 plants with only 2 mature at any time; maximum number of plants allowed in a single residence is twice the individual limit.	6 plants, no more than 12 on property, indoors or enclosed, with permission of landlord and must be 25 miles away from retail cannabis store.	Home cultivation is prohibited.
Interpersonal sharing	2.5 oz with a max of 15 mg of concentrate as long as money is not exchanged.	Within the personal possession limit.	Less than twice the amount of personal possession limit without any consideration or remuneration.	Presumably same as personal possession limit.	Same as personal possession limits, and only without payment or compensation.
Retail transaction limit	Up to 2.5 oz (70 g) of cannabis flower 15 g of extract or concentrate	Not specified	Under the new law customers may purchase up to 1 oz of cannabis per transaction, or the THC equivalent in other forms: 800 mg of edibles or 8 g of concentrate.	Not specified, presumably same limits as for personal possession.	Adults can legally purchase up to 1 oz of cannabis through a licensed retailer.

	Michigan	Minnesota	Montana	Nevada	New Jersey
Retail pricing structure	Market/commercial	Market	Market/commercial	Market/commercial	Market/commercial
Maximum THC content	Not set	5 mg/serving and 50 mg/package for edibles	Not specified	Not set initially	Not set
Registration requirements	None	None	None	Personal data collection not required	None
Commercial production	Licensed establishments	Licensed	Licensed	Licensed establishments In Nevada, cannabis growers must legally account for all cannabis waste by weighing and destroying it.	Licensed
Commercial distribution	A municipality may completely prohibit or limit the number of establishments operating.	Licensed	Licensed	Limits on market concentration by population	Licensed establishments
Restrictions on edibles	Except for THC limits (see above)	50 mg/package for edibles	Edibles are limited to 100 mg per package, with no more than 10 mg of THC per serving, as a common industry standard. Cannabis infused products may not be in shapes or packages that are attractive to children or that are easily confused with commercially sold candy.	Single-serving edible cannabis product offered for sale to a consumer containing not more than 10 mg of THC.	Edible cannabis product shall contain no more than 10 mg of active THC per unit of sale.
Advertising	Restrictions on public signs related to cannabis establishments.	Prohibition of advertising to minors; prohibtion of false or misleading advertising; restrictions on advertising in places where minors are likely to be present; compliance with other advertising regulations.	Advertising cannabis is prohibited in any medium including electronic media.	A licensed marijuana establishment cannot engage in advertising that contains any false or misleading statements, promotes overconsumption, depicts actual consumption, or appeals to minors. Also applies 70/30 rule from Colorado.	Restrict advertising of cannabis items and cannabis 41 paraphernalia in ways that target or are designed to appeal to individuals under the legal age to purchase cannabis items, includes objects, such as toys, characters, or cartoon characters suggesting the presence of a person under 21 years of age or any other depiction; also advertising on television and radio between 6:00 to 22:00 is prohibited; also prohibited to sponsor sports or cultural events.
Taxation	10% excise tax	10% sales tax, in addition to state tax	20% of the retail price	15% excise on wholesale sale 10% excise tax on retail sale	General state sales rate of 6.625%; plus a social equity excise fee of $1.52 per oz for cultivators (starting from 1 January 2023). Annually adjusted excise fee based on average retial price: up to $10 per oz if the average retail price of an oz was $350 or more; up to $30 per oz if the average retail price of an oz was less than $350 but at least $250; up to $40 per oz if the average retail price of an oz was less than $250 but at least $200; and up to $60 per oz if the average retail price of an oz was less than $200.

	Michigan	Minnesota	Montana	Nevada	New Jersey
On site consumption	Not specified	Not specified	Not specified	On-site consumption lounges are permitted. Prospective licences are being awarded as of 30 November 2022. The first cannabis conumption lounge is due to open before summer 2023.	Allowed in designated "Cannabis Consumption Areas" (also known as "on-site consumption areas") attached to places that sell legal cannabis.
Restrictions on use	Not permitted in public places or places where prohibited by person who owns, occupies or manages the property, allowed in designated public places that are not accessible to persons under 21 years of age.	Restriction on use in public schools, charter schools, school buses, state correctional facilities, in a location where the smoke, aerosol or vapor of a cannabis product could be inhaled by a minor, on federal property (such as courthouses, airports and national parks), in federally subsidized housing, while on an employer's premises, or operating an employer's vehicle, machinery or equipment.	Not permitted in public places where smoking tobacco is prohibited, unless allowed by the department.	Cannabis consumption is for private use only. It is illegal to smoke in public, on federal land or in a vehicle without risking a fine.	Consumption is only permitted in a private residence.
Medical cannabis	2008: patient registry, dispensaries can be established with local ordinances; dispensation for specific conditions, recognize out of state patients only for legal protection of possession but not for dispensary purchases.	2014/2015: patient registry, health practioner certification.	2004: Registered card holders; signed physician statement for a debilitating condition.	2000: Patient registry or identification card, No dispensaries; recognize out of state patients if other state's programmes are substantially similar; patients must fill out Nevada paper work.	2009: Medical cannabis can be purchased from any state-licensed New Jersey cannabis dispensary. Physicians determine the proper dosage allowed for the patient, with a maximum set at 3 oz for a 30-day period. Each dose is sold in 0.25 oz denominations. Visiting patients with valid medical marijuana cards from their home state are granted the same protections and allowances surrounding possession and consumption as New Jersey resident cardholders.

	New Mexico	New York	Ohio	Oregon
Legal process	Legislative process	Legislative process	Voter initative	Voter initiative, state statute
Title	HB 2 Cannabis regulation act passed by legislature 31 March 2021	Assembly bill A1248 A Marijuana regulation and taxation act	2023 Ohio Issue 2 (Marijuana Legalization Initiative)	Measure 91
Date passed	March 2021	31 March 2021	7 November 2023	November 2014
Date implemented/ required date of rule adoption	Signed by governor on 12 April 2021. Sales began in April 2022.	Assembly bill signed by governor on 31 March 2021; Sales may begin in December 2022.	Law would become effective 30 days after the vote, 7 December 2023.	July 2015: Personal possession, consumption, cultivation. October 2015 up to December 2016: Retail sales through medical dispensaries. January 2017: Retail sales through licensed retailers.
Regulatory authority	Cannabis Control Division	Cannabis Control Board	Division of Cannabis Control	Oregon Liquor Control Commission
Minimum age	21	21	21	21
Residency requirement	None	None	Not specified	None

