



United Nations
Office on Drugs and Crime



Myanmar Opium Survey 2025

Cultivation, Production, and Implications

December 2025



In Southeast Asia, UNODC supports Member States to develop and implement evidence-based rule of law, drug control and related criminal justice responses through the Regional Programme and aligned country programmes. This study is undertaken under the framework of the Mekong MOU on Drug Control which UNODC actively supports through the Regional Programme, including the commitment to develop data and evidence as the basis for countries of the Mekong region to respond to challenges of drug production, trafficking and use.

To assess the scope of opium poppy cultivation and opium production in Myanmar, UNODC has been conducting opium surveys regularly in the Republic of the Union of Myanmar since 2002. The opium surveys have been implemented within the technical framework of the UNODC Illicit Crop Monitoring Programme (ICMP), established in 1999 upon request of the Commission on Narcotic Drugs in its resolution 42/3, Monitoring and verification of illicit cultivation. The objective of ICMP is to assist the international community in monitoring the extent and evolution of illicit crops and to compile reliable and internationally comparable data. Currently, UNODC carries out and supports monitoring activities in the following countries affected by illicit crop cultivation: coca surveys in Bolivia, Colombia, and Peru; and opium poppy surveys in Afghanistan, Mexico and Myanmar. ICMP is part of UNODC's Research and Trend Analysis Branch.

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Introduction

This report presents the results of the twenty-third Myanmar opium survey, covering the 2024/2025 opium growing and harvesting season. With a year-on-year increase in cultivation area of 17%, the previous downward trend appears to have reversed. Between 2021 and 2023, surveys in Myanmar showed increases at national level in both area under opium poppy cultivation and opium production. In 2024, the survey estimated a modest decline in the area under cultivation of 4% to 45,200 hectares, indicating a possible stabilization. The 17% increase in 2025, however, brought the area under cultivation to 53,100 hectares, even as opium harvested per hectare decreased, partly offsetting the increase in cultivation area. As such, the 2025 survey highlights the complex inter-relation between conflict and changes in how opium poppy is cultivated and produced in Myanmar.

Instability and conflict, and their impact on the rule of law and the availability of licit income opportunities, are traditionally seen as drivers of illicit crop cultivation in Myanmar. According to UN estimates, some 3.6 million people have been internally displaced across the country, with Shan and Kachin in particular seeing escalating tensions and clashes.^{1,2} However, while the area under cultivation has increased, the expansion of conflict and shifts in control between different armed actors appears to have disrupted the production of illicit opium. In 2025, average opium yield has sharply decreased, resulting in a much smaller increase in opium output than the increase in cultivation area would suggest. Information from the field suggests that the ongoing internal conflict has contributed to this decline in opium yield, particularly in Shan State and Kachin. In northern Shan, a resurgence of fighting since late June has displaced an estimated 33,000 people from four townships, with civilian casualties and the destruction of numerous homes and structures.³ Continued air and drone strikes, especially in North Shan, have continued to

disrupt civilian populations.⁴ These conditions have impacted the ability of rural population to move, find more fertile land, and likely prevented farmers from accessing cultivation areas further away from their villages. There have been some field reports of farmers replanting previously cultivated areas without rotating crops, and challenges to obtain agricultural inputs like fertilizers, which are all possible factors in the declining productivity of fields.

As a result, across Myanmar's states and regions, most areas showed increases in cultivation but declines in yields. In 2025, average yields declined by 13% from 22 kilograms per hectare to 19 kg per hectare, resulting in an estimated opium production of 1,010 (822-1,340) metric tons, only 1% higher than in 2024. Nevertheless, both yield and production remain at relatively high levels compared with the past decade of estimates.

Cultivation in Shan State, which continues to be the centre of opium production in Myanmar at 88% of total cultivation area, increased by 17% to 46,700 ha, with East Shan having the largest increase of 32%. Chin and Kayah, where the overall area remained small in comparison to other regions, showed considerable increases of 26% and 21%, respectively, while cultivation in Kachin increased only moderately by 3%. In northern Sagaing region, which for the first time was fully included in the survey area, satellite imagery indicated 552 hectares under cultivation, approximately 1% of national total.

Changes in cultivation and production coincided with changes in farmgate prices of both fresh and dry opium in US dollars. Prices increased in most areas, except in North Shan. In 2025, the national average price of dry opium traded at just over US\$365 per kilogram, up from some US\$330 the year before, although it remained high compared to the last low point in 2021 when it stood at US\$131 a kilogram. In combination with stable levels of production, farmers earned similar income as the previous year, between US\$300 – US\$487 million in 2025 (US\$230 – US\$518 million in 2024). The farmgate value only represents a small share of the overall opiate economy, with heroin manufacture and export making up a much larger share. Wholesale prices

1 OCHA, "Myanmar Humanitarian Update No. 37," April 5, 2024, <https://www.unocha.org/publications/report/myanmar/myanmar-humanitarian-update-no-37-5-april-2024>.

2 OCHA, "Myanmar Humanitarian Update No. 49," September 23, 2025, <https://www.unocha.org/publications/report/myanmar/myanmar-humanitarian-update-no-49-23-september-2025>.

3 OCHA, "Myanmar Humanitarian Update No.40," August 16, 2024, <https://www.unocha.org/publications/report/myanmar/myanmar-humanitarian-update-no-40-16-august-2024>.

4 OCHA, "Myanmar Humanitarian Update No. 49," September 23, 2025, <https://www.unocha.org/publications/report/myanmar/myanmar-humanitarian-update-no-49-23-september-2025>.

of heroin in the region declined, contributing to a decrease in the value of the total opiate economy of about 17%, now ranging between US\$641 million to US\$1.05 billion, representing 0.9 – 1.4% of Myanmar's 2024 GDP.

In addition to Myanmar's domestic context, external events may also be relevant to the future of poppy cultivation and opium production in the country. The strict ban on opium poppy cultivation and opium production enforced in Afghanistan since 2023, resulted in a 95% decline in production estimates,⁵ making Myanmar the world's main known source of illegally produced opium. A global shortage in opiates, including heroin in markets traditionally supplied by Afghan opiates, might result in upward pressure on the price of opium in Myanmar once global supply chains and distribution network adjust. In fact, there are emerging signs that heroin trafficked from Southeast Asia reaches markets traditionally not supplied from the region. According to the European Union Drugs Agency (EUDA), a total of 60kg of heroin believed to be illicitly manufactured in and around Myanmar were seized during several occasions from commercial airline passengers traveling from Thailand to EU countries in 2024 and early 2025.⁶ While the scale of heroin trafficking from Southeast Asia to Europe and other non-traditional markets is not yet significant, the changed environment could encourage more cultivation and production of opium in Myanmar.

With both internal and external factors impacting opium cultivation in Myanmar, continued monitoring of the situation will remain critical to understand the trajectory of illicit poppy cultivation against the background of social, political, and economic disruptions and a highly uncertain economic outlook. This coincides with a continued expansion in synthetic drug production in Southeast Asia, with increasing seizures of a variety of drugs like methamphetamine and ketamine⁷ contributing to a highly challenging illicit drug situation in the region and beyond.

As Myanmar finds itself at a critical juncture, coordinated, well-resourced and context-based interventions, in particular for farmers now drawn to opium cultivation, are needed to prevent the illicit drug flows from the country from spinning further out of control.

5 UNODC, "Afghanistan Opium Survey 2023," August 2023.

6 EUDA, "Heroin and other opioids – the current situation in Europe (European Drug Report 2025)", 5 June 2025.

7 UNODC, "Synthetic Drugs in East and Southeast Asia Latest Developments and Challenges," 2024, https://www.unodc.org/roseap/uploads/documents/Publications/2024/Synthetic_Drugs_in_East_and_Southeast_Asia_2024.pdf.

Key Takeaways

Four years after the military takeover in Myanmar, opium poppy cultivation continues to expand and has reached a ten-year high

The 2025 survey shows opium poppy cultivation has reached its highest level since 2015, with an increase in the area under cultivation of 17% to 53,100 ha from 45,200 ha in 2024. All states and regions observed as part of the survey recorded an increase in cultivation area, with the highest increases in East Shan and Chin at 32% and 26%, respectively, and the lowest increase in Kachin at 3%.

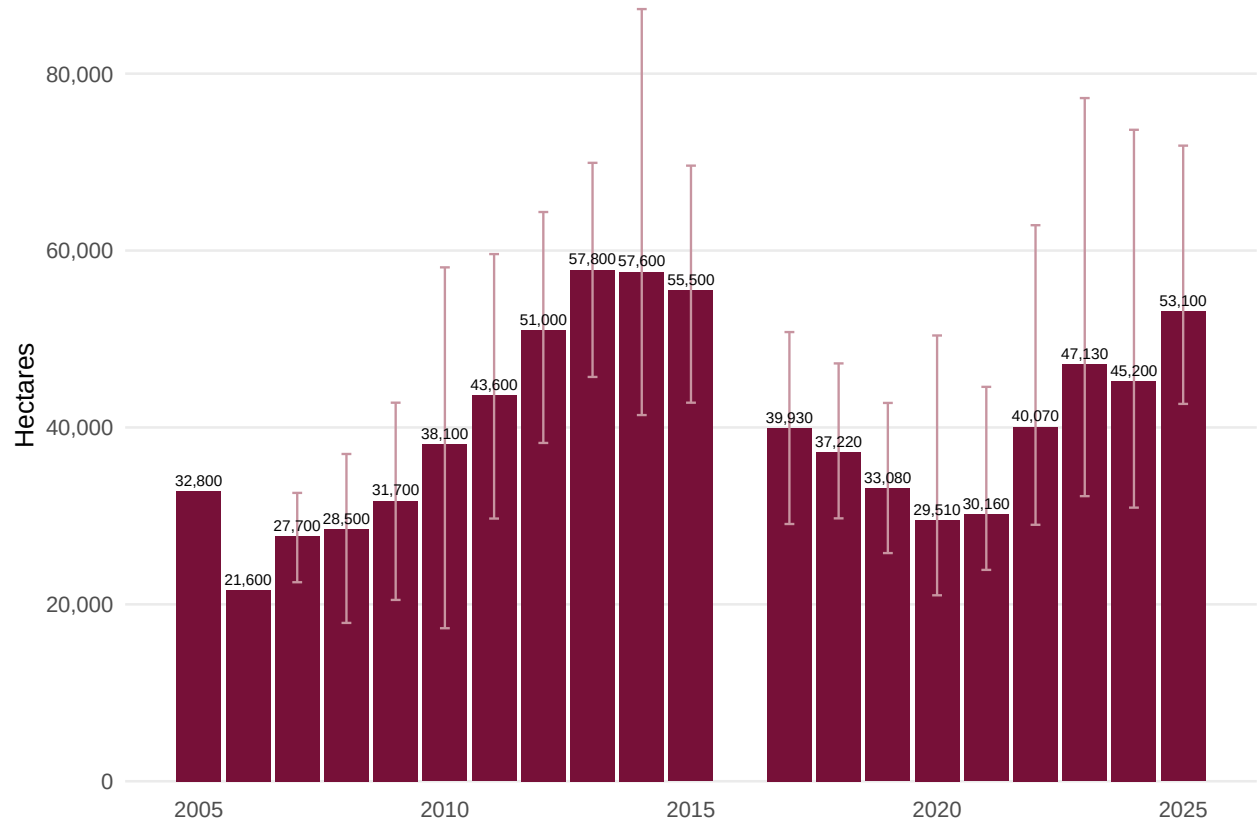
Overall, Shan State, which remains the centre of opium cultivation representing 88% of the country’s total, saw an increase of 17% from 39,700 ha in 2024 to 46,700 ha in 2025. Both North Shan and South Shan show a 13% increase. In northern Sagaing region, which for the first time was fully included in the survey area, satellite imagery indicated 552 hectares under cultivation, approximately 1% of national total.

Opium production remained stable in 2025, as the increase in cultivation was offset by lower yields

With declining yield levels offsetting by the increase in cultivation area, overall opium production in 2025 remained relatively stable, increasing by only 1% to 1,010 compared to 995 tons in 2024.

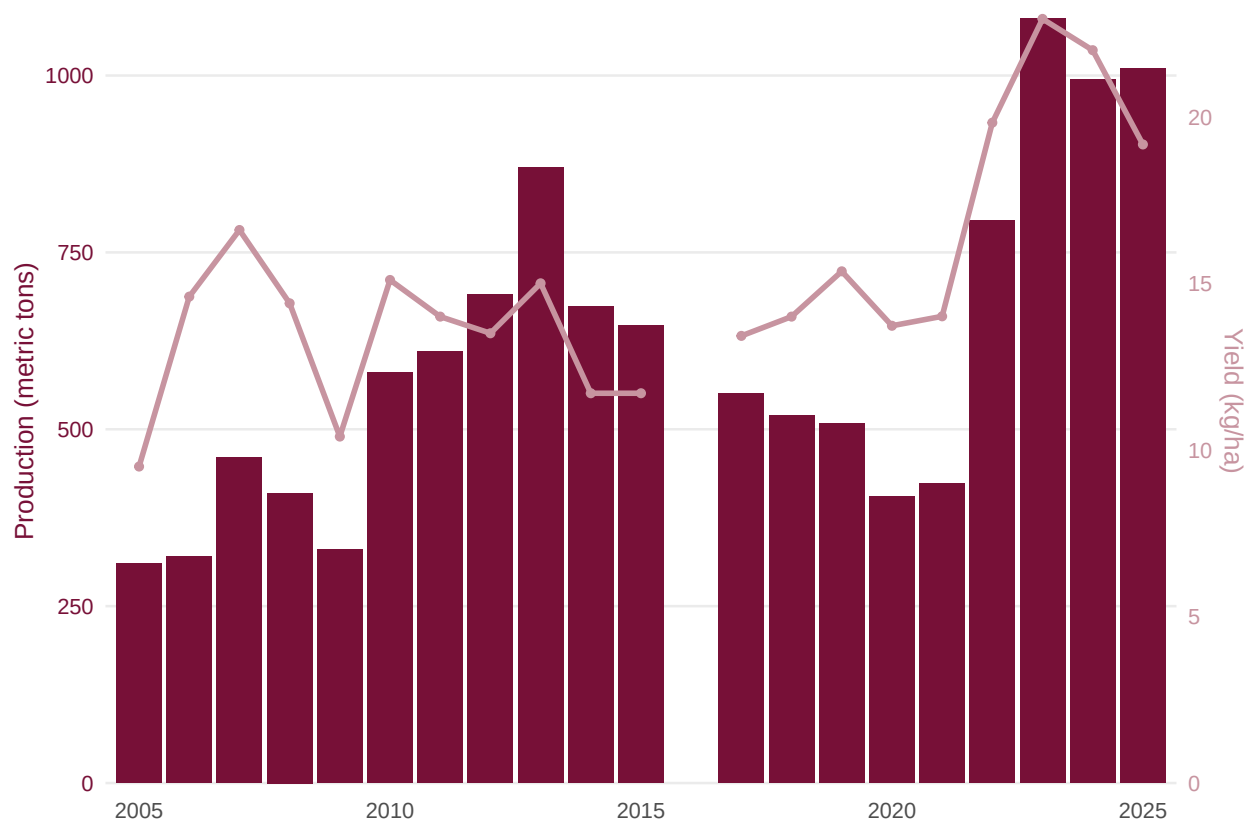
Historically, opium poppy cultivation in Myanmar, and Southeast Asia in general, was typically of small, poorly organized, and sparse plots. Field and ethnographic research point to longstanding traditions of small-scale opium poppy cultivation, sometimes as a cash or insurance crop, but also for household use. However, in 2022 cultivation in Myanmar started shifting toward more sophisticated practices which resulted increased yields. National yield estimates in 2023 rose to 22.9kg per hectare—the highest ever recorded by crop surveys in the country. By 2024, yields declined slightly by 4% to 22kg/hectare, and in 2025 they fell again by 13% to 19.2kg per hectare. At the local level, some declines were more pronounced with North Shan declining by 27%.

Area under opium poppy cultivation in Myanmar, 2005 to 2025



No survey was conducted in 2016. The error bars are the upper and lower limits of 95% confidence intervals.

Opium production and yields in Myanmar, 2005 to 2025



No survey was conducted in 2016.

Evidence from the field suggests that disruptions brought on by the internal conflict have made it harder for farmers to maintain high levels of productivity.⁸ Accessing fertilizers and other inputs remained limited and, in some cases, replanting of old fields was a common practice this season.

Myanmar remains the world’s known leading source of illegally produced opium

At 1,010 tons in 2025, the estimated opium output in Myanmar is now more than twice that of Afghanistan, making it the world’s leading known source of illicitly produced opium. This follows further decreases in poppy cultivation in Afghanistan following the 2022 ban on opium production in the country which for many years was the source for over 80% of the world’s illegal opium supply.

The farmgate price of opium in Myanmar increased nationally but varied regionally

The national average farmgate prices at harvest time for fresh and dry opium in 2025 were assessed at around US\$329 (692,000 Kyat) and US\$365 (767,000 Kyat) per kilogram, respectively.⁹ This marks an 8% increase in fresh opium prices and an 11% increase in dried opium prices when compared to 2024. This reversed the previous year’s decrease in prices. However, the 2025 price per kilogram of opium varied across regions, with North Shan reporting sharply declining prices.

8 Takeshima, Hiroyuki, Bart Minten, Joanna van Asselt, Isabel Brigitte Lambrecht, Ian Masias, Joseph Goeb, Zin Wai Aung, and May Thet Htar. “Fertilizer and conflicts: Evidence from Myanmar.” *Food Policy* 133 (2025): 102786.

