



# AFGHANISTAN DRUG INSIGHTS VOLUME 4



## DRUG TRAFFICKING AND OPIATE STOCKS

VOLUME 1: OPIUM POPPY  
CULTIVATION 2024

VOLUME 2: 2024 OPIUM PRODUCTION  
AND RURAL DEVELOPMENT

VOLUME 3: MAPPING OF FACILITIES FOR TREATMENT OF  
SUBSTANCE USE DISORDERS: ADDRESSING SERVICE PROVISION  
CHALLENGES IN A HUMANITARIAN CRISIS

**VOLUME 4: DRUG TRAFFICKING  
AND OPIATE STOCKS**

**JANUARY 2025**

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# THE SERIES ON AFGHANISTAN DRUG INSIGHTS

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The Afghanistan Drug Insights are a series of reports that provide the latest data and in-depth analysis on aspects of the evolving drug situation in Afghanistan. This fourth volume provides an assessment of drug seizure trends near Afghanistan and estimates potential opium stocks within the country by the end of 2022, just before the start of the ban. The remaining reports in the series will cover a range of topics related to the drug situation in Afghanistan, including the socioeconomic situation of farmers after the drugs ban, and drug use.

Given the unprecedented nature of the ongoing drugs ban in Afghanistan, which has continued for a second year, UNODC sought to examine different aspects of the drug situation in that country. Taken together, the reports in the series paint a comprehensive picture of the effects of the enforcement of the ban on production, trafficking and consumption of all drugs and delve deep into the impacts of the ban on the Afghan economy, as well as on Afghanistan's neighbors and the wider region.

The insights are aimed at informing international engagement in Afghanistan in an objective and timely manner, using the latest data of the highest quality standards, presenting it in an evidence-based, coherent, coordinated, and structured manner as foreseen in Security Council resolution 2721 (2023).

The present Insight has been produced under the project "Monitoring of Opium Production in Afghanistan" (AFG/F98). Information and data contained in this report, unless otherwise stated, are based on data collected by UNODC by remote sensing, through rural village surveys and other tools; as well as through global data collections on drugs (UNODC Annual Report Questionnaires and the UNODC Drugs Monitoring Platform). Data on opium cultivation and production are based on the Afghanistan Opium Surveys 1994-2020 jointly published by UNODC and the Government of Afghanistan, as well as the Afghanistan Opium Surveys conducted by UNODC in 2021, 2022, and 2023. Other data used in this report to model stock estimates come from UNODC's Afghan Opiate Trade Project published in 2020.





# AFGHANISTAN DRUG INSIGHTS VOLUME 4:

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## DRUG TRAFFICKING AND OPIATE STOCKS

Assessing the impact of the drugs ban on opiate stocks within Afghanistan and trafficking in the wider region

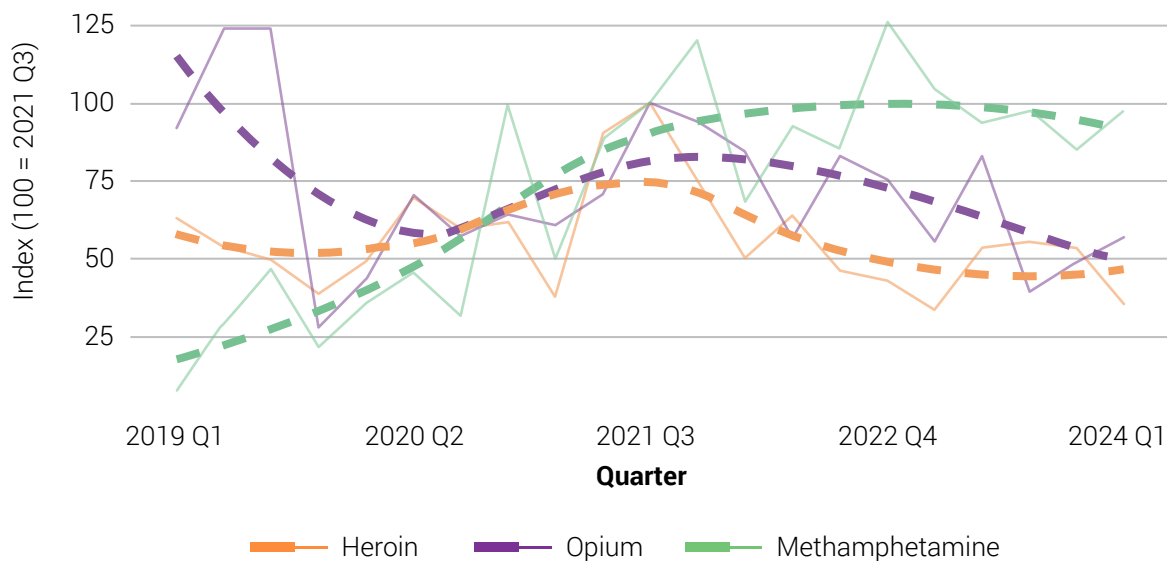
# Key points

**As a result of a reduction in production, the amount of opiates being trafficking out of Afghanistan has declined in recent years and it appears that less heroin is being processed in the country.**

The incidence of opiate seizure in the countries closest to Afghanistan has declined since mid-2021. This is especially the case for heroin, which is now seized half as frequently. Opium seizures (meaning number of events, as opposed to amounts seized) initially rose by 50% immediately after the announcement of the drugs ban in April 2022. However, seizures have fallen since the latter half of 2023 back to levels seen in late 2021. The average weights of seizures, both heroin and opium, have fallen by about 50% since the De-facto Authorities (DfA) returned to power. There are fewer opiate seizures as of the first quarter of 2024 compared to mid-to-late 2021 and those seizures weigh, on average, about half as much as they used to. This downward trend is most pronounced for heroin, suggesting that less heroin is being processed in Afghanistan and that, in total, lower amounts of opiates are leaving the country.

## Average weight of drug seizures, indexed to 2021 Q3

Observations within 3000 km from Afghanistan

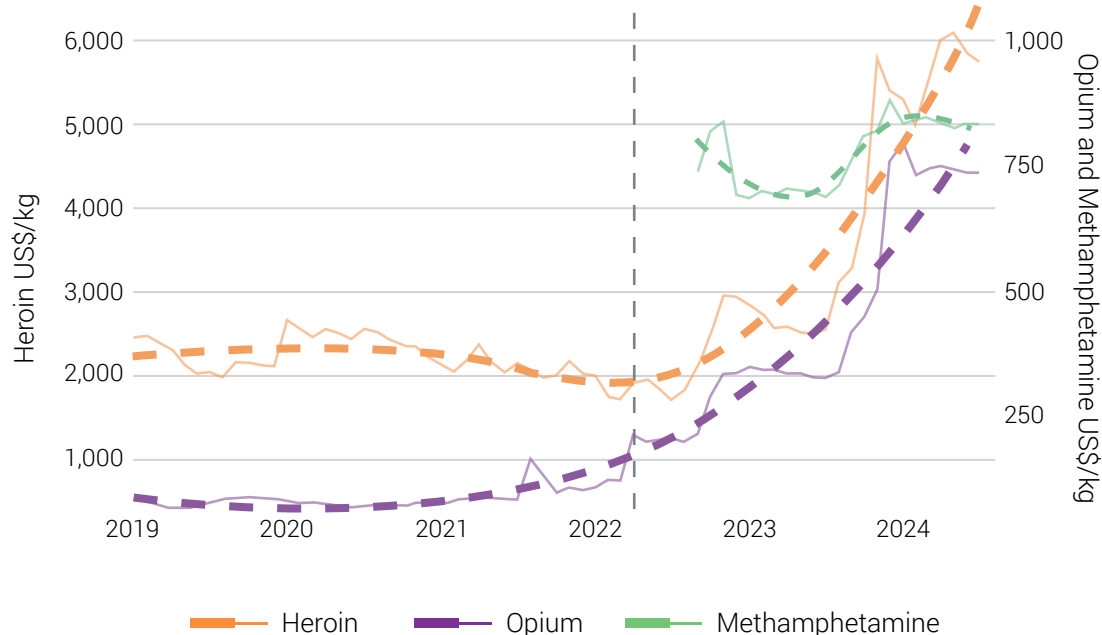


Note: Dashed line plots smoothed trend; observations below 0.01kg are removed; data come from UNODC Drug Monitoring Program. Data is plotted as trend against Q3 2021.

### Opiate prices are at recent historic peaks, making drug trafficking very profitable.

Dry opium prices in Afghanistan have sharply increased on several occasions over the last three years. The long-running average was around US\$75 per kilogram before the DfA took over. In the latter half of 2021 until the announcement of the drugs ban in April 2022, trade prices for a kilogram of opium increased to around US\$110. Prices jumped to around US\$300 a kilogram at the beginning of the following season's sowing period in 2023. By the start of the sowing period for 2024, prices had jumped to ten times higher than the long-running pre-ban average and about four times higher than when the ban was announced.

### Monthly Afghan drug prices (US\$/kg) at trader level, January 2019 to June 2024



Note: Dashed line plots smoothed trend; data come from UNODC Afghanistan Price Monitoring.

Monthly wholesale heroin prices in Afghanistan have also seen sharp increases that generally follow dry opium prices. The longstanding pre-ban average hovered around US\$2,200 a kilogram, falling to just under US\$1,700 in the middle of 2022 right after the announcement of the ban before rising to over US\$6,000 a kilogram by the first half of 2024. Recent prices are about three times higher than when the ban was announced. The difference between annual prices of a kilogram of heroin and opium has also declined substantially. In 2019, a kilogram of heroin sold for about 28 times that of opium; by 2024 a kilogram could generate less than eight times that of opium. Heroin prices lag price hikes of opium, which can contribute to a narrowing gap in profitability. At current ratios, exporting opium appears to be economically more attractive than exporting heroin, a factor that might contribute to increased opium seizures.

The price hikes are reflected in neighbouring Iran. According to the Drug Control Headquarters of the Islamic Republic of Iran a kilogram of dry opium rose from just over US\$2,900 in 2022 to US\$7,000 by the first half of 2024, even after accounting for inflation.<sup>1</sup> Heroin prices experienced a sharp increase as well, rising from US\$13,000 a kilogram in 2022 to almost US\$77,000 in the first half of 2024 (in 2023 dollars). Pakistan also witnessed increases in both opium and heroin prices according to data reported to the Annual Report Questionnaire. For opium, prices increased from US\$270 in 2021 to just over US\$400 a kilogram in 2023. Heroin prices in Pakistan increased from US\$2,200 a kilogram in 2021 to over US\$3,600 in 2023, values not adjusted for inflation.

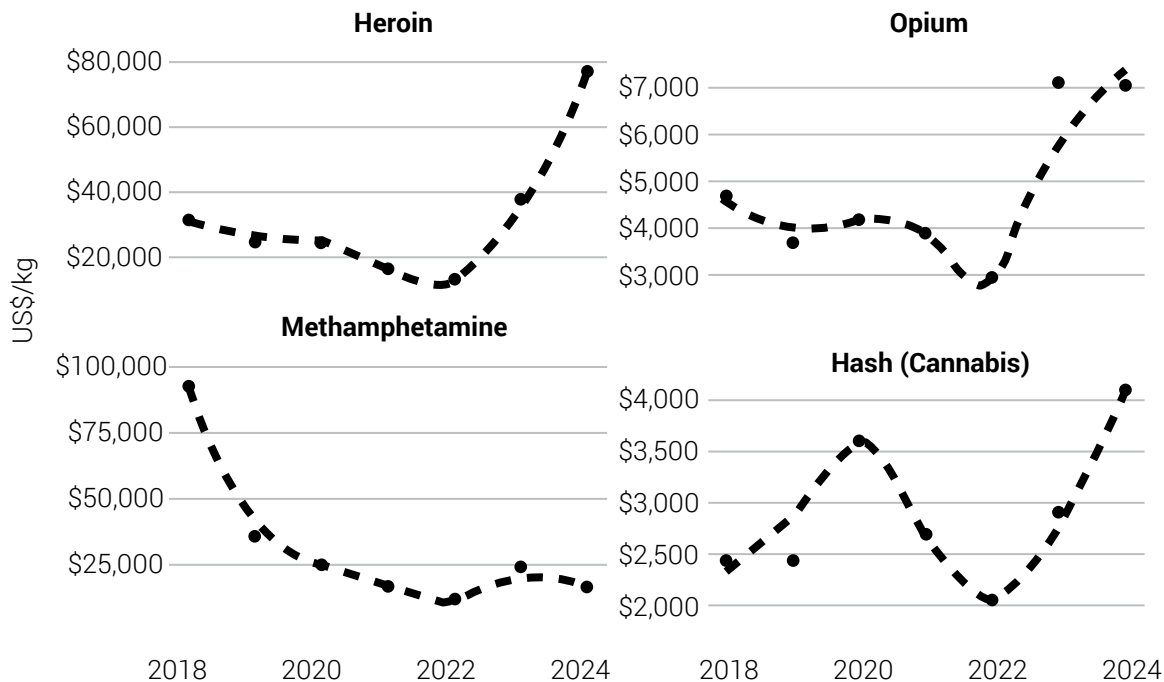
### **Methamphetamine supply appears to be largely unaffected by the ban**

In contrast to opiates, there are now about 75% more methamphetamine seizures quarterly compared to when the DfA returned to power. Average methamphetamine seizure weights have remained relatively flat. Price signals also suggest that supply is largely uninterrupted. Although UNODC price monitoring of methamphetamine started toward the end of 2022, monthly kilogram prices have generally remained flat, hovering around US\$750. In neighbouring Iran, wholesale methamphetamine prices have continued to decline, from a peak at near US\$93,000 a kilogram in 2018 to just under US\$17,000 (in 2023 dollars after adjusting for inflation) by the first half of 2024. The fact that methamphetamine supply does not appear to be constrained by the drugs ban in Afghanistan may point to substantial production capacity within the country, resilient means of production, or potentially other large scale manufacture outside of Afghanistan. Continued monitoring and forensic analysis of methamphetamine seizures that are reported to come from Afghanistan are needed to better understand the means of manufacture and countries of origin.

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<sup>1</sup> US dollar amounts adjusted for inflation to 2023 dollars using official exchange rates. Drug price data come from Islamic Republic of Iran Drug Control Headquarters. Differences in price levels between the three countries can be caused by a variety of reasons, including official versus unofficial exchange rates, purity, and monitoring mechanisms. For understanding market developments, trends in prices are more informative than price levels.

### Annual wholesale drug prices (US\$/kg) in Iran, 2018-2024



Note: 2024 data go through June of that year; prices are adjusted for inflation to 2023 dollars in Iran using the official exchange rate. Data come from Islamic Republic of Iran Drug Control Headquarters; inflation adjustment and currency conversion from UNODC.