	New Mexico	New York	Ohio	Oregon
Personal possession quantity	56 g (2 oz) 16 g of cannabis concentrates and 800 mg of infused edibles	85.5 g (3 oz) or 24 g of concentrated cannabis Up to 5 pounds at home	15g of extract and 2.5 oz of other forms	In public: 28.5 g At home: 228 g
Home cultivation	6 plants per person, or 12 per household; away from public view.	6 plants, 3 mature and 3 seedlings, or up to 12 per household.	Up to 6 plants per adult or a maximum of 12 per household.	4 plants in flower
Interpersonal sharing	Same as personal possession limits. Prohibited to gift cannabis alongside a transaction or in conjunction with sale of goods and services.	Same as personal possession limits but without compensation.	Not specified	Gifting of recreational cannabis to adults 21 and older is allowed, so long as the amount gifted falls within the personal possession limits and no financial consideration is associated with the transfer.
Retail transaction limit	Same as personal possession limits	To be determined	Not specified	1 oz dried flower 5 g cannabinoid extracts or concentrates 16 oz edible form 72 oz cannabis in liquid form 10 cannabis seeds 4 immature cannabis plants
Retail pricing structure	Regulated market started in April 2022	Market/commercial	Not specified yet	Market
Maximum THC content	Not specified	Not set	Not specified	Not set initially
Registration requirements	None	None	None	None
Commercial production	Licensed cultivation/production. Small cannabis microbusinesses can grow up to 200 plants.	Licensed	Licensed	Licensed cannabis producers
Commercial distribution	Licensed	Licensed establishments. Existing medical cannabis operators will be allowed to operate three adult-use stores, co-locating them with their medical dispensaries.	Licensed	Licensed retail cannabis stores
Restrictions on edibles	Not specified	None	Not specified	Edibles produced for recreational consumers are limited to 5 mg for a single dose and 50 mg for an entire package. Edibles concentration limits increased from 50 mg THC to 100 mg per package on and after April 1, 2022. Single serving portions (of no more than 10 mg THC) is scored, to make the portion sizes obvious.
Advertising	Advertising cannabis to people under 21 is prohibited, with the use of cartoon characters or other imagery likely to appeal to children forbidden. Advertisements will also be barred from billboards or other public media within 300 feet of a school, day-care centre or church.	The board is authorized to promulgate rules and regulations governing the advertising	Not specified	Entry sign required on exterior of dispensaries; Oregon Liquor Control Commission has authority to further regulate or prohibit advertising.
Taxation	12% excise tax to be gradually increased to 18% by 2025; 5.125% gross receipts tax (sales tax).	Proposed tax is 13%. Wholesale tax will be applied to products based on potency (0.5 cent per mg for flower, 8/10th of a cent per mg for concentrated cannabis and 3 cents per mg for edibles).	10% tax on marijuana sales	No tax on retail sales from October 2015 to December 2015; 25% sales tax after 5 January 2016; 17% sales tax in 2017 with options for local communities to establish local tax up to 3%.

	New Mexico	New York	Ohio	Oregon
On site consumption	Is allowed if businesses offer	Is allowed	Not specified	Not allowed
Restrictions on use	Public consumption remains illegal, but business can offer on-site consumption if certain requirements are met.	Smoking cannabis in any location is prohibited where smoking tobacco is prohibited.	Use of marijuana in public is illegal.	Smoking marijuana in public is illegal.
Medical cannabis	2007: In 2020, registered patients are required to be state residents; patients need to have a certification from a prescriber with the qualifying conditions; patients are allowed to possess no more than 230 units (approx. 8 oz of flower or buds).	2014: Registration and ID card, medical cannabis to be given either to a certified patient (resident of the state) or by a designated caregiver for a certified medical use for defined "severe debilitating or life threatening conditions".	2016: Patient registry, medical cannabis to be given either to a certified patient (resident of the state) or by a designated caregiver for a certified medical use for defined "severe debilitating or life threatening conditions".	1998: Patient registry, dispensaries already existed but not clearly authorized by law or regulated, possession, home cultivation.

	South Dakota	Vermont	Virginia	Washington
Legal process	Voter initiative	Legislative process	Legislative	Voter initiative, state statute
Title	Measure 27	No. 86 S.54 (initiated in February 2020 and went into force in October 2020 without the Governor's signature	SB 1406 Marijuana; legalization of simple possession Signed by Governor on 7 April 2021	Initiative 502
Date passed	November 2020	January 2018	April 2021	November 2012
Date implemented/ required date of rule adoption	Anticipated date of implementation was 1 April 2022. The ballot measure overturned by courts in February 2021. The ballot was defeated in the November 2022 mid term elections.	1 July 2018; Sale regulations effective October 2020.	Effective July 2021; Bill provisions are subject to re-enactment by the 2022 Session of the state General Assembly. Sales beginning and regulations taking effect on 1 January 2024.	December 2012: Personal possession, consumption July 2014: Retail sales.
Regulatory authority	Department of Revenue	Cannabis Control Board (proposed under S.54)	Virginia Cannabis Control Authority Cannabis Oversight Commission; Cannabis Public Health Advisory Council Cannabis Equity Reinvestment Board and Fund, and Virginia Cannabis Equity Business Loan Program and Fund	Liquor and Cannabis Board (formerly the Liquor Control Board)
Minimum age	21	21	21	21
Residency requirement	None	None	None	None
Personal possession quantity	28.5 g (1 oz or less) or 8 g of concentrate	28.5 g (1 oz) or less or 5 g or less of concentrates (e.g., hashish oil)	28.5 (1 oz) or less	Flower 1 oz (28.35 g) Concentrates; 7 g Edibles 16 oz (454 g) Infused liquid 72 fl oz (2.13 l)
Home cultivation	3 plants with no more than 6 per household. Plants must be in a locked space and out of public view.	2 mature plants or 7 immature plants.	Up to 4 plants for personal use per household. The plants should be kept away from public view, and each one should have a legible tag with owner's ID.	Not allowed
Interpersonal sharing		28.5 or 1 oz or less, or 5 g or less	Yes, same as personal limit	Not allowed
Retail transaction limit		1 oz or cannabis or equivalent in cannabis products	28.5 g (1 oz) or equivalent	28.5 g

	South Dakota	Vermont	Virginia	Washington
Retail pricing structure		Market	Market with limitation	Market
Maximum THC content		Flower is capped at 30% THC and concentrates cannot exceed 60% THC. Edibles have a 50 mg limit per package, 5 mg per serving.	Not specified	Not set initially
Registration requirements		None	None	None
Commercial production		Licensed	Number of licences not to exceed: a) Marijuana manufacturing facilities, 60; and b) Marijuana cultivation facilities, 450	Licensed cannabis producers
Commercial distribution		Licensed	Number of licences issued shall not exceed the following limits: a) Retail cannabis stores, 400; b) Cannabis wholesalers, 25	Cannabis can only be sold and purchased at state-licensed retail stores.
Restrictions on edibles		Edibles can have up to 50 mg of THC with serving of no more than 5 mg of THC each.	Not to contain more than 5 mg of THC per serving of the product; and shall not contain more than 50 mg of THC per package of the product.	10 mg of THC in each individually packaged serving; child-proof packaging; THC labelling; marijuana-infused products, packages and labels to be approved by the State Liquor Control Board before sale.
Advertising		Advertising could not be deceptive, promote overconsumption, offer free samples, or be appealing to minors. Advertising would only be allowed where the licensee can reasonably expect no more than 15% of viewers will be under 21.	Board to regulate reasonable restrictions on advertising and promotion of products.	Cannabis business licensees are limited to two permanent signs on their licensed premises, and all other forms of outdoor advertisements on the premises are banned. New rules mandated that billboards and signs can no longer contain images of the cannabis plant or cannabis products. Cannot contain depictions of cartoon characters or any depictions that may be appealing to children.
Taxation	15% tax proposed	14% of sales price of retail sale	21% retail sale tax. 3% local option sale tax may apply depending on the area.	37% cannabis excise tax; 6.5 state sales tax. Sales Tax: 7.0–10.4% (Option to apply existing local sales taxes (0.5–3.1%)).
On site consumption		Maybe allowed	Not specified	Not allowed
Restrictions on use	Prohibited in public places other than in an area licensed by the Department for consumption; smoking in a location where smoking tobacco is prohibited.	Use is limited to individual dwellings. Prohibited in street, alley, park or sidewalk in addition to usual smoke free-places.	Public use of cannabis will be prohibited.	It is illegal to consume cannabis in view of the public.
Medical cannabis	In 2020, the voters of South Dakota passed Initiated Measure 26 and approved medical cannabis.	Department of health reviews application of qualifying patients diagnosed with qualifying conditions; Department of health verifies the condition with the physician.	2020: Registration is based on certification from a practitioner for specified conditions.	1999/2010/2011: no registration or identification card; dispensaries approved as of November 2012, first stores opened in July 2014; 1999 possession; 2012 home cultivation.