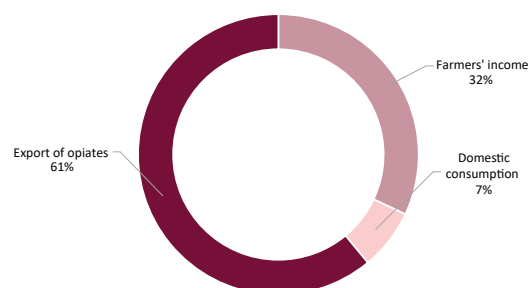
9 Applied MMK/USD exchange rate is the 2024 DEC alternative conversion factor provided by the World Bank (<https://data.worldbank.org/indicator/PA.NUS.ATLS>).

Prices of dry opium (US\$ per kilogram) in Myanmar (2005 to 2025)



Prices adjusted to inflation of US dollar.

Shares of the Myanmar opiate economy in 2025, by component (approximation)



As Myanmar's licit economy remains fragile, the income from opiates continues to be an important source of revenue

In combination with stable opium production, modest increases in opium prices amounted to US\$300 to US\$487 million worth of opium sold at the farmgate, which represented 0.4% to 0.7% of the GDP in 2024, or between 1.9% and 3.2% of the agricultural, forestry and fishing sectors of the 2024 GDP.¹⁰ Overall, the opium economy generated more revenue for farmers but comprised a smaller part of the national economy in 2025, compared to the year before.

The most profitable activity in the opiate economy is heroin production and trafficking. In 2025, it was estimated that 5.8 tons of heroin were consumed in Myanmar. Between 65 to 116 tons of heroin were potentially exported, with an estimated value between US\$525 million and US\$935 million.

The gross value of the entire opiate economy – comprising both the value of domestic consumption and exports of opium and heroin – in Myanmar in 2025 decreased by 17% as compared to 2024 and was estimated to be between US\$641 million and US\$1.05 billion, accounting for about 0.9-1.4% of the national GDP in 2024.

¹⁰ Source: The World Bank, <https://data.worldbank.org/indicator/NY.GDP.MKTP.CD?locations=MM>

Fact Sheet

	Year 2024 (rounded)	Year 2025 (rounded)	Change 2024-2025
Total opium poppy cultivation (ha)¹¹	45,200 (30,900 to 73,700)	53,100 (42,700 to 71,900)	17%
Opium poppy cultivation in Shan State	39,700 (25,600 to 53,300)	46,700 (36,300 to 54,600)	17%
Opium poppy cultivation in Kachin State	4,140 (2,390 to 10,300)	4,250 (2,860 to 8,120)	3%
Opium poppy cultivation in Chin State	832 (806 to 858)	1,040 (1000 to 1,090)	26%
Opium poppy cultivation in Kayah State	521 (453 to 590)	628 (584 to 672)	21%
Opium poppy cultivation in Sagaing Region	NA	552 (487 to 617)	NA
Total potential production of dry opium (metric tons)¹²	995 (698 to 1,580)	1,010 (822 to 1,340)	1%
Potential dry opium production in Shan State	836 (544 to 1,390)	853 (672 to 1,160)	2%
Potential dry opium production in Kachin State	129 (74 to 320)	123 (82 to 235)	-5%
Potential dry opium production in Chin State	18 (17.1 to 19.5)	20 (18.7 to 21.4)	9%
Potential dry opium production in Kayah State	11.5 (9.8 to 13.1)	12 (11 to 13.1)	5%
Potential dry opium production in Sagaing Region	NA	10.6 (9.2 to 12)	NA
Average opium yield (kg/ha)¹³	22.0 (20.8 to 23.2)	19.2 (18.2 to 20.3)	-13%
Farmgate price of fresh opium ¹⁴	304 US\$/kg (640,000 Kyat/kg)	329 US\$/kg (692,000 Kyat/kg)	8%
Farmgate price of dry opium	330 US\$/kg (690,000 Kyat/kg)	365 US\$/kg (767,000 Kyat/kg)	11%
Farmgate value of opium in million US\$	229 – 518	300 – 487	13%*
Value of the opiate economy (gross) in million US\$	589 – 1,570	641 – 1050	-17%*
Value of the opiate economy (after the farmgate) in million US\$	360 – 1,060	341 – 564	-33%*
Total opium poppy eradication reported by the CCDAC (ha)	2,502	1,917	-23%

Numbers in the table are rounded, percentage changes are calculated with exact estimates. CCDAC is the Central Committee on Drug Abuse Control.

*Although the values of the opiate economy are presented as ranges, percentage changes are calculated based on the mid-point estimates.

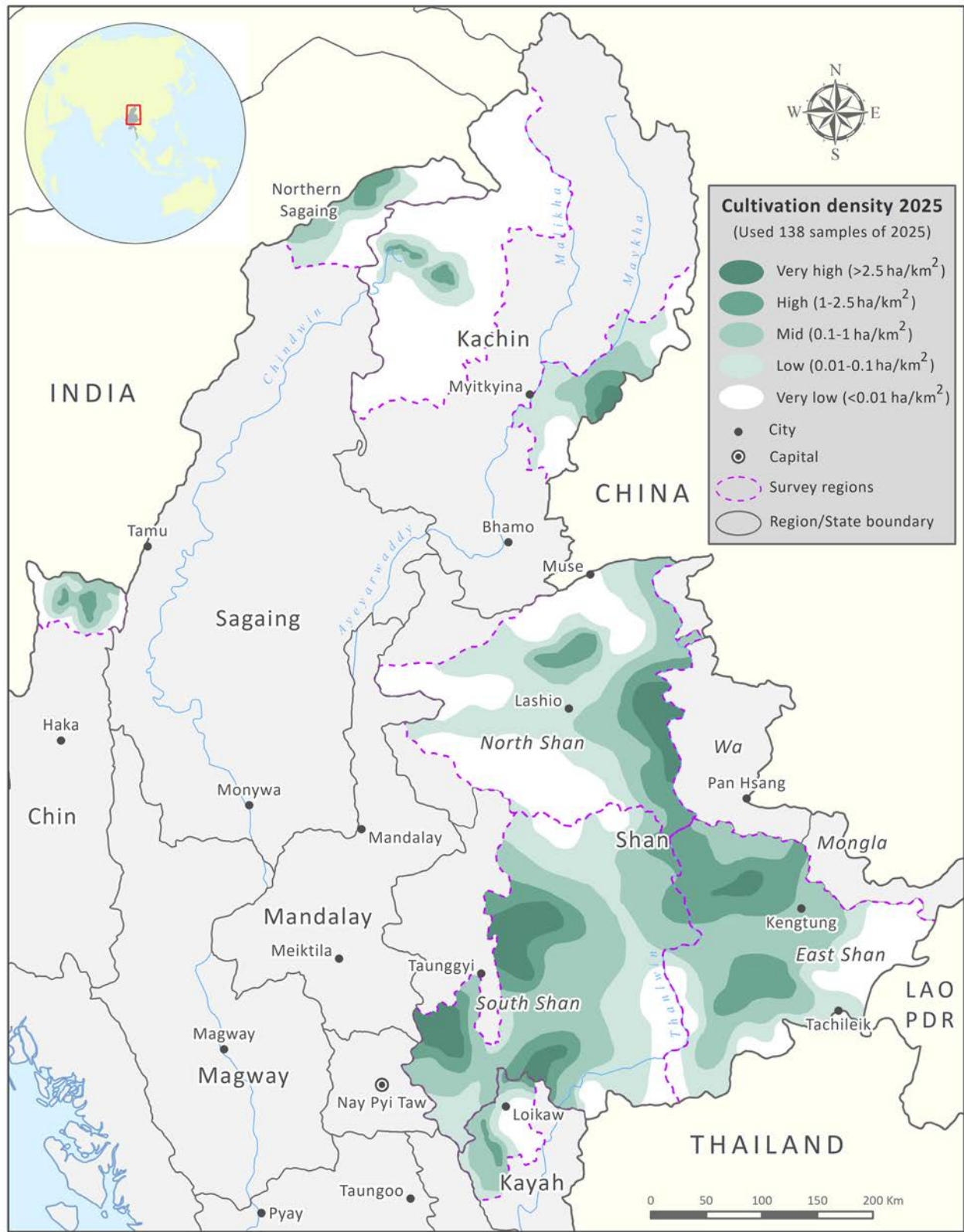
11 The estimates may include areas eradicated after the acquisition date of the satellite images.

12 In 2025, for Shan and Kachin states a multi-year average was applied, using data from 2023 to 2025. For Chin, Kayah and Sagaing States the national average yield was applied (see methodology report for further details).

13 Opium yields weighted by cultivation. In Kayah, Chin and Saigang States, the national average has been applied since no yield measurements were available.

14 National average weighted by regional production estimates. For 2023 and 2024, the applied exchange rates MMK/US\$ are the 2022 and 2023 DCE alternative conversion factors provided by the World Bank (<https://data.worldbank.org/indicator/PA.NUS.ATLS?locations=MM>).

Map 1: Opium poppy cultivation density in Myanmar in 2025¹⁵



Source: UNODC Illicit Crop Monitoring Programme.
The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.

15 To have a more comprehensive visualisation of cultivation density UNODC uses data from 2023, 2024 and 2025.

FINDINGS



Findings

Estimated area under opium poppy cultivation increased by 17% in 2025

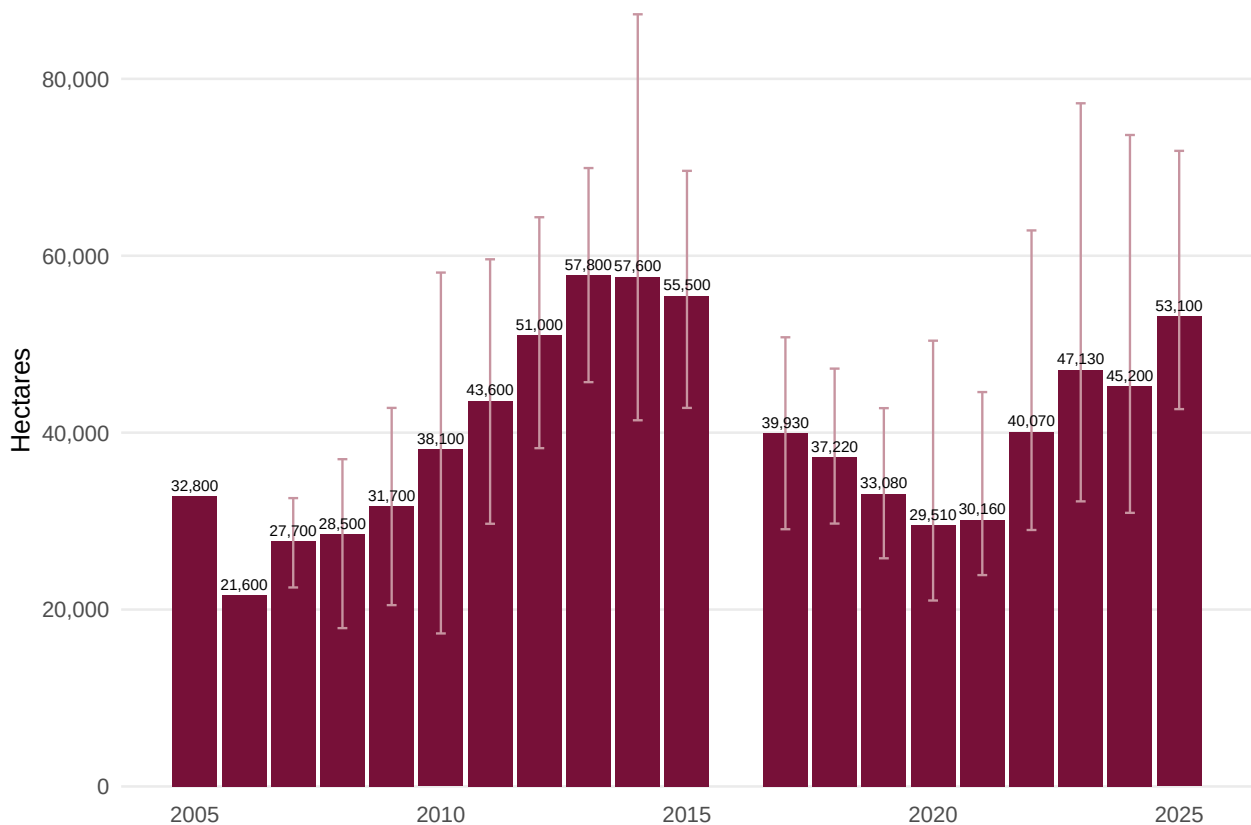
In 2025, the area under opium poppy cultivation in Myanmar was estimated at 53,100 (42,700 to 71,900) hectares. That is a 17% increase from the 45,200 hectares estimated to be under cultivation in 2024. This continues a recent trend of expanding cultivation that started in 2021.

The reasons behind this recent increase in area cultivated are varied and may relate to broader dynamics of the regional opiate economy as well as the ongoing internal conflict, which has resulted in the internal displacements of populations in regions that have long engaged in poppy cultivation. Disruptive factors brought on by the country's

internal conflict which saw rapid changes in events in 2025 in opium-poppy-growing areas.

Opium poppy cultivation increased in all places surveyed, with most states seeing increases from 2024. Compared to 2024, Shan State showed uneven increases, with East Shan seeing largest rates of growth by about 32%. Increases were also observed in North and South Shan (13% each). In Kachin State, a modest 3% decrease was estimated. Shan continued to be the major cultivating state in Myanmar, accounting for about the 88% (46,700 ha) of the overall opium poppy area. Within Shan State, the sub-regions of South, North and East Shan accounted for 44%, 21% and 23% of total cultivation in 2025, respectively. Kachin State accounted for 8% (4,250 ha), and Chin State, Kayah State, and northern Sagaing region together for 4% (2,225 ha).

Figure 1: Area under opium poppy cultivation in Myanmar, 2005 to 2025

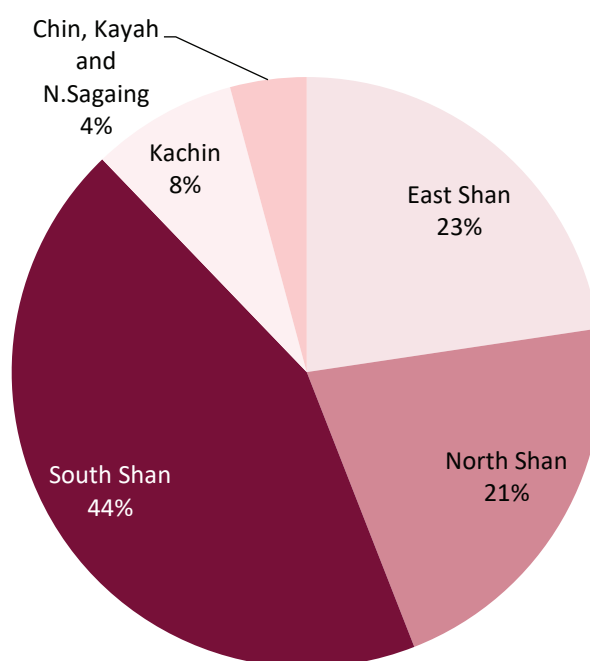


No survey was conducted in 2016. The error bars are the upper and lower limits of 95% confidence intervals.

Table 1: Areas under opium poppy cultivation in Myanmar (ha), in 2024 and 2025

Region	Year 2024 (rounded)	Year 2025 (rounded)	Change 2024-2025
South Shan	20,600 (9,100 to 43,200)	23,200 (15,000 to 36,700)	13%
East Shan	9,090 (3,550 to 17,800)	12,000 (8,490 to 17,500)	32%
North Shan	10,100 (3,870 to 23,500)	11,300 (6,100 to 22,600)	13%
Shan State total	39,700 (25,600 to 53,300)	46,700 (36,300 to 54,600)	17%
Kachin	4,140 (2,390 to 10,300)	4,250 (2,860 to 8,120)	3%
Chin	832 (806 to 858)	1,040 (1,000 to 1,090)	26%
Kayah	521 (453 to 590)	628 (580 to 670)	21%
Sagaing	NA	552 (487 to 617)	NA
National total	45,200 (30,900 to 73,700)	53,100 (42,700 to 71,900)	17%

Values in parenthesis indicate the 95% confidence interval. Numbers in the table are rounded, percentage changes are calculated with exact estimates.

Figure 2: Regional share of opium poppy cultivation areas in Myanmar, 2025

A healthy opium poppy field in Kachin, 2025



The increase in cultivation was offset by a decrease in productivity of fields

The recent declines in yields in Myanmar follow three years of increases. Available evidence points to two possible, potentially overlapping, reasons. Declining yields may be related to reductions in productivity in hotspot clusters. Visual evidence showed that some crops were in poorer condition than last year. The second could be related to Myanmar's ongoing internal conflict, which could have disrupted labour supply and the opium trade by reducing access to markets or inputs needed to boost productivity; there has been some research looking at how the conflict has constrained access to fertilizers.¹⁶

Opium poppy cultivation remains largely concentrated in certain areas

Opium poppy cultivation is concentrated in areas characterised by a combination of specific topographical conditions, challenging socio-economic circumstances and a precarious security situation. Additionally, poppy cultivation can be found in high density near some international borders. The map above provides an overview of the average density of opium poppy cultivation during the 2023, 2024 and 2025 growing seasons.