**Opiate stocks in Afghanistan at the end of 2022 are estimated to have totaled 13,200 tons, which could be sufficient to meet the demand for Afghan opiates until 2027.**

Estimates of stocks accumulated within Afghanistan by the end of 2022, prior to the enforcement of the ban in 2023, came to some 13,200 tons (11,600 to 14,800 tons). This range is 1.8 to 2.3 times pre-ban annual harvests. Afghanistan witnessed an unprecedented period of over-production between 2017, the year with highest level of production since the beginning of systematic monitoring, and 2022, the last harvest prior to the drugs ban taking effect. This period allowed for stocks to accumulate and from their estimates it is possible to develop an empirical model that approximates the volumes left prior to the massive drop in production in 2023.

If the consumption and export levels of Afghan opiates have remained unchanged, stocks at the end of 2022 could have been sufficient to meet the external demand for about two to three years, meaning there still could be stocks in Afghanistan at the end of 2024. Taking into account plausible ranges in annual consumption of Afghan opiates, it is possible that stocks in Afghanistan at the end of 2022 could have been enough for another three or four years, or at least until the end of 2025 or 2026. Of course, this assumes that production in Afghanistan (or elsewhere) does not rise, that stockpiling behaviour of traffickers and thus exports from Afghanistan remain the same, and that seizures are minimal.

The estimates presented here are to be understood as orders of magnitude rather than precise statistical measures. The evidence clearly points towards continued trafficking activity, however, any changes in behaviour of farmers or traffickers (for example, selling stock due to high prices), production in our outside Afghanistan, or seizures will strongly affect how long remaining stocks will last.

**The majority of stored opium in Afghanistan was thought to be held by large traders and exporters; the minority of farmers who stockpile could have held about a quarter of stocks at the start of the ban.**

About 60% of stocks at the end of 2022 were estimated to be held by large-scale traders and exporters. Farmers are estimated to have held about a quarter of remaining opium stocks at the end of 2022. However, given the nature of the heroin production chain, there are many more farmers than traffickers. Surveys of farming households note that about 70% do not keep stock.<sup>2</sup> Therefore, most farmers who previously cultivated poppy are likely to be presently experiencing severe financial hardship.

This means that although farmers together may have been holding onto a quarter of the estimated opium stockpiles, individually these are small to modest amounts – with the few exceptions of those who managed to pile up large stocks during years of overproduction – and the majority of farmers have no stocks of opium. In contrast, there are fewer large-scale traders and exporters sitting on much larger stockpiles. The distribution of stocks among all players in the market is therefore highly unequal, with a very few benefitting the most from stocks and high prices.

<sup>2</sup> UNODC, “Afghanistan Opium Survey 2019: Socio-Economic Survey Report, Drivers, Causes and Consequences of Opium Poppy Cultivation,” February 2021, [https://www.unodc.org/documents/crop-monitoring/Afghanistan/20210217\\_report\\_with\\_cover\\_for\\_web\\_small.pdf](https://www.unodc.org/documents/crop-monitoring/Afghanistan/20210217_report_with_cover_for_web_small.pdf).

### **Total stockpiles of opium just before the drop in cultivation in 2023 could have been worth between US\$4.6 to US\$5.9 billion, possibly mitigating the economic challenges faced by Afghanistan since the return of the DFA**

The range of estimated stocks held by large traders and exporters at the end of 2022 would be worth between US\$2.3 and US\$4 billion at the average price of US\$400 per kilogram of dry opium in 2023. Stocks held by farmers would have been valued at US\$1 to US\$1.6 billion. For context, in 2022 the potential sale of harvested opium by farmers was estimated at US\$1.4 billion. In 2021, that figure was US\$425 million. Across all segments of the internal supply chain, the stockpile valuation could range between US\$4.6 and US\$5.9 billion. To put that into context, World Bank estimates suggest the country's GDP in 2023 was close to US\$20 billion.<sup>3</sup> Overall, the country's economy has continued to see a recovery since 2023, with appreciating currency and growing trade deficits. Despite declines in legal exports and sharp increases in imports, tax revenues collections surpassed projections.<sup>4</sup> It remains to be seen how long these stocks will continue to support the Afghan economy.

Some traders and exporters may have sold off part or all those stocks, generating enormous returns. However, others might still be holding and speculating on further price hikes. Opium stocks in Afghanistan are used to guard against unproductive years or sudden demand shifts in demand. It is likely that, given their immediate needs, farmers and low-level traders who hold opium stocks have sold more of their shares than traders who could afford to speculate on higher prices.

The value of opium stocks has been calculated based on the value of opium within Afghanistan. However, when exporting opium either in raw form or after conversion to heroin, value added is generated and the resulting monetary inflows are much higher than the value of opium within the country. Prices available to date do not allow for estimates of the export value of the stocked opium, but historical data showed that exports may be worth at least double or triple the value of opiates within Afghanistan.<sup>5</sup> Further, the average price in Afghanistan of acetic anhydride, an important chemical needed in the manufacture of heroin, increased by about a third in 2023 from the previous year, which may further encourage the export of opium in raw form rather than as heroin. Although Afghanistan has not reported seizures of acetic anhydride to the International Narcotics Control Board since 2020, global seizures of the chemical in 2022 were at their lowest since 2005.<sup>6</sup>

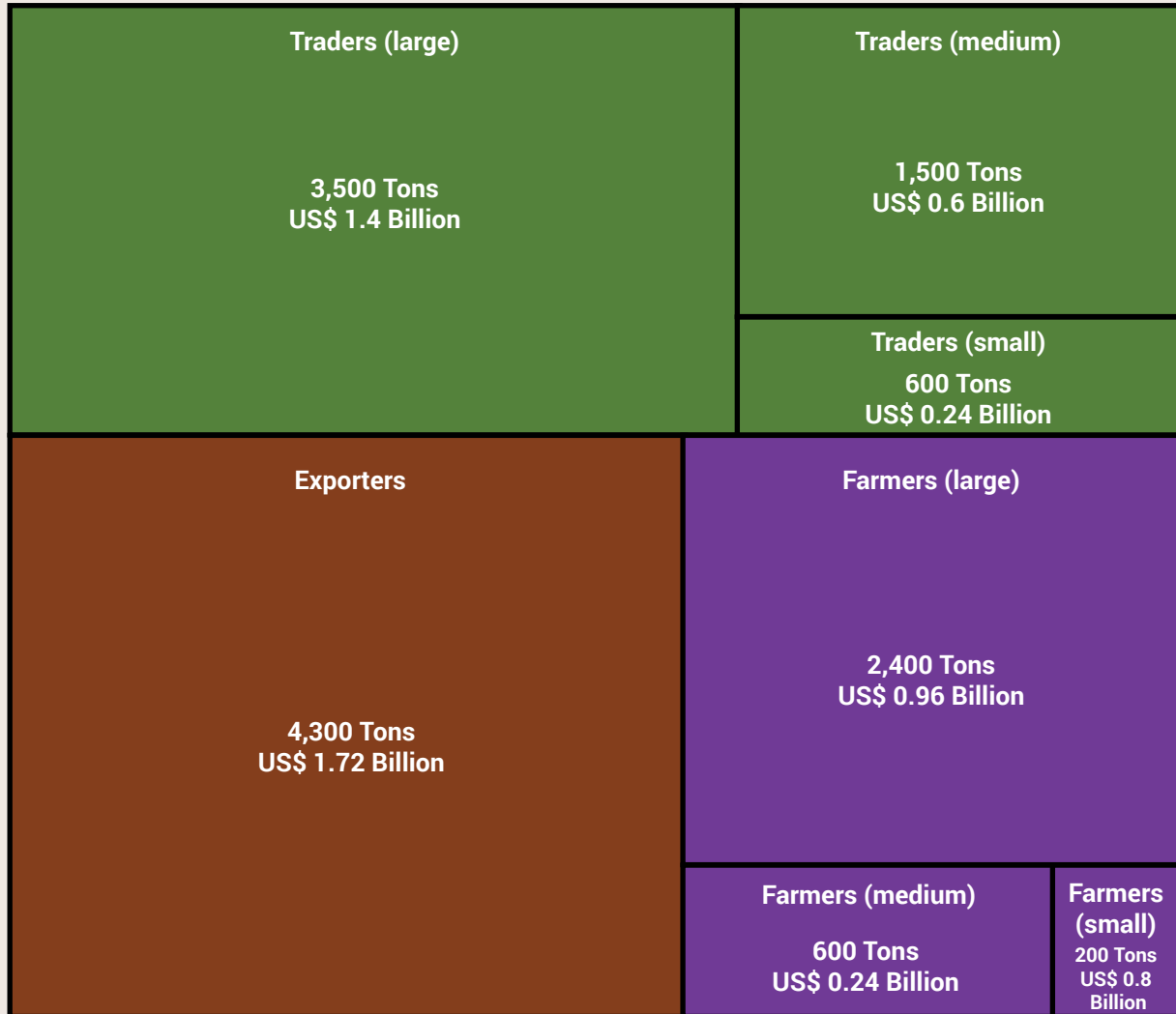
<sup>3</sup> World Bank Group, "Afghanistan Economic Monitor," September 2024.

<sup>4</sup> Ibid.

<sup>5</sup> UNODC, "Afghanistan Opium Survey 2019: Socio-Economic Survey Report, Drivers, Causes and Consequences of Opium Poppy Cultivation."

<sup>6</sup> INCB, "Precursors and Chemicals Frequently Used in the Illicit Manufacture of Narcotic Drugs and Psychotropic Substances 2023" (Vienna Austria, March 5, 2024), [https://www.incb.org/documents/PRECURSORS/TECHNICAL\\_REPORTS/2023/E/Pre\\_Report\\_E.pdf](https://www.incb.org/documents/PRECURSORS/TECHNICAL_REPORTS/2023/E/Pre_Report_E.pdf).

**Modelled accumulated opium stocks in tons in 2022 and their US\$ value  
at each segment in the supply chain within Afghanistan  
(Total stock 13,200 tons valued at US\$5.34 billion)**



Note: Valuation uses the average 2023 price of dried opium in US\$.

# Policy and programmatic implications

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## **The continued trafficking of opium stocks funds transnational organized crime, calling for support of countries neighbouring Afghanistan to locate and liquidate opium stocks.**

Most of the opium stocks and thus potential profits from trafficking remain with those at the higher levels of the supply chain, such as high-level traders and exporters, often organized in large networks. Following two years of negligible opium production, remaining stockpiles are likely to have become further concentrated among transnational organized crime groups, as farmers and lower-level traders needed to sell their stocks to support their livelihoods. Opium trafficking persists, as evidenced by continued seizures in and around the country, pointing towards continued financial profits for organized crime networks which manage trafficking of opiates transnationally. The proceeds from the trafficking and sale of illicit drugs feed into other serious forms of crime in the region, including organized crime, human trafficking and migrant smuggling, corruption, and weapons trafficking.

By targeting the pooling of remaining stocks among large traders and exporters, international counterdrug efforts could severely disrupt opiate availability along the entire supply chain. Therefore, international attention and focus on locating and liquidating these stocks could result in substantial financial blows to traffickers and could hasten heroin shortages in markets downstream.

This situation underscores the necessity for strong regional coordination to address both the social and criminal impact related to the illicit narcotics trade. Ongoing support from the international community to the wider region, particularly on counternarcotics efforts, coupled with an integrated approach involving private sector initiatives to promote alternative livelihoods, is essential for disrupting illicit drug markets.

## **Strengthening resilience in farmers through Alternative Development to prevent a resurgence of opiate production and shifts to neighbouring countries.**

Without the annual opium harvests, Afghan farmers face financial hardship. Some farmers might continue to earn revenues from the sale of dwindling stocks; however, the majority of farmers will have by now liquidated any stocks they had been able to accumulate. Rising farmgate prices of opium could encourage a re-uptake of poppy cultivation in Afghanistan and an emergence in neighbouring countries to alleviate the precarious situation of the rural population.

Therefore, there is an urgent need to provide farmers with alternative livelihoods. A robust and timely programme of sustainable economic alternatives is likely to be welcomed by those who face financial hardship from the loss of opium income. The window for potential engagement regarding alternative livelihoods is closing and rural households formerly involved in cultivation may become increasingly pressured to resume – or to take up – poppy cultivation in the coming years.

Economic alternatives do not only encompass alternative produce for former poppy farmers. Scope exists to extend efforts to support market and value chain development across borders. Improved cross-border trade aligned with alternative development efforts that target increasing the value added at different stages of the supply chain, supported by countries on either side of a border, can make a significant impact on the sustainability and long-term viability of interventions.

Communities on both sides of the border often have ethnic and cultural ties and historical trade relationships. Alternative Development and Sustainable Livelihood projects that span across countries can benefit the populations of both countries and sustainably reduce transnational opium trafficking by addressing illicit drug production and trafficking at the same time.

A close monitoring of the situation with opiates in Afghanistan and neighbouring countries is essential to address any developments in a timely manner and to design appropriate interventions. Effective monitoring involves the continued assessment of the extent of opium poppy cultivation in Afghanistan, or the initiation of systematic assessments in the case of Afghanistan's neighbours, as well as close monitoring of the production and trafficking of other drugs including methamphetamine produced from the ephedra plant or from chemical precursor substances.

To foster a more nuanced understanding of the shifting dynamics, neighbouring countries might consider enhancing their capacities to systematically collect and share data on drug-related standardized metrics, with a particular focus on seizures, prices, trafficker behaviour, purity levels, and drug use patterns.

### **Global production of opiates has plummeted, which risks boosting demand for and supply of other drugs.**

The enforcement of the drugs ban in Afghanistan is now entering its third year. As a result, global annual opium production has plummeted and remains at historically low levels. If production is not taken up again or shifted elsewhere, there will be global opiate supply shortages in the coming years.

Supply shortages can produce varied outcomes. Buyers and sellers might look to alternatives, potentially even more harmful ones than heroin, such as other opioids, including synthetic opioids like fentanyl. The hike in opium prices within Afghanistan might have already led to drug users moving towards other drugs. Within Afghanistan, improved access to high-quality, evidence-based HIV prevention, treatment, and care for people who use drugs and people in prisons is needed. These efforts include access to Opioid Agonist Treatment (OAT) and addressing the adverse health and social consequences of drug use through targeted interventions in both community and prison settings.

Supply shortages will have long-reaching impacts well beyond Afghanistan. Drug markets as far away as India and Europe supplied by Afghan opiates will need to monitor signs of shortages closely, including price spikes or purity decreases, which could indicate emerging shortages. When facing shortages of opiates, individuals that regularly use opium and heroin might be more willing to seek treatment, including methadone. Therefore, to reduce potential exposure to more harmful substitutes, policymakers could prioritize treatment access to lastingly reduce demand for illicit drugs.

### **Coordinated support of counternarcotics activities in Afghanistan and its neighbours.**

With most profits of drug production and trafficking made in markets beyond the source countries, countering drug trafficking remains an international responsibility. As drug trafficking crosses borders, a concerted and coordinated effort on counternarcotics is needed among UN agencies, regional and intergovernmental organizations and donor countries, in line with the UN Common Position on Drugs.<sup>7</sup>

Effective counternarcotics coordination operates along different dimensions: a common knowledgebase on the situation with drugs from UN agencies as well as experts of Member States; an examination of all ongoing responses, including outside Afghanistan, addressing drugs issues originating from Afghanistan, to ensure that there is a comprehensive view of all actions related to counter narcotics and to facilitate sharing of best practices; fostering regional and international criminal justice cooperation on cases of transborder trafficking of drugs originating from Afghanistan; intensified research that examines linkages between the drug economy and the licit economy – including, but not limited to, the monitoring and evaluation of the socio-economic impact of alternative development interventions, and linkages of drugs with other crimes such as smuggling of migrants, trafficking in persons, corruption, and money laundering.

