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United Nations Office on Drugs and Crime

Synthetic Drugs in East and Southeast Asia

Latest developments and challenges

2022

Global SMART Programme

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This report has not been formally edited.

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The term “region” unless specified, generally refers to the geographical area that includes the countries and territories in East and Southeast Asia. The term “lower Mekong region” refers to the geographical area that includes five countries: Cambodia, Lao PDR, Myanmar, Thailand and Viet Nam. The term “maritime Southeast Asian countries” includes Brunei Darussalam, Indonesia, Malaysia, the Philippines, Singapore, and Timor Leste.

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

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

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Abbreviations

ARQ	Annual report questionnaire
ATS	Amphetamine-type stimulants
BNN	National Narcotics Board (Indonesia)
CCDAC	Central Committee for Drug Abuse Control (Myanmar)
CNB	Central Narcotics Bureau (Singapore)
DAINAP	Drug Abuse Information Network for Asia and the Pacific
DDB	Dangerous Drugs Board (Philippines)
EWA	UNODC Early Warning Advisory on New Psychoactive Substances
HSA	Health Sciences Authority (Singapore)
KIMIA	Department of Chemistry (Malaysia)
LCDC	Lao National Commission for Drug Control and Supervision
MHLW	Ministry of Health, Labour and Welfare (Japan)
NACD	National Authority for Combating Drugs (Cambodia)
NADA	National Anti-Drugs Agency (Malaysia)
NCB	Narcotics Control Bureau (Brunei Darussalam)
NDSB	Narcotics Division, Security Bureau (Hong Kong, China)
NNCC	National Narcotics Control Commission (China)
NPA	National Police Agency (Japan)
NPS	New Psychoactive Substances
ONCB	Office of the Narcotics Control Board (Thailand)
PDEA	Philippine Drug Enforcement Agency
RMP	Royal Malaysia Police
SMART	Synthetics Monitoring: Analyses, Reporting and Trends
SODC	Standing Office on Drugs and Crime (Viet Nam)
SPO	Supreme Prosecutors' Office (Republic of Korea)
UNODC	United Nations Office on Drugs and Crime

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Introduction

INTRODUCTION

The versatility of synthetic drugs and flexibility of their manufacture is driving a constant evolution of the illicit synthetic drug market. The dynamic nature of the market continues to present a significant challenge globally, requiring a multifaceted, comprehensive approach to address the problem.

In November 2021, UNODC launched the Synthetic Drug Strategy as a framework to support countries in developing evidence and science-based responses to address this ongoing challenge. The strategy includes four spheres of action, namely, multilateralism and international cooperation, early warning on emerging synthetic drug threats, promoting science-informed health responses, and strengthening counternarcotic interventions.

East and Southeast Asia, which is home to one of the largest methamphetamine markets in the world, is a key region for implementation of the strategy. Amidst the continued impact of the COVID-19 pandemic and other recent developments, organised crime groups in the region have shown their adaptability and ingenuity to capitalise on the situation and expand their operations.

Record amounts of methamphetamine continue to be seized in the region, showing that supply reduction strategies have been effective, as evidenced by the substantial amounts seized, but insufficient to reduce the large volumes of drugs produced. Porous borders do not only facilitate the movement of drugs across regions and territories, but also the movement of chemicals, controlled and non-controlled, to illicit manufacturing sites. This has enabled organised crime groups to diversify their manufacturing locations and methods. At the same time, sustained increases in supply will not be possible without a resurge in demand eventually, as so far, the steady increases in the supply of methamphetamine have resulted in continuously decreasing drug prices, leading to greater affordability and accessibility, and presenting more risk to the community.

Meanwhile, organised crime groups in East and Southeast Asia have taken advantage of the flexibility in manufacturing synthetic drugs to develop new products and substances, including new psychoactive substances,[1] to appeal to drug users or try to circumvent legal controls. The evolving nature of the illicit synthetic drug market makes it essential for countries to put early warning mechanisms in place to keep abreast of new developments in the region and respond timely to emerging threats. Responses to the changing dynamics of the synthetic drug market must be based on science. With varying capacity among countries in East and Southeast Asia to analyse and identify substances, it is essential to support and enhance the capabilities of forensic laboratories in the region, which play a crucial role in contributing to early warning interventions.

The information presented in this report, covering data up to 2021 and where available, the first quarter of 2022, highlights the latest trends of the synthetic drugs situation in East and Southeast Asia, so that countries in the region, as well as other stakeholders affected by the flow of drugs through the region, may strengthen their policies and strategies to effectively disrupt the manufacture and trafficking of illicit synthetic drugs.

1 For the purpose of this report, NPS that have been placed under international control since 2014 continue to be included under the term NPS to enable time series analysis. A list of all scheduling decisions can be found at: https://www.unodc.org/unodc/en/commissions/CND/Mandate_Functions/Mandate-and-Functions_Scheduling.html.

Regional Trends: East and Southeast Asia

REGIONAL TRENDS: EAST AND SOUTHEAST ASIA

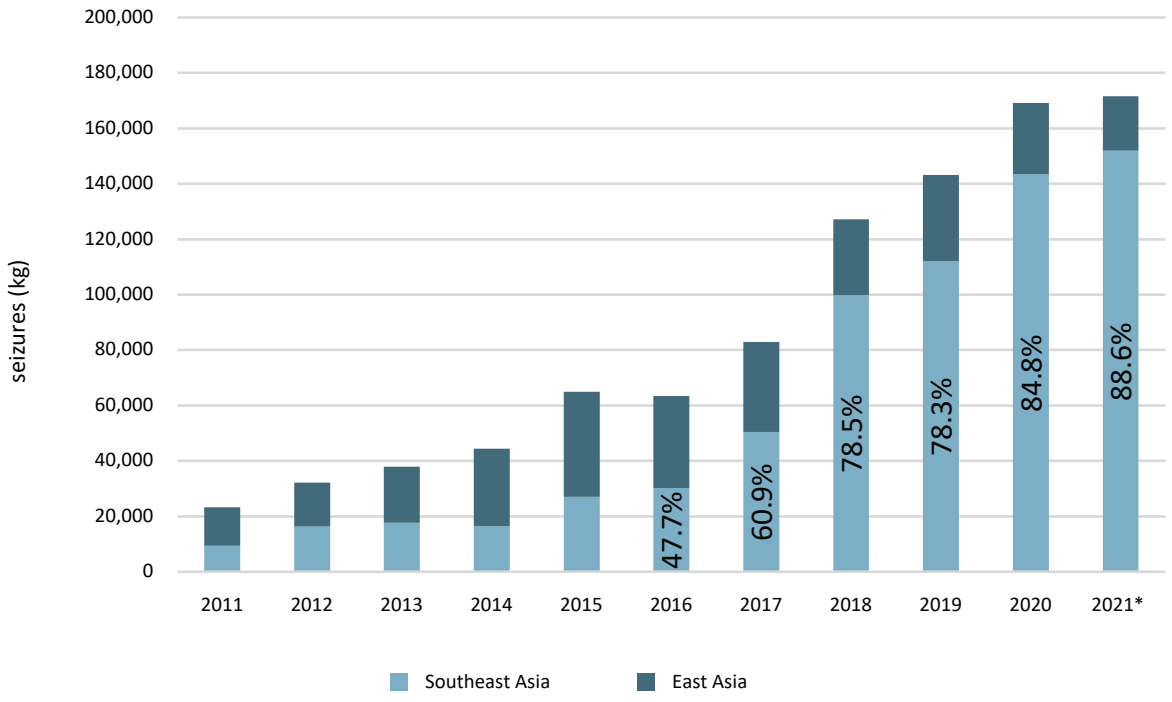
Overview of the methamphetamine market

The methamphetamine market in East and Southeast Asia has continued to expand. Increasingly, organised crime groups in the region appear to have resorted to using non-controlled chemicals to manufacture methamphetamine and other synthetic drugs. Prices have decreased even further in several countries in the region, leading to increased affordability and accessibility to the drug.

Methamphetamine supply continues at high levels in East and Southeast Asia

The supply of methamphetamine to the region, particularly from Shan State, Myanmar, as reflected in seizures showed remarkable continuity. Preliminary data for 2021 suggests that another record amount of methamphetamine was seized in East and Southeast Asia, reaching 171.5 tons. Southeast Asia, particularly the lower Mekong subregion (comprising Cambodia, Lao PDR, Myanmar, Thailand, and Viet Nam),[1] continues to account for an increasing proportion of methamphetamine seizures in the region amounting to nearly 89 per cent of total seizures reported in 2021.[2]

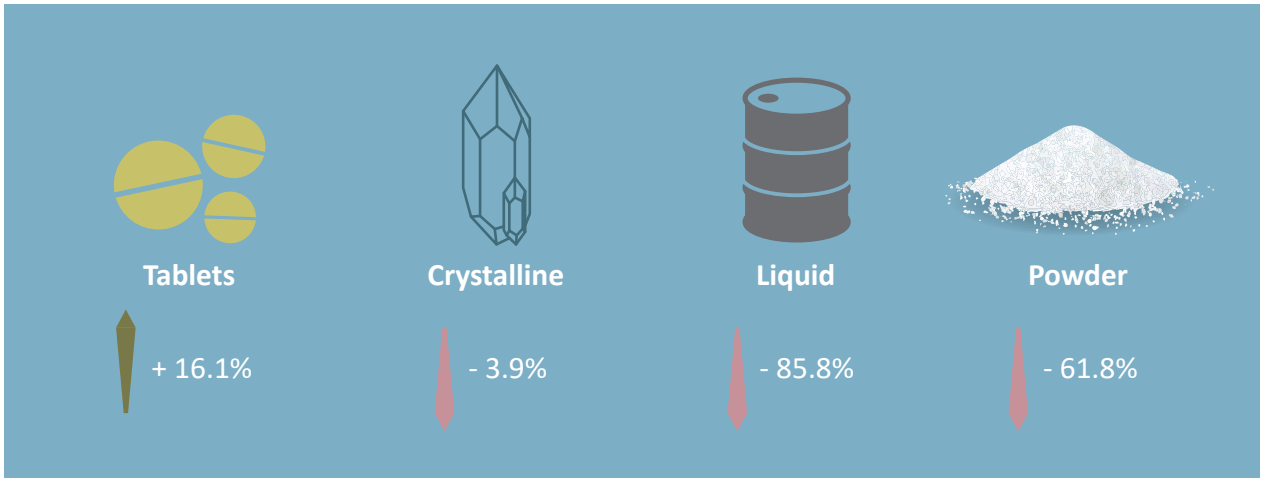
Figure 1. Seizures of methamphetamine in East and Southeast Asia, by region, 2011-2021



Sources: Drug Abuse Information Network for Asia and the Pacific (DAINAP); UNODC, responses to the annual report questionnaire (ARQ); Official communication with national drug agencies in the region, February-May 2022.
Note: * Data are preliminary and include all forms of methamphetamine.