	Maryland	Missouri	Rhode Island
Legal process	Voter initiative	Voter initaitve	Legislative
Title	Question 4	Amendment 3	The Rhode Island Cannabis Act
Date passed	9 November 2022	9 November 2022	25 May 2022
Date implemented/ required date of rule adoption	The law takes effect on July 1 2023	8 December 2022	25 May 2022
Regulatory authority	Natalie M. LaPrade Medical Cannabis Commission	Missouri Department of Health & Senior Services	Rhode Island Cannabis Control Commission (appointment pending)
Minimum age	21	21	21
Residency requirement	None	None	None
Personal possession quantity	1.5 oz of cannabis and 12 g of concentrates	3 oz of cannabis flower or equivalent	Possess or purchase up to 1 oz Possess up to 10 oz at home Possess up to 5 gm of concentrates
Home cultivation	Up to 2 plants at home, out of the public view	With a personal cultivation card, one can grow up to 6 flowering plants and up to 18 non-mature plants, in an enclosed and locked facility at home.	Cultivate up to 3 mature plants along with 3 immature plants
Interpersonal sharing	Allowed if there is no remuneration or transfer in conjunction with sale of goods or services	Presumably the same as personal possession limit	1 oz of cannabis flower or equivalent, as long as transfer is not advertised or promoted to the public
Retail transaction limit	Retail sales regulations pending	Retail sales regulations pending	Public: 1 oz Home: 10 oz
Retail pricing structure	Retail sales regulations pending	Retail sales regulations pending	
Maximum THC content	750 mg	Regulations pending	
Registration requirements	None	None	
Commercial production	Licensed establishments	Licenced establishments	Licensed establishments
Commercial distribution	Licensed establishments	Microbusiness license forms will start to be reviewed by September 2023.	Licensed establishments; Licenced "hybrid cannabis retailers"; Compassion centres
Restrictions on edibles	To be decided	Prohibited to sell edibles in shapes or packages that are attractive to children or easily confused for non-cannabis candies.	None
Advertising	Regulations pending	Regulations pending	A city or town can adopt ordinances governing advertisement.
Taxation	Regulations pending	6% sales tax on cannabis sales	Retail excise tax 10%; 3% local sales tax; 7% normal sales tax rate
On-site consumption	Not stated	Not stated	To be decided
Restrictions on use	Public smoking prohibited	Public smoking prohibited	Public smoking prohibited in places where tobacco smoking is prohibited
Medical cannabis	In April 2014, Hourse Bill 881 was signed, taking effect on 1 June 2014, which created a medical marijuana infrastructure. On 1 December 2017, the medical marijuana program officially began.	Medical cannabis dispensaries can transition to recreational sales from 6 Feburary 2023. When possessing a medical card, one will be exempt from sales tax, and able to purchase higher THC cannabis.	Licensed medical cannabis cultivators, as of 1 August 2022, can cultivate cannabis for adult use. As of 1 December 2022, these hybrid cannabis retailers can sell adult use cannabis.

	Guam	Northern Mariana Islands	Virgin Islands
Legal process	Legislative	Legislative	Legislative
Title	The Guam Cannabis Industries Act	The Taulamwaar Sensible CNMI Cannabis Act	The Virgin Islands Cannabis Use Act
Date passed	4 April 2019	21 August 2019	30 December 2022
Date implemented/ required date of rule adoption	4 April 2019	21 August 2019	18 January 2023
Regulatory authority	Cannabis Control Board	CNMI Cannabis Commission	USVI Office of Cannabis Regulations
Minimum age	21	21	21
Residency requirement	None	None	None
Personal possession quantity	1 oz of cannabis flower, 8 g of cannbis concentrate	1 ounce of cannabis flower, 5 g of concentrate	2 oz of flowers, 14 g of concentrate and 1 oz of edibles
Home cultivation	6 plants at home in a fully enclosed, locked facility	If on the homegrown cannabis registry, one can grow up to 6 plants in a locked, secure place, and keep no more than 8 oz of useable cannabis at a time.	No more than 6 flowering plants and 6 immature plants per household, "with the express consent of the landowner"
Interpersonal sharing	1 oz or equivalent if there is no remuneration	Same as personal possession limit. Allowed if for noncommercial purposes.	
Retail transaction limit	1 oz of cannabis flower, 8 grams of cannbis concentrate	1 ounce of cannabis flower, 5 g of concentrate	
Retail pricing structure	Market	Market	Market
Maximum THC content	800 mg	Not stated	100 mg of THC per unit of sale for edibles
Registration requirements	None	None	Non-residents to pay cannabis fee.
Commercial production	Licensed establishments	Licensed establishments	Licensed establishments
Commercial distribution	Licensed establishments	Licensed establishments	Licensed establishments
Restrictions on edibles	Special packaging requirements for edibles, including specific colour requirements.	None	No more than 10 mg of THC per unit of sale.
Advertising	Advertising must not promote over consumption, represent curative or therapeutic affects of cannabis, depict children or present images that may appeal to children.	Advertising must not be attractive to minors.	Must be within restrictions and cannot target minors
Taxation	15 % excise tax	10% excise tax	18% sale tax
On-site consumption	Not stated	Permitted for establishments registered as marijuana lounges. Class 1 and Class 2 lounges are subject to different requirements and have different privileges.	Adult use lounges
Restrictions on use	Public smoking prohibited	Public smoking prohibited	Must hold a permit
Medical cannabis	Proposal 14-A (now, the Joaquin (KC) Concepcion II Compassionate Cannabis Use Act) was passed via voter initiative in 2014, making cannbis available for qualifying patients for medical use.	Medical cannabis made legal alongside recreation cannabis use per the Taulamwaar Sensible CNMI Cannabis Act. Personal possession and growing limits are looser for medical patients.	Patient registry, state-licensed dispensaries, caregivers must be registered, up to 4 oz of cannabis flower.