South Shan showed high density opium poppy cultivation in the southwestern mountains and the mountain ranges east of Taunggyi. Medium cultivation levels were observed in southern part of South Shan region. The areas near the boundaries of South, East and North Shan regions, on both sides of the Than Lwin River, presented several extensive areas of poppy cultivation, while cultivation is dispersed in the areas along the southern boundaries of South Shan and East Shan.

¹⁶ Takeshima, Hiroyuki, Bart Minten, Joanna van Asselt, Isabel Brigitte Lambrecht, Ian Masias, Joseph Goeb, Zin Wai Aung, and May Thet Htar. "Fertilizer and conflicts: Evidence from Myanmar." *Food Policy* 133 (2025): 102786.

High-density cultivation areas were detected in the southeastern mountains bordering the Wa region. Very high cultivation levels were observed in pockets in the northwestern part of Kachin State and the areas east of Myitkyina, along the border with China. Chin State showed high poppy cultivation density in the mountains north of Tonzang town, near to the border with India. In Kayah State, poppy cultivation is mainly dispersed.

A visual examination of year-over-year changes for several poppy plots shows similar density to 2023, with indications of clustering and increased organization in the planting of opium poppy. That said, many plots were found to be in poorer state than last year and the average poppy bulb size significantly declined compared to the previous year.

Opium production continues to be disrupted by Myanmar's internal conflict and other humanitarian challenges

The UN noted that the country's ongoing internal conflict experienced an escalation in parts of Kachin and South Shan in the first half of 2024,¹⁷ with continued instability into 2025 in several areas of the country, including North Shan State.¹⁸ As of mid-2025 some 3.6 million people were estimated to have been displaced,¹⁹ with the Northwest and Southeast parts of the country reporting natural disasters.²⁰ The center of the country, including parts of North and South Shan, experienced a severe and devastating 7.7 magnitude earthquake in March of 2025, which has put greater strain on access to markets, trade, agricultural productivity, transportation, and the overall humanitarian situation in a country that plagued by an ongoing internal conflict.²¹

The figure below uses open-source incident reporting data to show the monthly trends across the four regions of analysis. There are clear monthly spikes of reported violence in the North Shan starting in late 2023 which continued into 2024 during the harvest period and again peaking in July of that year. For 2025, violent clashes remained persistent and at relatively the same levels as the prior year. Kachin also saw sharp increases in violence in the spring of 2024 and incidents of violence remained higher in the lead up to the 2025 harvest season than in the previous year. Reports on the ground suggest that incidents of violence have made opium cultivation and harvesting challenging, particularly in North Shan.

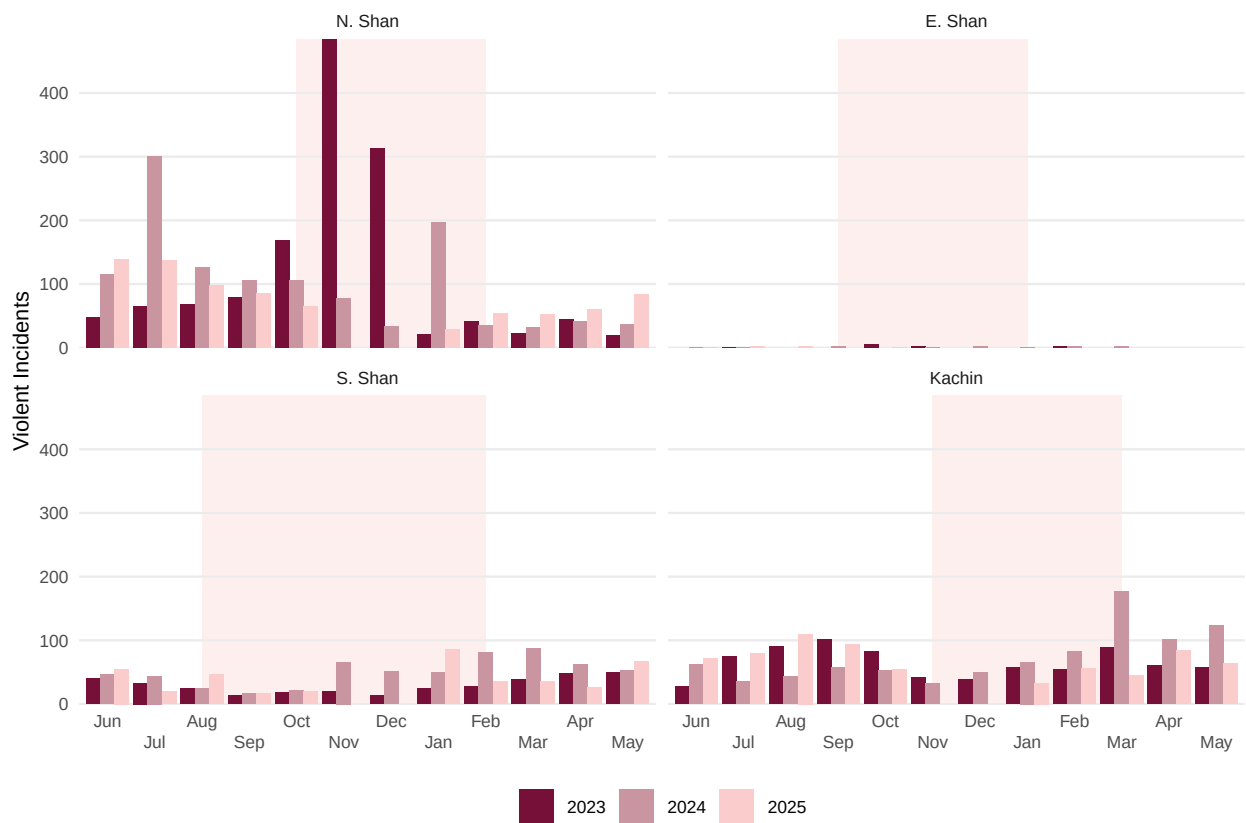
17 OCHA, "Myanmar Humanitarian Update No. 37."

18 OCHA, "Myanmar Humanitarian Update No. 49," September 23, 2025, <https://www.unocha.org/publications/report/myanmar/myanmar-humanitarian-update-no-49-23-september-2025>.

19 OCHA, "Myanmar Humanitarian Update No. 49," September 23, 2025, <https://www.unocha.org/publications/report/myanmar/myanmar-humanitarian-update-no-49-23-september-2025>.

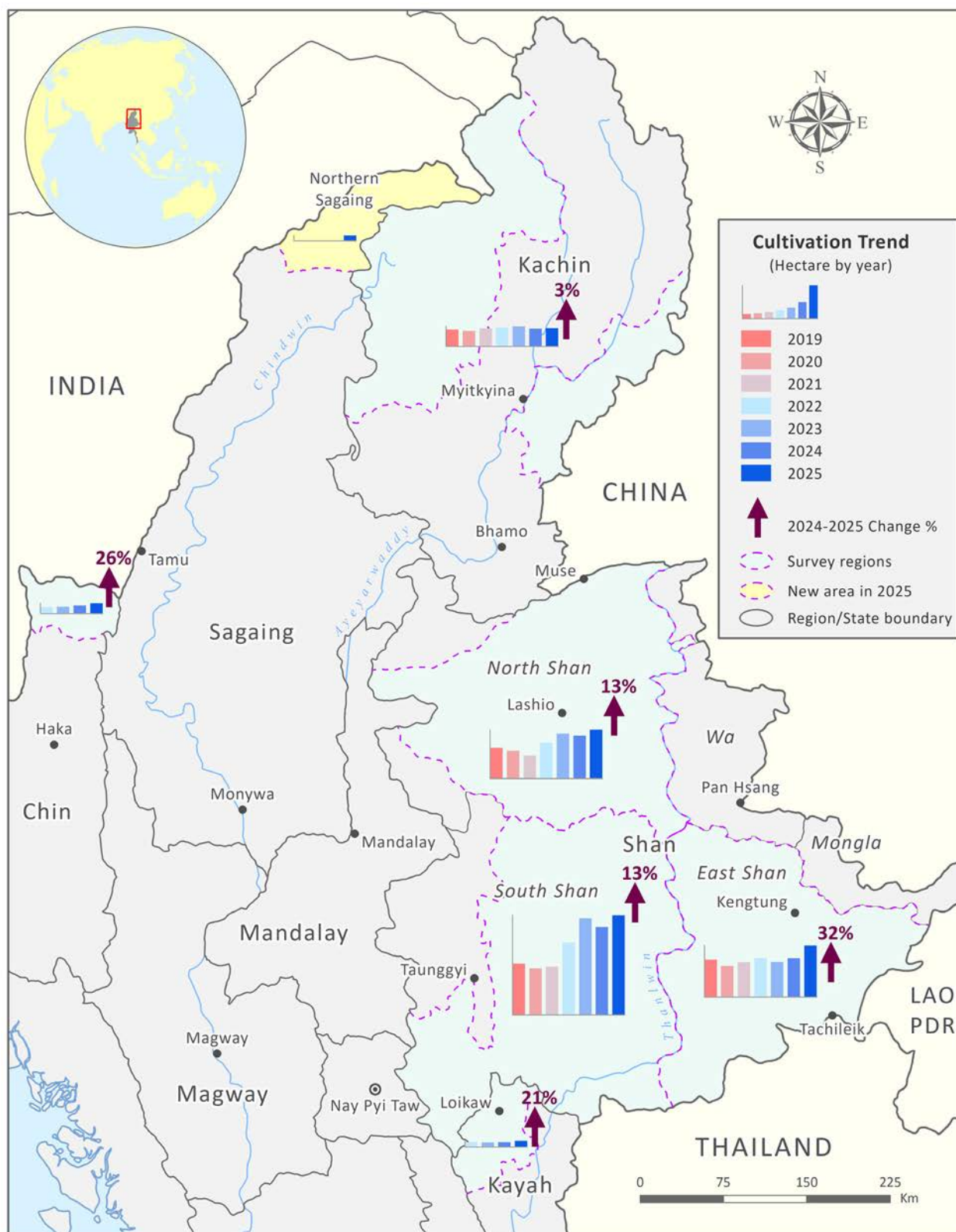
20 OCHA, "Myanmar Humanitarian Update No. 36," March 3, 2024, <https://myanmar.un.org/en/262193-myanmar-humanitarian-update-no-36>, <https://myanmar.un.org/en/262193-myanmar-humanitarian-update-no-36>; OCHA, "Myanmar Humanitarian Update No. 41."

21 <https://www.unocha.org/publications/report/myanmar/myanmar-humanitarian-needs-and-response-plan-2025-quarter-2-dashboard-jan-jun-2025>

Figure 3: Monthly number of violent incidents, 2023 to 2025, grey areas represent typical opium harvest times

Shaded area indicates the start and end of typical poppy harvest
 Source: ACLED, 2025 data are not complete

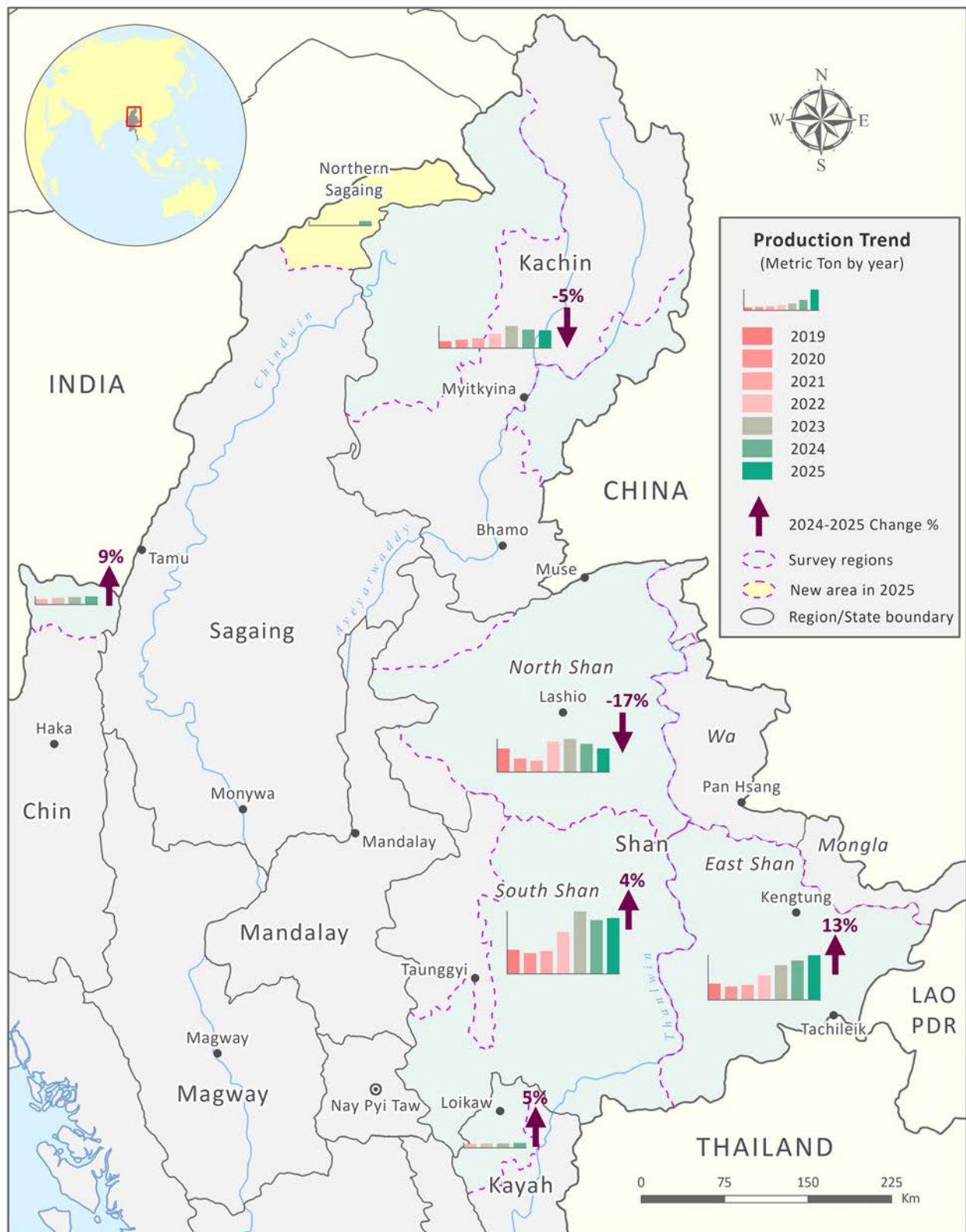
Map 2: Cultivation changes between 2024 and 2025 (percentage) and opium poppy cultivation trend between 2019 and 2025



Source: UNODC Illicit Crop Monitoring Programme.

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

Map 3: Opium gum production trends in Myanmar, 2019 - 2025



Source: UNODC Illicit Crop Monitoring Programme.

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

Abundant poppy field in early stage with extensive irrigation system, South Shan, 2025



Opium poppy cultivation on a hillside in South Shan, 2025



A young-stage rain-fed poppy field, East Shan 2025



Extensive opium poppy fields with some scoring of bulbs in South Shan, 2025



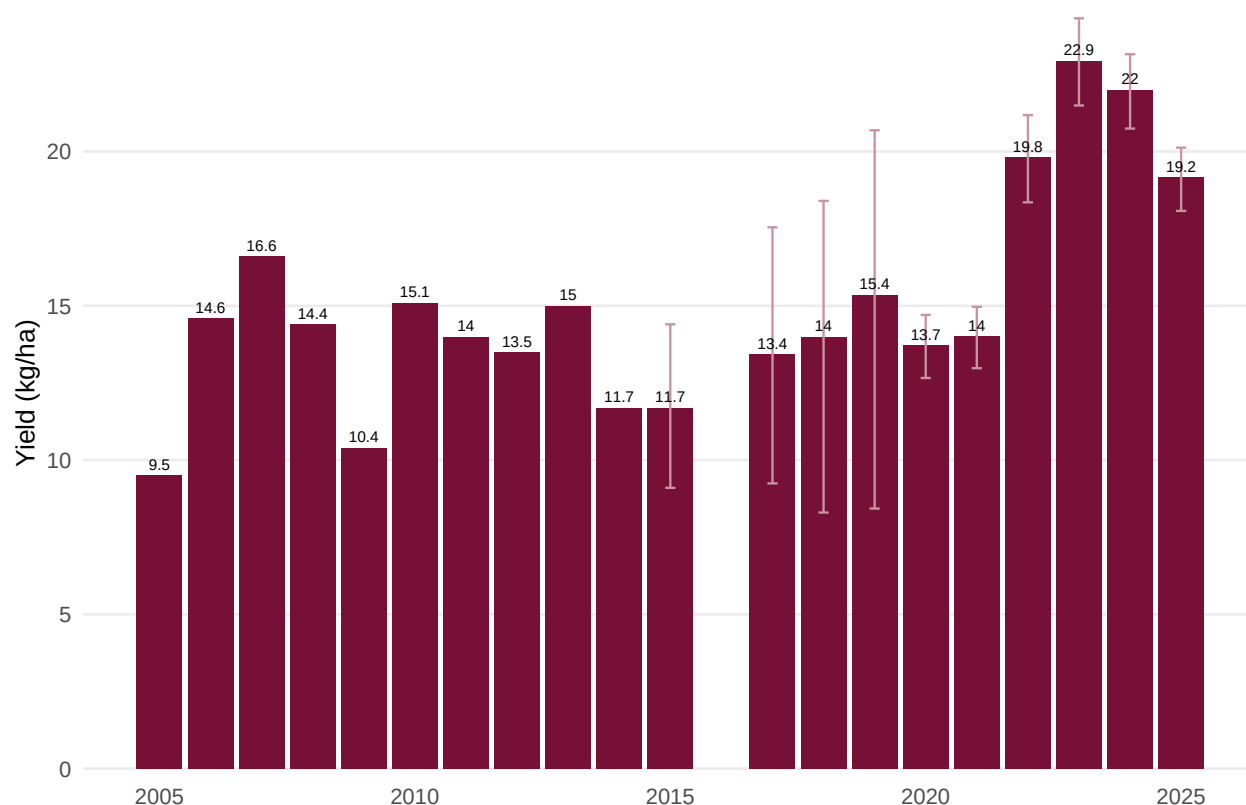
Poorly maintained opium poppy field, North Shan, 2025



Opium yield and production estimates

In 2025, a yield survey was carried out in Shan and Kachin States. To avoid the possibility of the opportunistic nature of the sample biasing the final

estimates, a three-year average was calculated using measures from 2023, 2024, and 2025. For Chin and Kayah States, the national average yield was applied (see separate methodology report for further details).