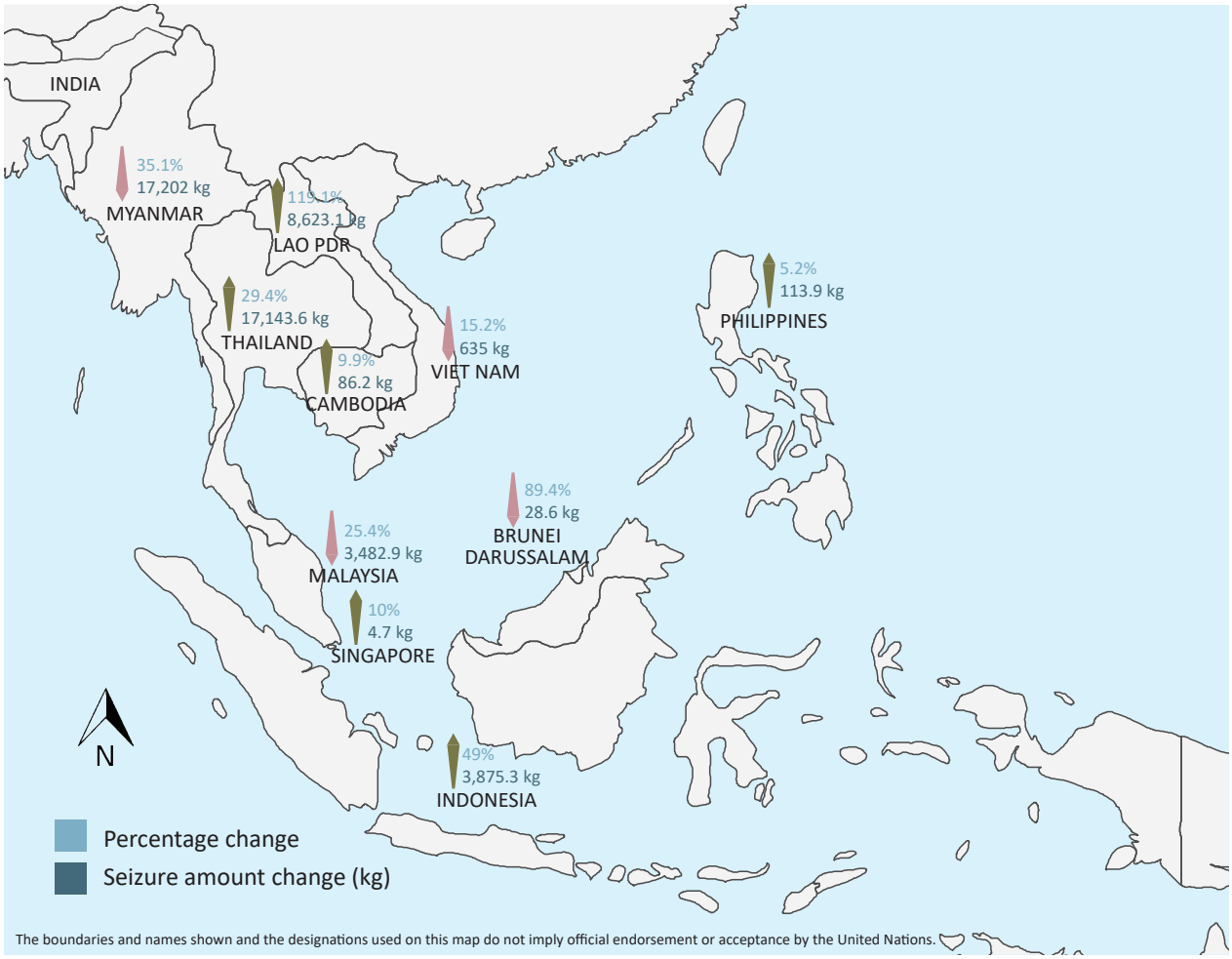
1 Preliminary data for 2021 show that 127.6 tons of methamphetamine was seized in the lower Mekong subregion, accounting for 74.4 per cent of the total amount of methamphetamine seized in 2021.
2 DAINAP.

Figure 2. Change in seizure amounts of different forms of methamphetamine in East and Southeast Asia, by percentage, from 2020 to 2021*



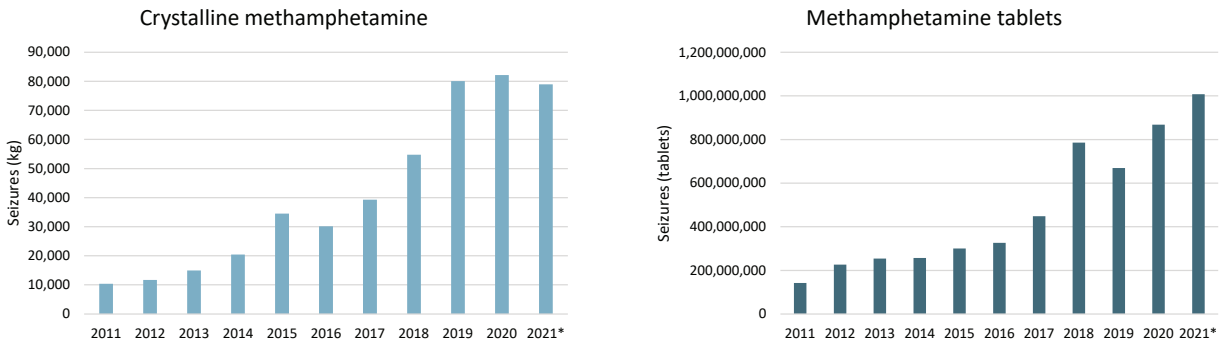
Sources: DAINAP; UNODC, responses to the ARQ; Official communication with national drug agencies in the region, February-May 2022.
Note: * Data are preliminary.

Map 1. Change in methamphetamine seizure amounts in Southeast Asia, by percentage and weight, from 2020 to 2021*



Sources: DAINAP; Official communication with national drug agencies in the region, February-May 2022.
Note: * Data are preliminary and include all forms of methamphetamine.

Figure 3. Seizures of methamphetamine tablets and crystalline methamphetamine, 2011-2021

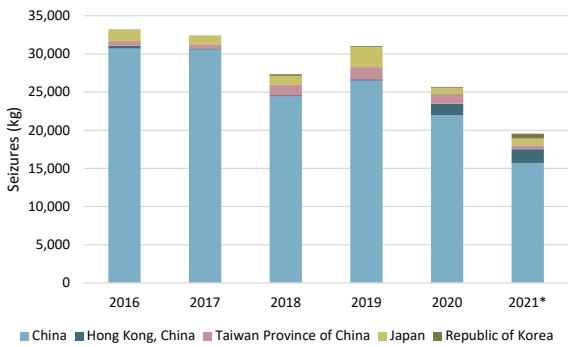


Sources: DAINAP; UNODC, responses to the ARQ; Official communication with national drug agencies in the region, February-May 2022.
Note: * Data are preliminary.

The increase in quantity of methamphetamine seized in 2021 was solely driven by the increase in methamphetamine tablet seizures, which reached over one billion tablets for the first time since the start of monitoring by the UNODC Global SMART Programme. While the amount of crystalline methamphetamine and methamphetamine powder seized decreased by 3.2 tons and 1.5 tons respectively, liquid methamphetamine seizures dropped from 6.4 tons in 2020 to only 908 kg in 2021.

In East Asia, the quantity of methamphetamine seized declined for the third year in a row, dropping from 25.7 tons in 2020 to 19.5 tons in 2021.[3] This was largely due to significant decreases in quantities of seizures in China and Taiwan Province of China, which were not compensated by increases in Japan, the Republic of Korea, and Hong Kong, China, in 2021.

Figure 4. Seizures of methamphetamine in East Asia, by country or territory, 2016-2021*



Sources: DAINAP; UNODC, responses to the ARQ; Official communication with the National Narcotics Control Commission (NNCC) of China, March 2022; Taiwan Ministry of Justice, "Drug Offenses" (accessed at https://www.moj.gov.tw/2832/2833/2853/2854/2857/); Japan Customs, "Summary of Japan Customs' Enforcement in 2021", February 2022.

3 At the time of writing, data on methamphetamine seizures in Japan for 2021 were preliminary and only include data reported by Japan Customs.

In Southeast Asia, the quantity of methamphetamine seized in 2021 increased from 143.5 tons to 152 tons, despite a drop in methamphetamine seizures in Myanmar, mainly due to increases in neighbouring Lao PDR and Thailand. In maritime Southeast Asia, a large increase in the amount of methamphetamine seized in Indonesia was almost compensated by a decrease in Malaysia, with other countries reporting only smaller changes in absolute terms.[4]

Concentration of methamphetamine manufacture in the Golden Triangle and expansion to the lower Mekong subregion

Starting from 2015, illicit methamphetamine manufacture in East and Southeast Asia has become more and more concentrated in the lower Mekong, predominantly in Shan State, Myanmar. This development seems to continue as evidenced by information on methamphetamine trafficking cases and forensic profiles of methamphetamine reported from countries in the region, the dominance of crystalline methamphetamine in teabag packaging seized in the region, and continued seizure of controlled and non-controlled chemicals used in the illicit manufacture of methamphetamine in the country.[5]

At the same time, organised crime groups have increasingly targeted Cambodia for synthetic drug manufacture. Although only two clandestine laboratories were dismantled in Cambodia in 2021, at least one of the sites was an industrial-scale