TABLE 5 Regulation for the legalization of the non-medical use of cannabis in Uruguay

	Uruguay
Legal process	Government initiative, national law
Title	Law No. 19.172
Date passed	December 2012
Date implemented/ required date of rule adoption	August 2014: Personal cultivation October 2014: Grower clubs Mid-2017: Pharmacy sales
Regulatory authority	Institute for the Regulation and Control of Cannabis (IRCCA)
Minimum age	18
Residency requirement	Uruguayan citizenship or permanent Uruguayan residency required
Personal possession limit	Individuals can purchase up to 40 g per month; according to subsequent regulations, the limit is 10 g per week.
Home cultivation	Six plants in flower. These plants are not allowed to yield more than 480 g of marijuana per year.
Interpersonal sharing	Allowed within the home
Retail transaction limit	40 g per month, 10 g per week (sale through pharmacies to registered users)
Retail pricing structure	Government price control
Average retail price per gram after tax	265 Uruguayan pesos per 5 g (approx. $1.2 per gram)
Maximum THC content	All products are required to indicate that CBD is equal to or more than 3% and THC is equal to or less than 9%.
Registration requirements	With IRCCA for any of the three modes of access
Commercial production	Licensed producers
Commercial distribution	Licensed pharmacies
Restrictions on edibles	
Advertising	Prohibited
Taxation	No tax, although IRCCA can impose tax in the future.
Cannabis clubs	Clubs with 15–45 members allowed to cultivate up to 99 plants; maximum 480 g of dried product per member per year.
Restrictions on use	Uruguay's cannabis law forbids cannabis use in indoor public spaces where tobacco use is prohibited.
Medical cannabis	In 2013: Passed (Law 19.172). Decree N° 46/015. Oils under prescription (CBD) and cosmetics with CBD currently for sale in pharmacies.

DRUG USE AND THE RIGHT TO HEALTH: TOWARDS AN ASSESSMENT FRAMEWORK

In the context of addressing the world drug problem, this chapter proposes the development of a framework to examine the right to health of people who use drugs, as well as their children, other family members and communities affected by drug use. The right to health is enshrined in several international rights instruments.[1, 2, 3, 4, 5, 6, 7] The 2030 Agenda for Sustainable Development also envisions a world with equitable and universal access to health care and social protection where physical, mental, and social wellbeing is assured.

This chapter will discuss the potential building blocks for developing such a framework, using the concept of right to health as defined under each of the international instruments and as interpreted by the Committee on Economic, Social and Cultural Rights.[8]

Introduction

The right to health is an internationally recognized fundamental human right. Everyone has the right to enjoy the highest attainable standard of physical and mental health, including complete physical, mental and social well-being and not merely the absence of disease or infirmity.[9, 10, 11, 12, 13, 14, 15, 16]

The right to health is recognized and enshrined in the international human rights instruments that represent legally binding commitments for the States parties to them. The "health and welfare of humankind" is also the founding goal of the international drug control conventions and appears in the preamble to the Single Convention on Narcotic Drugs of 1961 as amended by the 1972 Protocol[17] and in the Convention on Psychotropic Substances of 1971.[18] The use of drugs can result in adverse health consequences for people who use drugs. These can include both direct health consequences such as drug use disorders, or indirect consequences from risky behaviours, such as blood borne infections or overdose. Moreover, children and family members may also suffer from health and social consequences of a person's use of drugs. People who use drugs may also face barriers that impact on their access to services for other health issues. In the context of drug use, there are many actors involved for which the right to health needs to be considered, not only for people who use drugs, but also their children, other family members and communities.

The right to health in the context of drug use

Fulfilling the right to health applies equally to people who use drugs, their children and other family members, and people in their community. It is an inalienable right of all human beings, regardless of a person's drug use status,[19, 20, 21, 22, 23] and whether a person is imprisoned, detained or incarcerated.[24]

Fulfilling the right to health of people who use drugs entails making evidence-based health services and programmes available, accessible and acceptable for all their physical and mental health needs (whether related to drug use or not) without any stigma or discrimination and creating environments that enable people who use drugs to realize the highest attainable standard of health. People who use drugs also have the right to privacy and confidentiality of their health information, to bodily autonomy and to informed consent.

The right to health is consistent with international human rights instruments, and with the very general objective of the international drug conventions regarding the 'health and welfare of humankind'. The goal of fulfilling the right to health, as articulated in this chapter, does not preclude or contradict the goals of reducing illicit supply and demand of drugs, or with the functioning of the international drug control system. In fact, actions in all these directions at the same time can form part of a comprehensive and balanced effort to address the world drug problem.

Many factors can prevent the realization of the right to health for people. Some of these constraints arise from the drug situation itself (drug use disorders); others arise from societal attitudes and opinions (stigma and discrimination); some from funding constraints or biased allocation of resources; and some from drug-related laws and regulations.

The constraints can include:

- The presence of drivers of drug use and drug use disorders: lack of connections to family or community, instability, insecurity, trauma, poor experience of parenting style or negligence, social norms, peer or familial drug use, mental health problems, conflict, violence and use of other substances (e.g. alcohol and tobacco).[25]

What is the right to health?

States parties to the International Covenant on Economic, Social and Cultural Rights recognize in its article 12 the right of everyone to the enjoyment of the highest attainable standard of physical and mental health.a The notion of the progressive realization of "the highest attainable standard of health" takes into account both the individual's biological condition and socioeconomic status and a State's available resources.

The right to health is an inclusive right extending not only to timely and appropriate health care but also to the underlying determinants of health, and access to health-related education and information. A further important aspect is the participation of the population in all health-related decision-making at the community, national and international levels.

The right to health is not to be understood as a right to be healthy. Good health cannot be ensured by a State, nor can States provide protection against every possible cause of human ill health. Thus, genetic factors, individual susceptibility to ill health and the adoption of unhealthy or risky lifestyles may play an important role in an individual's health. Consequently, the right to health is understood as a right to the enjoyment of a variety of facilities, goods, services and conditions necessary for the realization of the highest attainable standard of health.

The right to health entails both freedoms and entitlements:

- Freedoms include the right to control one's health and body – the right to be free from interference, such as the right to be free from torture, non-consensual medical treatment and experimentation.
- Entitlements include the right to a system of health protection that provides equality of opportunity for people to enjoy the highest attainable level of health.

The right to health embraces a wide range of socioeconomic factors that promote conditions in which people can lead a healthy life, and extends to the underlying determinants of health, such as access to safe and potable water and adequate sanitation, an adequate supply of safe food, proper nutrition and housing, and healthy occupational and environmental conditions. The right to health encompasses the following interrelated and essential elements:

i. *Availability:* Functioning public health and health-care facilities, goods, and services, as well as programmes, have to be available in sufficient quantity;

ii. *Accessibility:* Health facilities, goods and services must be accessible to everyone without discrimination;

iii. Accessibility has four overlapping dimensions:

   a. Non-discrimination – accessibility guaranteed especially to the most vulnerable or marginalized sections of the population;

   b. Physical accessibility – health facilities, goods and services are within safe physical reach of all;

   c. Economic accessibility – affordability guaranteed to all, including socially disadvantaged groups. Payment for health-care services and underlying determinants to be based on the principle of equity;

   d. Information accessibility – information and ideas concerning health issues to be searchable, received and imparted.

iv. *Acceptability:* All health facilities, goods and services must be respectful of medical ethics and be culturally appropriate, i.e., respectful of the culture of individuals, minorities, peoples and communities, sensitive to gender and life-cycle requirements, as well as being designed to respect confidentiality and improve the health status of those concerned.

v. *Quality:* Goods and services must be scientifically and medically appropriate and of good quality.

a Although the rights to health is recognised in several international treaties, the text in this box is based on the Committee on Economic, Social and Cultural Rights, Substantive Issues Arising in the Implementation of the International Covenant on Economic, Social and Cultural Rights: The Right to the Highest Attainable Standard of Health (Article 12 of the International Covenant on Economic, Social and Cultural Rights), General Comment no.14, Twenty-Second Session, Agenda Item 3 (Geneva: United Nations Economic and Social Council, May 2000).