Such efforts build on and extend existing platforms, and use them to optimize impact while using existing resources and synergies efficiently.

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<sup>7</sup> CEB/2018/2 and <https://www.unodc.org/unodc/en/un-common-position-drugs/index.html>

## Disruptions in opiate supply are apparent from declining seizures and rising prices, but the methamphetamine supply remains unaffected

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An analysis of available drug seizure and price data in and around Afghanistan show clearly that regional opiate markets are experiencing reductions in supply. Production estimates for 2023 and 2024 indicate that poppy cultivation and opium production remain a fraction relative to years of steady harvests prior to the enforcement of the drugs ban in 2023 when total annual production fell from a pre-ban average of about 6,400 tons of opium to 330 tons. The decline in production has translated to marked reductions in seizures of opiates outside of Afghanistan. Similarly, declining seizures are consistent with rising prices for opium and heroin within Afghanistan and in neighbouring Iran. During the first half of 2024, wholesale opium and heroin prices per kilogram have spiked to recent historic highs. Taken together, the ban appears to have reduced heroin processing in Afghanistan and the availability of opium.

That said, seizure and price trends for methamphetamine appear largely uninterrupted by the return of the DfA in Afghanistan and their enforced drugs ban. In fact, methamphetamine seizures are recorded more frequently, and prices show some signs of relative stability in Afghanistan and continue to fall in neighbouring Iran. This generates important questions around the means of the drug's manufacture, its sourcing, and the underlying market forces. Although the authorities continue to report seizures of ephedra and ephedrine, such efforts have had no apparent effect on the availability of methamphetamine's availability in regional drug markets.

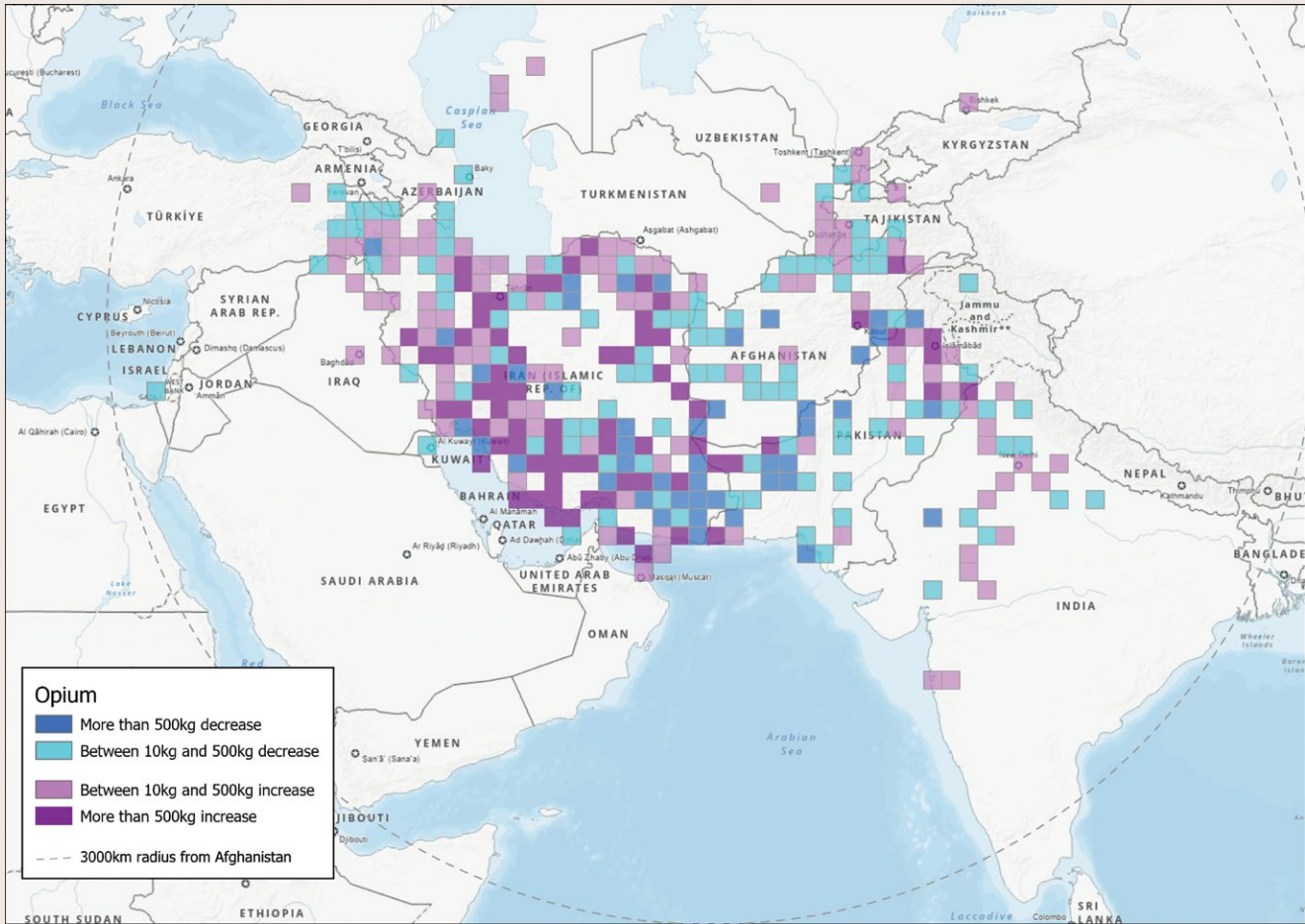
## Trafficking continues but declining seizures of opiates points to a slowdown

An examination of non-retail seizures within 3,000km from Afghanistan between January 2019 until July 2024 from the UNODC's Drug Monitoring Platform shows that heroin, opium, and methamphetamine seizures vary geographically.<sup>8</sup> Opium seizures occur most frequently near Afghanistan, with many occurring in Iran. Concentrations of seizures, particularly for heroin, occur in Northern Pakistan and near the border regions of the Caucasus. Comparatively little opium is seized in maritime areas, but there are cases of heroin and methamphetamine seizures at sea. The figures below plot the changes in amounts of drugs seized within each 100km square between, before and after the takeover of the DfA.

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<sup>8</sup> A 3,000km threshold was chosen to cover the initial stages of several drug trafficking routes out of Afghanistan, including the Northern, Southern, and Balkan routes. Non-retail seizures are those above 50g of heroin or methamphetamine and 500g of opium. Drug seizure events closer to the centroid of Myanmar were dropped for this analysis as it is assumed that those events emanate from that country and not Afghanistan. Data come from the UNODC Drug Monitoring Platform.

**Figure 1: Map of opium seizure changes before and after return of DfA within 3,000 km from Afghanistan**

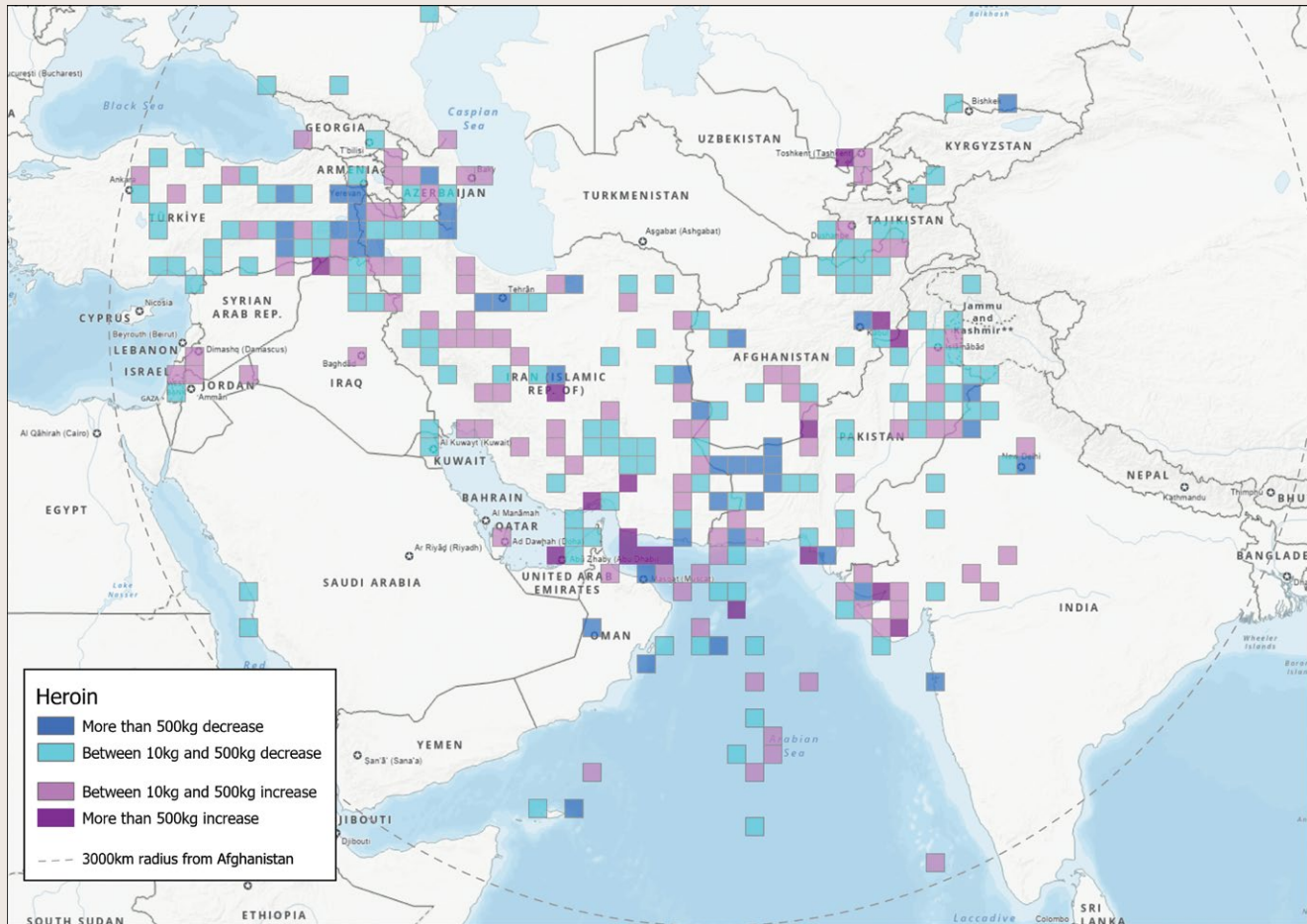


Source: UNODC Drugs Monitoring Platform. This map visualises the geographical location of changes in quantities seized, overall trends in seizures are depicted in the time series graphs.

Note: The pre-DfA period ranges from January 2019 until July 2021; the post period starts in August 2021 until July 2024. Only seizures and changes larger than 10kg are taken into account. The boundaries and names shown, and the designations 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.



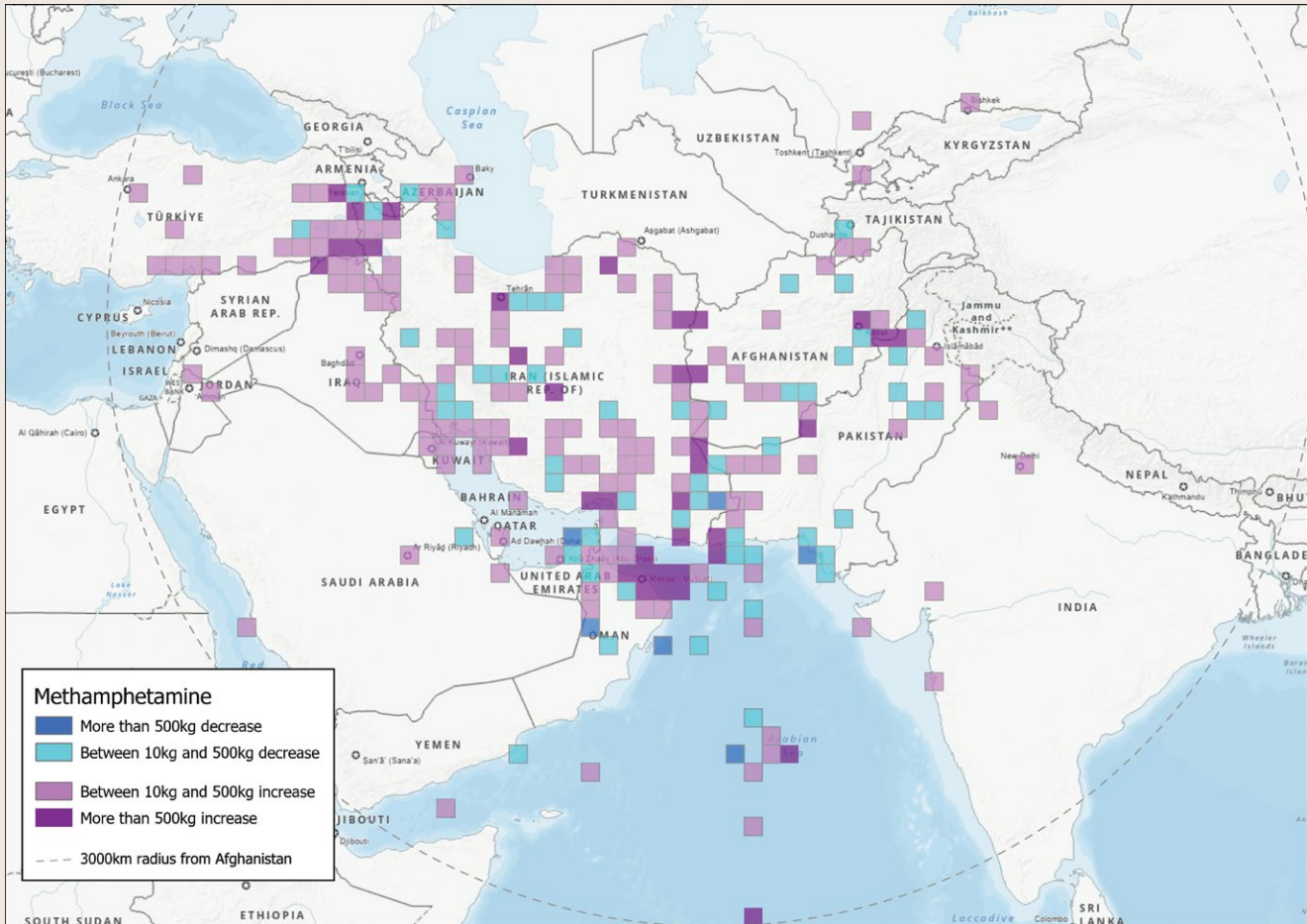
**Figure 2: Map of heroin seizure changes before and after return of DfA within 3,000 km from Afghanistan**



Source: UNODC Drugs Monitoring Platform. This map visualises the geographical location of changes in quantities seized, overall trends in seizures are depicted in the time series graphs.