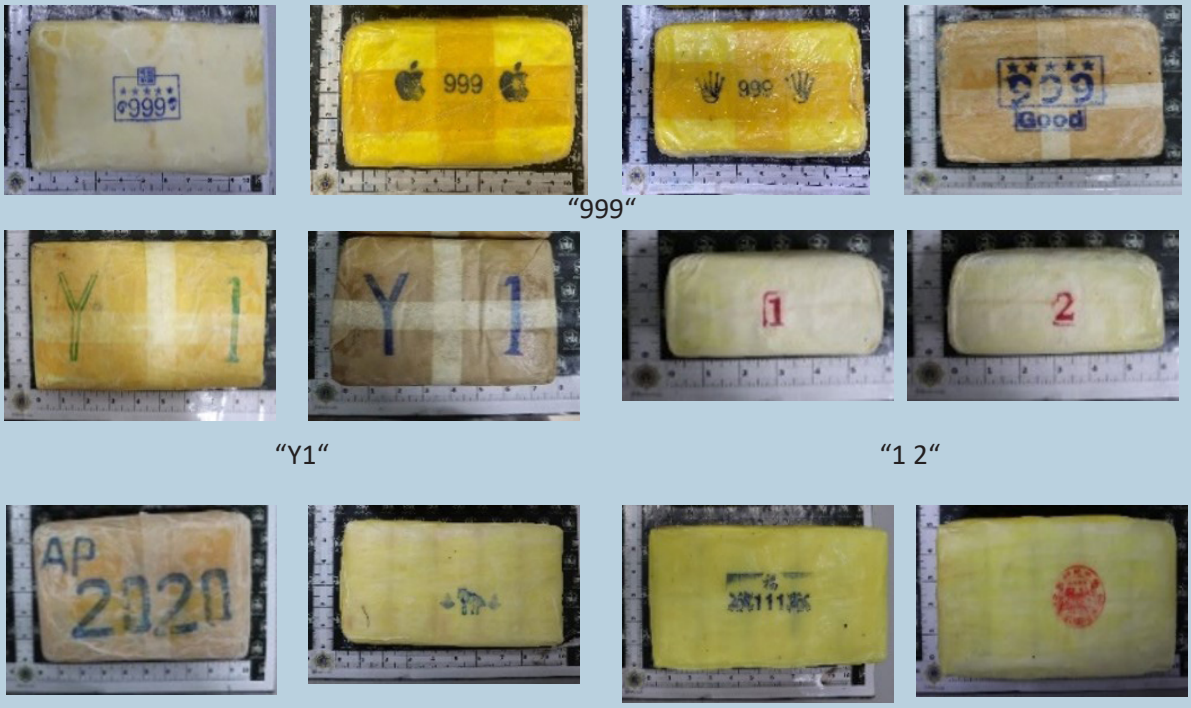
4 In the case of Malaysia, the drop was due to a decrease in the amount of liquid methamphetamine seized, which fell from nearly 6 tons in 2020 to 188.5 kg in 2021. If only considering the amount of crystalline methamphetamine and methamphetamine tablets seized in Malaysia in 2021, there was an increase of 29.5 per cent (2,288.5 kg) compared to 2020 figures. See the Malaysia country chapter for more information at https://www.apaic.net.

5 See the Myanmar country chapter for more information at https://www.apaic.net.

Box story: Packaging of methamphetamine tablets originating from the Golden Triangle

The exterior of the packaging of methamphetamine tablets manufactured in the Golden Triangle shows a wide variety of branding marks.

Figure 5. Branding on methamphetamine tablet packages found in Thailand



"999"

"Y1"

"1 2"

"Other branding"

Source: Office of the Narcotics Control Board (ONCB) of Thailand.

The most commonly detected branding on methamphetamine tablet packaging found in Thailand include "999", "Y1" and "1" or "2". In 2020, packaging marked with "999" accounted for the largest number of tablets seized (76 per cent), followed by "Y1" (20 per cent). However, in 2021, a larger variety of brandings was observed.

Table 1. Proportion of different branding on methamphetamine tablet packaging seized in Thailand, 2020-2021

Branding	2020	2021
"999"	76.2%	73.5%
"Y1"	20.0%	13.2%
"1" or "2"	0.5%	0.1%
Other branding	2.8%	13.0%
No logo	0.5%	0.3%

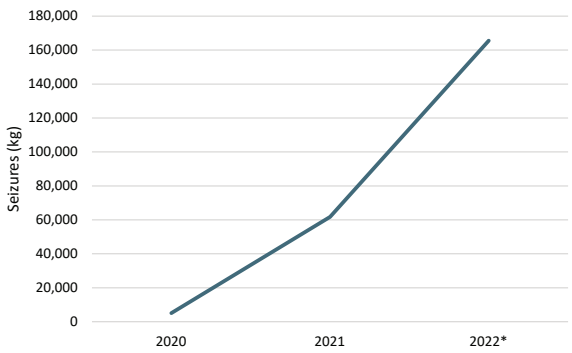
Source: Official communication with ONCB of Thailand, May 2022.

Although there is limited information on linkages between the branding on methamphetamine tablet packaging and their specific origin, drug control authorities in the region have reported that the branding can be indicative of which organised crime group manufactured/tableted the drug.[6] The increase in "other" category in 2021 could indicate a larger number of different actors.

6 Official communication with national drug agencies in the region, March-May 2022.

facility,[7] which was set up to produce ketamine and potentially other synthetic drugs.[8] In addition, the amount of precursors and non-controlled chemicals that can be used in illicit synthetic drug manufacture seized at warehouses and other sites in the country has grown exponentially over the past two years. In January 2022, 165 tons of chemicals were seized across three warehouses in Cambodia. These include controlled chemicals, such as acetic anhydride (2.7 tons), hydrochloric acid (29.1 tons), and toluene (32.4 tons), as well as non-controlled chemicals, such as cyclohexane (3.9 tons) along with other chemicals, which can be used in the illicit manufacture of synthetic drugs.[9]

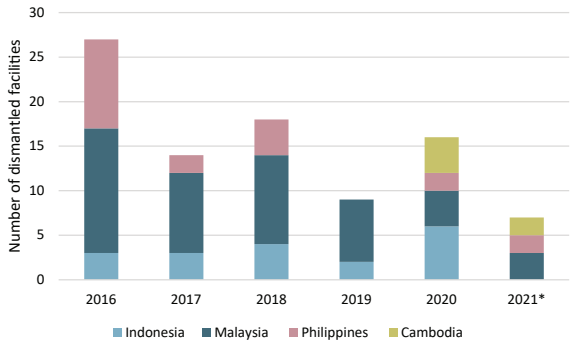
Figure 6. Amounts (kg) of controlled and non-controlled chemicals seized in Cambodia, 2020-2022



Source: Bilateral Meeting with Cambodian authorities, March 2022.
Note: * Data are preliminary and are up to January 2022.

Although the number of clandestine laboratories seized is not necessarily indicative of manufacturing trends, as the facilities vary significantly in size and potential manufacturing capacity, methamphetamine manufacture seems to have diminished in other Southeast Asian countries, which, however, continue to seize large quantities of methamphetamine. In Malaysia and the Philippines, the number of methamphetamine facilities has been declining since 2016, while in Indonesia, no illicit methamphetamine manufacturing facilities were dismantled in 2021.[10] Meanwhile, in China, only 123 clandestine drug laboratories[11] were dismantled in 2021 compared to 449 in 2016.[12]

Figure 7. Number of methamphetamine manufacturing and/or re-processing facilities dismantled in Cambodia, Indonesia, Malaysia, and the Philippines, 2016-2021*



Source: DAINAP.
Note: * Data are preliminary. The figures refer to all laboratories, regardless of the size of the facility or the scale of the output. At present, there are no comprehensive data to assess the scale of the dismantled manufacturing facilities in East and Southeast Asia.

Emerging trafficking routes and diversified sources of methamphetamine

For the most part, trafficking routes in East and Southeast Asia did not change dramatically from 2020 to 2021, as organised crime groups adapted to COVID-19 mobility restrictions (see maps). Methods that gained traction following the onset of COVID-19, such as increased use of online methods, continued into 2021, and maritime trafficking routes along the Andaman Sea and through the Malacca Strait towards Malaysia, Indonesia, and beyond were still used in 2021.

Intensification of trafficking through and to Lao PDR, especially for methamphetamine tablets

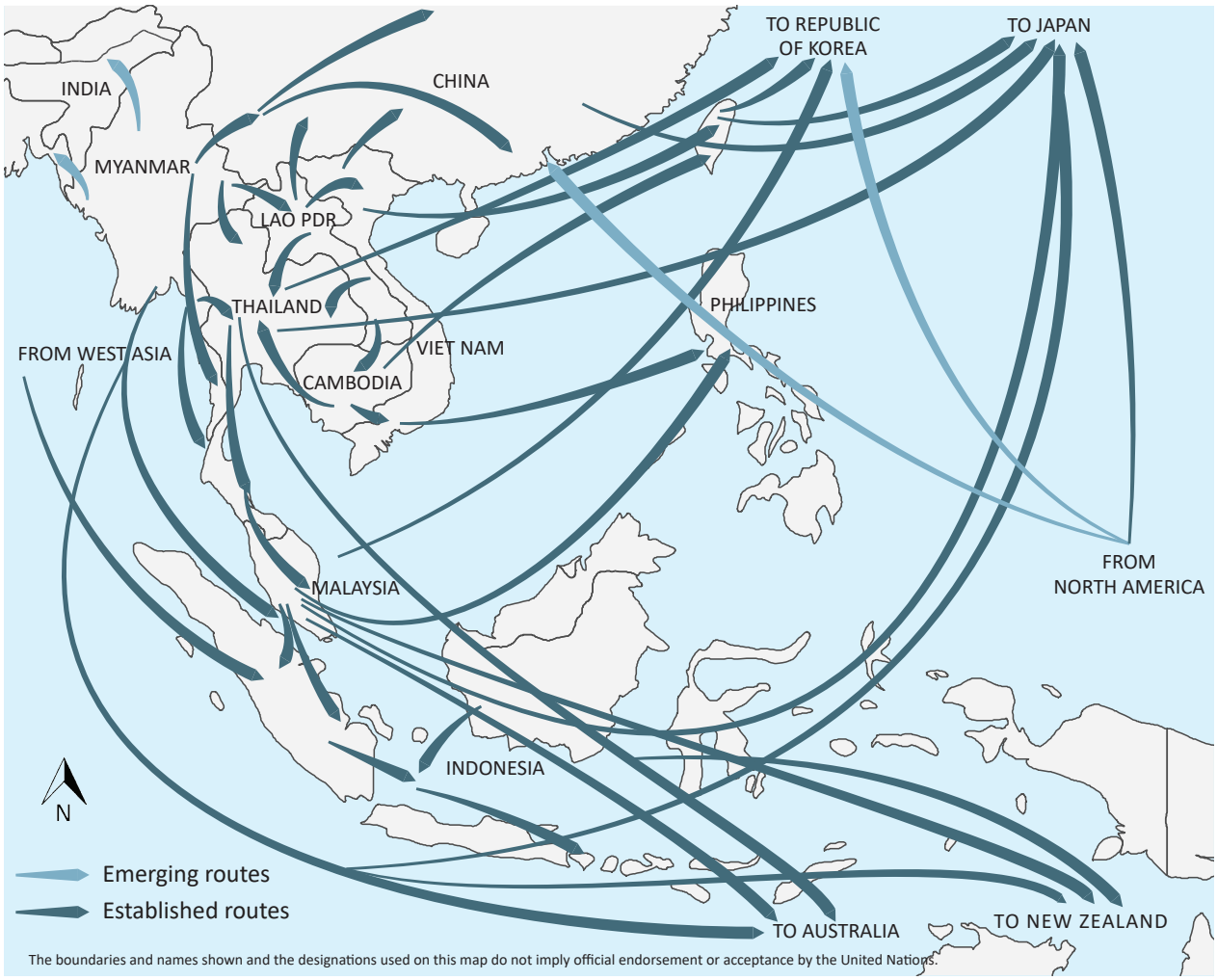
Lao PDR is one of the countries most impacted by methamphetamine trafficked out of Myanmar. The increased drug trafficking from Shan State, Myanmar through and to Lao PDR that was observed in 2020 further intensified in 2021, particularly for methamphetamine tablets. In 2021, Lao PDR seized a record 143 million tablets, a 669 per cent increase from the amount seized in 2020. This trend has continued into 2022, with a seizure of over 36 million tablets and 590 kg of crystalline methamphetamine in January.[13] These

7 Industrial-scale laboratories use equipment that is either custom-made or purchased from industrial processing sources and can yield 50 kg or more per typical manufacturing cycle.
8 Bilateral Meeting with Cambodian authorities, March 2022; Official communication with the National Authority for Combating Drugs (NACD) of Cambodia, March 2022.
9 Bilateral Meeting with Cambodian authorities, March 2022.
10 Official communication with the National Anti-Drugs Agency (NADA) of Malaysia, the Dangerous Drugs Board (DDB) of the Philippines, and the Narcotics Control Board (BNN) of Indonesia, March-April 2022.
11 Disaggregated data by drug type is not available.
12 See the China country chapter for more information at https://www.apaic.net.
13 Official communication with the Lao National Commission for Drug Control and Supervision (LCDC), March 2022.