Figure 4: Average opium yield in Myanmar, 2005 to 2025

Average weighted by regional area estimates. In 2016 no survey was conducted. In 2021–2025, a multi-year average was used to estimate yields in Shan State regions, reducing the uncertainty ranges.

Compared to 2024, which also averaged yields over three years using measures from 2022, 2023, and 2024, decreases in estimated yield were observed in all of the surveyed regions: 27% in North Shan (14.1 kg/ha in 2025), 8% in South Shan (16.5kg/ha in 2025), 14% in East Shan (25.6kg/ha in 2025), and 7% in Kachin (28.9 kg/ha in 2024).

The national average yield in 2025 was estimated at 19.2 kg/ha (95% confidence interval: 18.2 to 20.3), 13% lower than the previous year. Despite these decreases, yield levels remain higher than in any year measured prior to 2022.

Lancing an opium poppy capsule with the scratching tool, East Shan, 2025



Table 2: Potential opium yield by region (kg/ha), in 2024 and 2025

Region	2024	2025	Change
Kachin	31.1 (29.5 to 32.8)	28.9 (27 to 30.9)	-7%
South Shan	18 (17.2 to 18.9)	16.5 (15.9 to 17.3)	-8%
East Shan	29.9 (28.5 to 31.5)	25.6 (24.5 to 26.9)	-14%
North Shan	19.3 (17.9 to 20.8)	14.1 (13.1 to 15.3)	-27%
Average yield	22.0 (20.8 to 23.2)	19.2 (18.2 to 20.3)	-13%

Average weighted by cultivation. Values in parentheses indicate the 95% confidence interval. Numbers in the table are rounded, percentage changes are calculated with exact estimates but rounded. In Kayah and Chin, the national average has been applied since no yield measurements were available.

The resulting estimate of potential dry opium production in Myanmar in 2025 was 1,010 (820-1,340) metric tons, an increase of 1% compared to last year. This stability was largely driven by declining yields, which offset increases in the area under cultivation. Declining yields are driven by various factors, such as disruptions to the internal labour market brought on by the ongoing civil conflict, and decreasing access to agricultural inputs, like fertilizers.²² While all surveyed areas saw declines in yield, production increased in all areas except for North Shan with a sharp decrease of 17%, and Kachin where production decreased by 5%.

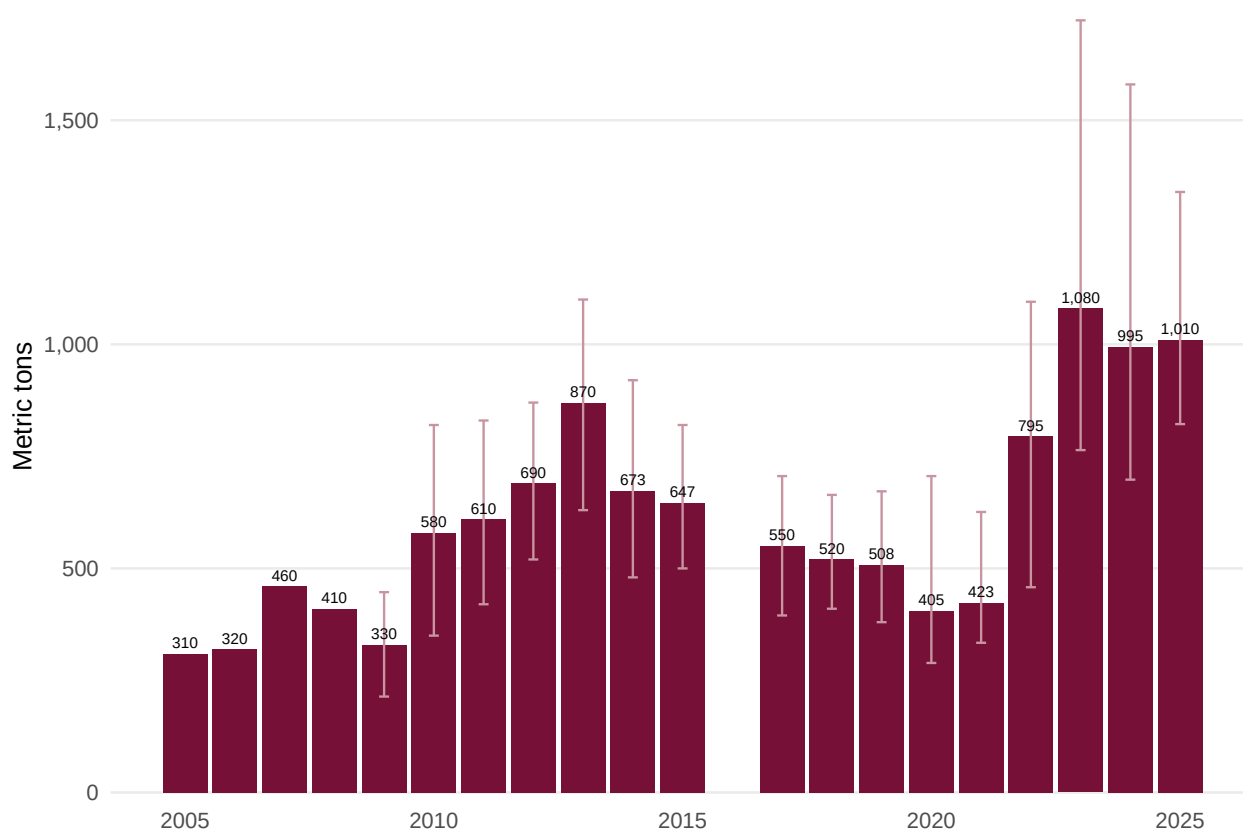
At the national level, Shan State continues to be the dominant opium producing State, accounting for some 85% of the national total of opium production, with South Shan alone accounting for 38% of the national total.

Table 3: Potential opium production by region and State (metric tons) in 2024/2025

Region	Potential production 2024	Potential production 2025	Change 2024-2025	2025 proportion by State
South Shan	370 (163 to 778)	384 (248 to 607)	4%	38%
East Shan	272 (106 to 532)	308 (216 to 448)	13%	31%
North Shan	194 (74 to 454)	161 (85 to 320)	-17%	16%
Shan State total	836 (544 to 1390)	853 (672 to 1,160)	2%	85%
Kachin State	129 (74 to 320)	123 (82 to 235)	-5%	12%
Chin State	18 (17.1 to 19.5)	20 (18.7 to 21.4)	9%	2%
Kayah State	11.5 (9.8 to 13.1)	12 (11 to 13.1)	5%	1%
Sagaing Region	NA	10.6 (9.2 to 12)	NA	1%
Total	995 (700 to 1,580)	1010 (822 to 1,340)	1%	100%

Values in parentheses indicate the 95% confidence interval. Numbers in the table are rounded, percentage changes are calculated with exact estimates.

²² Takeshima, Hiroyuki, Bart Minten, Joanna van Asselt, Isabel Brigitte Lambrecht, Ian Masias, Joseph Goeb, Zin Wai Aung, and May Thet Htar. "Fertilizer and conflicts: Evidence from Myanmar." *Food Policy* 133 (2025): 102786.

Figure 5: Annual potential opium production in Myanmar, 2005 to 2025

From 2005 to 2020 estimates from CCDAC–UNODC, from 2021–2025 UNODC only. In 2016 no survey was conducted.

Collecting fresh opium gum, South Shan, 2025

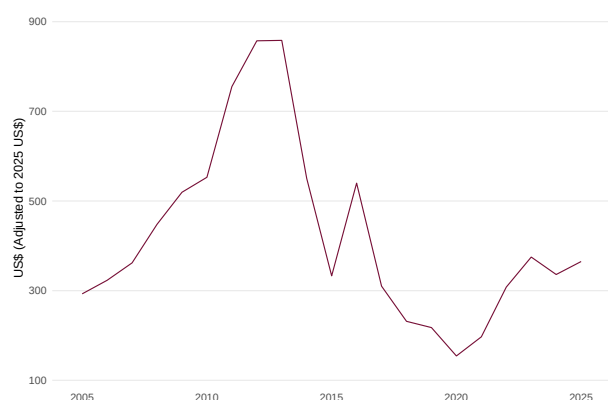


Farmgate price of opium

Opium price data were collected during the yield survey implemented between January and March 2025 in the three regions of Shan State and in Kachin State. The average²³ farmgate prices at harvest time of fresh and dry opium in 2025 were assessed at around US\$329 (692,000 Kyat) and US\$365 (767,000 Kyat) per kilogram, respectively.²⁴ This represents an 8% and 11% increase in fresh and dry opium prices, respectively, from the previous year when prices were around \$304 and \$328 per kilogram.

In 2025, the farmgate price resumed a broad upward trend that started in 2021, with prices increasing despite relatively stable production. One possible explanation is that the ongoing internal conflict created localized shortages which drove prices upwards.

Figure 6: Prices of dry opium (US\$ per kilogram) in Myanmar, 2005 to 2025

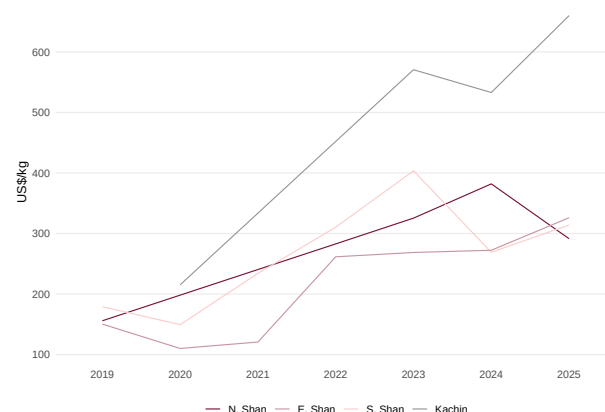


Dry opium prices have varied over the years but have largely followed an increasing trend in recent years. In 2019, dry opium prices per kilogram converged at around US\$160 in each of the three Shan regions. Prices in Kachin have long been higher than in Shan, which probably reflects that state's smaller volume of production. Prices continued to increase overall for the four regions assessed until about 2024 when they fell in East Shan and Kachin. In 2025, only North Shan reported a decline, which speaks to the challenges of production in that state this season.

²³ Weighted by opium production in the respective regions.

²⁴ Applied MMK/USD exchange rate is the 2024 DEC alternative conversion factor provided by the World Bank (<https://data.worldbank.org/indicator/PA.NUS.ATLS>).

Figure 7: Regional prices of dry opium (US\$ per kilogram), 2019 to 2025



Opium economy in Myanmar

For the 2024-2025 season, the role of opiates in the Myanmar economy remains important although its share of the national GDP declined slightly due to the decreases in the wholesale price of heroin. Exported opiates, especially heroin, generate substantial returns, making up the largest segment of the illegal opiate economy. The farmgate value of opium is an important measure of the gross income of farmers generated by opium poppy cultivation. In 2025, it was estimated to range between US\$300 – US\$487 million, representing between 0.4 and 0.7% of the 2024 national GDP, and between 1.9 and 3.2% of the agricultural, forestry and fishing sector of the 2024 GDP, which was estimated at US\$15 billion.²⁵

The harvested opium is either consumed raw or further processed into heroin. Both raw opium and heroin reach the end-consumer markets in Myanmar and are exported outside Myanmar – or are seized by law enforcement.

After deducting the seizures of opiates in Myanmar reported by relevant law enforcement agencies,²⁶ it was estimated that 99 tons of raw opium and between 71 to 122 tons of heroin reached the illicit markets in the country and outside.²⁷ Out of these 99 tons of opium, 22 tons were destined for domestic consumption, with a value of US\$13

²⁵ Source: World Bank, <https://data.worldbank.org/indicator/NV.AGR.TOTL.ZS?locations=MM>

²⁶ CCDAC reported between 1 of January and 21 October 2025 seizures of 1,005 kg of opium and 1,530 kg of heroin. The quantities of opiates seized in the whole year 2024 were extrapolated based on these figures to 1,206 and 1,836 kilograms, respectively.

²⁷ See more in separate Methodology report.

Table 4: Estimated values of the opiates economy, 2025

	Gross value Millions of US\$	Value in relation to GDP* (%)
Value of the opiates economy (gross)	641 – 1,051	0.9 – 1.4
Value of opiates potentially available for export	564 - 974	0.8 – 1.3
Raw opium	39	
Heroin	525 - 935	
Value of the opiates market for domestic consumption	77	0.1
Raw opium	13	
Heroin	64	
Farm-gate value of opium	300 - 487	0.4 – 0.7
Value of the opiate economy after farm-gate to the border	341 – 564	0.5 – 0.8

*GDP 2024. Source: World Bank.

The gross value of opiates is the sum of the value of the domestic market and the value of opiates believed to be exported. Numbers in the table are rounded, percentages are calculated with exact estimates. Ranges are calculated based on lower and upper bounds of opium production and on assumptions about the different purities of exported and domestic heroin. See more details in the Methodology report.

million; the remaining 77 tons of opium were exported with a value of US\$39 million.

The most valuable component of the opium economy is heroin trafficking. In 2025, it was estimated that perhaps some 5.8 tons of heroin were consumed in Myanmar, with a monetary value of about US\$64 million. Between 65 to 116 tons of heroin were potentially exported, with a value between US\$525 million and US\$935 million. The gross value of the entire opiate economy – comprising both the value of domestic consumption and exports of opium and heroin – in Myanmar in 2025 was estimated to be between US\$641 million and US\$1.05 billion, accounting for about 0.9-1.4% of the national GDP in 2024.

The value of manufacturing and trafficking after farmgate up to the border of Myanmar ranged between US\$341 and US\$564 million. This value represents the income generated by traffickers after deducting the cost of buying raw opium from the farmers.

The estimates presented here have some limitations that comes with lack of up-to-date data. There is great uncertainty around the conversion ratio of opium to heroin, which depends on three main factors: The morphine content of opium, the efficiency of traffickers to extract morphine from opium and convert morphine to heroin, and the purity of the heroin estimated.²⁸ None of

these factors are well researched in the context of Myanmar, but can have a strong impact on the estimated values of the opiate economy. Estimates on demand in the region are based on 2010 data and may have changed since then. Moreover, the estimates presented are gross estimates before deducting any cost, e.g., costs for precursor substances, such as acetic anhydride, which can substantially reduce the profits of manufacturers and traffickers of heroin. To assess the profits made, other cost components such as transportation, labour costs and costs of bribery also need to be considered. The estimates presented here need to be understood as an indication.

Regional heroin markets continue to indicate falling prices over the past years, in line with production increases in Myanmar

Myanmar is an important source of opiates (both opium and heroin) for regional markets across Southeast Asia, East Asia, South Asia, and Oceania. There are limited timely data for understanding drug market trends, but measures of prices and purities from the Annual Report Questionnaire (ARQ) indicate that heroin has become less expensive for some markets in recent years. Purity-adjusted prices are presented below because the purity of heroin may fluctuate due to changes in supply even though the wholesale price remains steady. Measures for purity-adjusted prices for both wholesale and retail are given as some countries only report one or both levels of the market. Note that retail prices may be affected by domestic law

²⁸ For a detailed description of the calculation of conversion ratios see “UNODC/MCN Afghanistan opium survey 2014” and “UNODC/MCN Afghanistan opium survey 2017 – Challenges to sustainable development, peace and security”.

Table 5: Purity-adjusted wholesale and retail prices of heroin (US\$ per pure gram)

Country	Level of Sale	2020	2021	2022	2023	2024	% change ^a
China	Wholesale	172	217	153		247	+44%
	Retail	279	353				+27%
China, Hong Kong Special Administrative Region	Wholesale						
	Retail	165	210	146	134	108	-34%
Malaysia	Wholesale	79	108	36			-55%
	Retail				951		
Singapore	Wholesale	166	297	177	209	105	-65%
	Retail		560	3,017	3,645	2,880	+415%
Thailand	Wholesale			13	5	3	-75%
	Retail		16				

Source: Data on prices and purities come from Annual Report Questionnaire for years stated.

^aPercent change calculated for first and last measures for each country-level.

Collecting harvested opium poppy capsules to extract seeds for the next cultivation season, South Shan, 2025



enforcement or other dynamics in destination markets whereas wholesale prices are more likely to reflect import prices. In either case, there is a general decline in pure heroin prices over the years for both retail and wholesale amounts of heroin.