Right to health of all individuals, their families and community

Drug use may negatively impact families and the entire community. Protecting the right to health of people who use drugs, their family members and communities entails an approach that respects and enhances the wellbeing of each individual with no stigma and discrimination.

The Universal Declaration of Human Rights[a] and the International Covenant on Economic, Social and Cultural Rights,[b] which, along with the International Covenant on Civil and Political Rights,[c] make up the International Bill of Human Rights, as well as other major conventions, treaties and declarations of the United Nations, recognize the right to health of every human being and, in particular, the right to health of specific groups, such as indigenous people,[d] minorities, people experiencing racial discrimination,[e] women,[f] childrenc and persons with disabilities.[g]

The international instruments emphasize the importance of ensuring the availability of and access to health-care services, disease prevention, health education and action to address the social determinants of health in order to fulfil the right to health of communities worldwide.

The rights set forth in the international human rights instruments are to be enjoyed by all on a basis of equality.[h] Everyone has the right to a standard of living adequate for the health and well-being of themselves or their families.[i]

In the preamble to the International Covenant, the States parties recognize that individuals have duties to other individuals and to the community to which they belong and have a responsibility to strive for the promotion and observance of the different rights, including the right to health, recognized in the Covenant.[h]

a United Nations, *Universal Declaration of Human Rights*, General Assembly Resolution 217A (Paris, 10 December 1948).

b United Nations, *International Covenant on Economic, Social and Cultural Rights*, General Assembly Resolution 2200A (XXI) (1966), entry into force 3 January 1976, in accordance with article 27.

c United Nations, *International Covenant on Civil and Political Rights*, General Assembly Resolution 2200A (XXI) (1966), entry into force 23 March 1976, in accordance with Article 49.

d United Nations, *Declaration on the Rights of Indigenous People*, General Assembly Resolution 295A (LXI) (2007).

e United Nations, *International Convention on the Elimination of All Forms of Racial Discrimination*, General Assembly Resolution 2106 (XX) (1965), entry into force 4 January 1969, in accordance with Article 19.

f United Nations, *Convention on the Elimination of All Forms of Discrimination Against Women*, General Assembly Resolution 34/180 (1979), entry into force 3 September 1981, in accordance with article 27(1).

g United Nations, *Convention on the Rights of Persons with Disabilities*, General Assembly Resolution 106A (LXI) (2006).

h United Nations, *International Covenant on Economic, Social and Cultural Rights*, Article 3, General Assembly Resolution 2200A (XXI) (1966), entry into force 3 January 1976, in accordance with article 27.

i United Nations, *Universal Declaration of Human Rights*, Article 25, General Assembly Resolution 217A (Paris, 10 December 1948).

- A lack of accessible, affordable and acceptable, age- and gender-appropriate, evidence-based prevention interventions.[26]
- A lack of access to essential medications, particularly in low- and middle-income countries, for the treatment of drug use disorders, pain management and palliative care and mental health disorders.[27]
- The drug situation, the availability of drugs, and high rates of drug use disorders, overdoses and deaths.
- A lack of accessible, affordable, age- and gender-appropriate, scientific evidence-based treatment and care for drug use disorders.[28] Globally, only 1 in 10 people with drug use disorders received drug treatment in 2022.[29] Drug treatment services are often neither part of universal health coverage nor integrated with health-care delivery systems.[30]
- A lack of accessible, affordable, age- and gender-appropriate, scientific evidence-based interventions to prevent adverse public health and social consequences of drug use,[31] and manage overdoses.
- Unethical standards of care in drug treatment and care services, where treatment interventions are not based on scientific evidence, including drug treatment that is involuntary or compulsory or is aimed only at abstinence.[32]
- Stigma and discrimination towards and fear or threat of legal sanctions for people who use drugs, which are heightened for populations with specific needs, particularly women, groups in vulnerable situations, and people living with HIV, and increase the harms they experience and prevent them from accessing drug treatment and interventions to minimize or prevent adverse health and social consequences of drug use.[33, 34]

Protecting the rights of children exposed to drug use

The Convention on the rights of the Child places an obligation on States to take all appropriate measures to protect children from the illicit use of narcotic drugs. Every child has the right to such care and protection as is necessary for their well-being, including when the child's parents use drugs or have a drug use disorder. The Convention reaffirms the special role of the family for the optimal development of the child and includes the obligation to assist parents in carrying out their childcare responsibilities when needed.[a]

Where children have parents who use drugs it is important to note that drug use or drug use disorders do not, of themselves, constitute abuse or neglect. They should not be a reason to notify authorities.

Children or family members of people who have a drug use disorder, may, experience negative effects, such as neglect, poor parental performance and violence. These effects may not be simply because of drug use, but are a result of a variety of structural factors. The best interests of the child are a paramount consideration in all cases. According to the Convention on the Right of the Child,[a] a child must not be separated from his or her parents against their will, and can be removed from parental custody only if competent authorities subject to judicial review have determined that such separation is necessary for the best interests of the child,[a] such as in the case of abuse or neglect by the parents or any other person who has the care of the child. The best interests[b] of the child need to be the primary consideration in all actions concerning children, whether undertaken by public or private social welfare institutions, courts of law, administrative authorities or legislative bodies.[c]

The International Guidelines on Alternative Care of Children state that "States should seek to ensure appropriate and culturally sensitive measures ... [t]o support family caregiving environments whose capacities are limited by factors such as ... drug and alcohol misuse". The importance of assisting parents with drug use disorder to carry out their childcare responsibilities by providing good parenting support and childcare practices, is recognized and that treatment and care programmes for parents with drug use disorders recognize and accommodate the paramount needs of the parents and the child/ren.[d]

a United Nations, *Convention on the Rights of the Child*, Preamble, General Assembly Resolution 44/25 (1989), entry into force 2 September 1990, in accordance with article 49.

b The best interests of a child, as explained in the General Comment No. 14 (2013), is a dynamic concept and can be assessed based on the child's physical, emotional, social, and educational needs, age, sex, the preservation of the family environment and respecting the child's right to express his or her views freely, according to article 12 of the Convention on the Right of the Child.

c United Nations, *Convention on the Rights of the Child*, Article 3 (1), General Assembly Resolution 44/25 (1989), entry into force 2 September 1990, in accordance with article 49.

d WHO and UNODC, *International Standards for the Treatment of Drug Use Disorders: Revised Edition Incorporating Results of Field-Testing,* (Geneva, 2020).

Towards a multi-dimensional framework of the right to health in the context of drug use

A multi-dimensional framework could be developed taking into account the international conventions, the legal instruments and declarations, and taking into consideration all people whose right to health may be affected by drug use. The outline of a potential framework is presented below with specific references to various reports and the scientific literature demonstrating a significant association between each dimension of the right to health and the health outcomes of individuals affected by drug use.

The framework would capture a right to health that takes into account the social determinants of health and well-being, prevention of drug use, prevention of adverse health consequences of drug use, treatment of drug use disorders and provision of a policy environment that supports the right to health of all people affected by drug use.

The dimensions are interrelated and could include:

1. Ensuring access to internationally controlled drugs for medical use, including for pain management and palliative care.
2. Making available accessible, acceptable, and quality age- and gender-appropriate drug prevention interventions, including addressing the underlying (social and commercial) determinants of health and

well-being in the context of drug use and its health and social consequences.