Map 2. Methamphetamine tablet trafficking flows in the Mekong region, 2021

Source: UNODC elaboration based on information presented at the Global SMART Programme Regional Workshop, November-December 2021.
Note: Flow arrows represent the general direction of trafficking and do not coincide with precise sources of production or manufacture, are not actual routes and are not weighed for significance or scale. Boundaries, names and designations used do not imply official endorsement or acceptance by the United Nations.

Map 3. Crystalline methamphetamine trafficking flows in East and Southeast Asia, 2021



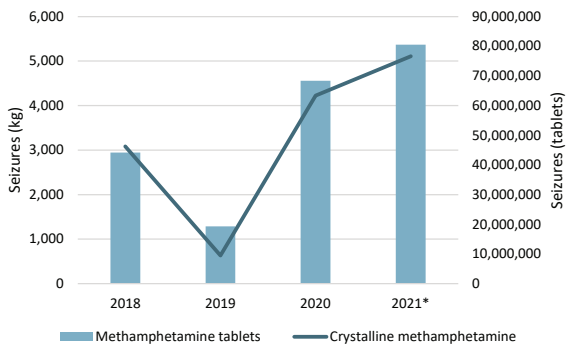
Source: UNODC elaboration based on information presented at the Global SMART Programme Regional Workshop, November-December 2021.
Note: Flow arrows represent the general direction of trafficking and do not coincide with precise sources of production or manufacture, are not actual routes and are not weighed for significance or scale. Boundaries, names and designations used do not imply official endorsement or acceptance by the United Nations.

large seizures point towards organised crime groups increasingly diverting their trafficking operations through Lao PDR for further trafficking to destination countries. Drug control authorities in the region have indicated that organised crime groups have also targeted Lao PDR for tableting of the drug.[14]

Lao PDR authorities have reported that in addition to an increasing inflow of methamphetamine and other drugs from Myanmar, there has also been an increase in outflow through its border with Thailand.[15] This is further supported by rising seizures of methamphetamine and other drugs in the northeastern provinces of Thailand which are bordering Lao PDR.[16]

14 Communication with drug control authorities in the Mekong subregion.
15 Official communication with LCDC, March 2022.
16 These provinces include Loei, Nong Khai, Nakhon Phanom, Bueng Kan and Mukdahan at the border, as well as Khon Kaen, Udon Thani, Maha Sarakham, Kalasin, Nong Bua Lamphu, Roi Et, and Sakon Nakhon.

Figure 8. Seizure amounts of methamphetamine in northeastern Thailand, 2018-2021

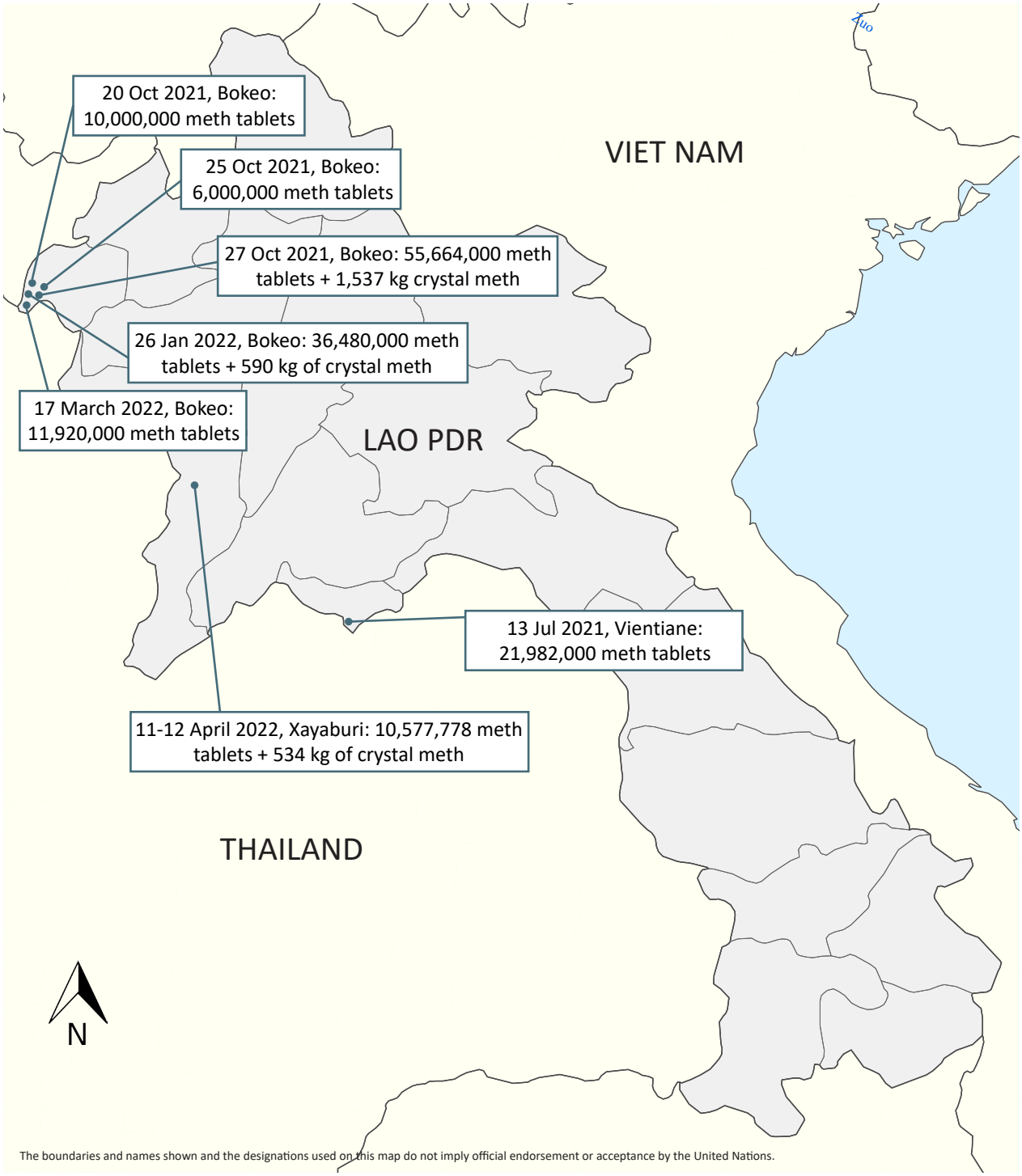


Source: Official communication with ONCB of Thailand, May 2022.
Note: * Data are preliminary.

Lao PDR has also been increasingly reported as the origin of parcel shipments of methamphetamine trafficked to New Zealand.[17]

17 New Zealand Customs Service, "The Golden Triangle – Methamphetamine and Heroin Seizures", November 2021.

Map 4. Significant seizures of methamphetamine in Lao PDR, 2021-2022



Sources: Official communication with the Lao National Commission for Drug Control and Supervision (LCDC) of Lao PDR, March 2022.

Hong Kong, China, and the Republic of Korea used as transit for methamphetamine from Mexico

Countries and territories in East Asia, particularly Hong Kong, China, remain an important transit location not only for drug shipments from Southeast Asia, but also for shipments from outside the region. Over the past two years, several large shipments of methamphetamine from Mexico have been seized in Hong Kong, China, e.g. in July (145 kg), September (230 kg), and October (180 kg) 2021.[18] A record amount of 700 kg of methamphetamine was seized in March 2022.[19] The Republic of Korea has also been targeted as a transit location for methamphetamine from Mexico. In July 2021, authorities seized a record amount of methamphetamine (402.8 kg) originating in Mexico and destined to Australia.[20]

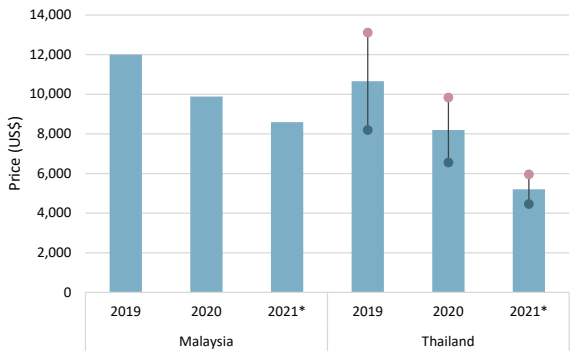
Emergence of crystalline methamphetamine trafficked from Myanmar to South Asia

The integration of South Asia into the Southeast Asian methamphetamine market continued in 2021 and includes no longer only methamphetamine tablets,[21] but more and more also crystalline methamphetamine. A number of seizures of crystalline methamphetamine has been reported from India, including a seizure of 154 kg of the drug in December 2021 where one suspect from Myanmar was apprehended, as well as 10.5 kg in Nagaland and 12 kg in Guwahati in March 2022.[22] In Bangladesh, smaller-scale seizures were made, including 1.5 kg in October, and three seizures of 1 kg each in November 2021. A total of 33.6 kg of crystalline methamphetamine has already been seized in 2022,[23] along with over 5.6 million methamphetamine tablets.[24]

Continuously decreasing prices of methamphetamine in Southeast Asia

Available data on wholesale and retail prices for crystalline methamphetamine show further decrease in three out of four reporting countries, while methamphetamine tablet prices remained stable. Meanwhile, purity has remained high across all three countries. In the case of the Philippines, though the retail price has been stable for the past three years, the purity of crystalline methamphetamine increased in 2021.[25] These price drops have made high-purity crystalline methamphetamine even more affordable to drug users.