Purity-adjusted wholesale prices were lowest in neighboring Thailand and highest in Singapore or China, depending on the year. Purity-adjusted prices of a pure gram of heroin fell by 11% between 2020 and 2022 in China, while prices fell by almost three-quarters between 2022 and 2024 in Thailand. Wholesale prices in Malaysia also dropped by more than half between 2020 and 2022 and retail prices for a pure gram at retail fell in Hong Kong by more than a third between 2020 and 2024. Similarly, Singapore reported a 65% decline in purity-adjusted wholesale prices between 2021 and 2024 but a four-fold increase in retail-level prices. China reported an increase in purity-adjusted wholesale prices by 2024. Overall, declining prices, in most markets, are in line with recent production increases in Myanmar.

Increasing global constraints on heroin availability due to the cessation of cultivation in Afghanistan may be putting upward pressure on prices elsewhere.

ERADICATION AND SEIZURES



Eradication and Seizures

Eradication

During the 2024 – 2025 poppy growing season, the Central Committee for Drug Abuse Control (CCDAC) reported the eradication of 1,917 ha of opium poppy, 23% less than in the previous season, with eradication almost exclusively conducted in South Shan.

The estimates presented in this report refer to the fields that were identified at the time that

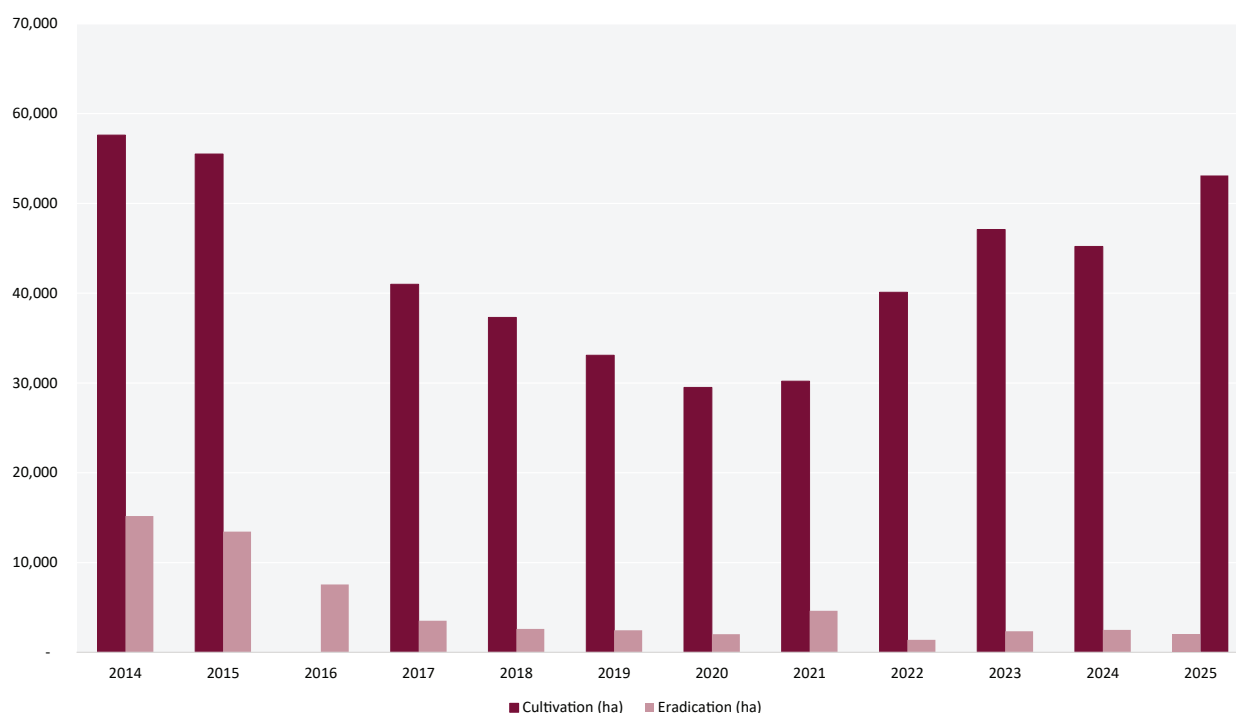
the satellite images were taken. Therefore, if any effective eradication was carried out after the satellite image acquisition dates, this is not reflected in the estimated cultivation or production figures. Data provided by CCDAC may include eradication implemented during the monsoon poppy season, prior to the main growing season during which the remote sensing survey was implemented. The eradication figures reported by CCDAC were not verified by UNODC.

Table 6: Reported eradication in Myanmar (ha), 2013-2025

Region	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	2018-2019	2019-2020	2020-2021	2021-2022	2022-2023	2023-2024	2024-2025
East Shan	356	378	482	264	224	100	106	85	55	74	75	64
North Shan	337	532	69	97	29	44	179	127	34	53	0	0
South Shan	13,696	10,715	4,947	3,019	2,209	2,000	1,571	4,226	1,282	2,186	2,394	1,852
Shan State total	14,389	11,625	5,498	3,381	2,462	2,144	1,856	4,438	1,370	2,312	2,469	1,917
Kachin	395	1,495	1,504	28	65	126	75	90	19	33	18	0
Kayah	67	54	16	47	12	3	0	0	0	0	0	0
Magway	60	8	9	47	44	19	25	18	15	9	15	0
Chin	277	267	534	28	22	50	35	81	0	0	0	0
Mandalay	0	0	0	1	0	0	0	0	0	0	0	0
Sagaing	1	0	0	0	0	118	31	5	0	4	0	0
Other States	0	0	0	0	0	0	0	0	0	0	0	0
National total	15,188	13,450	7,561	3,533	2,605	2,460	2,023	4,633	1,403	2,358	2,502	1,917

Source: CCDAC

Figure 8: Opium poppy cultivation and eradication in Myanmar (ha), 2014-2025



Seizures

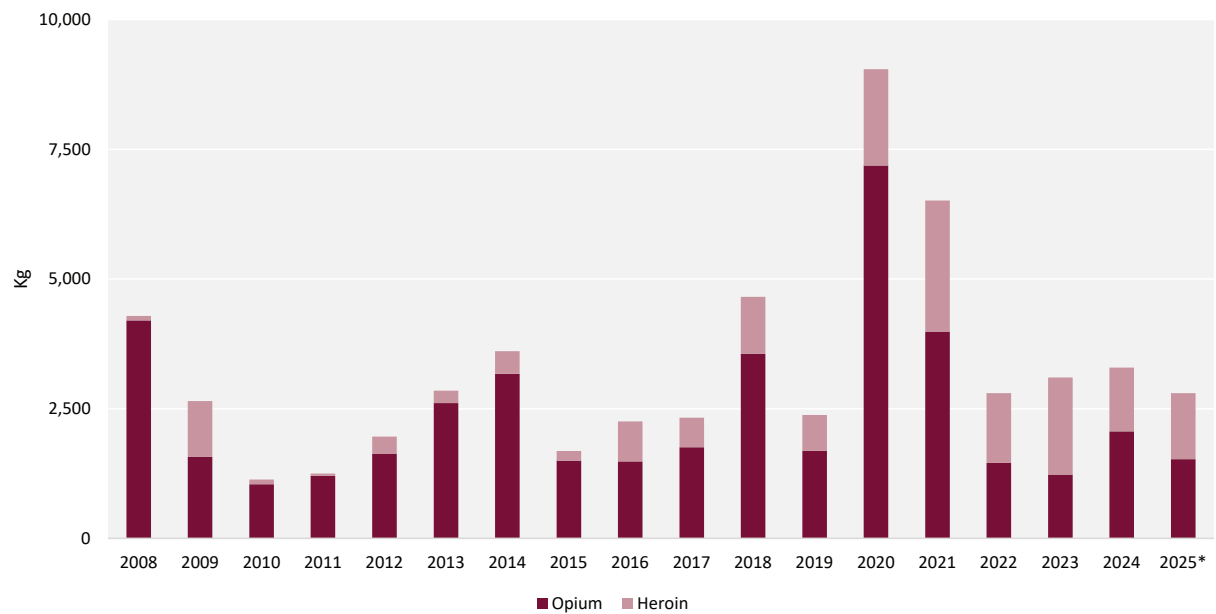
Preliminary opiate seizure totals (January to October 2025) suggest a slight decline in overall annual seizures (after annualization) compared with 2024, remaining on par with recent annual trends at about three to four thousand tons a year,

after historically high peaks in 2020 and 2021. The share of heroin seizures compared to other opiates remains significant. Prior to 2021, heroin never amounted to more than 40% of total opiate seizures, with an average of around 20%. Since 2021, heroin has increasingly made up a larger share of the total, topping out at 60% in 2023 and comprising around half of totals in 2024 and 2025.

Table 7: Reported opiates seizures in Myanmar (kg), 1998-2025

Year	Raw Opium	Heroin	Brown Opium	Liquid Opium	Low-grade Opium
1998	5,394	404	96	206	312
1999	1,473	245	24	333	314
2000	1,528	159	23	16	245
2001	1,629	97	7	19	142
2002	1,863	334	314	18	126
2003	1,482	568	156	52	204
2004	607	974	59	39	396
2005	773	812	44	21	128
2006	2,321	192	1,371	29	6,154
2007	1,274	68	1,121	56	10,972
2008	1,463	88	206	80	2453
2009	752	1,076	326	27	465
2010	765	89	98	35	147
2011	828	42	37	60	282
2012	1,470	336	46	29	81
2013	2,357	239	72	115	66
2014	1,828	435	1,109	102	134
2015	889	186	539	38	35
2016	944	769	472	47	22
2017	1,256	754	348	146	6
2018	2,829	1,099	554	146	30
2019	1,553	690	6	65	66
2020	3,883	1,853	523	2,694	22
2021	2,110	2,003	0	1,334	21
2022	1,078	1,249	1	2	13
2023	581	1,873	573	75	0.4
2024	1,719	1,979	462	3.2	3.8
2025*	1,005	1,530	265	3	0.52

* Figures for 2025 correspond to the period 1 January – 21 October. Source: CCDAC.

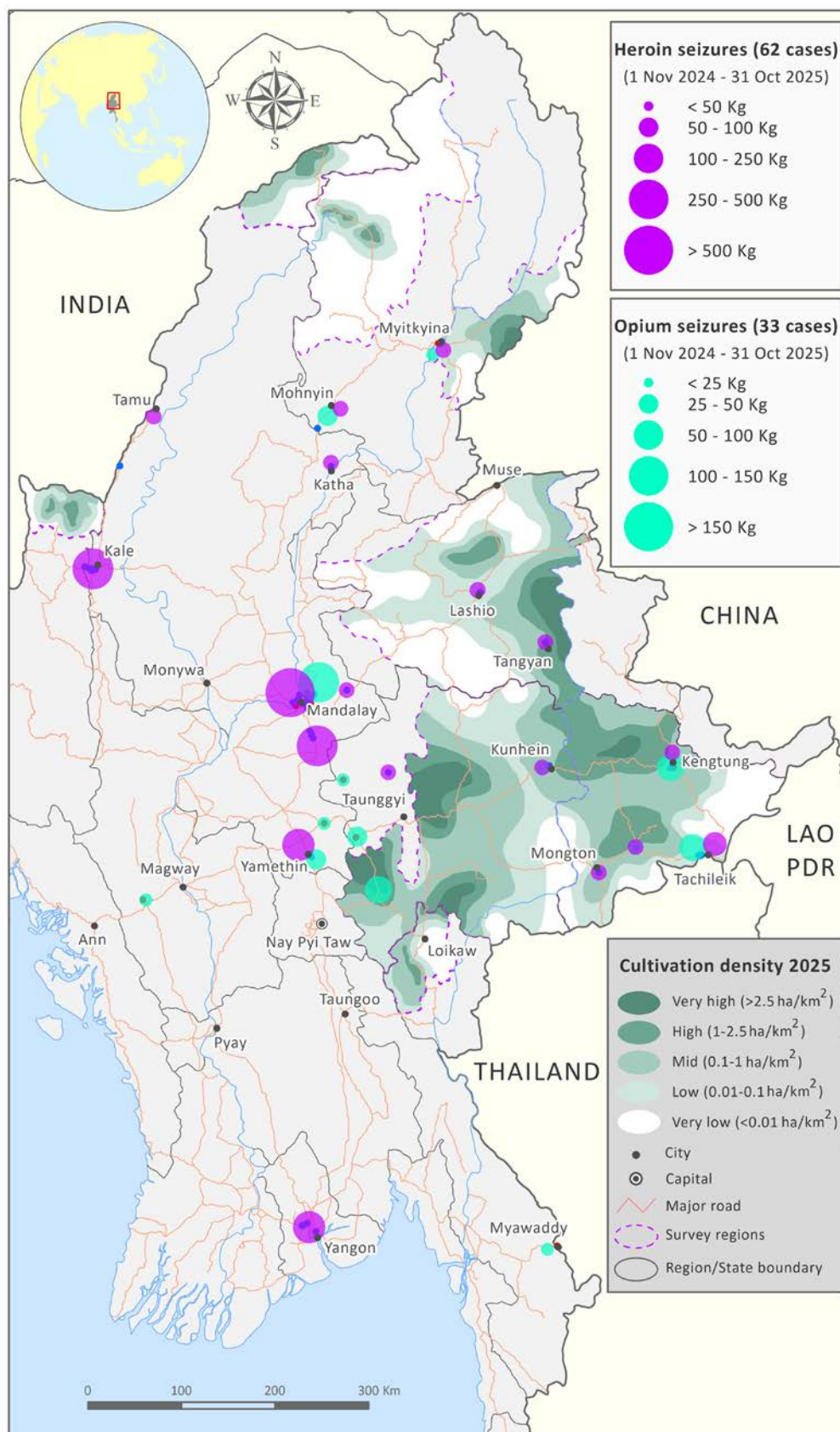
Figure 9: Opiates seized in Myanmar (kg), by type, 2008-2025

Source: CCDAC. Figures for 2025 correspond to 1 January – 21 October

Heroin seizure, 2025



Map 4: Seizures of opium and heroin in Myanmar, 1 November 2024 to 31 October 2025



Source: CCDAC, UNODC Illicit Crop Monitoring Programme.

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

METHODOLOGY



Methodology

The 2025 Myanmar Opium Survey, conducted to monitor cultivation, production, and related implications, consisted of two main components:

- **Cultivation Survey Component:** This component focused on estimating the extent of opium poppy cultivation across North, East, and South Shan, as well as Kachin, Chin, and Kayah States, where poppy cultivation commonly occurred. In 2025, the survey also included a new area, northern Sagaing, bordering India, due to the emergence of significant cultivation activities in that region. The estimation primarily relied on satellite imagery as the main data source, complemented by field surveys to validate and confirm the identification of opium poppy fields.
- **Crop Yield Survey Component:** This component aimed at estimating opium yields in major cultivation areas, where field data collection was feasible, specifically in North, East, and South Shan, and Kachin States.

Area estimation

The estimation of planted areas was carried out using satellite remote sensing techniques to assess the extent of opium poppy cultivation across Myanmar. The satellite imagery survey covered the main cultivation areas in North, East, and South Shan and Kachin States, as well as specific cultivation areas in Chin and Kayah States and the northern Sagaing region. Satellite imagery acquisition for the survey was implemented through two distinct approaches:

- A sampling method based on systematically and randomly selected square tiles of satellite imagery was applied in key areas, including the three Shan regions and the eastern part of Kachin State (see the *“Sampling Approach, Sample Size, and Sample Selection”* sections for details).
- An inclusive coverage approach, applying larger and specifically targeted satellite imagery, was employed for the Tanai area in Kachin State, the northern part of Chin State, the northwestern part of Kayah State, and the northern part of the Sagaing Region (see the *“Target Area Selection and Interpretation”* section).

In the sampling method, very high-resolution (VHR) satellite imagery was specifically used for detecting opium poppy cultivation areas, while both VHR and high-resolution (HR) imagery were employed for detection in the targeted areas.

The VHR imagery for the sample segments was acquired by the Pleiades satellites, which provide a 2-meter ground resolution with four spectral bands (blue, green, red, and near-infrared) and a 50-centimeter panchromatic band. Typically, two images were collected for each segment at approximately five-week intervals, the first acquired in December or January, and the second in February or March. These acquisition periods corresponded to the pre- and post-harvest stages of the opium poppy crop, facilitating effective identification of opium poppy fields and differentiation from other crops with similar characteristics. Regional variations in crop cultivation timelines were also considered to optimize the timing of image acquisition.

In the inclusive coverage approach, Planet-NICFI monthly mosaic imagery was employed to detect opium poppy fields in specific target areas, including the Tanai area in Kachin State, the northern part of Chin State, the northwestern part of Kayah State, and the northern part of the Sagaing region. These images provided an approximate ground resolution of 4.5 meters in analysis-ready products and included four spectral bands, covering wavelengths from blue to near-infrared.

In each target area, three 5 × 5 km square segments of Pleiades VHR imagery were acquired to assess, validate and adjust the interpretation results derived from the Planet-NICFI mosaic data. By independently analyzing both imagery types, a correction factor was established to account for discrepancies in area estimates between the Planet HR and Pleiades VHR imagery. This correction factor was subsequently applied to adjust for spatial resolution differences in poppy area estimates based solely on Planet-NICFI imagery.