Note: The pre-DfA period ranges from January 2019 until July 2021; the post period starts in August 2021 until July 2024. Only seizures and changes larger than 10kg are taken into account. The boundaries and names shown, and the designations 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.

**Figure 3: Map of methamphetamine seizure changes before and after return of DfA within 3,000 km from Afghanistan**



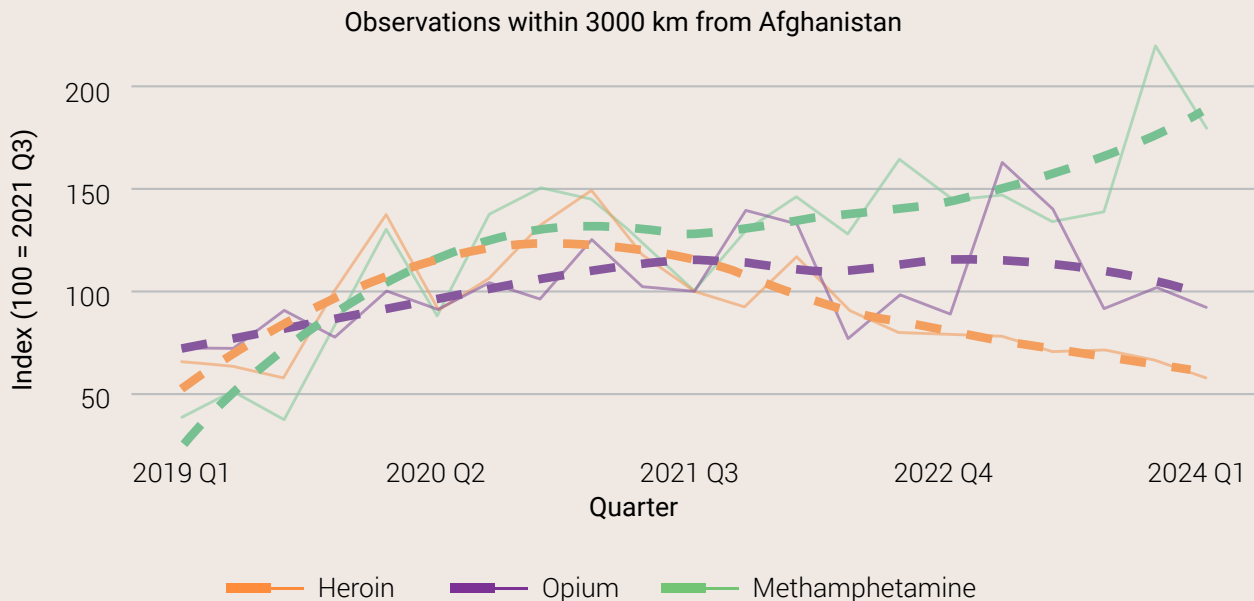
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## Heroin supply declining faster than opium supply

From seizure data, it appears that heroin processing within Afghanistan has declined since the DfA returned to power in August 2021. The subsequent announcements and enforcements over the ban in the following years may have further reduced supplies of finished opiate products. The frequency of seizures suggest that the availability of opium in the market increased a few months after the DfA took over and started to decline only more recently, while the supply of heroin continued to decline after the takeover. Since the third quarter of 2021, heroin seizures have declined by about half. In contrast, opium seizures saw an initial decline that was followed by a 50% increase into the first two quarters of 2023, relative to the third quarter of 2021. By the first quarter of 2024, seizures had fallen to just below the baseline of the third quarter of 2021. Interestingly, these prohibitions or their enforcement have not had any negative effect on methamphetamine seizure frequency. Relative to the third quarter of 2021, methamphetamine seizures have continued to increase in frequency and by the first quarter of 2024 had increased by more than 75%.

**Figure 4: Counts of drug seizures indexed to 2021 Q3**

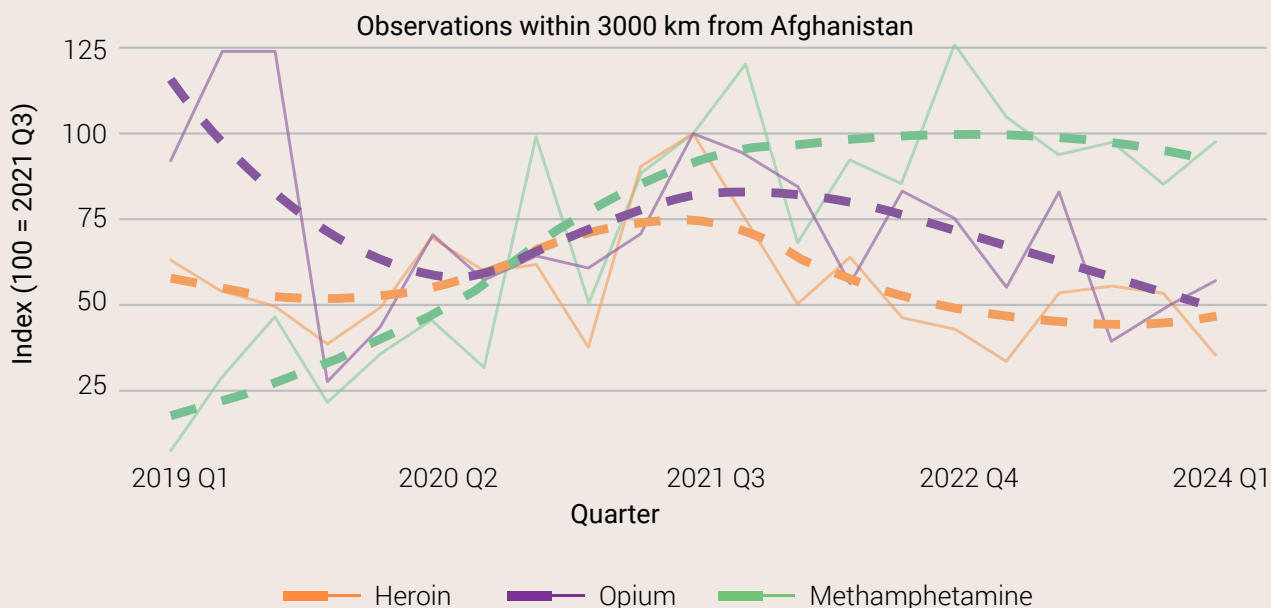


Note: Dashed line plots smoothed trend; observations below 0.01kg are removed; data come from UNODC Drug Monitoring Program. Data is plotted as trend against Q3 2021.

## Overall supply of opiates declined after Q3 2021 while methamphetamine remains unchanged

Comparing average seizure weights, there is a similar downward trend for opiates relative to the third quarter of 2021. As shown below, average opium and heroin seizure weights have fallen by half. In contrast, methamphetamine seizure weights remain relatively flat over that same period. This would suggest that methamphetamine supply remains relatively unaffected by the recent bans on drugs in the country and the subsequent and sharp reduction in poppy cultivation and opium production. This may point to substantial methamphetamine production capacity within the country, resilient means of production, or potentially other large scale manufacture outside of Afghanistan.

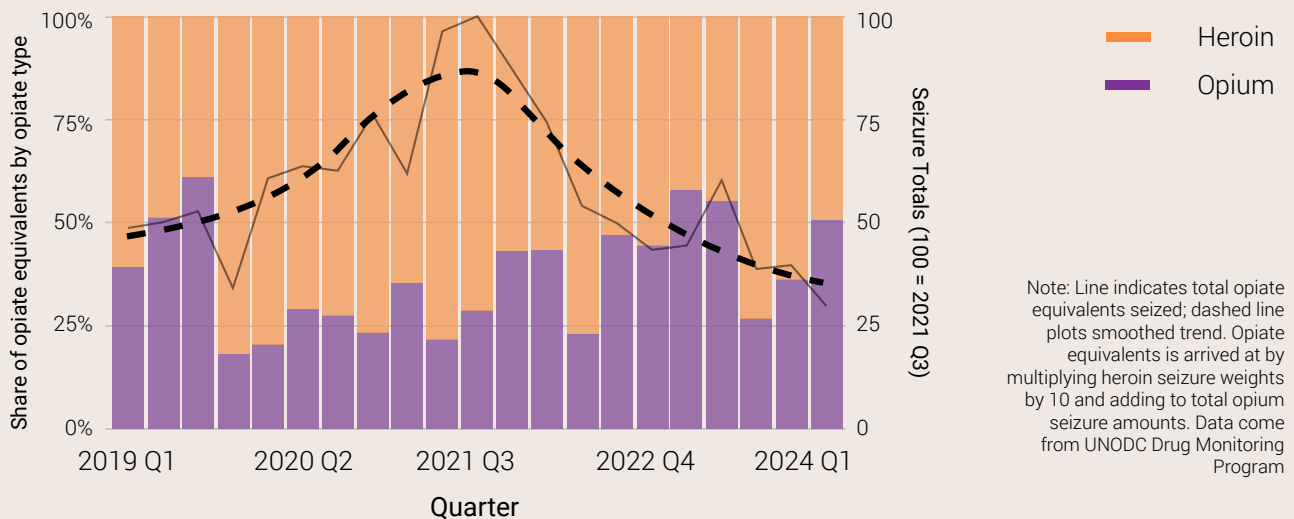
**Figure 5: Average weight of drugs seizures indexed to 2021**



Note: Dashed line plots smoothed trend; observations below 0.01kg are removed; data come from UNODC Drug Monitoring Program. Data is plotted as trend against Q3 2021.

Taken together, the seizure data above suggest that opiate trafficking has declined since mid-to-late 2021. There are fewer opiate seizures as of the first quarter of 2024 compared to when the DfA returned to power and those seizures weigh, on average, about half as much as they used to relative to the third quarter of 2021. This downward trend was most pronounced for heroin, which is seized about 50% less frequently than before. Frequency of opium seizures initially increased after the DfA returned, but average weights have halved. In contrast, methamphetamine seizures are more frequent while average weights have remained flat. It is difficult to interpret seizure data on their own, but in combination with recent estimates of production it is likely that opiate supplies are declining while the situation with methamphetamine appears to remain stable or expanding. In terms of total opiate seizures by weight, both heroin and opium continue to see declines in amount seized. Overall, seizures of total estimated opiate equivalents<sup>9</sup> within 3,000km from Afghanistan shows marked decline in the last few years. Opiate seizure equivalents peaked in the third quarter of 2021 at close to 250 tons that quarter. Since then, seizure totals declined each following quarter until 2023. Quarterly opiate equivalents seized rose into the first half of 2023, perhaps because of the release of opium stocks in Afghanistan, from past years, but started to decline later that year into 2024 to around 75 tons of opiate equivalent seized by the first quarter of 2024.

**Figure 6: Quarterly total weight of opiate seizures indexed to Q3 2021 and quarterly share of opiate equivalents by opiate**



<sup>9</sup> Opiate equivalents are estimated by multiplying weight of heroin seizures by a factor of 10 and adding it to opium seizure weights. This inflation factor for heroin takes an input-to-output ratio of 10kg of opium needed to produce 1kg of heroin.

# Opium prices are at record highs

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Dry opium prices in Afghanistan have increased on several occasions over the last four years. The long-running average was around US\$75 per kilogram before the DfA took over. There was an initial jump in prices, which reflects immediate uncertainty when the DfA gained control of the country. In the latter half of 2021 until the announcement of the drugs ban by the authorities in April 2022, monthly kilogram prices increased to around US\$110. Monthly opium prices increased in the following season to around US\$300 a kilogram at the beginning of the sowing period in 2023. By the start of the sowing period for the 2024 harvest, prices had jumped to US\$750 a kilogram. Dry opium prices stabilized slightly in the first half of 2024, from a monthly peak of US\$800 per kilogram in December 2023 to around US\$750 by the end of June 2024. These prices are almost ten times higher than the long-running pre-ban average below US\$100 per kilogram and about four times higher than when the ban was announced.<sup>10</sup>

Monthly wholesale heroin prices in Afghanistan have also seen sharp increases that generally follow dry opium prices. The longstanding pre-ban average hovered around US\$2,200 a kilogram, falling to just under US\$1,700 in the middle of 2022 right after the announcement of the ban, before sharply rising to over US\$6,000 a kilogram by the first half of 2024. Recent prices are about three times higher than when the ban was announced. The difference between annual prices of a kilogram of heroin and opium has also declined substantially. In 2019, a kilogram of heroin sold for about 28 times that of opium; by 2024 a kilogram could generate less than eight times that of opium. At current ratios, exporting opium appears to be economically more attractive than exporting heroin, a factor that might contribute to increased opium seizures.

Further, the average price in Afghanistan of acetic anhydride, an important chemical needed in the manufacture of heroin, increased by about a third in 2023 from the previous year, which may further encourage the export of opium in raw form rather than as heroin. Although Afghanistan has not reported seizures of acetic anhydride to the International Narcotics Control Board since 2020, global seizures of the chemical in 2022 were at their lowest since 2005.<sup>11</sup>

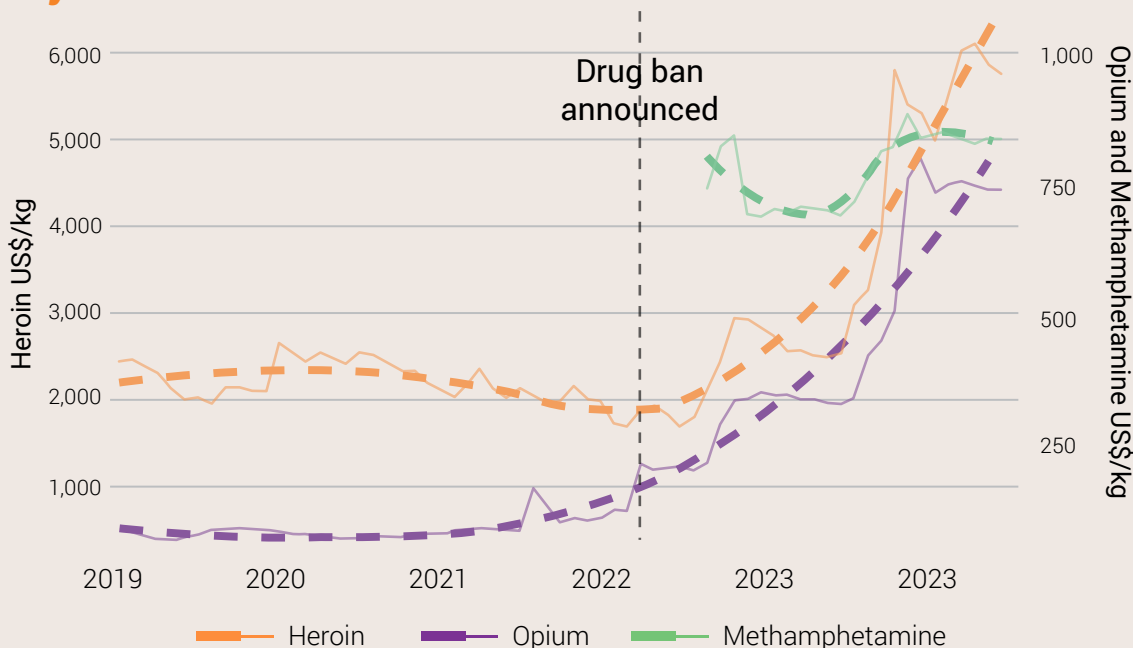
Although UNODC price monitoring of methamphetamine only started toward the end of 2022, monthly kilogram prices have generally remained flat, hovering around US\$750 a kilogram.