Figure 9. Wholesale price of crystalline methamphetamine in Malaysia and Thailand, 2019-2021* (US$)



Sources: Official communication with the National Anti-Drug Agency (NADA) of Malaysia, and ONCB of Thailand, March-May 2022.
Note: * Data are preliminary. The high-low bars represent the upper and lower limits of the price ranges reported in addition to the typical price.

18 Hong Kong Customs press releases, July, September, and October 2021 (accessed at https://www.customs.gov.hk/en/publication_press/press/index_id_3256.html; https://www.customs.gov.hk/en/publication_press/press/index_id_3296.html; https://www.customs.gov.hk/en/publication_press/press/index_id_3306.html).

19 Hong Kong Customs, "Hong Kong Customs makes record seizure of methamphetamine", press release, April 2022 (accessed at https://www.customs.gov.hk/en/publication_press/press/index_id_3428.html).

20 Official communication with the Supreme Prosecutors' Office (SPO) of the Republic of Korea, March 2022.

21 For instance, see seizures reported by the Karimganj Police official Twitter account, November 2021 (accessed at https://twitter.com/karimganjpolice/status/1460948185195560967) and Dimapur Police official Twitter account, February 2022 (accessed at https://twitter.com/dimapurpolice/status/1493954525681831938).

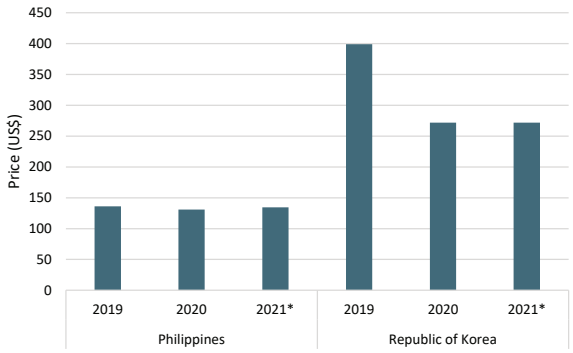
22 The Assam Rifles official Twitter account, December 2021 (accessed at https://twitter.com/official_dgar/status/1468149150420066305); the Nagaland Police official Facebook account, March 2022 (accessed at https://www.facebook.com/346980418805829/posts/1687963614707496/); and the Guwahati Police official Twitter account, March 2022 (accessed at https://twitter.com/GuwahatiPol/status/1503965202231955458).

23 As of April 2022.

24 Border Guard Bangladesh official Facebook account, October, November, and December 2021, and April 2022 (accessed at: https://www.facebook.com/permalink.php?story_fbid=1455533771486097&id=241407426232077; https://www.facebook.com/permalink.php?story_fbid=1489042204801920&id=241407426232077; https://www.facebook.com/permalink.php?story_fbid=1491689214537219&id=241407426232077; https://www.facebook.com/permalink.php?story_fbid=1492928444413296&id=241407426232077; https://www.facebook.com/BorderGuardBangladeshNews/posts/363118152512946).

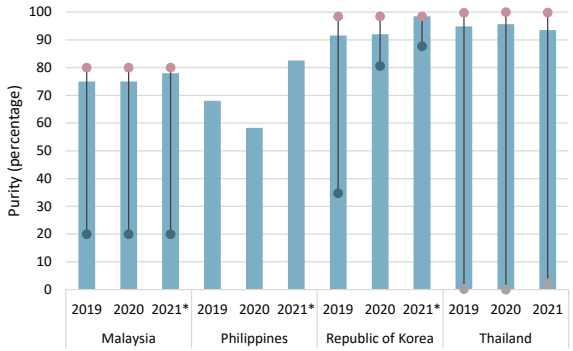
25 Official communication with DDB, March 2022.

Figure 10. Retail price of crystalline methamphetamine in the Philippines and the Republic of Korea, 2019-2021 (US$)



Sources: Official communication with the Dangerous Drugs Board (DDB) of the Philippines, and the Supreme Prosecutors' Office (SPO) of the Republic of Korea, March-April 2022.
Note: * Data are preliminary.

Figure 11. Purity of crystalline methamphetamine in Cambodia, Malaysia, and Thailand, 2019-2021*

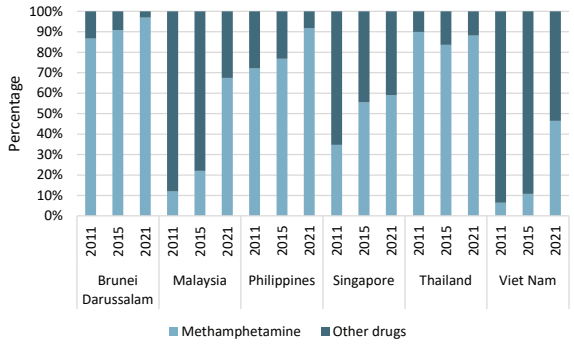


Sources: Official communication with NADA of Malaysia, DDB of the Philippines, SPO of the Republic of Korea, and ONCB of Thailand, March-May 2022.
Note: * Data are preliminary. Purity data for Thailand and the Republic of Korea refer to the weight/weight (w/w) percentage, expressed as the hydrochloride salt of these substances. For Malaysia and the Philippines, it refers to the weight/weight (w/w) percentage, expressed as the base form of these substances. The high-low bars represent the upper and lower limits of the purity range reported in addition to the average purity.

Drug demand indicators show methamphetamine is the most used drug in the region

Drug demand indicators[26] have shown that use of methamphetamine has increased in East and Southeast Asia over the past decade, with increasing proportions of users brought into formal contact with authorities for the use of methamphetamine or increasing treatment admissions for methamphetamine use.

Figure 12. Proportion of methamphetamine users among all drug users as identified through various demand indicators in Brunei Darussalam, Malaysia, the Philippines, Singapore, Thailand, and Viet Nam, 2011, 2015 and 2021



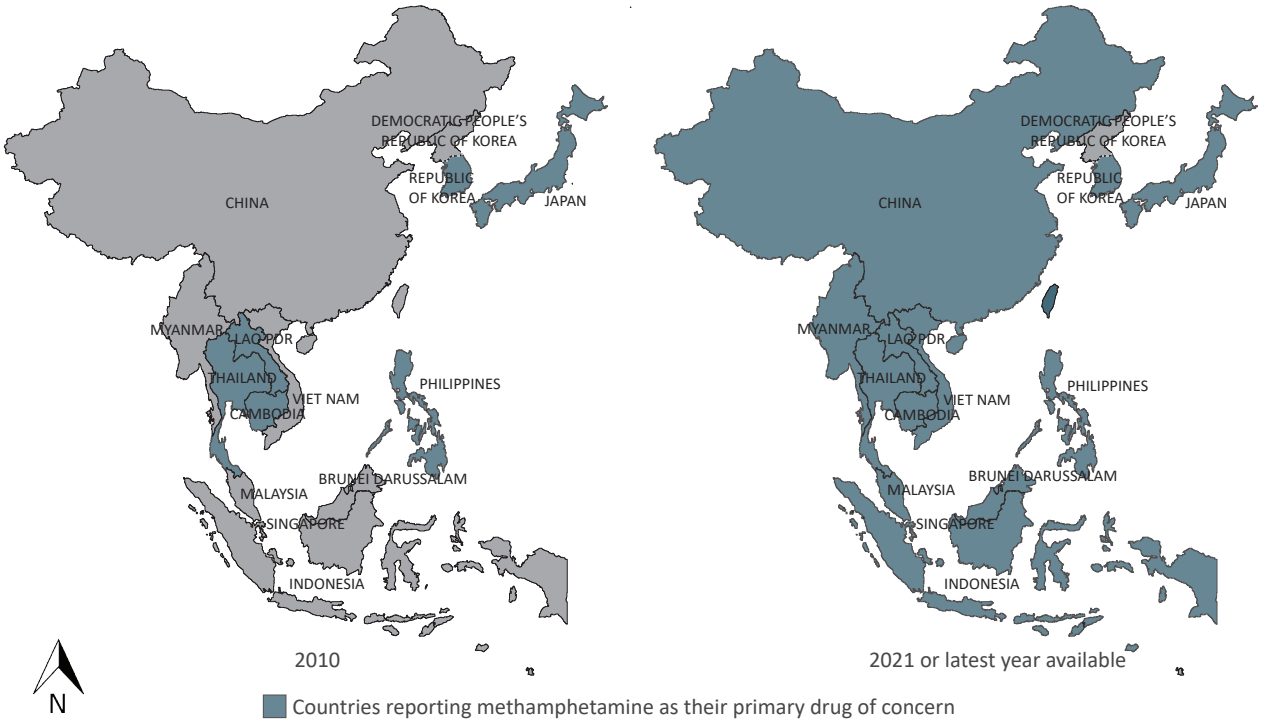
Sources: Official communication with the Narcotics Control Bureau (NCB) of Brunei, NADA of Malaysia, DDB of the Philippines, the Central Narcotics Bureau (CNB) of Singapore, ONCB of Thailand, and the Standing Office on Drugs and Crime (SODC) of Viet Nam, February-May 2022.
Note: Data for Brunei Darussalam and Singapore are based on the number of drug users brought into formal contact with authorities; the data for Malaysia, the Philippines, and Thailand are based on treatment; and the data for Viet Nam are based on registered drug users.

Methamphetamine has also been identified as the primary drug of concern in all reporting countries in the region.[27]

26 Drug demand can be difficult to accurately discern. Though a wide variety of drug demand indicators are available, such as the number of registered drug users, household surveys, treatment admissions, wastewater analysis, not all of them are available in all countries and they have certain limitations. Therefore, a combination of indicators is considered by governments when determining drug use trends.

27 DAINAP.

Map 5. Countries in East and Southeast Asia reporting methamphetamine as their primary drug of concern, 2010 and 2021*

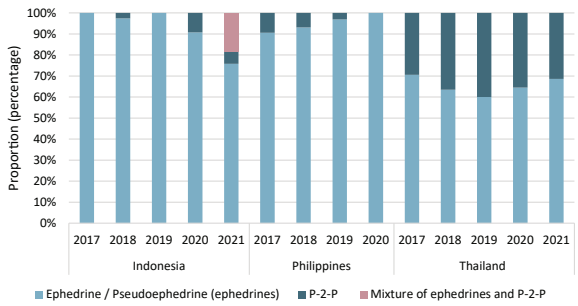


Source: DAINAP.
Note: * Or latest year available.