Poppy fields delineation in HR satellite image, Northern Sagaing 2025

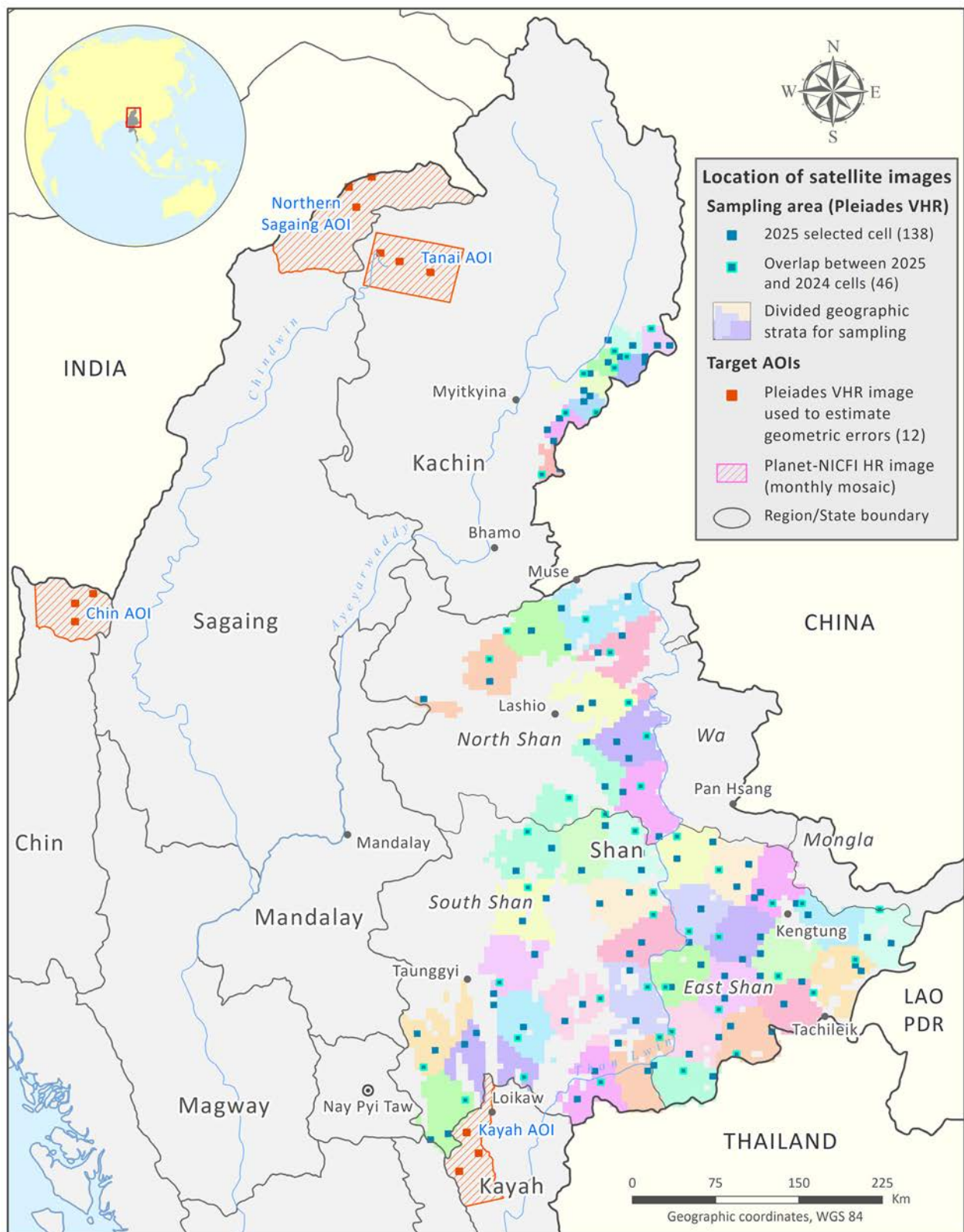


Poppy field interpretation in Planet-NICFI monthly mosaic image, northern Sagaing

Verification of Planet-NICFI results using Pleiades VHR image analysis, northern Sagaing

Includes materials ©CNES (2024-2025), Distribution Airbus DS, and Planet-NICFI programme, all rights reserved.

Map 5: Location of satellite images, Myanmar Opium Survey 2025



Source: UNODC Illicit Crop Monitoring Programme.

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

Risk area and sampling frame in the sampling method

The risk area refers to the areas with potential opium poppy cultivation that are included in the estimation survey. Opium poppy cultivation is influenced by a combination of environmental and socio-economic factors. In the context of the Myanmar opium survey, the risk areas were identified through the integration of the following key factors:

- Land Cover
- Altitude
- Opium poppy-free²⁹ areas according to ground information.

Land cover was considered a critical factor in establishing the sampling frame, as opium poppy cultivation typically occurs in small agricultural plots surrounded by natural vegetation. When the survey was first conducted in the 2000s, a land cover map was produced using Landsat satellite imagery. This map was later updated in the 2010s using 22-meter resolution DMC (Disaster Monitoring Constellation) imagery acquired during the opium poppy cultivation period. From this map, extensive agricultural areas, such as permanent agricultural land (typically paddy fields), were identified and designated as poppy-free zones, since poppy cultivation was generally confined to smaller plots. Other land covers, including water bodies, wetlands, and settlements, were also excluded from potential poppy cultivation, while all remaining land use types were considered to have potential for opium poppy cultivation.

Opium poppy cultivation in Myanmar was observed within a specific altitude range. In the early 2010s, risk areas were limited to altitudes between 800 and 1,800 meters, based on previous survey data indicating that 95% of cultivation occurred within this range. Subsequent evidence, however, revealed poppy fields at elevations as low as 600 meters and at higher altitudes without a clearly defined upper limit. As a result, beginning in 2013, the sampling frame for selecting sample locations was adjusted to incorporate these expanded altitude ranges.

Several areas in Shan State were designated as poppy-free based on on-site verification and field information. The three Special Regions: Wa (formerly S.R.2), Mongla (formerly S.R.4), and Kokang (formerly S.R.1), were excluded from the sampling framework, as they had been officially designated as poppy-free zones. The latest UNODC's assessments in those regions, confirming the poppy free status are dated 2014 and 2015. In addition, several townships, including Mabein, Kyaukme, Nawngkhio, and Kunlong in North Shan, as well as Kalaw, Pindaya, Lawksawk, and Ywa Ngan in South Shan, were excluded following reports confirming the absence of poppy cultivation. In East Shan, a 10-kilometre buffer zone along the Thailand border was initially excluded in the early 2010s due to its poppy-free status in previous surveys. However, this area was reintroduced into the sampling frame in the late 2010s after ground surveys identified new instances of poppy cultivation, indicating renewed cultivation risk.

For Kachin State, establishing the sampling frame required a distinct approach. In previous surveys, the sampling frame for identifying major poppy cultivation areas in Kachin was limited to Waingmaw township, which borders China. However, field observations from earlier surveys also identified poppy fields in Chipwe township. Consequently, beginning with the 2022 survey, the Kachin sampling frame was updated to reflect this new evidence. The revised frame included parts of Chipwe township and applied an altitude threshold of over 800 meters, incorporating village tract-level administrative boundaries informed by field visit reports.

For Shan State, the key factors described above were integrated into the Geographic Information System (GIS) to refine the sampling frame. In contrast, the sampling frame for Kachin State, covering Waingmaw and Chipwe townships, was developed solely based on altitude criteria and local administrative boundaries.

²⁹ Opium poppy free in the sense of no indication for significant levels of opium poppy cultivation.

Figure 10: Altitude ranges (meters) of area of poppy fields detected in satellite images

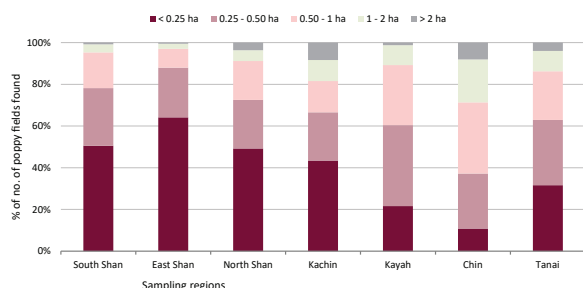
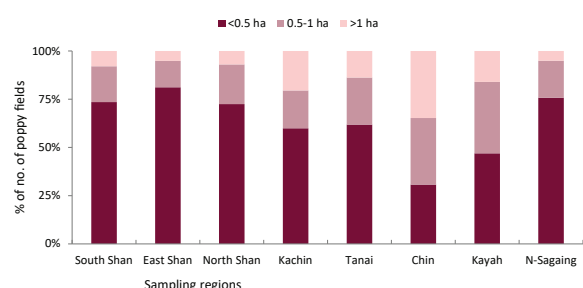


Figure 11: Field size distribution of poppy fields detected in satellite images



Sampling approach, sample size and sample selection

Opium poppy cultivation in Shan and the eastern part of Kachin States is generally dispersed across the regions. Given the scattered distribution and small plot sizes of cultivation throughout these areas, adopting a sampling approach is the most cost-effective method to achieve the desired level of accuracy.

In this approach, the delineated risk area was divided into 5×5 km segments to create a sampling frame used for identifying locations for satellite imagery acquisition. To improve sampling efficiency and minimize the acquisition of imagery that covers only small portions of the risk area, a minimum threshold of 30% risk-area coverage per segment was established. Segments falling below this threshold, particularly those along the outer boundaries of the risk area, were excluded from the sampling frame.

A random sampling method was applied within geographic strata. The sampling frame was first divided by survey region, with each 5×5 km segment assigned to a region based on the predominant

presence of the risk area. This process required minor adjustments to regional boundaries to align with the grid structure. Each survey region, or sub-frame, was then further subdivided into compact geographic strata of approximately equal size.

A clustering algorithm, k-means from the Spcosa package in the statistical software R, was used to define geo-strata. For the 2025 survey, three sampling locations were randomly selected per stratum, with one location overlapping a sample unit from the previous survey to ensure comparability. This approach ensures a geographically well-distributed sample and allows for unbiased estimation of variance (uncertainty). For additional details, refer to the Myanmar Opium Survey 2015³⁰.

This 2025 survey featured the largest sample size to date, with a total of 138 satellite imagery locations, 114 in Shan and 24 in Kachin. Of the 114 imagery locations in Shan State, 45 were in South Shan, 45 in East Shan, and 24 in North Shan subregions.

Opium poppy cultivation in Myanmar generally takes place in small, discreet plots located in remote and hard-to-reach areas, which makes the assessment particularly difficult. To ensure consistency over time, standardized sampling methods are applied across survey periods. This approach includes periodic resampling with replacement to track changes in plot size, planting density, and overall cultivation area throughout the surveyed regions.

In the 2022 survey samples, a greater number of dense hotspots were identified, indicating an overall rise in poppy density across several regions. Observations from these hotspots contributed to higher cultivation estimates for that year, suggesting the upward trend may have begun even earlier. In the 2023 and 2024 surveys, confidence intervals for previous years' estimates were adjusted to reflect this uncertainty, incorporating recent regional drug market data such as heroin seizure quantities, retail prices, and consumption levels based on population estimates. To ensure consistent trend monitoring, the 2025 survey employed the largest sample size to date.

30 https://www.unodc.org/documents/crop-monitoring/sea/Southeast_Asia_Opium_Survey_2015_web.pdf

Table 8: Sample size allocation in 2025

Region	Number of geo-strata	Sample size 2022	Sample size 2023	Sample size 2024	Sample size 2025
East Shan	15	30	15	15	45
South Shan	15	30	15	15	45
North Shan	8	16	8	8	24
Kachin	8	16	8	8	24
Total	46	92	46	46	138

Ground verification

In surveys conducted up to 2016, ground verification was carried out jointly with the Forest Department under the coordination of CCDAC. Each year, field teams organized by the Department conducted ground-truthing at selected sample sites. However, starting in 2017, the Forest Department could no longer participate due to resource constraints. Consequently, ground verification was integrated with yield measurement activities and conducted by contracted independent local surveyors. Each year, these surveyors received training prior to field data collection campaign.

In the 2025 survey, as in 2024, surveyors faced limitations in on-site data collection due to security and transportation challenges. Four teams, each consisting of two trained surveyors, one team per subregion, performed ground verification at 17 satellite imagery locations. Specifically, they visited seven imagery sites in South Shan, seven in East Shan, two in North Shan, and one in Kachin, collecting geo-tagged field photographs for ground-truth validation. Additionally, one survey team visited several poppy fields in the northern Sagaing target area, also collecting geo-tagged field pictures. These ground verification visits were conducted between January and March 2025.

Ground truth data collection, 2025

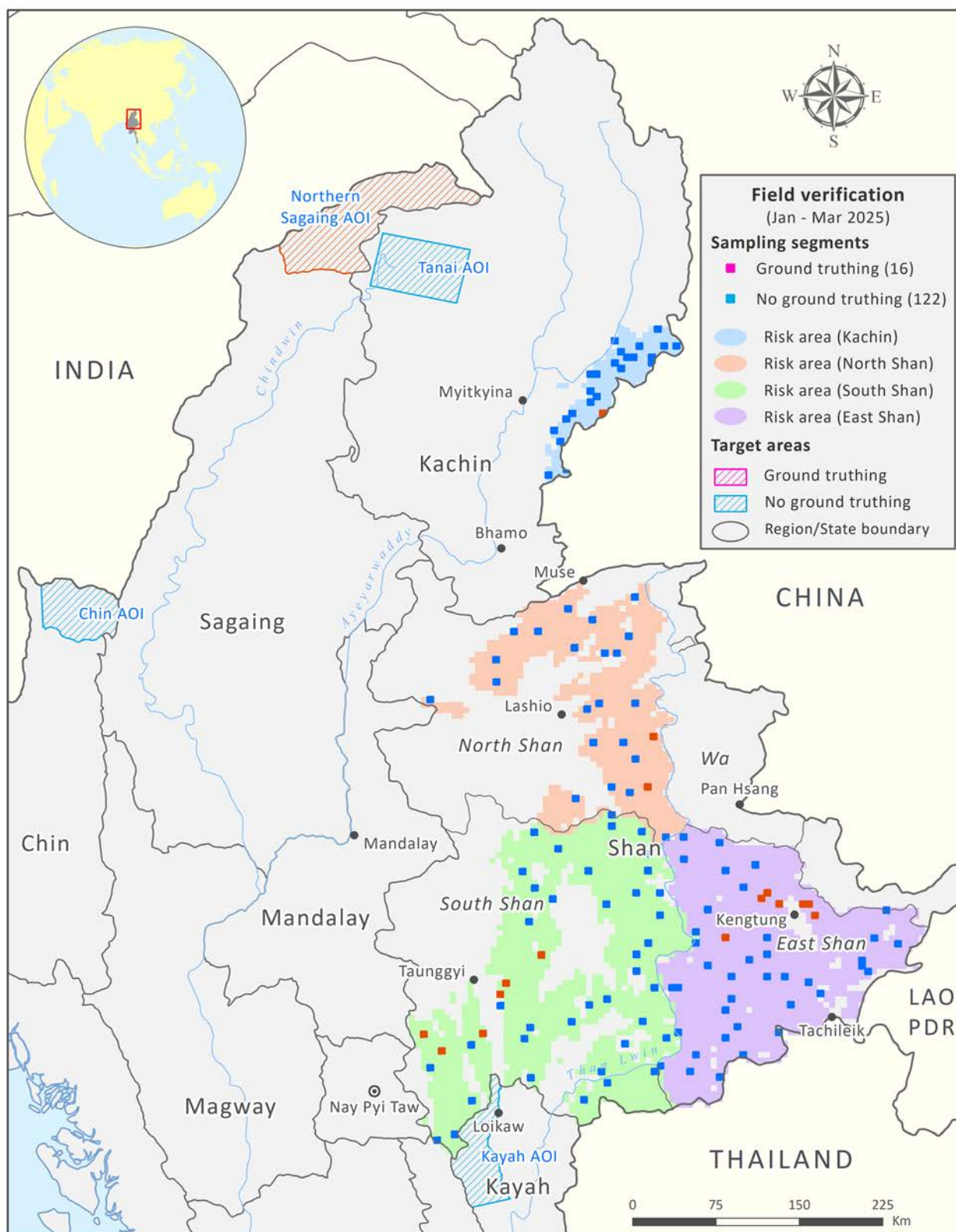
Table 9: Ground truth data collection, 2007-2025

Survey Year	Satellite image VHR	No. of segments in Shan	Segment size (km)	Segments visited in Shan (ground truth)	Ground truth % in Shan	No. of segments in Kachin	Segments visited in Kachin (ground truth)	Ground truth % in Kachin	VHR images area (km ²)
2007	Ikonos	22	8x8	17	77%	--	--	--	2,816
2008	Ikonos	28	8x8	19	68%	--	--	--	3,584
2009	Ikonos	40	8x8	34	85%	--	--	--	5,120
2010	GeoEye, WorldView	40	6.5 x 6.5	32	80%	3	--	--	3,634
2011	WorldView, QuickBird	51	6 x 6	40	78%	3	--	--	3,888
2012	GeoEye, WorldView	58	5x5	47	81%	8	--	--	3,300
2013	GeoEye, WorldView	66	5x5	46	70%	8	--	--	3,700
2014	GeoEye, WorldView, QuickBird	76	5x5	49	64%	8	--	--	4,200
2015	Pleiades	76	5x5	47	62%	8	--	--	4,200
2016	No survey	--	--	--	--	--	--	--	--
2017	Pleiades	38	5x5	3	8%	8	--	--	2,300
2018	Pleiades	76	5x5	30	39%	8	--	--	4,200
2019	Pleiades	76	5x5	32	42%	8	--	--	4,200
2020	Pleiades	38	5x5	12	32%	8	3	38%	2,300
2021	Pleiades	76	5x5	8	11%	8	--	--	4,200
2022	Pleiades	76	5x5	8	11%	16	5	31%	4,600
2023	Pleiades	38	5x5	11	29%	8	4	50%	2,300
2024	Pleiades	38	5x5	7	18%	8	3	38%	2,300
2025	Pleiades	114	5x5	16	14%	24	1	4%	5,700



The trained local surveyors, under the technical supervision of UNODC Myanmar Office, visited satellite imagery locations selected based on opportunistic considerations. Using printed maps and Google Earth imagery of sample segments, they recorded GPS coordinates of identified poppy fields and similar crops, and captured field photographs at sites across Shan and Kachin States. The collected field data supported the visual interpretation of poppy fields carried out by a national expert at the UNODC Myanmar Office. Finally, the interpretation results underwent a rigorous quality control review at UNODC Headquarters in Vienna.