3. Making available accessible, acceptable, quality, age- and gender-appropriate, scientific evidence-based drug treatment and care services, including measures aimed at minimizing the adverse public health and social consequences of drug use.
4. Ensuring equity and non-discrimination in the realization of the right to health.
5. Ensuring meaningful participation in all health-related decisions to address the problems related to drug use.

Dimension 1: ensuring access to internationally controlled drugs for medical use, including for pain management and palliative care

One of the key dimensions for promoting the right to health of people is ensuring access to internationally controlled drugs for medical purposes, including for the treatment of drug use disorders, other mental health disorders, pain management and palliative care.

Pain can substantially affect an individual's health, with serious negative consequences including slower or partial healing from injury, surgery or disease, as well as impact quality of life and activities of daily living. Approximately 75 per cent of the world's population have no, insufficient or inadequate access to pain medication for acute and chronic pain management, including for childbirth and palliative care, causing needless suffering to millions of people, while in other countries, there is overconsumption of pain medication.[35]

Major inequalities remain in the availability of pharmaceutical opioids for medical consumption. Despite progress in recent years and a slight reduction in the gap between high-income and low- and middle-income countries, there continued to be a large (46-fold) difference in the availability of opioids per capita for pain management and palliative care between the two sets of countries in 2022. While a number of countries in North America, Oceania and Western Europe have comparably high levels of availability of opioids for medical use, most other countries have extremely low levels of availability, especially countries in Africa, Asia and in the Pacific. Levels of per capita use in Africa are just 0.4 per cent of those in North America, and in West and Central Africa the proportion is even lower (0.06 per cent).[36]

In the past two decades, overall progress has been made with regard to the global availability of methadone and buprenorphine, two opioids that are used not only as analgesics but also as opioid agonist medication in the treatment of opioid use disorders. However, since 2019 their availability for medical use has remained rather stable at the global level.[37]

Where access to controlled medicines is curtailed, there is the risk of illicitly manufactured medicines (substandard and falsified medicines). A recent review noted a prevalence (across all medicines, not limited to controlled drugs) of 13.6 per cent of substandard and falsified medicines among samples analysed in low- and middle-income countries,[38] with the attendant negative health and economic consequences. This issue may have become more acute with the proliferation of the online sale of medicines.[39]

The importance of ensuring access to opioids for medical and scientific purposes is supported by best practice evidence.[40, 41, 42, 43] Opioid agonist treatment, which is also covered under the dimension on drug treatment below, is part of the suite of essential medicines needed to effectively address the drug problem.

Dimension 2: making available accessible, acceptable and quality age- and gender-appropriate drug prevention interventions, including addressing the underlying determinants of health and wellbeing in the context of drug use

Preventing the initiation of drug use and the development of drug use disorders is key to achieving positive health outcomes. Children and young people are a particular target group for prevention activities given that adolescence is a peak period for the initiation of substance use and brain development is still occurring. Studies have found links between early age of onset of drug use and severity of use and health harms later in life.[44, 45, 46, 47] One component of drug prevention interventions is policies and practices that address the social determinants of health and attend to vulnerabilities (such as poverty, unstable housing and so on) that increase a young person's likelihood of drug use. Other prevention interventions can be carried out at an individual, family or community level. The International Standards on Drug Use Prevention[48] provide a scientific summary of the research literature on a wide range of evidence-based and age- and gender-appropriate prevention interventions at different levels. Among these, parenting skills programmes, personal and social skills education and prevention education based on social competence and influence are some of the evidence-based interventions for middle childhood and early adolescence. All

interventions listed in the Standards are supported by best practice evidence.[49, 50, 51, 52, 53, 54, 55, 56, 57]

For prevention programmes to be successful, they need to be available, accessible, acceptable, of high quality and offered by trained professionals.[58] This means that they need to be available in the settings required, provided without discrimination, affordable to community members, and delivered by trained professionals in ways that are acceptable to the people and communities they serve. They also need to be ethical and culturally appropriate, sensitive to gender and age, and based on evidence of effectiveness in improving health outcomes.

Social determinants of health are also foundational elements for achieving positive health outcomes for individuals, families and communities.[59] There is a substantial body of scientific evidence showing that policies and practices that address and provide equitable access to the underlying determinants of health result in improved health statuses. The *World Drug Report 2020* in one of the booklets presented the association of socioeconomic characteristics with drug use disorders and how those characteristics influence the macro and individual-level circumstances, resulting in drug use disorders which, in turn impact the socioeconomic inequalities of people with drug use disorder and access to services.[60]

The commercial determinants of health also have an impact on health outcomes. Commercial determinants relate to private sector activities that impact health and the regulation of commodities that then go on to influence access and use.[61, 62]

Dimension 3: making available accessible, acceptable, quality, age- and gender-appropriate, scientific evidence-based drug treatment and care services, including measures aimed at minimizing the health and social consequences of drug use

This dimension refers to all the health-care and social protection services that are needed to promote the right to health of people who use drugs and people with drug use disorders, and of those around them affected by drug use in the family and other people in the community.

Drug use disorders are multifactorial in nature and often follow the course of a relapsing and remitting chronic disease that requires a continuum of care. Scientific evidence-based drug treatment has been shown to result in improved health outcomes, including better quality of life. There are several evidence-based, effective treatments for drug use disorders, including medically assisted treatment such as opioid agonist treatment for people with opioid use disorders,[63, 64, 65, 66, 67] residential rehabilitation,[68, 69, 70] evidence-based psychosocial treatments/interventions such as cognitive behavioural therapy, contingency management, and motivational interviewing,[71, 72] peer-based support,[73, 74, 75] withdrawal management for stimulant use,[76] and treatment of neonatal abstinence syndrome,[77] safe housing and health environments, family and social support, community integration and social skills and educational development.[78, 79, 80, 81] Additional elements of evidence-based services include low threshold and outreach services, which form part of a continuum of care, for the "hidden" populations most affected by drug use, those who may be reluctant to receive treatment or who relapse after a treatment programme. The International Standards for the Treatment of Drug Use Disorders outline in detail the different scientific evidence-based interventions and services that exist for people with drug use disorders and their families.[82]

Addressing the harm associated with drug use includes effective measures aimed at preventing and reducing the adverse public health and social consequences of drug use, including overdose prevention and management and prevention of infectious diseases. People who inject drugs remain particularly at risk of non-fatal and fatal overdose[83] and of contracting blood-borne viruses, including HIV and hepatitis B and C, especially where injecting equipment is shared.[84] The comprehensive, package of evidence-based interventions for the prevention, treatment and care of people who inject drugs[85] lists nine interventions grounded in scientific data showing their efficacy and effectiveness at reducing and combating HIV among people who inject drugs.[86, 87, 88, 89, 90, 91, 92, 93, 94] Among the different interventions, access to needle and syringe programmes, opioid agonist and other forms of treatment for drug dependence, and community availability of naloxone for overdose management, are currently considered as essential interventions.[95]

In some places, the coverage of drug treatment and/or interventions for the prevention of adverse public health and social consequences of drug use are inadequate, and some effective interventions, such as opioid agonist treatment or naloxone for overdose management, are not permitted or available.[96, 97, 98] This substantially reduces the impact of interventions to address drug use disorders, and to prevent infections such as HIV and viral hepatitis, and to prevent and manage overdose.