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<sup>10</sup> Prices are collected through UNODC drugs price monitoring system.

<sup>11</sup> INCB, "Precursors and Chemicals Frequently Used in the Illicit Manufacture of Narcotic Drugs and Psychotropic Substances 2023."

**Figure 7: Monthly Afghan drug prices (US\$/kg) at trader level, January 2019 to June 2024**



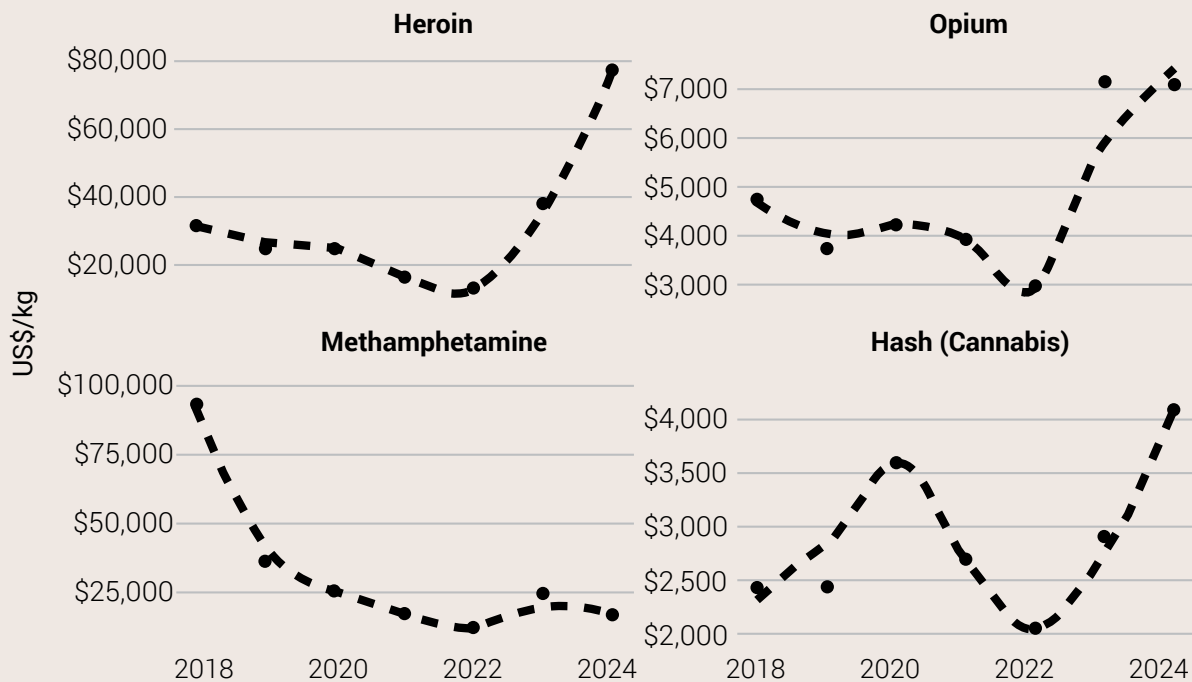
Note: Dashed line plots smoothed trend; data come from UNODC Afghan Price Monitoring

These price hikes are reflected in neighbouring Iran where the price of a kilogram of dry opium rose from just over US\$2,900 in 2022 to US\$7,000 by the first half of 2024, after adjusting for inflation.<sup>12</sup> Heroin prices experienced a sharp increase as well, rising from US\$13,000 a kilogram in 2022 to nearly US\$77,000 in the first half of 2024 (values calculated in 2023 dollars to adjust for inflation). Similarly, wholesale prices of opium reported by Pakistan to UNODC through the Annual Report Questionnaire have risen from US\$270 a kilogram in 2021 to US\$400 a kilogram in 2023. Prices of heroin in Pakistan have also increased from about US\$2,200 in 2021 to just over US\$3,600 in 2023.

Wholesale methamphetamine prices in Iran have continued to decline, from a peak at near US\$93,000 a kilogram in 2018 to just under US\$17,000 (in 2023 dollars) by the first half of 2024. The fact that methamphetamine supply is unaffected by the drugs ban in Afghanistan suggests alternative means of production and potentially also alternative sources.

<sup>12</sup> US dollar amounts adjusted for inflation to 2023 dollars using the official exchange rate.

**Figure 8: Annual wholesale drug prices (US\$/kg) in Iran, 2018-2024**



Note: 2024 data go through June of that year; prices are adjusted for inflation to 2023 dollars in Iran using the official exchange rate. Data come from the Islamic Republic of Iran Drug Control Headquarters; inflation adjustment and currency conversion from UNODC.



# Quantifying opiate stocks is critical for anticipating possible disruptions to global heroin markets and assessing economic impacts in Afghanistan

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Opium production within Afghanistan fell by some 95% in 2023 and remained very low for 2024, but not all that is produced makes its way to end markets in the same year. A reduction in production by 95% does not immediately translate to a reduction in availability or amounts consumed by 95%. Instead, supply will dwindle gradually and therewith the prices of transacted opium or heroin increase while quantities transacted decrease. There is some historical precedent to draw from to anticipate what could happen in the near term.

During the last opium ban in 2001, supply-side shocks were mitigated by opiate inventories along the entire supply chain that were sold off, albeit at much higher prices.<sup>13</sup> Changes in retail price in consumption markets, indicative of supply shortages, were not immediately witnessed and not uniform across various heroin markets supplied by Afghanistan. One possibility was that changes in purity may have occurred at this level, masking price changes, but that these were not sufficiently captured in the available data. Studies of the 2001 opium ban noted that stocks were available at consumption level, too, to avoid shortages brought on by the ban.<sup>14</sup>

Today, the continued reports of opium seizures events provide the evidence that selling of stocks at various segments of the supply chain occurs. This was especially true in 2023 as the DfA indicated their desire to reduce domestic stockpiles.<sup>15</sup> Opium seizure totals during 2023 showed an increase relative to 2022, suggesting some degree of stock liquidation. Afghanistan's drug ban held for a second year and suppliers are likely to have continued to sell off their stockpiles at amounts that are hard to estimate but likely to have generated considerable returns.

The main question, therefore, is **How much opiates (opium or heroin) are likely to have been stockpiled by various supply segments within Afghanistan by the end of 2022, after the last high production season?** Naturally, the next question is to ask **How long could those stocks last given the typical export amounts or levels of consumption in countries supplied by Afghan opiates?**

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<sup>13</sup> Letizia Paoli, Victoria A. Greenfield, and Peter Reuter, *The World Heroin Market: Can Supply Be Cut?* (OUP USA, 2009).

<sup>14</sup> *Ibid.*

<sup>15</sup> UNODC, "Afghanistan Opium Survey 2023," November 2023.

To answer the first question, several other questions are first explored to better understand the opiate economy and the strategies of holding stocks by supply segments within Afghanistan. The second question is answered later after estimating plausible ranges of total export amounts or consumption of Afghan opiates. However, estimating total consumption is extremely challenging given the variations in prevalence rates, which are not reported each year, underreporting of chronic use, and pure amounts consumed by daily users across markets as culturally and economically diverse as India, Iran (Islamic Republic of), the Russian Federation, and Europe.

## Caution regarding interpretation of estimates

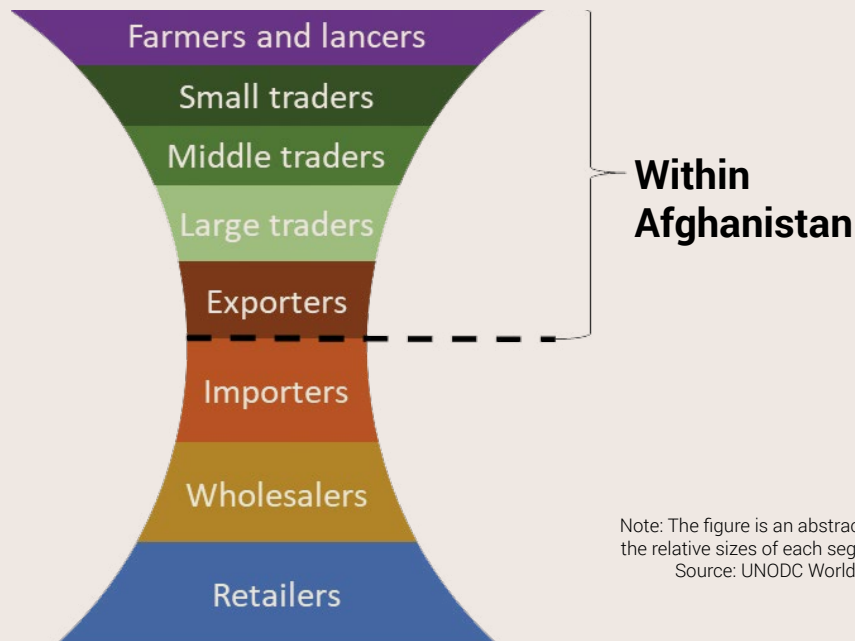
Considering the imprecision around estimates and the opacity of illegal markets, this brief relies on self-reported information from surveys of various supply-side actors within Afghanistan to model stocks during a time of relative stability in production when markets were likely saturated, ending in 2022. The period 2017 to 2022 was marked by over-production of opium in Afghanistan, during which prices were falling prior to the return of the DfA. It is safe to assume that stocks were accumulated during this time and not cleared. This assumption, together with data points on stockpiling behaviour from that period, made it possible to develop an empirical model, valid for 2017 to 2022. It yields estimated stocks in Afghanistan by the end of 2022, prior to the sharp reduction in opium cultivation in 2023. One critical limitation is that the model assumes that self-reported information about holding stocks from farmers and traders, collected from 2018 to 2020, remains unchanged during this period. While there is more confidence about the representativeness of self-reported measures by farmers, data may not be representative for traders given the relatively small sample size (n=41).

**Estimates here are therefore not to be interpreted as precise amounts remaining in Afghanistan or along supply routes at the present date.** The ranges of amounts of opium within Afghanistan at the end of 2022 are estimated to provide a sense of magnitude and to determine what these amounts could mean for markets supplied by Afghan opiates and for the Afghan economy and its people today. The estimates offer some reasonable understanding about remaining stocks and the timeframe for when shortages can be expected – assuming no major changes in the heroin markets. In the absence of empirical evidence for the stock-keeping behaviour of traffickers today, there is no reliable way to estimate with exact certainty when markets will suffer a shortage.

# What does the opiate supply chain look like and why focus on stockpiles only within Afghanistan?

In rough terms, the opiate (opium and heroin) supply chain emanating from Afghanistan is shaped like an hourglass. That is, there are many cultivators, farmers, and labourers, such as lancers (the workers who cut the seedpods of mature poppies and collect opium gum), involved in poppy cultivation and opium production and many retailers of heroin in end markets. The labour supply chain is narrowest near point of international trafficking where exporters move product out of Afghanistan destined to international markets. This is often where seizures are at their largest and purest as opium and heroin are bundled before making their way to import markets for further wholesale and retail processing (i.e., dilution and repackaging) and distribution.

**Figure 9: Labour supply chain for heroin has several segments and is hourglass shaped**



Note: The figure is an abstract representation of the relative sizes of each segment of the labour.  
Source: UNODC World Drug Report 2023.

There is more confidence estimating stocks within Afghanistan than estimating opiate stocks along the entire supply chain. First, there is more reliable information about the various strategies and shares of farmers, traders, and traffickers within Afghanistan as it pertains to stockpiling. Outside of Afghanistan, different traffickers, for instance wholesalers or retailers, may have different strategies when it comes to stockpiling. The amount they hold in reserve may vary substantially from one market to another given the differentiated risks posed by law enforcement or demand-side dynamics.

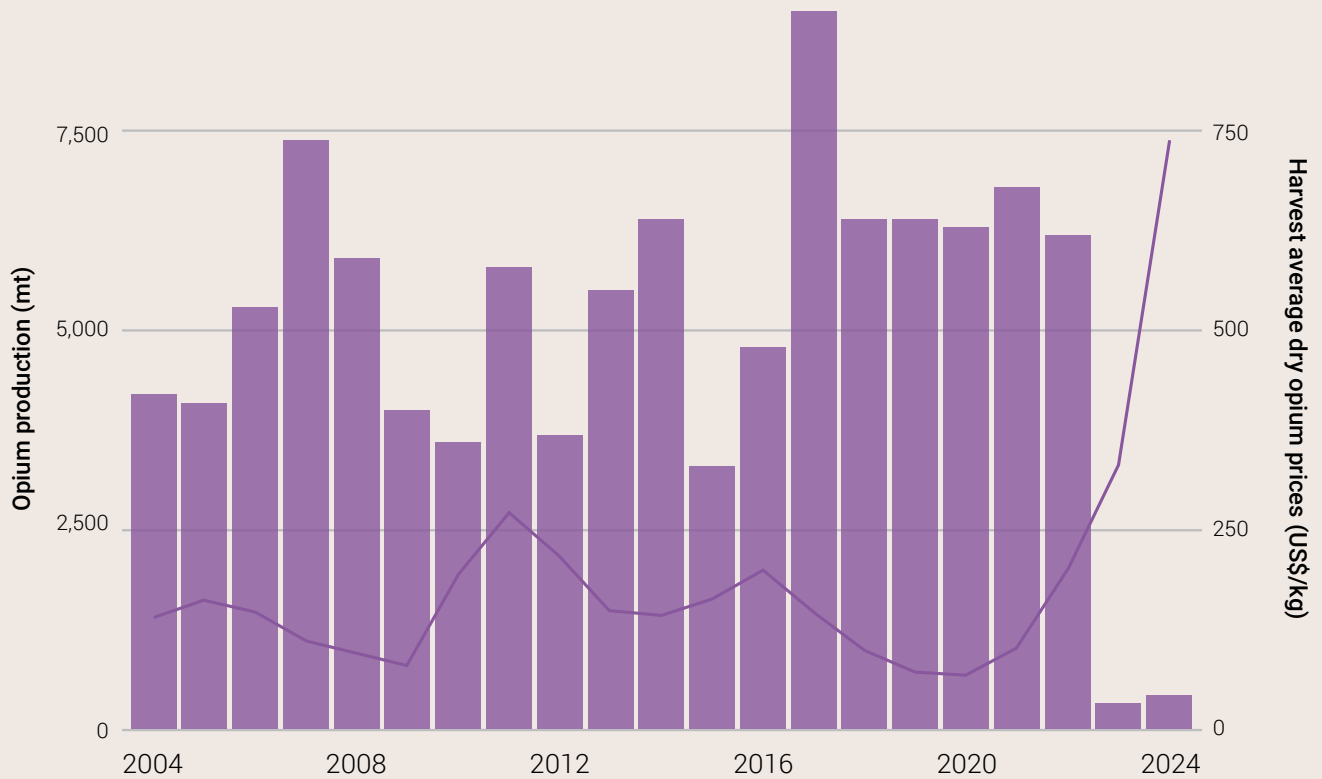
Additionally, following a year of record production in 2017, opium production quantities were relatively stable between 2018 into 2022, and annual opium prices in Afghanistan were generally declining (see Figure 2 and Table 1). This implied that markets were stable and demand saturated.<sup>16</sup> Strategies and needs of suppliers likely remained largely unchanged for most of that period. The 2023 harvest almost entirely disappeared after the enforcement of the ban. Therefore, given that prices and quantities radically shifted it is highly unlikely that strategies and needs of suppliers went unchanged after the start of the drugs ban.