Map 6: Ground truthing coverage, Myanmar Opium Survey 2025



Source: UNODC Illicit Crop Monitoring Programme.

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

Geotagged pictures of poppy fields (right) and corresponding area digitized on VHR satellite images



Poppy field observed in Pleiades satellite image, South Shan



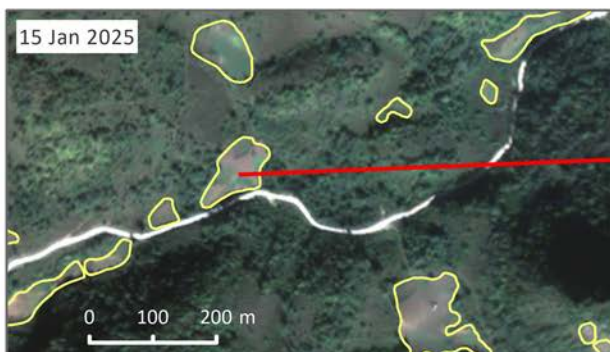
Well organized early-stage poppy field



Poppy field observed in Pleiades satellite image, East Shan



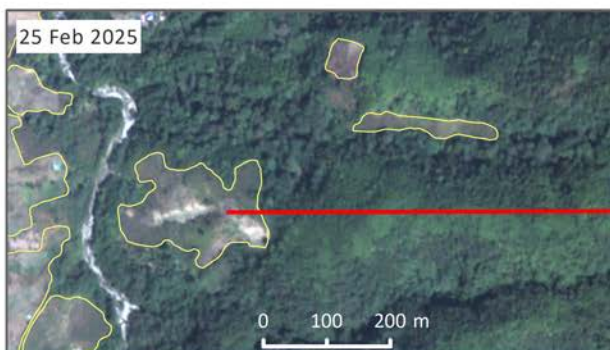
Fully matured poppy field



Poppy field observed in Pleiades satellite image, North Shan



Well-grown poppy field at the flowering stage



Poppy field observed in Pleiades satellite image, Kachin
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Naturally rain-fed poppy field

Target area interpretation and correction factors

In the 2025 survey, the study area was expanded to include northern Sagaing, specifically a township (Nanyun) bordering India, due to the emergence of significant opium poppy cultivation there. The Tanai area in Kachin State, the northern part of Chin State, the northwestern part of Kayah State, and the newly added northern Sagaing area were assessed using a comprehensive “target approach” or full-coverage survey method. High-resolution (HR) Planet-NICFI mosaic imagery was used, while very high-resolution (VHR) images were employed to verify, validate, and adjust the estimation results (see the satellite imagery location map).

For each of the four target areas, including northern Sagaing, three 5 × 5 km segments were acquired using Pleiades VHR imagery. These VHR images were used to evaluate potential omission and commission errors, as well as geometric discrepancies, associated with the lower-resolution imagery. In each target area, the locations of the three 5 × 5 km segments were adjusted based on the distribution of poppy cultivation identified in the 2024 survey to ensure comparability.

First, opium poppy fields were visually interpreted using the full-coverage Planet-NICFI mosaic imagery. Separately, the same areas were interpreted on the Pleiades imagery for the three segments within each target area. The differences in estimated opium poppy field areas between the two interpretations were used to derive a correction factor, which was then applied to adjust the estimates obtained from the Planet-NICFI imagery³¹.

Satellite image processing and interpretation

The interpretation of opium poppy fields in satellite imagery was carried out through visual analysis. Geotagged field photos and yield measurement pictures collected during the field campaign, along with archived field photos from previous surveys, were used as primary references for identifying, interpreting, and delineating poppy fields. This task was undertaken by a UNODC national expert based in the Myanmar office, who possesses

extensive experience in detecting and interpreting opium poppy fields based on their distinct visual characteristics.

Before visual analysis, the collected imagery was subjected to several preprocessing steps to ensure a consistent and standardized format suitable for visual interpretation. The flowchart below presents the classification workflow for the VHR imagery.

The initial processing stage mainly includes a pan-sharpening procedure, in which high-resolution panchromatic imagery of Pleiades is merged with lower-resolution multispectral imagery. This process produces a pan-sharpened VHR image with a spatial resolution of 50 cm, equivalent to that of the panchromatic band, while preserving the spectral information of all multispectral bands. Pan-sharpening is a crucial step that enhances the ability to distinguish poppy fields from other land cover types. When necessary, additional visual enhancement techniques are also applied.

The detection of poppy fields was performed through visual interpretation, using the latest ground truth data, historical field records, and yield measurement data as key reference sources throughout the process. The accuracy and precision of visual interpretation can vary depending on the interpreter’s expertise and skill level. To ensure consistency in knowledge, experience, and understanding, standardized interpretation keys (decision rules) were applied. These keys incorporate characteristic features of poppy fields, such as tone, color, shape, and texture, along with contextual and regional insights.

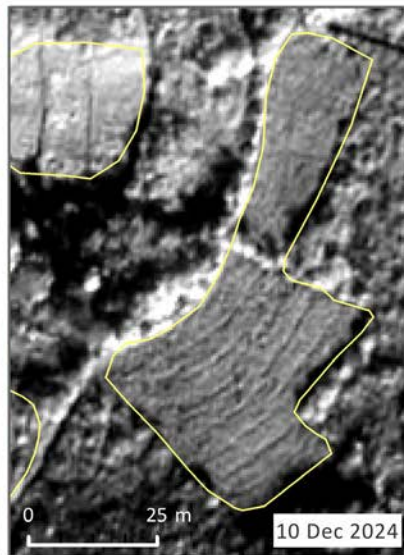
Imagery acquired on the second date was primarily used to monitor potential opium poppy field areas for any observable changes. When visual differences indicative of opium poppy harvesting or growth stages were detected, the field was confirmed as being under opium poppy cultivation. However, since the images were not geometrically corrected, automated classification and change detection were not feasible, especially due to possible field displacement in mountainous regions. Typically, the delineation of opium poppy field boundaries and the calculation of their areas were performed using the first-date imagery.

31 95% confidence intervals for each targeted area were calculated assuming a t-student distribution and two degrees of freedom. See <https://www.itl.nist.gov/div898/handbook/mpc/section5/mpc552.htm> for further information on the method to calculate the standard deviation.

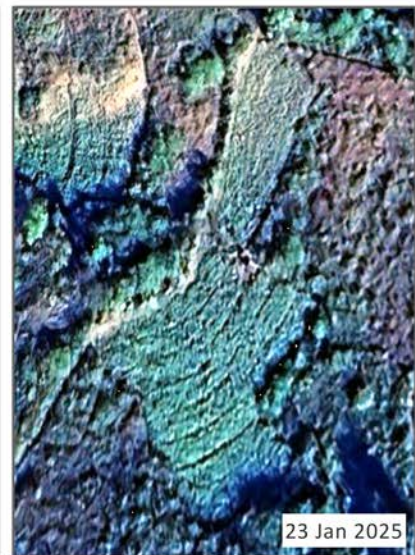
Poppy field interpretation in VHR satellite image



Poppy field detected in multi-spectral Pleiades VHR image at 2m ground resolution



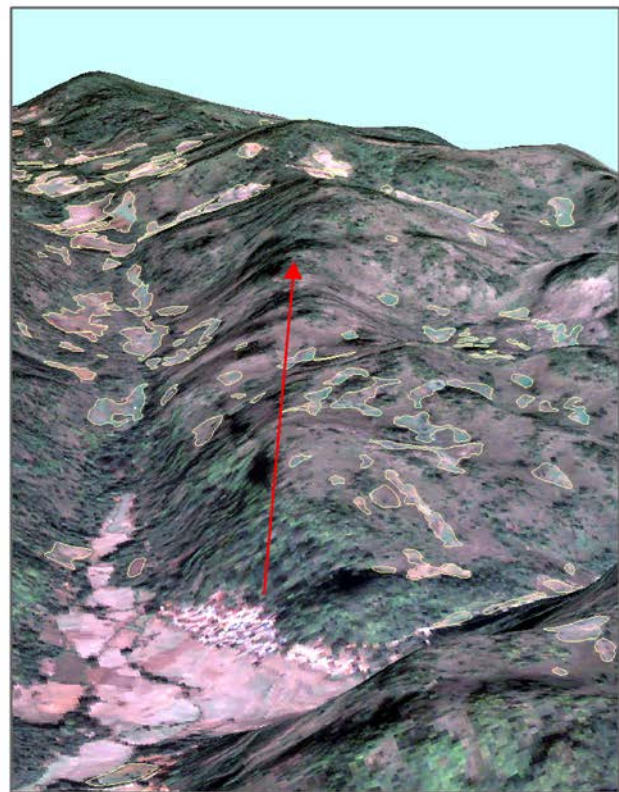
Poppy field observed in pan-chromatic Pleiades VHR image at 50cm ground resolution



The same poppy field observed in Google Earth imagery

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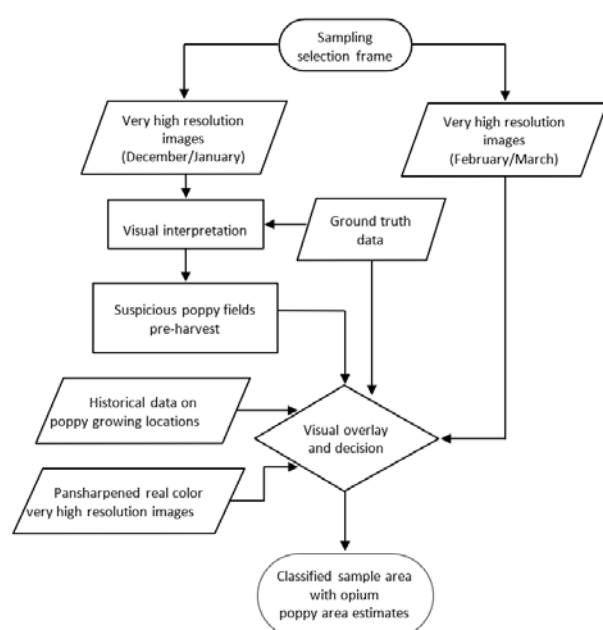
Use of 3D visualization in poppy field interpretation, 2025



Use of 3D visualization to enhance terrain comprehension during poppy field interpretation (Pleiades image draped on SRTM Digital Elevation Model)

Includes material © CNES (2025), Distribution Airbus DS, all rights reserved.

Satellite image interpretation flowchart



The decision rules were developed by comparing ground-based field photographs with corresponding satellite imagery, accounting for regional differences and variations in cultivation stages. The primary rule applied was that if an area identified as potential poppy cultivation in the first image appeared as bare soil or exhibited noticeable vegetation changes in the second image, it was confirmed as an opium poppy field. To support this interpretation process, historical opium poppy interpretation data, 3D terrain visualizations (where necessary), true-color pan-sharpened VHR imagery, and contextual information were employed.

Area estimation methods

The area estimation included both the sampling estimates and the target area estimates. The final national estimate is the precise sum of the regional estimates, specifically: opium poppy cultivation estimates from sampled regions in Shan and Kachin States, along with estimates from target areas in Tanai (Kachin), northern Chin, northwestern Kayah and northern Sagaing.

The sample area estimation of the extent of opium poppy cultivation at the national level is a combined ratio estimate using risk area as an auxiliary variable. The estimation was done separately for the strata containing segments where opium poppy was identified in the past and for the strata that

were free of opium poppy (but containing risk area because of their biophysical features). The total is a sum of these two separate estimates. At the regional level, a simple combined ratio estimate was calculated. The ratios were then extrapolated to risk area outside the frame. In 2025, the sample mean was calculated as

$$\bar{y}_{st} = \sum_{h=1}^k \frac{N_h}{N} \bar{y}_h ; \bar{x}_{st} = \sum_{h=1}^k \frac{N_h}{N} \bar{x}_h.$$

where k is the number of strata, $\bar{y}_h$ is the sample mean of poppy in stratum h ; $\bar{x}_h$ is the sample mean of the risk area in stratum h ; N_h is the number of sampling units in stratum h , and N is the population size.

The combined ratio estimate of the area under poppy cultivation then is given by

$$\bar{Y}_{RC} = \frac{\bar{y}_{st}}{\bar{x}_{st}} \bar{X}$$

where $\bar{X}$ is the total risk area in the sampling frame.

Bootstrapping³² was performed to estimate the confidence intervals of the regional estimates. This was necessary as the heavily skewed distribution of opium poppy in the samples led to unrealistic confidence intervals when applying the standard methods. Although bootstrapping is considered to be an appropriate choice in such situations, UNODC is undertaking further research to assess if this is the case in all situations. The confidence interval of the national estimate combines the uncertainty of the regional estimates.

Table 10: Estimated poppy cultivation areas for the sampled areas in 2024 and 2025

Region	2024	2025	Difference 2024-2025
South Shan	20,555	23,247	13%
East Shan	9,095	12,026	32%
North Shan	10,084	11,383	13%
Kachin	2,827	2,989	6%
Total	42,561	49,646	17%

32 <http://cran.r-project.org/web/packages/boot/index.html>.

Table 11: Estimated poppy cultivation areas for the target area in 2025

Target area	Interpreted poppy area (ha) before correction factor	Correction factor 2025	Interpreted poppy area (ha) after correction factor
Tanai (Kachin State)	1,422	-6.10%	1,258
Chin	1,144	-4.60%	1,045
Kayah	759	-9.47%	628
Sagaing	610	-4.99%	552

Yield and potential opium production estimation

Collection of yield data

Similar to the situation during the 2024 survey period, armed conflicts escalated across much of the survey area, particularly in North Shan and Kachin, during the 2025 data collection period. As a result, yield data collection was restricted in many locations. Field teams therefore adopted an opportunistic approach, focusing on accessible areas within North Shan, South Shan, East Shan, and Kachin.

The data collection was carried out by independent local surveyors. Four teams, each comprising two trained local surveyors based in their respective regions, were contracted for the task. Each team was assigned to one subregion, three in Shan State and one in Kachin State. Altogether, these teams conducted field measurements across 89 poppy-growing villages in Shan and Kachin. Specifically, the data collection covered 25 villages in Pinlaung, Hopong, and Loilen townships (South Shan); 25 villages in Kengtung and Mongping townships (East Shan); 25 villages in Tangyan township (North Shan); and 14 villages in Waingmaw township (Kachin). The data collection took place from 1 January to 30 March 2025.

The field teams selected opium poppy-growing villages opportunistically, considering factors such as accessibility, security conditions, and the harvesting stage of the poppy plants. Following the standard methodology, yield data were collected from three poppy fields within each village. During the 2025 survey, measurement data were collected from a total of 267 poppy fields across 89 villages, comprising 75 fields in each Shan subregion and 42 fields in Kachin. All visited poppy fields were at the harvesting stage, enabling the collection of

accurate yield data. However, measurements from one field in South Shan and four fields in East Shan were excluded from the final estimation due to data quality issues identified during the quality control process. In total, 7,820 lanced poppy capsules were measured during the 2025 survey.

Table 12: Sample survey for estimating yield by region

No	Region	No. of villages	No. of poppy fields	No. of capsules
1	South Shan	25	74	2,314
2	East Shan	25	71	1,854
3	North Shan	25	75	2,297
4	Kachin	14	42	1,355
	Total	89	262	7,820

The surveyors were trained in accordance with the UNODC Guidelines for Yield Assessment³³. They visited opium poppy fields in the harvesting stage around each selected village and chose one high-quality, one average, and one lower-quality field. For each selected field, a transect line was randomly established, along which three sample plots, each measuring one square meter, were set up. Within each plot, the survey team counted the number of buds, flowers, immature capsules, and mature capsules expected to yield opium. Typically, the diameter and height of 10 to 14 lanced capsules were measured using a digital caliper. To ensure data accuracy and consistency, all measurements were carefully documented with digital photographs. GPS coordinates and overview photo of each poppy field were also recorded.

The majority of opium poppy cultivation in Myanmar typically takes place between October and February, with most seed broadcasting occurring in September and October. However, in several regions, farmers practice staggered planting,

33 <https://www.unodc.org/unodc/en/scientists/guidelines-for-yield-assessment-of-opium-gum-and-coca-leaf.html>.

sowing poppy seeds over a span of several weeks to a month instead of all at once. This approach helps distribute labor more evenly and reduces the risk of crop loss due to adverse weather conditions during harvest, thereby extending the planting period to more than a month in many areas.

Another common practice is multi-stage cropping, in which farmers sow opium poppy seeds twice in the same field or specific area, separated by a few weeks. This results in plants at different growth stages coexisting within a single plot. In certain high-altitude areas of Kachin, where the climate is cooler, the cultivation period can extend until April. Additionally, in parts of southern Shan and Kayah, an early cultivation practice occurs during the monsoon season; however, previous studies have shown that this method typically produces very low yields, as well as low quality.