Forensic profiles of methamphetamine seized in East and Southeast Asia

In 2021, ephedrine and pseudoephedrine (ephedrines) remained the primary precursors used to manufacture methamphetamine in East and Southeast Asia. To a much lesser extent, methamphetamine synthesized using P-2-P-based manufacturing methods also continue to be present in the region, in particular in samples analysed in Thailand. Information on the specific synthesis routes is only available from Indonesia. In 2021, for the first time, samples containing methamphetamine manufactured using both ephedrines and P-2-P-based synthesis methods were detected in Indonesia. Of the 33 samples analysed in 2021, five were manufactured using a mix of the Emde and Leuckart methods, while one sample was a mixture of the Emde and reductive amination methods.[28]

Figure 13. Proportion of crystalline methamphetamine samples analysed in Indonesia, the Philippines, and Thailand, by main precursor, 2017-2021*



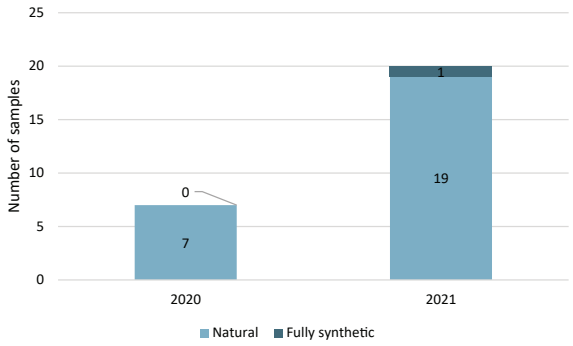
Sources: Official communication with the National Narcotics Board (BNN) of Indonesia, the Philippines Drug Enforcement Agency (PDEA) of the Philippines, and ONCB of Thailand, May 2022.
Note: * Or latest year available. Data reported as "unknown" were not included.

In the case of methamphetamine shipments originating from West Asia which were seized by Indonesia in 2020 and 2021, chemical analysis of the seized methamphetamine pointed to ephedra plant material as the main source of ephedrine used in its synthesis.[29]

28 The Emde method uses ephedrines as its primary precursor, whereas both the Leuckart and reductive amination methods use P-2-P.

29 Official communication with BNN, March 2022.

Figure 14. Synthesis routes of ephedrine in methamphetamine samples seized from West Asia in Indonesia, 2020-2021



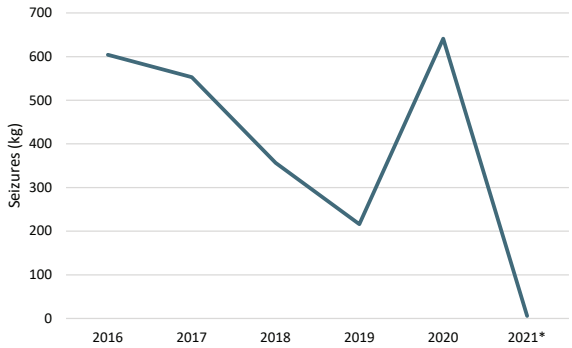
Source: Official communication with BNN of Indonesia, April 2022.

Increases in use of non-controlled chemicals

In recent years, compared to the large and increasing amounts of methamphetamine seized in the region, only negligible amounts of ephedrine and pseudoephedrine have been seized in Southeast Asia. In 2021, based on preliminary data, only 6 kg of ephedrine were seized and no seizures of P-2-P were reported from Southeast Asia.

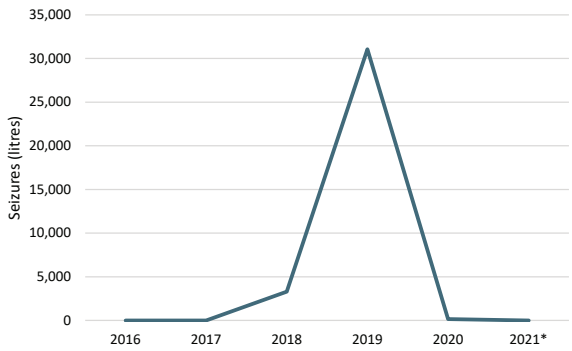
A probable reason for this mismatch is the use of non-controlled chemicals[30] for the illicit manufacture of ephedrine, pseudoephedrine and P-2-P. In 2021 and up to the first quarter of 2022, law enforcement authorities in the region seized a variety of non-controlled chemicals which can be used in the illicit manufacture of controlled substances either at or en route to suspected manufacturing areas. These chemicals include 4-Methylpropiophenone, ammonium nitrate, bromine, dichloromethane, ethyl acetate, hydrogen peroxide, methyl acetate, and nitric acid among others.

Figure 15. Seizure amounts of ephedrine and pseudoephedrine (raw material) in Southeast Asia, 2016-2021



Source: DAINAP.
Note: * Data are preliminary.

Figure 16. Seizure amounts of P-2-P in Southeast Asia, 2016-2021



Source: DAINAP.
Note: * Data are preliminary.

30 Non-controlled chemicals refer to substances not listed in Table I and Table II of the 1988 UN Convention against Illicit Traffic in Narcotic Drugs and Psychotropic Substances.

Overview of the "ecstasy" market

Compared to methamphetamine, the "ecstasy"[31] market in East and Southeast Asia remains small. Europe remains a main source for "ecstasy" flows into the region. However, "ecstasy" manufacturing facilities continue to be found in the region.

The use of "ecstasy" in the region continues to be limited

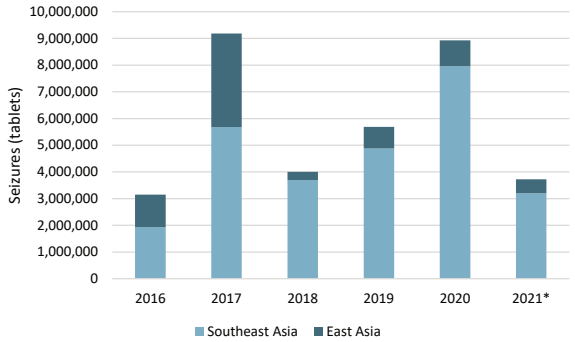
In 2021, four countries in the region provided expert perception on "ecstasy" use, with Cambodia and Singapore reporting increases in use, while Malaysia and Thailand reported decreases. Meanwhile, the number of people who were admitted to treatment for "ecstasy" use remains low. Brunei, Malaysia, the Philippines, and Thailand all reported that less than one per cent of drug treatment admissions were due to "ecstasy", while in Singapore, it was below two per cent.[32]

Drop in seizures of "ecstasy" in East and Southeast Asia

Preliminary data for 2021 shows a significant drop in the amount of "ecstasy" seized in the region, both in East Asia and Southeast Asia from the equivalent of 8.9 million tablets in 2020 to 3.7 million tablets in 2021. In East Asia, although seizures of the drug increased in the Republic of Korea and Japan, the amount of "ecstasy" seized in China, including Hong Kong, declined sharply compared to the previous year.[33] As in previous years, "ecstasy" seizures in Southeast Asia were primarily driven by Indonesia and Malaysia, where the combined amounts seized declined significantly from 5.2 million tablets in 2020 to only 1.8 million in 2021.[34] However, increases in "ecstasy" seizures were observed in Myanmar, the Philippines, the Republic of Korea, and Thailand.[35]

31 "Ecstasy" tablets sold in East and Southeast Asia may contain a range of substances in varying composition and quantities in addition or instead of MDMA.
32 See the Cambodia, Singapore, Thailand, and Philippines country chapters for more information at https://www.apaic.net.
33 Official communication with NNCC, March 2022; Japan Customs, "Summary of Japan Customs' Enforcement in 2021", February 2022.
34 Official communication with BNN and NADA, April 2022.
35 See the Myanmar, Philippines, Republic of Korea, and Thailand country chapters for more information at https://www.apaic.net.

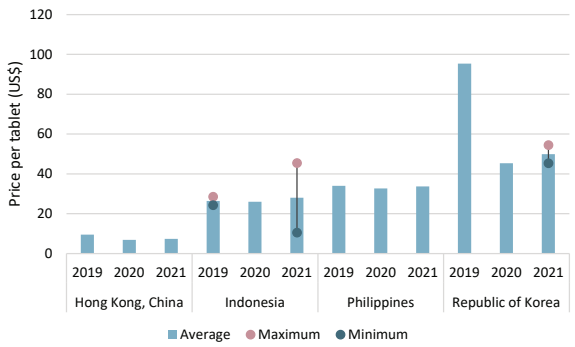
Figure 17. Seizures of "ecstasy" tablets in East and Southeast Asia, 2016-2021



Sources: DAINAP; UNODC, responses to the ARQ; Official communication with national drug agencies in the region, February-May 2022.
Note: * Data are preliminary. Figures reported other than the number of tablets were converted into estimated tablet equivalents at 300 mg per tablet.

Despite the fluctuations in the amount of "ecstasy" seized over the past few years, retail prices of the drug have not changed significantly, except for the Republic of Korea, where the retail price per tablet halved in 2020 and remained stable through 2021.[36]

Figure 18. Typical retail prices of "ecstasy" tablets in Hong Kong, China, Indonesia, the Philippines, and the Republic of Korea, 2019-2021 (US$)



Sources: Official communication with the National Narcotics Control Commission (NNCC) of China, BNN of Indonesia, DDB of the Philippines, and SPO of the Republic of Korea, March-April 2022.

Europe continues to be a prominent source of "ecstasy" trafficked into the region.[37] In addition to "ecstasy" tablets trafficked from Europe, Thai authorities also reported "ecstasy" tablets trafficked through its northeastern provinces bordering Lao PDR.[38]

36 Official communication with SPO, March 2022.
37 BNN, "Latest situation on synthetic drugs and responses to the threats in Indonesia", presented at the Global SMART Programme Regional Workshop, November-December 2021; Official communication with ONCB, May 2022.
38 Bilateral meeting with Thai authorities in northeastern provinces, December 2021.

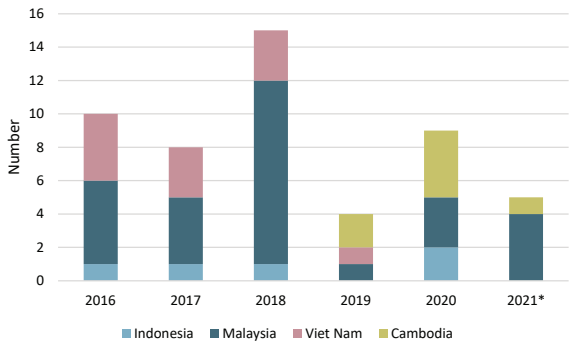
Growing scale of "ecstasy" manufacture in the region

Though the "ecstasy" market in East and Southeast Asia is small, there has been continued production of the drug in region, notably in Cambodia and Malaysia. Cambodia, especially, has been increasingly targeted for the illicit manufacture of synthetic drugs, including "ecstasy".