Outside Afghanistan, much less information is available on the behaviour and stock-keeping strategies of traffickers, and while demand is thought to be stable over time, the granularity of information is coarser than for supply, considering that few countries update drug use estimates on an annual basis nor report regular information on the purity of seizure samples or amounts consumed on a typical use day. Other variations across consumer markets as far away as Western Europe are hard to account for and may not reflect the reality in Afghanistan during this period of overproduction. Local disruptions in supply chains could also shape strategies and responses by suppliers in those markets.

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<sup>16</sup> See more information from UNODC Crop Monitoring Reports for Afghanistan, <https://www.unodc.org/unodc/en/crop-monitoring/index.html>

**Figure 10: Annual opium production estimates in tons and average trade price per kilogram of opium, 2004-2024**



Note: Line represents April to July average kilogram prices of dried opium; prices unadjusted for inflation. Bars represent total opium production in tons. Data come from UNODC Afghanistan Drug Insights Volume 1, Opium poppy cultivation 2024.

**Table 1: UNODC estimates of opium production quantities in tons and average annual farmgate price per kilogram in US\$ in Afghanistan 2017-2022**

Year	Quantities Produced			Farmgate Price
	Estimate	Lower bound	Upper bound	Per kilogram
2017	9,000	8,000	10,000	\$163
2018	6,400	5,600	7,200	\$105
2019	6,400	5,600	7,100	\$83
2020	6,300	5,400	7,200	\$78
2021	6,800	6,600	7,000	\$103
2022	6,200	5,400	6,900	\$224

Note: Annual farmgate prices are adjusted for inflation to 2022 US\$.

## Who holds stocks?

Actors at nearly all segments of the supply chain are likely to hold stocks of opiates (opium and heroin). Inside Afghanistan, this includes primary producers, such as households that cultivate poppy, small-to medium-sized traders who collect opium for internal trade and processing into heroin, and large-scale traders and traffickers who process opium into heroin and export raw or processed opiates to global markets. Outside of Afghanistan, importers, wholesalers, and retailers are likely to hold reserves and inventories of opiates to absorb losses from seizures or meet shifts in demand.

## Why might suppliers keep stockpiles?

The reasons for holding inventory are several and vary depending on the segment within the supply chain. Below are several possible (non-exclusive) reasons for why different actors might hold opiate reserves.

1. **Savings or insurance**, like cash or gold, to hedge against anticipated income loss or to guard against broader economic or political challenges, crop failures, or crises, or simply to store wealth for some future need. Some local economies, especially near production, may engage more readily in bartering and thus opium, which holds its value, is a good commodity for trade or bartering.
2. **Normal business practices** of holding inventory to meet sudden demand and maintain market share and customers.
3. **Product accumulation** during periods of oversupply or because no buyer could be found.
4. **Price speculation and arbitrage** to obtain a higher price during future periods of scarcity or when price differences are substantial across different markets.
5. **Market manipulation** by holding back very large amounts of product to increase prices.
6. **Avoiding legal risk** during moments of counter-drug operations when marketplaces may be surveilled or disrupted or when crops are eradicated, necessitating that product is held.

## Some farmers and households that cultivated poppy keep some of their harvest.

UNODC field surveys asked farmers about selling their harvest to ascertain stockpiling levels in 2018 and 2019. The 2019 survey of cultivators indicated that, on average, 82% of the opium harvest was sold within the same year, suggesting that farmers sell opium relatively quickly and, individually, do not hold large stock, if at all.<sup>17</sup> The estimate remained stable when compared to 2018 when 80% of the opium harvest was sold in the same year.<sup>18</sup> An even earlier UNODC report examining production in 2009 notes that farmers held on average 10-20% of their harvest for sale later.<sup>19</sup> However, of farming households surveyed, about 70% reported holding no stocks. Of the remaining portion that did hold stocks, the shares were unevenly distributed with the top third of households holding about three-quarters. The middle third of farmers held some 20% of stocks, while the bottom third of farmers held some six percent of stocks, as reported by surveys.<sup>20</sup>

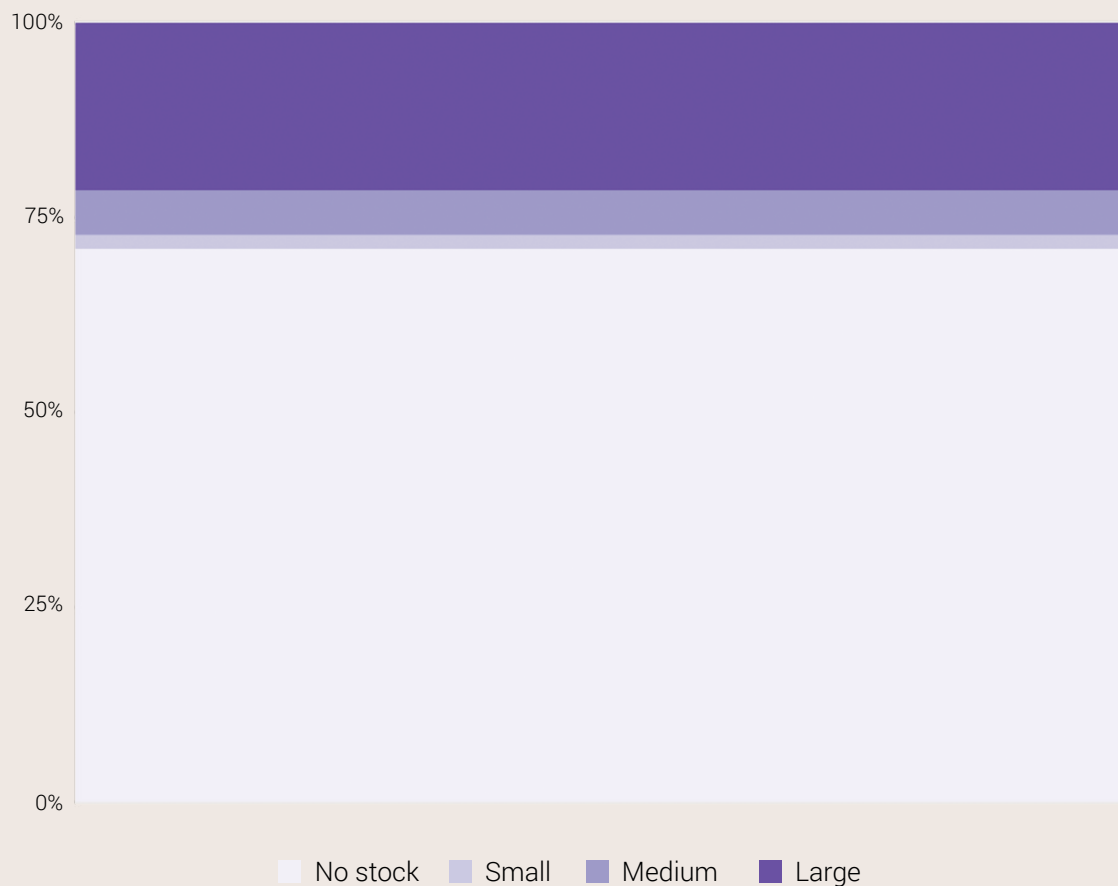
<sup>17</sup> UNODC and Islamic Republic of Afghanistan, UNODC, *Afghanistan Opium Survey 2019: Socio-Economic Survey Report*, Drivers, Causes and Consequences of Opium Poppy Cultivation, February 2021.

<sup>18</sup> UNODC, *Drug Situation in Afghanistan 2021: Latest Findings and Emerging Threats*, November 2021, [www.unodc.org/documents/data-and-analysis/Afghanistan/Afghanistan\\_brief\\_Nov\\_2021.pdf](http://www.unodc.org/documents/data-and-analysis/Afghanistan/Afghanistan_brief_Nov_2021.pdf).

<sup>19</sup> UNODC, *The Global Afghan Opium Trade: A Threat Assessment, 2011* (Vienna, Austria: United Nations Office on Drugs and Crime, 2011).

<sup>20</sup> Analysis of survey data from poppy-farming households collected in 2019.

**Figure 11: Share of stocks held by poppy-farming households in 2018**



Note: Measures come from survey data analysed by UNODC and come from "Afghanistan Opium Survey 2019: Socio-Economic Survey Report, Drivers, Causes and Consequences of Opium Poppy Cultivation".



Prior to the announcement of the drugs ban, very low prices in what was likely a saturated market might have shaped the strategies and incentives for holding and accumulating stock. Storing opium is possible for farmers who can afford to do so and most farmers live under conditions that often require them to sell most or all their harvest to finance their daily needs. Some farmers also sold opium from previous year's stocks, suggesting that some amount of stock is released but it is considered that during this period of oversupply farmers generally accumulated opium stocks. The degrees of accumulation have varied; for example in 2019, 30% of farmers in the Eastern region reduced their stocks, while just 6% in the Western region did so.<sup>21</sup> Better off farmers with larger landholdings were found to be more likely to hold and accumulate stocks, benefitting from the sale of stocks later.<sup>22</sup>

The portion of harvested opium that is not sold onwards to traders can be stored, used for self-consumption, or used to pay opium lancers. Opium that was used for payments for opium harvesting may have entered the market in the same year, namely when lancers sell opium onwards to traders.<sup>23</sup> Similarly, the highly productive years presumably encouraged a larger share of stockpiling as prices were depressed, and buyers might not have purchased the entire year's harvest, since the market would not be able to absorb it.

Households cultivating poppy may be most inclined to hold and accumulate some opium for savings or insurance purposes.<sup>24</sup> UNODC surveys have found that for farmers, most of the opium income goes to pay for immediate household needs, like food, medical expenses, and debt repayment, but it is also used to pay for labour, including poppy lancing, and for funding large expenditure like weddings.<sup>25</sup>

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<sup>21</sup> UNODC and Islamic Republic of Afghanistan, "UNODC, "Afghanistan Opium Survey 2019: Socio-Economic Survey Report, Drivers, Causes and Consequences of Opium Poppy Cultivation"."

<sup>22</sup> Based on data collected by UNODC and the Islamic Republic of Afghanistan in 2019.

<sup>23</sup> UNODC and Islamic Republic of Afghanistan, "UNODC, "Afghanistan Opium Survey 2019: Socio-Economic Survey Report, Drivers, Causes and Consequences of Opium Poppy Cultivation"."

<sup>24</sup> For example, the opium surveys found that some farmers decided to cultivate opium to fund large events like weddings. Opium can be stored easily and allows for saving up for such events when formal banking systems are not available.

<sup>25</sup> UNODC and Islamic Republic of Afghanistan, "UNODC, "Afghanistan Opium Survey 2019: Socio-Economic Survey Report, Drivers, Causes and Consequences of Opium Poppy Cultivation"."

## Opium traders at all levels within Afghanistan hold stock.

UNODC research throughout the years points, roughly, to three categories of traders. In general, the framework follows a “concentric trafficking circle” whereby small-scale traders on the periphery buy opium from farmers and sell it to mid-level traders at the district or provincial levels who then go on to sell to large traders at the centre of the circle who engage in inter-provincial trade before product leaves Afghanistan.<sup>26</sup> Multiple segments of traders serve two functions. First is the bundling of opium, essentially processing it for further redistribution; the second involves conversion to heroin. One analysis of 41 opium traffickers published in 2020 noted that about 20% of large and mid-level traders also reported owning or maintaining a drug manufacturing laboratory, presumably to process opium into heroin.<sup>27</sup> Exporters specialize in moving product outside of Afghanistan, although some large traders reported working with international traffickers, as well as trafficking product outside of the country.<sup>28</sup>

Traders and traffickers at each segment are likely to hold stock for various reasons, including to be able to respond to requests from other drug traffickers, to draw on reserves during periods of supply shortages, and to speculate on higher prices. There are substantial information challenges when it comes to assessing supply and demand for opiates, so traders naturally hedge by holding back some portion of opium. From interviews with 41 traders from 2019, a period of relatively stable harvests prior to the ban, 73% reported holding stock<sup>29</sup> and stockholding was more common for those trading in larger amounts of opium. That is, within the study, 100% of large-scale and 83% of mid-level traders held reserves, while only 55% of small-scale traders held stock.<sup>30</sup>

The 2020 survey of traders and traffickers noted that “all participants confirmed that after one or two years both morphine and heroin start to lose quality, and therefore many do not keep heroin in storage for a long time.”<sup>31</sup> Some studies of heroin seized at the retail level in destination countries note that the rate of degradation may be minimal or five percent a year.<sup>32 33</sup>

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<sup>26</sup> UNODC, “Voices of the Quchaqbar: Understanding Opiate Trafficking in Afghanistan from the Perspective of Drug Traffickers,” 2020.

<sup>27</sup> Ibid.

<sup>28</sup> According to interviews of traffickers, exportation requires additional specialized needs, including escorting shipments with armed security and bribing officials to ensure product leaves the country. These are capital-intensive inputs that are unlikely to be available to most traders. See Ibid.

<sup>29</sup> Ibid.

<sup>30</sup> Ibid.

<sup>31</sup> Ibid.

<sup>32</sup> A. R. L. Wijesekera, D. M. U. J. Abeyasinghe, and K. C. Pathirana, “Studies on the Degradation of Heroin,” *Forensic Science International* 67, no. 3 (August 10, 1994): 147–54, [https://doi.org/10.1016/0379-0738\(94\)90085-X](https://doi.org/10.1016/0379-0738(94)90085-X).

<sup>33</sup> M. Gloger and H. Neumann, “Studies on the Stability of Illegal Heroin Samples,” *Archiv Fuer Kriminologie* 166, no. 3 (1980): 89–98.