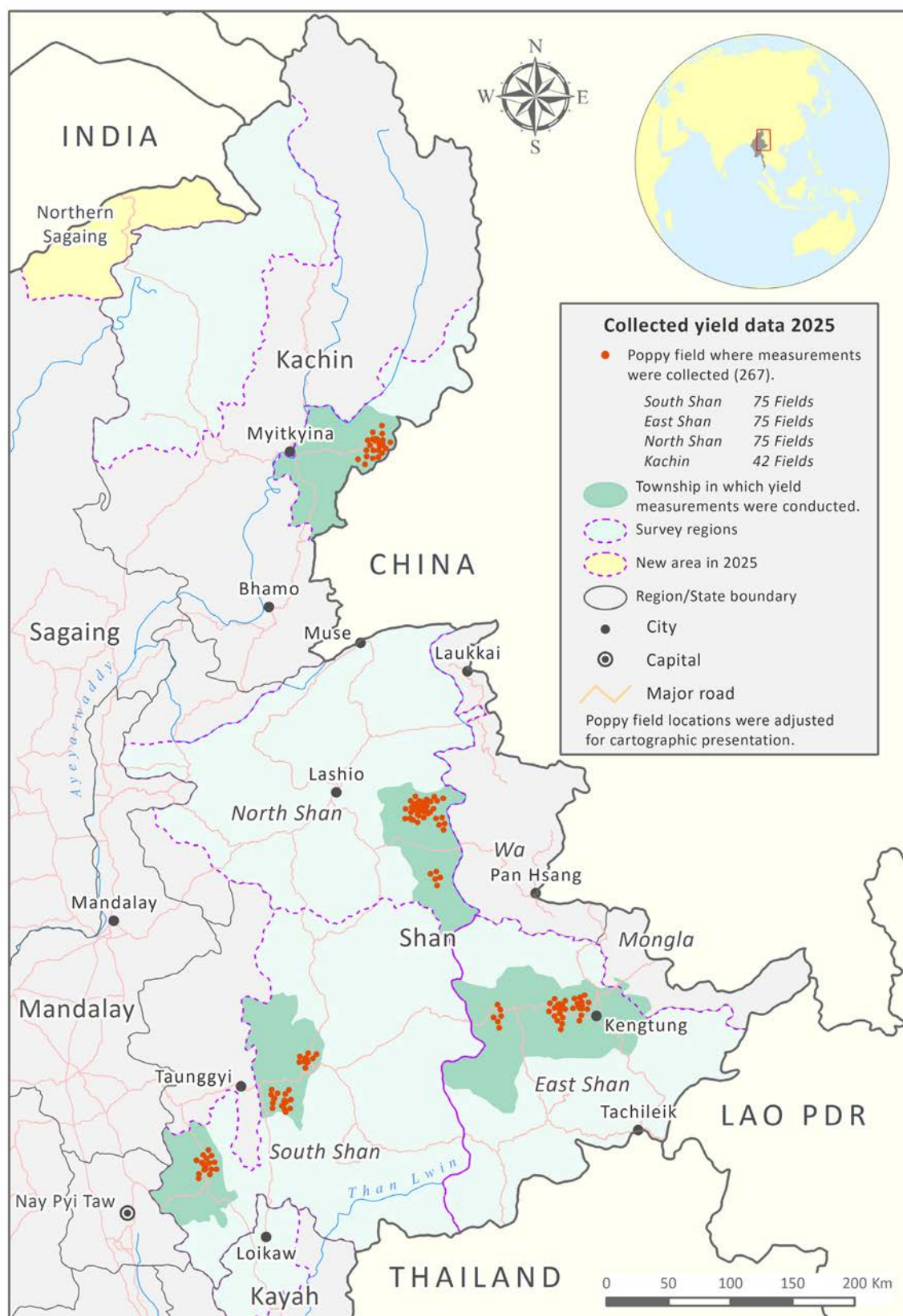
Yield data collection, 2025



Opium gum collection and capsule measurement, 2025



Map 7: Locations where yield data were collected, 2025



Source: UNODC Illicit Crop Monitoring Programme.

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

Table 13: Opium cultivation calendar Myanmar, 2024-2025*

Region	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr
Kayah											
South Shan											
East Shan											
North Shan											
Kachin											
Chin											

	Monsoon cultivation
	Normal cultivation
	Late cultivation

Source: Illicit Crop Monitoring Programme in Myanmar.

* Monsoon cultivation observed in Kayah and southern South Shan refer to early planting before end of rainy season and Late cultivation refer to staggered planting after normal time to spread the harvest over a longer period.

Estimating potential opium yield

The capsule volume per square metre is derived from field measurements and entered into the formula for the yield calculation. Each plot thus provides one yield observation. The simple average of the three plots in a field is considered the field yield. The yield by State is calculated as the simple average of all fields in a State.

For estimating potential opium yield, a relationship between poppy capsule volume per square metre and dry opium yield is used. The relationship is based on extensive field research and is described as:

$$Y = 1.89 + 0.0412 V$$

where Y is dry opium weight (kg/ha) and V is the mature capsule volume (cm³/m²).

This formula has been developed based on data collected in Thailand and emphasizes the lower end of observed capsule volume. It is based on data varying between 0 and 900 cm³/m².

However, high volumes exceeding 900 cm³/m² were observed (particularly in Kachin). The formula was

not validated for these ranges and would supposedly overestimate yields. To avoid overestimation, an alternative formula was used for fields where at least one plot exceeded said volume. This formula was calibrated with combined data from Pakistan and Thailand, and reads as:

$$Y = \frac{[(V + 1,495) - ((V + 1,495)^2 - 395.259 V)^{0.5}]}{1.795}$$

A range was calculated to express the uncertainty of the yield estimate due to sampling with the 95% confidence interval.³⁴

In 2025, yield data were collected in 89 villages of Shan and Kachin States. To ensure higher representativeness of the sample a three-year (2023 – 2025) average was applied to calculate yield figures for North, East, South Shan regions and Kachin State.

It has not been possible to conduct yield surveys in Kayah State since 2014 and not at all in Chin State and northern Sagaing hence, yield values for those regions were derived from the national average yield (see following section).

34 $Y \pm 1.96 \frac{\sigma}{\sqrt{n}}$, where Y is the point estimate, n is the number of samples and σ is the standard deviation.

Estimating national average yield

In 2025, national average yield was calculated based on the average yield of Shan and Kachin States and then weighed by cultivation estimate of the respective States.

Estimating opium production

Opium production was calculated by region/State as the result between the estimated area under opium poppy cultivation and the corresponding opium yield. The total national potential opium production is a sum of regional estimates, weighted by cultivation.

All opium estimates in this report are expressed in oven-dry opium equivalent, (i.e., the opium is assumed to contain 0% moisture). The same figure expressed in air-dry opium, (i.e., opium under “normal” conditions as traded), would be higher, as such air-dry opium contains some moisture.

The uncertainties of the opium production estimate combine those due to sampling for the area under poppy cultivation and those related to the yield estimate. These uncertainties were calculated by using the standard method for error propagation. The point estimates and uncertainties of the area under poppy cultivation and yield can be expressed as $a_p \pm \Delta a$ and $y_p \pm \Delta y$ respectively, where the uncertainty is determined from the 95% confidence intervals. These uncertainties will impact on the estimate of production ($pp \pm \Delta p$, or equivalently expressed as the range $[pp - \Delta p, pp + \Delta p]$), where the best estimate is $pp = a_p y_p$. Therefore,

$$\frac{\Delta p}{p_p} = \sqrt{\left(\frac{\Delta a}{a_p}\right)^2 + \left(\frac{\Delta y}{y_p}\right)^2}$$

expresses the error in production (Δp), resulting from uncertainty in the estimates for cultivation area and yield.

The ranges around average national yield were calculated by using the uncertainty around yield estimates, that is the national lower/upper bounds are the averages of the regional lower/upper bounds weighted by the point estimates of the area estimates.

Estimating the value of opium economy in Myanmar

Estimating the value of Myanmar opium economy implies evaluating the amounts of raw opium and heroin which are used either for the domestic consumption or for export, along with their prices at every link of the chain. This means estimating and then combining multiple factors, using the best available data.

Due to the scarcity of reliable and/or updated data, especially on purity and conversion factor, the degree of uncertainties is significant and infers the use of ranges rather than point estimates.

The key components of the opium economy which have been estimated to derive the gross and net values of the opium economy in Myanmar are:

- The farm-gate value;
- The amounts of raw opium and heroin reaching the illicit end-consumer markets;
- The value of opiates market for domestic use;
- The value of opiates potentially available for export.

The farm-gate value

The farm-gate value is derived directly from the potential production of dry opium. The national price per kilogram of dry opium used for the calculation is the weighted average of the farm-gate prices at harvest time of the main producing States (Shan and Kachin). The lower and upper bounds of the farm-gate value reflect the range of the potential opium production estimate.

The amounts of raw opium and heroin reaching the illicit end-consumer markets

Opium can be consumed either as raw opium or further processed into heroin. Starting from the production figures, the estimate of the share of unprocessed opium entering the illicit markets is based on the direct opium consumption in the Southeast Asia region³⁵ and the comparison of the opium production levels between Myanmar and Laos,³⁶ which are supposedly the only opium

35 Source: *Transnational Organized Crime in Southeast Asia: Evolution, Growth and Impact 2019* (TOCTA-EAP), (UNODC, 2019).

36 Source: *Southeast Asia Opium Survey 2023* (UNODC, 2023).

providing countries in the region.³⁷ The remaining opium, after discounting opium seizures,³⁸ is deemed to be processed into heroin. A ratio of 10:1 is used for converting opium to heroin of unknown purity,³⁹ and, after subtracting the reported heroin seizures,⁴⁰ the amount of heroin reaching the end-consumer markets is obtained.

The value of opiates market for domestic use

The value of the domestic opiates market is given by:

(annual estimated domestic opium consumption x typical retail opium price)

+

(annual estimated domestic heroin consumption x typical retail heroin price adjusted for purity)

The estimates of opium and heroin consumed in Myanmar are based on:

- The prevalence of opiates use⁴¹ in the country
- The respective proportions of opium and heroin users⁴²
- The Myanmar population between 15 and 64 years old⁴³
- The annual heroin⁴⁴ and opium⁴⁵ average consumption rates

37 The assumption is that the ratio between total opium production and unprocessed opium is the same for the two countries. Sources: *World Drug Report 2020* (UNODC, 2020), *Transnational Organized Crime in East Asia and the Pacific – A Threat Assessment* (UNODC, 2013) and *Transnational Organized Crime in Southeast Asia: Evolution, Growth and Impact 2019*, UNODC.

38 CCDAC by October 2025 reported the seizure of 1,273 kg of opium. The quantities of opium seized in the whole year 2025 was linearly extrapolated based on this figure.

39 For countries other than Afghanistan, a traditional conversion ratio of opium to heroin of 10:1 is used. Source: *World Drug Report 2020, Booklet 3, p.79* (UNODC, 2020).

40 CCDAC by October 2025 reported the seizure of 1,530 kg of heroin. The quantities of heroin seized in the whole year 2021 was linearly extrapolated based on this figure.

41 Annual prevalence for opiates is 0.8%. Source: UNODC, 2010 (<https://data.unodc.un.org/data/drugs/Prevalence-general>).

42 Heroin users represent the 90.5% of opiates users, opium users the 9.5%. Derived from 2020 treatment data at the 2021 SMART Regional Workshop.

43 Source: World Bank, 2024.

44 The global annual average value of 22g of heroin is used, obtained from data from Australia's wastewater analysis (Source: https://www.unodc.org/documents/southeastasiaandpacific/Publications/2019/SEA_TOCTA_2019_web). The value was used to calculate the heroin market size in the region.

45 A value of 770g of opium for yearly consumption is used. Source: *Drug Use in Afghanistan* (Afghanistan Ministry of Counter-narcotics/ Afghanistan Ministry of Health/ UNODC, 2009).

The retail and wholesale prices of opium were provided by the Central Committee on Drug Abuse control of Myanmar (CCDAC).⁴⁶ Wholesale and retail prices of heroin were reported by Myanmar through the mandated Annual Report Questionnaire (ARQ) 2024. Heroin's prices have been adjusted for purity, using Thailand's ARQ responses as a proxy.⁴⁷

The value of opiates potentially available for export

The amounts of opiates potentially available for export are derived by subtracting the domestic consumption from the opiates reaching the illicit market. The obtained opium and heroin quantities are then multiplied by the respective wholesale prices and summed to each other to find the value of the opiates export.

Gross and net values of opiates economy in Myanmar

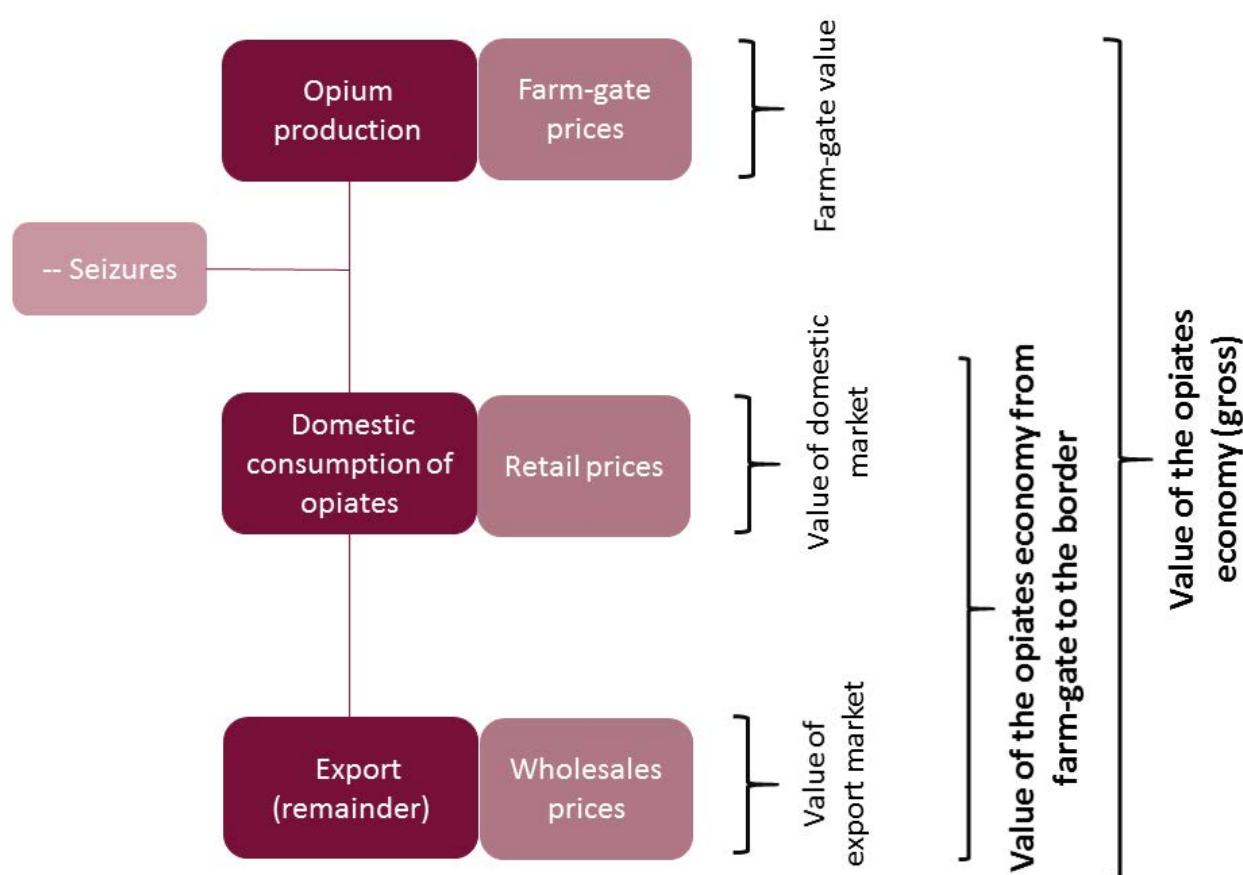
The gross value of the opiate economy is the sum of the value of the domestic market and the value of opiates believed to be exported.⁴⁸ The estimate of the value of manufacture and trafficking of opiates to the border excludes the farm-gate value, which is paid by first-level traffickers to the farmers. A detailed analysis of the profits made at each stage needs to consider other costs associated to the illicit drug business, for instance those related to manufacture and distribution, most importantly precursor substances. Due to a lack of data, it was not possible to include the above-mentioned components in this analysis.

46 CCDAC, at the 2021 SMART Regional Workshop.

47 Due to the lack of data on heroin's purity in Myanmar, Thailand's typical purity data were used as reported in the ARQs. For wholesale heroin 2024 purity was used while for retail heroin the latest available data were recorded in 2021.

48 The gross value of opiates economy includes several components (e.g., costs associated to precursor substances, transports, processing, etc.), which are not considered in this analysis.

Workflow diagram of the analysis of the opiates economy's components

**Uncertainties**

There is a significant uncertainty around these estimates. While confidence in the opium production estimates is high, uncertainties around the conversion ratio from opium to heroin stem mainly from the wide range of possible purities of the product and from the lack of data on the efficiency of the conversion from opium to heroin (i.e., how much opium is needed to produce 1kg of heroin).⁴⁹ Uncertainties around the demand estimate are mainly associated with the assumptions around annual opium consumption per user.

⁴⁹ The amount of raw opium needed for producing 1kg of heroin depends on two main factors: i) the average morphine content of opium and ii) the efficiency of the heroin labs. To date there are no available studies that focus on opium's morphine content and/or heroin labs efficiency in Myanmar.



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