Drug treatment and care services have a positive impact not only on those receiving them, but also for their children and other family members and the community within which they live. Scientific studies on the impact of drug treatment beyond the individual recipient have shown improved quality of life and health status for those around the person in treatment and significant reductions in crime rates.[99, 100, 101]

Family-oriented approaches are particularly useful in educating patients and their families about the nature of drug use disorders and the recovery process. Such approaches, which are identified as effective for different drug use disorders, include behavioural couples therapy, brief strategic family therapy, functional family therapy, multisystemic therapy and multidimensional family therapy.[102] Recovery from drug use disorders is considered to be a continuous process and experience in which individuals, families and communities utilize their resources to address drug use disorders, actively manage their continued vulnerability to such disorders and develop a healthy, productive and meaningful life.[103] Therefore, the provision of affordable, accessible, scientific evidence-based drug treatment services by trained professionals can help to support the right to health of children and other family members of people who use drugs.

Certain population groups with specific needs may require special treatment and care provisions. People who use drugs with comorbid health conditions, such as those with psychiatric comorbidities or those living with HIV, require a continuum of care to address both their drug use disorder and the comorbidities. Similarly, women, children and adolescents, and people who are homeless or socially marginalized may require additional social care services such as education, vocational training, housing and other general social support.[104]

The right to health is inalienable, ensuring that treatment for drug use disorders is accessible, affordable and available, also means ensuring that people have access to treatment and other interventions regardless of their circumstances or location. People in prison therefore have the right to the same level of health care as people in community settings.[105] Overcrowding, poor living conditions, high rates of incarceration for drug use and possession for personal use offences and inadequate health care and lack of prevention measures, higher levels of stigma and discrimination all exacerbate the health risks for people who use or inject drugs in prisons. Most people in prison are expected to return to the community, and are likely to carry with them diseases contracted in closed settings, or made worse by poor conditions of confinement, become matters of public health.[106] People who use drugs and are incarcerated in prison should have access health care and drug services, including access to overall health care, treatment for drug use disorders, interventions to minimize and prevent the adverse public health and social consequences of drug use, and other health services.[107, 108, 109] Continuity of treatment and care for people who are either transferred or released from prison is another crucial element that needs to be considered as part of the healthcare system. Beyond providing accessible and affordable drug treatment and care services, ensuring access entails identifying and removing the barriers, including stigma and discrimination, that prevent people, particularly women, children, minority groups and rural populations, from accessing these services.[110, 111, 112, 113] Removing the barriers that decrease access to drug treatment is vital to ensure health gains. Research has shown that the policing of people who use treatment and care services discourages them from accessing treatment (through harassment, arrests and searches and confiscation of injecting equipment), decreases treatment efficacy and increases risky drug use practices (such as the sharing of non-sterile syringes).[114, 115] Moreover, people with drug use disorders require a continuum of care, from outreach, basic support and interventions to reduce or prevent the adverse public health and social consequences of drug use, to treatment and social reintegration, with no "wrong door" for entry into the treatment system.[116]

One essential element of the right to health is the accessibility of information. This includes the right to seek, receive and impart information and ideas concerning health issues.[117] In the context of drug use, this would include access to factual information on the effects of drugs and their health and social consequences, on effective science-based prevention and treatment interventions, and on the availability of, and how to access, drugs and related health services in the community.[118] For people entering drug treatment, it would include access to information on the treatment programme's philosophy, expectations, approach to treatment and recovery, retention and health outcomes, and would address other concerns that the persons or their family may have prior to initiating treatment. Providing access to information can also be important for ensuring that the families of those who use drugs receive correct information about drug use disorders and their treatment, and about access to support groups for families and carers and other social resources.

Right to health and compulsory drug treatment

Voluntary (with informed consent) is a precondition for any medical treatment, including for treatment for drug use disorders. Compulsory drug treatment can be defined as the mandatory enrolment of individuals, who are often but not necessarily drug-dependent, in a drug treatment programme, which is often involuntary, inpatient, abstinence-based and nested within a broader criminal justice-oriented response to the drug problem.[a]

Compulsory treatment is distinct from treatment offered as an alternative to imprisonment, or other criminal punishment.[a] Given that the decision to undertake treatment is made under threat to imprisonment, such treatment can be labelled as coercive treatment, but in contrast to compulsory treatment there is a choice to refuse it even if options are limited.

Voluntary treatment can also be said to be influenced by pressure and persuasion.[b]

With regard to compulsory drug treatment, there is limited scientific literature that has evaluated it. However, the published evidence does not, on the whole, suggest improved outcomes, while some studies have suggested potential harms from such interventions.[a]

Compulsory treatment infringes the right to informed consent of people with drug use disorders[c] and to their personal liberty and security.

The INCB has also noted that "despite a call by a number of United Nations agencies in 2012, many countries throughout the world still retain compulsory systems for the treatment of persons with drug use disorders." The Board called upon "those Member States that have not already done so to shift efforts from compulsory and involuntary treatment services for people who use drugs towards alternatives to imprisonment and punishment in drug treatment and rehabilitation."[d]

a Dan Werb et al., "The Effectiveness of Compulsory Drug Treatment: A Systematic Review", *International Journal of Drug Policy*, 28 (February 2016), pp. 1-9.

b UNODC, *From Coercion to Cohesion: Treating Drug Dependence Through Health Care, Not Punishment. Discussion Paper*, (United Nations, October 2010).

c Committee on Economic, Social and Cultural Rights, *Substantive Issues Arising in the Implementation of the International Covenant on Economic, Social and Cultural Rights: The Right to the Highest Attainable Standard of Health (Article 12 of the International Covenant on Economic, Social and Cultural Rights)*, General Comment no.14, Twenty-Second Session, Agenda Item 3 (Geneva: United Nations Economic and Social Council, May 2000.

d International Narcotics Control Board, Annual Report 2023, E/INCB/2023/1 (United Nations, March 2024).

Another key element of the right to health is for a person to receive consensual medical treatment.[119] This requires a person with drug use disorders to give informed consent before voluntary treatment begins and for them to receive a guarantee that they can withdraw at any time.[120] Informed consent can only be granted when the person has received all the related information, as described above. Moreover, confidentiality and the anonymity of health data for people receiving drug treatment services are part of the medial ethics, which cannot be comprised at any stage, unless extraneous circumstances require, with due process and diligence releasing, part of the information on a person in drug treatment.

Dimension 4: ensuring equity and non-discrimination in the realization of the right to health

Stigma and discrimination against people who use drugs and people with drug use disorders are pervasive and represent a major barrier to accessing health-care services.[121, 122, 123] People who use drugs may be denied health care and other critical social services, receive poor treatment and ill advice, or be discouraged health care,[124, 125] which suggests a demonstrable relationship between discrimination and health outcomes and thus people's right to health.