It is unclear if the same rate of degradation holds for wholesale or export quality heroin that has not been diluted, but whether or not opiates can be stored for a long time, traders are likely to liquidate product should stocks be perceived to be expiring.<sup>34</sup> This suggests that most individuals engaged in trade and export do not accumulate stockpiles of heroin beyond a year or two. In contrast, those transacting in opium, especially farmers, may be more likely to accumulate stockpiles over the years as opium is perceived to have a longer shelf life, perhaps five or six years.<sup>35</sup>

In terms of amount kept, the 2020 study notes that within the 73% that report holding stock there was variation in the amounts kept depending on where in the supply chain they operated. The study found that 60% of respondents, in this case mid-level traders, kept 10-30% of the opium in reserve while 23% of large-scale traders or traffickers kept 40-70% of the opium in reserve.<sup>36</sup> The remaining respondents either did not specify or indicated smaller shares.<sup>37</sup>

## Traffickers who export opiates out of Afghanistan keep stocks.

There is less information on traffickers involved in export of opiates out of Afghanistan and some share of large traders may also overlap with exporters. That said, there is likely overlap in the large-scale segment of traders and those involved with international trafficking in terms of the strategies and degree of reserves. The 2020 UNODC study of traffickers and traders reports that some of the large-scale traders have contacts or engage with buyers outside of Afghanistan, suggesting they act as exporters.<sup>38</sup>

Given the possible overlap in categories indicated by UNODC and other reports that survey traders and traffickers, modelling here uses data on large-scale traffickers as a reasonable basis for inferring the estimated shares of opium held in reserve each year from 2017-2022. In this case, it is assumed that nearly all exporters hold reserves and that those reserves may comprise 60-70% of the amount traded a year by exporters.

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<sup>34</sup> Studies cited in the previous two footnotes note rates of decay. At 5% decay a year, after two years more than 90% of the original purity should remain. Heroin may take considerable amounts of time, perhaps many months, from when it leaves Afghanistan to before it arrives in the hands of end users. Therefore, some suppliers may be factoring in this travel time into their decision to export heroin sooner rather than later.

<sup>35</sup> UNODC, "Voices of the Quchaqbar: Understanding Opiate Trafficking in Afghanistan from the Perspective of Drug Traffickers."

<sup>36</sup> Ibid.

<sup>37</sup> For the purpose of the modelling exercise this is interpreted as less than 10% for small traders.

<sup>38</sup> UNODC, "Voices of the Quchaqbar: Understanding Opiate Trafficking in Afghanistan from the Perspective of Drug Traffickers."

For higher level traders and traffickers, the reasons behind stockpiling tend to be out of normal business needs and strategies. The 2020 study of traders and traffickers notes that some traders at all segments kept inventory “to meet sudden demands” from other buyers and traffickers.<sup>39</sup> However, for mid- and high-level traders and exporting traffickers there may have been additional reasons, including product accumulation during highly productive years and price speculation. The interviews with traffickers in Afghanistan noted that “high price” is an important factor when it comes to moving product from one part of Afghanistan to another, which could encourage stockpiling to earn higher profit margins during periods of scarcity or as a form of arbitrage.<sup>40</sup> Therefore, it is likely that some large-scale traders or exporters anticipated the likely effects of the drugs ban after the DfA came back to power and decided to stockpile at the outset of the announcement of the ban, maybe even earlier.

Market price manipulation is one possible strategy that cannot be discounted. However, those employing this strategy must have control over large stocks and substantial market segments to effectively increase prices. There may be regional large-scale traders, traffickers, or exporters who can do this, but information on this is scant.

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<sup>39</sup> Ibid.

<sup>40</sup> Ibid.

## How are stocks in Afghanistan at the end of 2022 estimated?

It is challenging to accurately estimate existing stocks given information deficiencies within illegal markets. However, calculating remaining total opium stocks within Afghanistan is done here by first estimating and then adding together stock estimates across the various segments of the supply chain (e.g., farmers, each segment of traders, exporters) within Afghanistan from each of the harvests from 2017 to 2022. The core estimate thus refers to possible stocks held at the end of 2022..

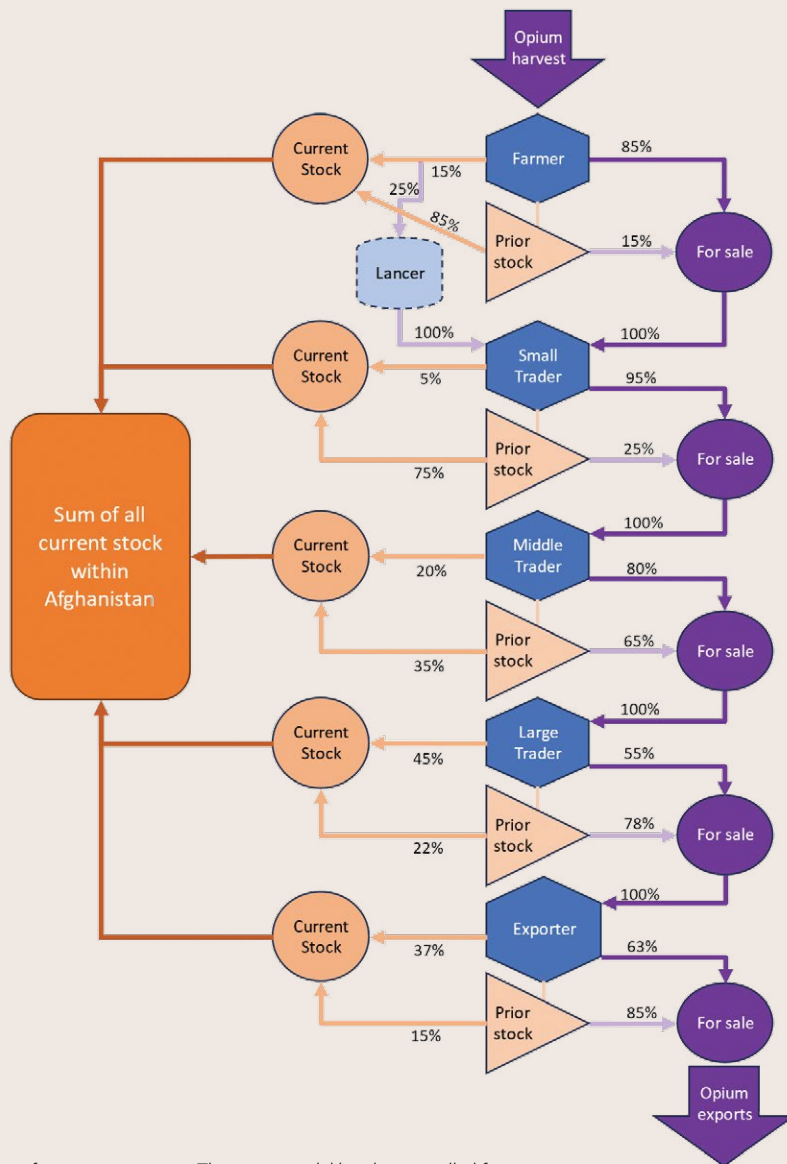
Estimating stocks for each segment is done through a series of sequenced calculations that account for the nature of how opium is traded within Afghanistan, based on surveys of various actors within the supply chain as described above, modelled over a six-year period. It assumes that what is not held as stock is traded on without any additional consumption, conversion, or seizures and assumes that each lower segment in the supply chain trades only with the following segment. That is, farmers only sell to low-level traders, who sell to mid-level traders and so forth. The modelling further assumes that the behaviour of farmers, traders, exporters did not fundamentally change during the time period considered. Findings from surveys conducted in that time period are considered to hold for all years.

The Figure below is a diagram of how stocks are modelled over the 2017 to 2022 period. This estimation first starts with farmers, calculating the amount of opium they store, in the aggregate, from annual production estimates (plus the rate of accumulation of the previous year's stock) and the amount of opium that is sold to small traders (plus the amount released from the previous year's stock). Lancers were accounted for by taking the rate of in-kind opium payments from the farmer's stockpile from that year's harvest<sup>41</sup> and passing it on to the first-level traders under the assumption that lancers hold no stock and merely pass on those in-kind earnings to small traders.

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<sup>41</sup> UNODC surveys report that farmers may pay lancers an in-kind amount of opium from their own stocks, which is self-reported to range from 20-33% of farmers' stocks from that year's harvest.

Figure 12: Opium stock model diagram



Note: Percentages are mid-points of parameter ranges. The same model has been applied for all years; it is a static model that did not change over the time period considered. The model considers farmers in aggregate, the distribution of stocks among farmers has been estimated outside of this model.

Opium received is sold to the next segment in the supply chain with small traders passing a portion of opium received on for sale and holding another portion in stock. Additions and subtractions to prior stock are made given what is known or inferred about the likelihood of accumulating stocks over time. This proceeds to middle traders and is continued through to the export segment for each year, ending in 2022. Over time and during relatively stable years modelled here, stocks are likely to accumulate at each segment; however, the data suggests that traders, especially those at the higher end, have a lower propensity to accumulate or hoard stocks over time, but rather have a constant amount at hand. This is mostly because high-level traders and exporters trade in heroin, which is perceived to have a shorter shelf life than opium.

## Modelling stocks

Taking everything together, the input table below reproduces the various parameter estimates and their possible ranges that are used in a Monte Carlo simulation of the flows depicted in the above figure, drawing randomly ( $n=10,000$  for each year) from a uniform distribution of annual production estimates and parameters involving the rate of suppliers' reserves and their rate of accumulation from prior stocks. This is carried out for each year, starting in 2017 and ending in 2022 without adjusting parameters over time. These stock estimates are then added together across all links of the supply chain to arrive at final estimated amounts, and their confidence intervals, of possible stockpiles within Afghanistan at the end of 2022.

## Parameters

To account for stock accumulated over time, several pieces of information are used to circumscribe the analysis to recent years. First, the 2015 and 2016 harvests were recent low points in terms of opium production (averaging about 4,000 tons for those two years). Starting in 2017, production surged to historic totals (9,000 tons) and subsided to relatively stable amounts from 2018 through 2022 at around 6,400 tons a year. Therefore, a very small starting point of remaining accumulated stock in 2016 is likely as stocks were likely drawn down on before being replenished in 2017 after that year's bumper harvest. The model accounts for this uncertainty by randomly drawing from plausible ranges of prior stocks.

**Table 2: Input details of parameters of supply segments for simulating stocks**

		Internal Traders			
	Farmers	Small	Medium	Large	Exporters
Inferred range of opium held in <b>reserve</b>	10-20%	1-10%	10-30%	40-55%	55-70%
Inferred range of rate of <b>accumulation</b> of stocks over time	80-90%	70-80%	20-50%	5-40%	0-30%

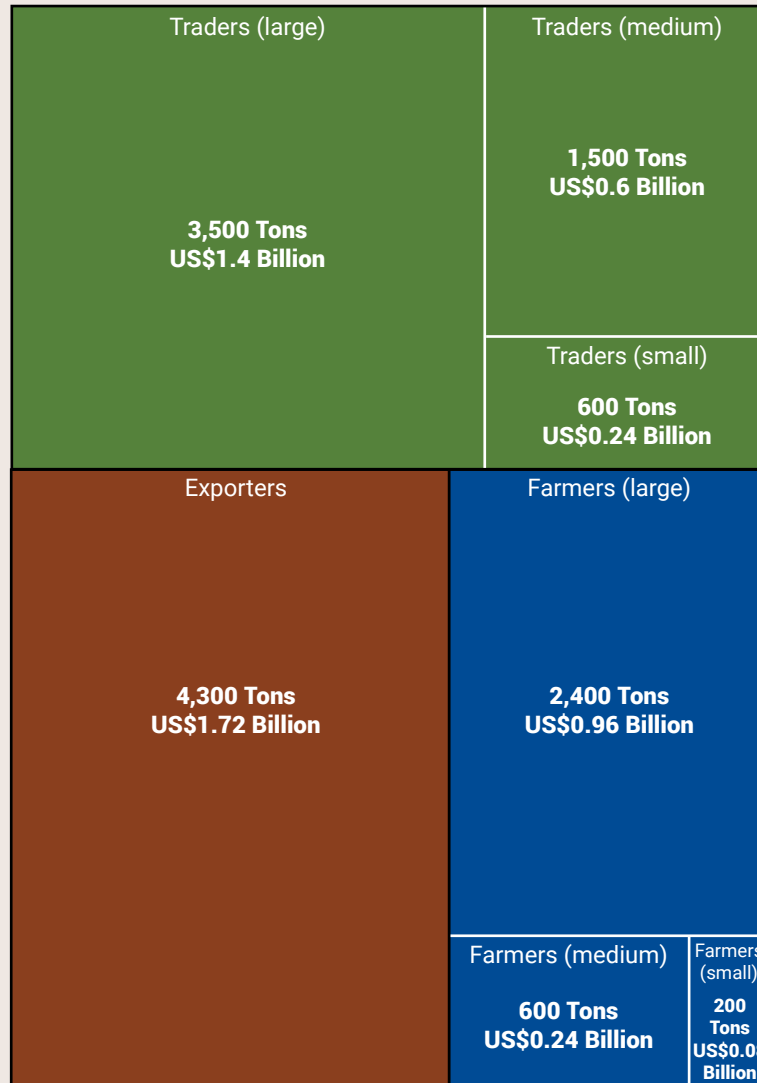
Ranges inferred from studies and surveys discussed earlier.

## Results

The model estimates that median opium stocks in Afghanistan amounted to some 13,200 tons (95% confidence interval 11,600 to 14,800 tons) at the end of 2022. Of that amount, nearly 60% was held by large scale traders and exporters. All farmers together are estimated to have held somewhere closer to a quarter of total stocks.



**Figure 13: Modelled, accumulated opium stocks in tons in 2022 and their value US\$ at each segment in the supply chain within Afghanistan (total stock 13,200 tons valued at US\$ 5.34 billion)**



Note: Valuation uses the average 2023 price of dried opium in US\$.

**Table 3: Distribution of results of modelled tons of opium stockpiled by each supply segment and total in 2022**

Segment	Min	2.5th percentile	Mean	Median	97.5th percentile	Max
Farmers (small)	100	200	200	200	200	300
Farmers (medium)	400	500	700	600	800	900
Farmers (large)	1,600	1,900	2,400	2,400	2,900	3,500
Traders (small)	200	400	600	600	900	1,200
Traders (medium)	600	900	1,500	1,500	2,200	2,600
Traders (large)	1,900	2,600	3,500	3,500	4,600	5,300
Exporters	2,500	3,100	4,300	4,300	5,500	6,700
<b>Total</b>	<b>10,500</b>	<b>11,600</b>	<b>13,200</b>	<b>13,200</b>	<b>14,800</b>	<b>16,500</b>

Note: Estimates rounded to the nearest 100 tons. The Total row is the distribution of the sum of estimated stocks across all supply segments for 2022. Rows for the different levels of farmers are calculated from the aggregate amount, apportioning 74, 20, and 6 percent to the large, middle, and small levels, respectively.

## Interpreting results

In rough terms, the ranges represent about 1.8 to 2.3 times of the average annual 2018-2022 harvests at roughly 6,400 tons of opium a year.

## In relation to estimated exports

After having some understanding of the magnitude of total remaining stocks at the end of 2022, the next question is: **How much are stocks relative to export amounts?** Estimating exports of Afghan opiates is challenging. However, by using the same model it is possible to calculate export quantities after removing stocks. The model estimates that the average annual amount of opium available for export (as opium or converted to heroin) each year between 2018 and 2022 was 5,600 tons. Using the estimated range of stockpiled opium at the end of 2022, there could have been enough stocks to meet annual exports for between two to three years after – if export quantities remain as they were prior to 2022.