In July 2021, a drug production facility was dismantled in Cambodia, where 102 kg of MDMA was seized, together with 39.9 kg of mephedrone and over 1,114 kg of chemical substances. Incidentally, tableting tools found at the site matched with the physical characteristics and designs of "ecstasy" tablets found in the region.[39] Moreover a tableting tool matching the design for a pharmaceutical product[40] was found. This shows the flexibility of organized crime groups in using facilities to produce multiple drug types.[41]

While the number of manufacturing facilities dismantled does not indicate the scale of manufacture, it can still provide a picture on the changing dynamic of manufacture. The number of "ecstasy" manufacturing facilities dismantled in Viet Nam and Indonesia declined in the past two years, while manufacture in Malaysia seems to be re-emerging.[42]

Figure 19. Number of clandestine "ecstasy" manufacturing facilities dismantled in Southeast Asia, 2016-2021



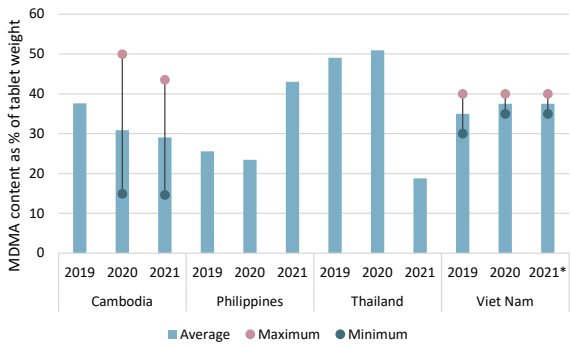
Sources: Official communication with BNN of Indonesia, NADA of Malaysia, SODC of Viet Nam and NACD of Cambodia, March-April 2022.
Note: * Data are preliminary.

39 Information on the destination of the drugs produced at the facility are not available.
40 The tableting tool design matched with an acetaminophen and hydrocodone bitartrate pharmaceutical product produced by Watson Laboratories, Inc.
41 Official communication with NACD, March 2022.
42 Official communication with NADA, April 2022.

Content of MDMA in "ecstasy" tablets remains high[43]

Though the average MDMA content in "ecstasy" tablets varies among countries in the region, the proportion of MDMA per "ecstasy" tablet has remained high or stable in 2021 in most countries, with significant changes only observed in the Philippines and Thailand. In the Philippines, the average MDMA content in "ecstasy" tablets nearly doubled from 23.4 per cent in 2020 to 43 per cent in 2021.[44] In contrast, the MDMA content in "ecstasy" tablets in Thailand dropped from 50.9 per cent in 2020 to only 18.8 per cent.[45] This decrease was in part due to about a quarter of the analysed samples containing a mixture of substances other than MDMA, particularly methamphetamine and ketamine.[46]

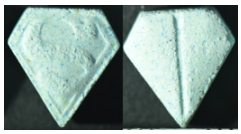
Figure 20. Changes in MDMA content in "ecstasy" tablets analysed in Cambodia, the Philippines, Thailand, and Viet Nam, 2019-2021*



Sources: Official communication with NACD of Cambodia, DDB of the Philippines, ONCB of Thailand and SODC of Viet Nam, March-May 2022.
Note: * Data are preliminary and as of September 2021. This graph should be interpreted with caution because it does not consider changes in the average weight of "ecstasy" tablets analysed during the period in the four countries.

43 The figures in this subsection should be interpreted with caution as "ecstasy" tablets are of different weights, and average weights may change from year to year. Nevertheless, these figures can still provide insight to changes to "ecstasy" found in the region.
44 Official communication with DDB, March 2022.
45 Official communication with ONCB, May 2022.
46 Of the 68 "ecstasy" samples containing a mixture of compounds analysed, 17 did not contain MDMA. Other samples contained a mixture of MDMA and other substances, including methamphetamine, amphetamine, ketamine, MDA, and paramethoxymethamphetamine.

Table 2. Examples of synthetic drug tablets sold as "ecstasy" with substances other than MDMA present analysed in Southeast Asia, 2021*

Photo	Reporting country	Weight of tablet	Other substance(s) present (per cent of substance content where available)
	Singapore	180 mg	• Diazepam • Methamphetamine
	Singapore	240 mg	• 4-Fluoro-MDMB-BUTICA • Caffeine • Methamphetamine • Eutylone • Ketamine
	Thailand	N/A	• Methamphetamine (12.09-18.92%) • Ketamine (8.03-9.23%) *Note: No MDMA present.*
	Thailand	N/A	• Ketamine (0.22-2.67%) • Methamphetamine (0.67-1.90%)

Sources: Official communication with CNB of Singapore and ONCB of Thailand, March-May 2022; ONCB, "Latest situation on synthetic drugs and responses to the threats in Thailand", presented at the Global SMART Programme Regional Workshop, November-December 2021.

Box story: Emergence of 'happy water' in Thailand

With the surplus of synthetic drugs in the region, over the years organised crime groups have combined various illicit substances and marketed them as new products to appeal to drug users. 'Happy water' is one such mixture.

Though previously identified and subsequently banned in China, this drug cocktail has recently been found in Thailand, illegally sold online through social media, as well as at entertainment venues where the drug is commonly used. It is sold as a liquid or in powder form to be mixed with water or other drinks. Whereas the 'happy water' marketed in China contained a mixture of MDMA, methamphetamine, amphetamine, and ketamine, the seized 'happy water' samples analyzed in Thailand contained MDMA, methamphetamine, diazepam, caffeine, tramadol, and ketamine.[47]

Table 3. Content of samples of 'happy water' analysed in Thailand, 2022

No.	Images	Forensic profile	Number of samples
1		MDMA (2.26%), ketamine (5.40%) and caffeine	2
2		Methamphetamine (46.18%) and diazepam (24.59%)	3

Source: Official communication with ONCB of Thailand, May 2022.

47 Department of Medical Services of Thailand, "The Princess Mother National Institute on Drug Abuse Treatment issues warning on 'happy water': a drug mixture with severe effects and potentially fatal consequences", press release, April 2022; Official communication with ONCB, May 2022.

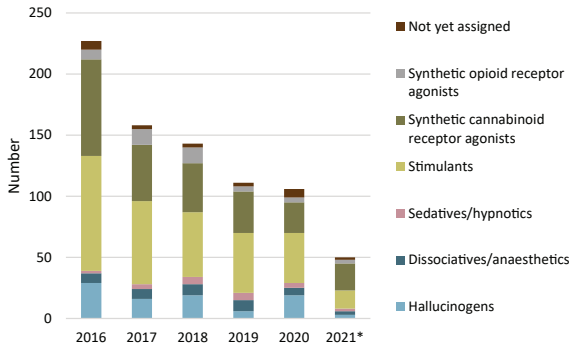
Overview of the new psychoactive substances (NPS) and other synthetic drug markets

In addition to methamphetamine and "ecstasy", other synthetic drugs, including NPS,[48] have become relevant in East and Southeast Asia over past few years. Although the annual reported number of NPS identified in the region has gradually decreased in recent years, substances continue to evolve and emerge. Ketamine remains a concern, with signs pointing to increasing supply from within and outside the region.

General trends in the emergence of NPS in East and Southeast Asia

As of December 2021, preliminary data show a cumulative total of 507 individual NPS identified in East and Southeast Asia. However, the total number of individual NPS identified annually has been decreasing with preliminary data showing that only 50 substances were identified in 2021 compared to 106 in 2020.[49]

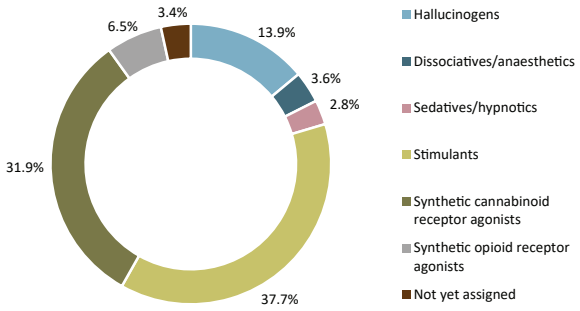
Figure 21. NPS reported annually to UNODC in East and Southeast Asia, by effect group, 2016-2021*



Source: UNODC Early Warning Advisory (EWA) on NPS; Official communication with national drug agencies in the region, February-May 2022.
Note: * Data are preliminary.

Of the 507 substances identified in the region thus far, in terms of pharmacological effects, NPS with stimulant effects (187) constitute the largest group of substances, followed by synthetic cannabinoid receptor agonists (158) and hallucinogens (69).

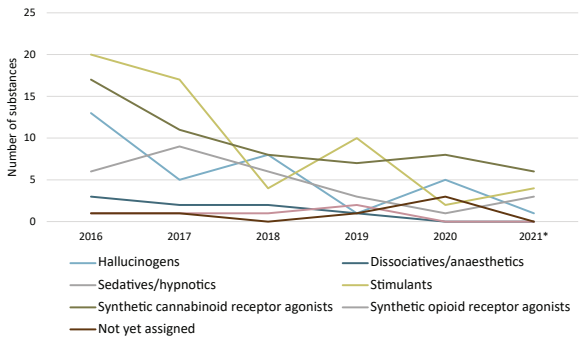
Figure 22. Proportion of NPS in East and Southeast Asia, by effect, up to December 2021*



Source: UNODC EWA on NPS.
Note: * Data are preliminary and based on analysis of 496 synthetic NPS. Plant-based substances were excluded from the analysis because they usually contain many different substances, some of which may not even be known and whose effects and interactions are not fully understood.

Though NPS with stimulant effects make up the largest proportion of NPS overall, the number of newly reported stimulant NPS has been on the decrease over the past five years. To some extent, this trend can be observed for other effect groups as well.

Figure 23. Newly reported NPS in East and Southeast Asia, by effect, up to December 2021*

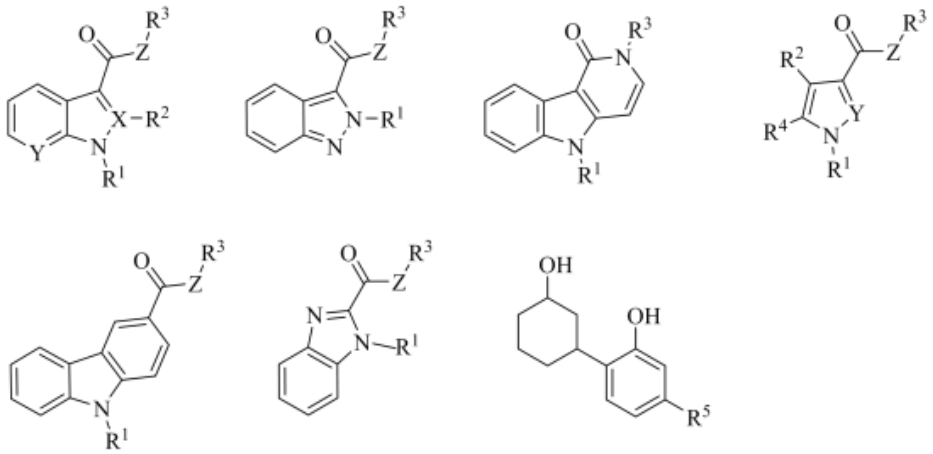


Source: UNODC EWA on NPS.
Note: * Data are preliminary.