Stigma can lead to the overall dehumanization and vilification of individuals, with people who use drugs commonly labelled as morally deficient, "addicts" and "societal villains",[126] which projects a stereotype of those who are incapable of making decisions for themselves. Stigma and discrimination further marginalize people who use drugs and can manifest in people being socially excluded, denied access to health care and drug services, or treated badly in general.[127, 128] This increases their risk of suffering adverse public health and social consequences, violence and abuse, and ill treatment by State actors and individuals within their own communities. Stigma can be compounded where it intersects with other stigmatized

identities.[129, 130] Women experience greater health and social vulnerabilities compared with men, which also contributes to gendered disparities in access to drug treatment services.[131] Women, minority groups and other population groups who use drugs report particularly high rates of stigma and related gender-based violence, and of physical and sexual abuse by police or other people providing services.[132, 133]

People who use drugs can be labelled in various ways that adds to the stigma and decrease their opportunity to receive health care "people with mental health conditions and psychosocial disabilities are routinely deemed incapable of making decisions" [134] as "morally bad".[135]

Dimension 5: ensuring meaningful participation in all health-related decisions to address the problems related to drug use

The Committee on Economic, Social and Cultural Rights has clarified that[136] ensuring the right to health for all those affected by drug use means ensuring their participation and that they have a voice in all decisions that are taken to address the drug use problem.

However, as noted in the scientific literature, it is very difficult to design studies (such as randomized controlled trials) that can test the impact of meaningful participation on subsequent health outcomes.[137] This is also the case for the research examining the relationship between individual health outcomes and an individual's own involvement in their medical care decision-making.[138] Despite the scientific challenges, there is evidence of situation-specific improved health outcomes associated with participation. One systematic review revealed a breadth of evidence that community involvement has a positive impact on health.[139] The review showed that participation in a community initiative, such as health intervention planning and delivery, fostered the engagement of the target community, while increased community participation could also address the social determinants of health outcomes through increased local employment services.[140] It is also worth noting that meaningful participation is an important element of a rights-based approach and promotes inclusion, dignity and respect.

Literature has shown that the inclusion of people who use drugs, all those affected by their use and other community stakeholders in the formulation of policies and programmes targeted towards them can reduce the likelihood of poor-quality, poorly informed and stigmatized responses.[141, 142, 143] People who use drugs and those affected by the drug use problem are sometimes best placed to identify what the needs are in their community and what types of approaches work; their involvement can prevent stigma or misconceptions from prejudiced responses.[144] Their participation can also promote collaboration and "ownership" of health-based solutions and ultimately increases chances of success.[145] The involvement of civil society organizations that represent local communities in the development of national policies can help to ensure that they are culturally relevant and accepted.[146]

Towards measurable indicators to assess right-to-health approaches

Providing Member States with indicators to assess how they are promoting the right to health in relation to drug use can provide a useful level of accountability and scrutiny.

The building blocks and dimensions described in this chapter may provide a starting point.

Any related indicators should be specific, measurable, achievable/appropriate/attributable, relevant, and time-bound (SMART).

Further dialogue about the most suitable and appropriate indicators may be useful, with special attention to the timeliness and feasibility of data collection for Member States.

Notes and references

1 The Universal Declaration of Human Rights, in Article 25, includes the right to a standard of living adequate for the health and wellbeing of himself and his family and the right to social security.

2 The Convention on the Elimination of All forms of Racial Discrimination, in Article 5 (e) (iv), guarantees the right to equality before the law in the enjoyment of the right to public health, medical care, social security and social services.

3 The International Covenant on Economic, Social and Cultural Rights, in the Article 12, states that everyone has the right to the enjoyment of the right to the highest attainable standard of physical and mental health.

4 The Convention on the Elimination of All Forms of Discrimination against Women, in Article 12, places an obligation on State Parties to take appropriate measure to eliminate discrimination against women in the field of health care.

5 The Convention on the Rights of the Child, in Article 24, recognises the right of the child to the enjoyment of the highest attainable standard of health.

6 The International Convention on the Protection of the Rights of All Migrant Workers and Members of Their Families, in Article 43 (e), guarantees the right to equality of treatment with nationals of the State of employment in relation to access to social and health services.

7 The Convention on the Rights of People with Disabilities, in Article 25, recognises the right to the enjoyment of the highest attainable standard of health without discrimination on the basis of disability and includes several obligations for the State Parties to provide affordable, quality health services.

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GLOSSARY

amphetamine-type stimulants — a group of substances composed of synthetic stimulants controlled under the Convention on Psychotropic Substances of 1971, which includes amphetamine, methamphetamine, methcathinone and the "ecstasy"-group substances (3,4-methylenedioxymethamphetamine (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 sub-regional designations. These are not official designations, and are defined as follows:

AFRICA

- 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

AMERICAS

- 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 (Kingdom of the), British Virgin Islands, Cayman Islands, Curaçao, Guadeloupe, Martinique, Montserrat, Puerto Rico, Saba, Netherlands (Kingdom of the), Sint Eustatius, Netherlands (Kingdom of the), 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, 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)

ASIA

- 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
- Near and Middle East: Bahrain, Iraq, Israel, Jordan, Kuwait, Lebanon, Oman, Qatar, Saudi Arabia, Syrian Arab Republic, United Arab Emirates, Yemen and State of Palestine
- South Asia: Bangladesh, Bhutan, India, Maldives, Nepal and Sri Lanka
- South-West Asia: Afghanistan, Iran (Islamic Republic of) and Pakistan

EUROPE

- Eastern Europe: Belarus, Republic of Moldova, Russian Federation and Ukraine
- South-Eastern Europe: Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Montenegro, North Macedonia, Romania, Serbia, Türkiye and Kosovo[1]
- 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 (Kingdom of the), 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

- 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

1 References to Kosovo shall be understood to be in the context of Security Council resolution 1244 (1999).

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UNODC Research

A global reference on drug markets, trends and policy developments, the *World Drug Report* offers a wealth of data and analysis and in 2024 comprises several elements tailored to different audiences. The web-based **Drug market patterns and trends** module contains the latest analysis of global, regional and subregional estimates of and trends in drug demand and supply in a user-friendly, interactive format supported by graphs, infographics and maps. The **Key findings and conclusions** booklet provides an overview of selected findings from the analysis presented in the **Drug market patterns and trends** module and the thematic **Contemporary issues on drugs** booklet, while the **Special points of interest** fascicle offers a framework for the main takeaways and policy implications that can be drawn from those findings.

As well as providing an in-depth analysis of key developments and emerging trends in selected drug markets, the **Contemporary issues on drugs** booklet looks at several other developments of policy relevance. The booklet opens with a look at the 2022 Taliban ban on the cultivation and production of and trafficking in drugs in Afghanistan and its implications both within the country and in transit and destination markets elsewhere. This is followed by a chapter examining the convergence of drug trafficking and other activities and how they affect natural ecosystems and communities in the Golden Triangle in South-East Asia. The chapter also assesses the extent to which drug production and trafficking are linked with other illicit economies that challenge the rule of law and fuel conflict. Another chapter analyses how the dynamics of demand for and supply of synthetic drugs vary when the gender and age of market participants are considered. The booklet continues with an update on regulatory approaches to and the impact of legalization on the non-medical cannabis market in different countries, and a review of the enabling environment that provides broad access to the unsupervised, "quasi-therapeutic" and non-medical use of psychedelic substances. Finally, the booklet offers a multi-dimensional framework on the right to health in the context of drug use; these dimensions include availability, accessibility, acceptability, quality, non-discrimination, non-stigmatization and participation.

The *World Drug Report 2024* is aimed not only at fostering greater international cooperation to counter the impact of the world drug problem on health, governance and security, but also at assisting Member States in anticipating and addressing threats posed by drug markets and mitigating their consequences.

The *World Drug Report 2024* is published on the UNODC website:

https://www.unodc.org/unodc/en/data-and-analysis/world-drug-report-2024.html