If stocks available in Afghanistan at the end of 2022 had been released at a constant rate, they could run out somewhere around the latter half of 2025 given that production totals in 2023 and 2024 were very small and assuming that poppy cultivation in Afghanistan (or elsewhere) does not or has not resumed and seizures remain minimal.

However, it is highly unlikely that export quantities have remained steady since the drugs ban. In fact, declines in total opiate seizures is evidence of overall reductions in exports. That is largely because those holding stocks can sell smaller quantities at higher prices to generate similar revenues. If prices double from last year, then a trader would only need to sell half as much this year to earn the same income. If prices quadruple from last year, then a trader would only need to sell a quarter of last year's amount. However, this assumes sellers can or want to maintain the same or similar level of income over time. The economic situation in Afghanistan, especially for farmers is quite precarious. Farmers, especially small-scale cultivators, do not have the ability to hold stocks at all or for long. It is therefore safe to assume that very few make profits from selling stock at very high prices, and that these few make substantial profits.

## In relation to estimated consumption of Afghan opiates

Given that consumption estimates are unlikely to change much from one year to the next, stock estimates can be used to better anticipate when opiate markets could experience supply shortages. The most critical interpretation is therefore to examine **how stocks measure against current levels of consumption of Afghan opiates.**

Estimating consumption for Afghan opiates poses considerable challenges given the uncertainties surrounding conversion to heroin, amount of pure product consumed by chronic heroin users in a year, and even prevalence of use in the general population. However, UNODC previously estimated total annual consumption for Afghan opiates in the Balkan route countries and in the Northern route countries which could have come to 1,250 tons of opium.<sup>42, 43</sup> Nevertheless, these consumption estimates, in some cases, rely on decades old prevalence data and do not include other large markets for Afghan opiates, such as the Southern route countries of Pakistan or India. Applying a similar estimation approach<sup>44</sup> to gauge consumption of Afghan opiates in the principal drug-consuming markets of the Southern route could result in another 2,000 tons of opium consumed. That largely has to do with the total size of the opiate-using population in South Asia, which is considerably larger due to prevalence rates that are double the global average<sup>45</sup> and the region's large population.

It is therefore a reasonable order of magnitude that some 3,000 to 4,000 tons of Afghan opium are consumed each year along the Balkan, Northern, and Southern routes in the years considered in that modelling exercise. With this range it is possible that remaining stocks could last anywhere between just over three to just over four years. This would suggest that there was enough opium stockpiled in Afghanistan by the end of 2022 to meet current levels of consumption at least until 2025 or 2026. However, these timeframes cannot account for possible stockpiles of opiates (opium and heroin) outside of Afghanistan, along trafficking routes, or in destination markets. Likewise, it is very unlikely that export quantities have remained at pre-ban levels. At some point into the next two years, retail prices for opiate products closest to Afghanistan should continue to see upward pressure as stocks are drawn on and emptied. Retail heroin prices farther away could remain steady for a bit longer if suppliers in those markets are sitting on stocks. This, of course, assumes opium production does not resume substantially in the coming years in and around Afghanistan.

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<sup>42</sup> UNODC, *Illicit Financial Flows from Trafficking of Opiates along the Northern Route*, 2022.

<sup>43</sup> UNODC, *Drug Money: The Illicit Proceeds of Opiates Trafficked on the Balkan Route*, 2015.

<sup>44</sup> Essentially calculating the number of past-year users and multiplying it by total amount of pure heroin consumed in a year from ranges applied by UNODC elsewhere.

<sup>45</sup> UNODC, *World Drug Report 2023* (Vienna, Austria, 2023).

## Stockpile valuation

While 60% of opium stocks are estimated to be held by large scale traders and exporters, farmers held somewhere closer to a quarter of estimated stockpiles. Assuming no conversion to heroin, the dry opium stocks are worth substantial amounts when considering the increasing trade prices. Given the narrowing nature of the opiate supply chain, at the end of 2022 exporters and large traders were potentially sitting on large quantities that could have been worth between US\$2.3 and US\$4 billion at the average price for 2023 of US\$400 per kilogram of dry opium. Stocks held by farmers nationally at the end of 2022 could have come to US\$1 to US\$1.6 billion. For context, the sale of harvested opium by farmers was estimated to have potentially generated US\$1.4 billion in 2022 and US\$425 million in 2021.<sup>46</sup> However, stock-keeping is not evenly distributed. For one, about 70% of farmers do not report holding stock.<sup>47</sup> Of the remaining share, it is estimated that the top tercile of farmers hold approximately three-quarters of stockpiled opium. Applying that distribution to the entire farmers' share modelled here, large farming households were likely to have been sitting on US\$770 million to US\$1.2 billion's worth of opium. Small farming households who engaged in opium stockpiling may have been holding between US\$60 million to US\$90 million's worth.

Across all supply segments inside Afghanistan, the stockpile valuation could range between US\$4.6 and US\$5.9 billion.<sup>48</sup> Those figures would be worth more if stored opium were to be converted to heroin, increasing the potential value held by high-level traders and exporters. The value of opium stocks has been calculated based on the value of opium within Afghanistan. However, when exporting opium either in raw form or after conversion to heroin, value added is generated and the resulting monetary inflows are much higher than the value of opium within the country. Prices available to date do not allow for estimates of the export value of the stocked opium, but historical data showed that exports may be worth at least double or triple the value of opiates within Afghanistan.<sup>49</sup>

To put that into context, World Bank estimates suggest the country's GDP in 2023 was close to US\$20 billion.<sup>50</sup> Overall, the country's economy continues to see a recovery since 2023, with appreciating currency and growing trade deficits. Despite declines in legal exports and sharp increases in imports, tax revenues collections surpassed projections.<sup>51</sup>

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<sup>46</sup> UNODC and Islamic Republic of Afghanistan, UNODC, *Afghanistan Opium Survey 2019: Socio-Economic Survey Report*, Drivers, Causes and Consequences of Opium Poppy Cultivation.

<sup>47</sup> UNODC, *Afghanistan Opium Survey 2019: Socio-Economic Survey Report*, Drivers, Causes and Consequences of Opium Poppy Cultivation.

<sup>48</sup> These estimates are perhaps on the lower side, as it assumes internal trader value prices of opium stocks. Opium yields much higher prices when exported and even more when exported in form of heroin.

<sup>49</sup> UNODC, *Afghanistan Opium Survey 2019: Socio-Economic Survey Report*, Drivers, Causes and Consequences of Opium Poppy Cultivation.

<sup>50</sup> World Bank Group, *Afghanistan Economic Monitor*.

<sup>51</sup> Ibid.

Some traders and exporters may have sold off part or all those stocks, generating enormous returns that have found their way into the national economy. However, others might still be holding and speculating on further price hikes. It is likely that, given their immediate needs, farmers and low-level traders have sold larger shares of their stocks. If higher-level traders and exporters abstained from processing opium into heroin during 2023, then they are likely to be sitting on substantial opium stocks. And while the values of those stocks may be increasing as prices increase, based on declining heroin seizures but continued opium seizures in and around Afghanistan it would appear that traders and exporters are not processing and trafficking in heroin—resulting in unrealized potential revenue.

# Technical Annex

## Table of ranges of parameter inputs for model

Segment	Share of segment that participates in stockpiling	Proportion of amount of opium received kept as stock	Proportion of prior stock that is accumulated	Long-run average share of starting stockpiles prior to 2017
Farmers	90 – 100% <sup>a</sup>	10 – 20%	80 – 90%	26%
Lancers	90 – 100%	20 – 33%	0 – 0%	0%
Traders (small)	40 – 70%	1 – 10%	70 – 80%	4.4%
Traders (medium)	70 – 90%	10 – 30%	20 – 50%	11.1%
Traders (large)	90 – 100%	40 – 55%	5 – 40%	26.1%
Exporters	90 – 100%	55 – 70%	0 – 30%	32.4%

<sup>a</sup> Although only 30% of farmers report stockpiling in surveys, the share for farmers used in the model is a range of 90-100% because the proportion of opium held back from trade and kept as stock is an aggregate estimate.

The “Long-run average share of starting stockpiles” is the breakdown of the share of stocks prior to 2017 that the model accounts for at the start. Various inputs of total starting stock were considered, ranging from 0 to 6,000 tons. The share breakdown is the percentage of that total prior amount that was held by each segment. Because the model math approaches a steady state over time (rather quickly at first) the model distributes starting share across each of the segments. Various total starting amounts were tested, and the starting amount affects very little in the amount of total stocks at the end of 2022. Because of the stable period modelled, every 1,000 tons of starting stockpile prior to 2017 would result in an additional 150 tons held in stock in 2022.

## Table of the distribution of starting stock inputs for model (MT) by supply segment

Segment	Minimum	2.5th Percentile	Mean	Median	97.5th Percentile	Maximum
Farmers	0.4	37.0	778.3	779.7	1,519.2	1,559.7
Lancers	0.0	0.0	0.0	0.0	0.0	0.0
Traders (small)	0.1	6.3	131.7	132.0	257.1	264.0
Traders (medium)	0.2	15.8	332.3	332.9	648.6	665.9
Traders (large)	0.4	37.1	781.3	782.7	1,525.1	1,565.7
Exporters	0.5	46.1	969.9	971.7	1,893.2	1,943.7

Estimates of consumption amounts of Afghan opiates are based on prior approaches for the Northern and Balkan routes.<sup>52, 53</sup> Simply, these totals are the sum of the product of past-year prevalence rates of opiate use multiplied by total pure amount consumed per individual per year. A similar approach was used to estimate the principal Afghan opiate-consuming countries in the Southern route, namely Pakistan and India.<sup>54</sup> For India, estimates included officially produced opioid prevalence rates from states and territories in western India to exclude any possible markets that are likely to be supplied by opiates from Myanmar. Here, west Indian states and territories include Delhi, Gujarat, Haryana, Himachal Pradesh, Jammu and Kashmir, Madhya Pradesh, Maharashtra, Punjab, Rajasthan, Uttar Pradesh, and Uttaranchal.



**Islamic Emirate of Afghanistan**  
**Ministry of Interior Affairs**  
**Deputy Ministry of Counter Narcotics**  
**Chief of Staff Office**  
**Policy and Strategy Management Office**

Number: 809 / 858

Date: 12/01/1446 (Islamic Date)

Subject: Submission of Comments from the Directorate of Survey and Analysis of Counter Narcotics, Civil Affairs Deputy of Deputy Ministry of Counter-Narcotics

To: The Esteemed office of UNODC

(Islamic Greetings) Peace, mercy and blessings of Allah be upon you,

In response to your letter No.086 dated October 2024, we would like to inform you that the directorate of survey and analysis of Civil affairs deputy of Deputy Ministry of Counter-Narcotics – Ministry of Interior has submitted a four-page document containing its opinions and recommendations concerning (Afghanistan Drug Insights Volume 4: Drug trafficking and opiate stocks).

We kindly request that, considering the suggestions and recommendations provided, appropriate actions be taken as deemed necessary.

*Respectfully,*

*Chief of Staff – Deputy Ministry of Counter-Narcotics*

*Comments from the Directorate of Survey and Analysis of Counter-Narcotics Regarding the UNODC Office Report*

Upon reviewing the report, we observe that the analyses are based on the following sources of information and data:

- Remote Sensing data, collected by UNODC.
- Rural surveys and other data tools.
- Global drug data collection initiatives.
- UNODC annual reports and its drug monitoring platform.
- Figures from poppy cultivation surveys conducted jointly by UNODC and the Government of Afghanistan between 1994 and 2020.
- Poppy cultivation surveys conducted independently by UNODC in 2021, 2022, and 2023.
- Estimations of opium stockpiles and trafficking, published by UNODC in 2020.

To obtain accurate and precise information about narcotics production and trafficking, a multifaceted approach is essential. These activities should include careful planning for surveys and data collection, interviewing individuals directly involved in or connected to drug trafficking, using advanced monitoring techniques, and collecting information from diverse sources. Such measures are critical for ensuring transparency and enabling a comprehensive analysis of the narcotics situation.

Unfortunately, neither UNODC nor other UN organizations have conducted substantial field activities in Afghanistan since 2021. While remote sensing data collection is effective for monitoring poppy cultivation, it is an imprecise method for estimating narcotics production and trafficking.

Moreover, comparing narcotics data from before 2021 to the post-2021 period is not feasible due to significant changes in Afghanistan's political, economic, and security conditions. Analysing the narcotics situation after 2021 requires a new approach tailored to the prevailing circumstances, as these factors have both direct and indirect impacts on the situation.

The report includes several analyses based on data from years prior to 2021, which may not accurately reflect the current realities.

### **Regarding Stockpiles of Opium in the Country**

The Islamic Emirate of Afghanistan has issued a decree banning poppy cultivation and trafficking, and significant steps have been taken over the past three years to reduce cultivation. The suggestion of stockpiles amounting to thousands of tons of opium within Afghanistan is far from realistic.

Afghan farmers face severe economic and social hardships, leaving them with limited capacity to store large quantities of opium. While many farmers view poppy cultivation as a primary source of income, they have consistently faced challenges due to fluctuating prices. From an economic perspective, stockpiling opium is not viable, as price volatility driven by supply and demand in the international market discourages long-term storage.

As a result, both producers and traffickers are increasingly opting for rapid sales instead of storing narcotics for extended periods.

### **Increase in Poppy Cultivation and Shifts in Trafficking Trends**

Following the Taliban Supreme Leader's decree banning poppy cultivation, there has been an observable shift in production dynamics. Poppy cultivation has significantly increased in regions known as the Golden Triangle, particularly in Myanmar. Additionally, there is evidence of cultivation shifting from Afghanistan to neighboring countries. However, storing opium within Afghanistan remains a high-risk practice for traffickers, given these circumstances.

Each year, thousands of tons of opium are produced in the countries to meet international demand. However, we note discrepancies in narcotics pricing as reported by UNODC, which do not align with the ground realities or the monthly price data reported by the Deputy Ministry of Counter-Narcotics. Using these inaccurate price references results in erroneous calculations and flawed analyses.

### **Concerns Regarding Methamphetamine Production and Seizures**

The analysis in your report suggests that an increase in methamphetamine seizures and a decrease in prices indicate domestic production in Afghanistan. We question the credibility of this conclusion and the data on which it is based.

The rising availability of methamphetamine in the market correlates with reduced opium and heroin production. However, intelligence from our department indicates that methamphetamine is being smuggled into Afghanistan via porous, unofficial border crossings from neighboring countries. No evidence of methamphetamine production facilities exists in any Afghan province.

Seizures of large quantities of opium and heroin in Asia, Europe, and the United States do not necessarily indicate production in those regions. Similarly, increased seizures within Afghanistan should not automatically be equated with domestic production.

The analyses presented in the report lack alignment with ground realities and rely on speculative assumptions rather than robust data. Such an approach undermines the credibility of the report and, by extension, the sovereignty of Afghanistan.

We request you to base future analyses on accurate and updated data, reflecting the true narcotics situation in Afghanistan and the region.

Sincerely,