48 For the purpose of this report, NPS that have been placed under international control since 2014 continue to be included under the term NPS to enable time series analysis. A list of all scheduling decisions can be found at: https://www.unodc.org/unodc/en/commissions/CND/Mandate_Functions/Mandate-and-Functions_Scheduling.html.

49 UNODC EWA on NPS; Official communication with national drug agencies in the region, February-May 2022.

Figure 24. Structural backbones of synthetic cannabinoids covered by the generic class scheduling of synthetic cannabinoids in China, July 2021[42]



Source: Ministry of Public Security of China (accessed at: https://app.mps.gov.cn/gdnps/pc/content.jsp?id=7881703).

Evolving nature of synthetic cannabinoids in the region

In July 2021, China implemented a class scheduling of synthetic cannabinoids based on common general structural backbones to curb the growing threat of this class of compounds in the country.[51] Subsequently, several new synthetic cannabinoids with previously unencountered or not commonly encountered structural backbones emerged in China, which might not be covered under this legislation and were likely developed to circumvent these legal controls.[52] These substances include ADB-FUBIATA, which is a methylene analogue of ADB-FUBICA, as well as analogues of MDA-19 (BZO-HEXOXIZID), such as BZO-POXIZID (MDA-19 pentyl analogue) and 5F-BZO-POXIZID (5F-MDA-19).[53] The aforementioned new "OXIZID" class of synthetic cannabinoids were also found in Singapore, in addition to BZO-CHMOXIZID.[54] BZO-POXIZID was also identified in Indonesia for the first time in 2021.[55]

MDMB-4en-PINACA was the most frequently identified NPS in 2020 in China and Viet Nam, and in Indonesia[56] and Singapore in 2021 by number of occurrences in drug samples analysed. ADB-BUTINACA, first identified in the region in 2020 in China and Singapore, is also of concern. Since its identification last year, it became the fourth and fifth most frequently identified NPS in Singapore and Malaysia respectively, while in China it was the most frequently identified synthetic cannabinoid in 2021.[57]

Persistent supply of ketamine in East and Southeast Asia

The non-medical use of ketamine from clandestine manufacture remains of concern in the region. In 2021, the total amount of ketamine seized in East and Southeast Asia reached nearly 10.3 tons.

50 R^1 represents the C_3-C_8 alkyl group whether or not substituted, or heterocyclic group containing 1-3 hetero atoms whether or not substituted, or methyl or ethyl group substituted by heterocyclic group containing 1-3 hetero atoms whether or not substituted. R^2 represents the hydrogen atom or methyl group or no atom. R^3 represents the C_6-C_{10} aryl group whether or not substituted, or C_3-C_{10} alkyl group whether or not substituted, or heterocyclic group containing 1-3 hetero atoms whether or not substituted, or methyl or ethyl group substituted by heterocyclic group containing 1-3 hetero atoms whether or not substituted. R^4 represents the hydrogen atom, phenyl group whether or not substituted, benzyl group whether or not substituted. R^5 represents the C_3-C_{10} alkyl group whether or not substituted. X represents N or C. Y represents N or CH. Z represents O or NH or no other atom.

51 Ministry of Public Security of China, May 2021 (accessed at: https://app.mps.gov.cn/gdnps/pc/content.jsp?id=7881703).

52 Cayman Chemical and NPS Discovery at the Center for Forensic Science Research and Education (CFSRE), *New Systematic Naming for Synthetic Cannabinoid "MDA-19" and Its Related Analogues: BZO-HEXOXIZID, 5F-BZO-POXIZID, and BZO-POXIZID*, August 2021.

53 Liu C-M, Hua Z-D, Jia W, Li T. Identification of AD-18, 5F-MDA-19, and pentyl MDA-19 in seized materials after the class-wide ban of synthetic cannabinoids in China. *Drug Test Analysis,* 2021; 1-10. doi:10.1002/dta.3185.

54 Official communication with CNB, March 2022.

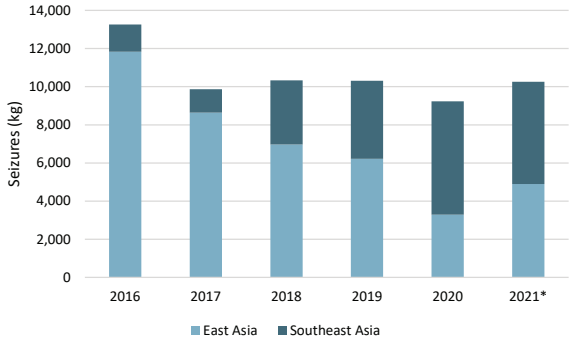
55 Official communication with BNN, April 2022.

56 In Indonesia, 794 of the 825 samples analysed were MDMB-4en-PINACA.

57 See the China, Malaysia, and Singapore country chapters for more information at https://www.apaic.net..

Though the total amount of ketamine seized in the region has remained stable over the past five years, the amount seized in Southeast Asia declined for the first time after a steady increase since 2017 (5.3 tons). This was in part due to declines in Malaysia, Myanmar, and Thailand, which in previous years accounted for a large proportion of ketamine seized in the subregion. These declines were offset by a significant increase in Cambodia, where 2.8 tons of the drug were seized, compared to only 112.5 kg seized in 2020.[58] In East Asia, while the amount of ketamine seized in China and Taiwan Province of China declined in 2021, Hong Kong, China, saw a significant increase of ketamine seized, reaching 3.2 tons, nearly sevenfold the amount seized the year prior.[59]

Figure 25. Seizure amounts of ketamine in East and Southeast Asia, 2016-2021



Sources: DAINAP; UNODC, responses to the ARQ; Official communication with national drug agencies in the region, February-May 2022; Taiwan Ministry of Justice, "Drug Offenses" (accessed at https://www.moj.gov.tw/2832/2833/2853/2854/2857/).
Note: * Data are preliminary.

Geographical expansion of the illicit manufacture of ketamine

Ketamine continues to be manufactured in the Golden Triangle. However, Cambodia has been increasingly targeted for illicit synthetic drug production, not only for methamphetamine and "ecstasy", but ketamine as well.

In December 2021, Cambodian authorities seized 1,420 kg of the drug, destined to Taiwan Province of China, in Sihanoukville. A series of follow-up investigations led to the dismantling of two large-scale illicit suspected ketamine manufacturing facilities and a chemical storage, including a clandestine ketamine laboratory in Kampong Speu province in the same month. A total of 61.7 tons of various substances, including 750 kg of ketamine (base form), 5.2 tons of ketamine waste as well as 13.2 tons of ethyl benzoate[60] were found.[61] A further 149 tons of chemicals, most of which are not under international control, were seized in a chemical storage site in Phnom Penh in January 2022,[62] including ammonia and activated carbon, which can be used in the manufacture of ketamine. Acetic anhydride, benzoic acid and cyclohexane were also found at the site, indicating that organized crime groups may have intended to produce not only ketamine but also other synthetic drugs in Cambodia.

Figure 26. Industrial-scale clandestine ketamine laboratory dismantled in Cambodia, December 2021

Source: NACD of Cambodia.

Aside from Cambodia, clandestine ketamine laboratories continue to be found in other countries in the region, notably Malaysia, with four ketamine laboratories dismantled in 2021.[63]

Diversification of sources of ketamine

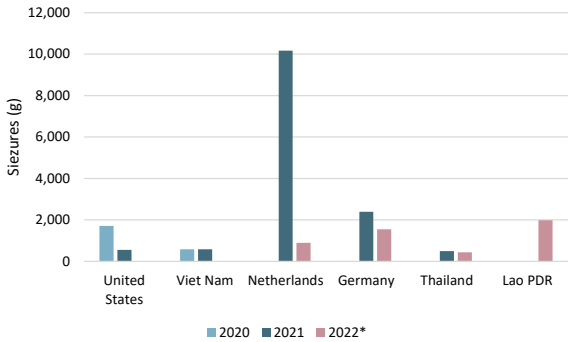
While the significant increase in ketamine seized in Cambodia was attributed to the illicit manufacture of the substance in the country, in the case of Hong Kong, China, this increase was due to the rising supply of the drug from West Asia. At least seventy

58 Official communication with NACD, March 2022.
59 Official communication with NNCC, March 2022.
60 Ethyl benzoate is a reagent commonly used in the synthesis of ketamine, but it also has licit uses. It is not internationally controlled.
61 NACD, List of Drugs and Chemicals Seized at the Production Site in Kamphong Speu, December 2021.
62 Bilateral Meeting with Cambodian authorities, March 2022.
63 Official communication with NADA, April 2022.

per cent (2.3 tons) of the ketamine seized in Hong Kong, China, in 2021 originated from Pakistan,[64] with two large shipments of the drug intercepted by authorities in February (682 kg)[65] and December (1,226 kg).[66]

In the past few years, increasing quantities of the drug have been reported to be sourced from Europe, particularly the Netherlands and Germany, by authorities in Viet Nam and the Republic of Korea.[67] Lao PDR has also emerged as an embarkation point for ketamine to the Republic of Korea.[68]

Figure 27. Seizure amounts of ketamine in the Republic of Korea, by embarkation point, 2020-2022



Source: Official communication with the Korea Customs Service, March 2022.
Note: * Data are preliminary.

Continued non-medical use of ketamine

Except for Cambodia and Hong Kong, China, where use of ketamine, as indicated by expert perception and number of ketamine users respectively, increased, other countries in the region reported stable or declining use. Expert perception on the use of ketamine in Malaysia and Thailand suggests a decrease in the use of the drug in 2021, while it remained stable in Singapore.[69] Meanwhile, the number of registered the drug users in China continued to decline, further dropping from 41,100 users in 2020 to 37,449 users in 2021.[70]

64 Based on seizures reported by Hong Kong Customs and the Hong Kong Police (accessed at https://twitter.com/hkpoliceforce/status/1357640178618126344; https://www.customs.gov.hk/en/publication_press/press/index_id_3221.html; https://www.customs.gov.hk/en/publication_press/press/index_id_3260.html; https://www.customs.gov.hk/en/publication_press/press/index_id_3280.html; https://www.customs.gov.hk/en/publication_press/press/index_id_3272.html; https://twitter.com/hkpoliceforce/status/1474722802892693511).

65 Hong Kong Police official Twitter account, February 2021 (accessed at https://twitter.com/hkpoliceforce/status/1357640178618126344).

66 Hong Kong Police official Twitter account, December 2021 (accessed at https://twitter.com/hkpoliceforce/status/1474722802892693511).

67 SODC, "Latest situation on synthetic drugs and responses to the threats in Viet Nam", presented at the Global SMART Programme Regional Workshop, November-December 2021; Official communication with SPO, March 2022.

68 Official communication with the Korea Customs Service, March 2022.

69 See the Cambodia, China, Malaysia, Thailand, and Singapore country chapters for more information at https://www.apaic.net.

70 Official communication with NNCC, March 2022.

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