

# Unwaste

## TRENDSPOTTING ALERT



This publication is produced by UNODC and the UNITAR Sustainable Cycles (SCYCLE) Programme, through the Unwaste project and with financial support of the European Union. Its contents are the sole responsibility of the Unwaste project and do not necessarily reflect the views of the European Union nor the United Nations Secretariat.

### Bulletin No. 5 - July 2023

This fifth bulletin focuses on eight types of metal waste: ferrous waste and scrap (HS code 7204), copper waste and scrap (HS code 7404), nickel waste and scrap (HS code 7503), aluminium waste and scrap (HS code 7602), lead waste and scrap (HS code 7802), zinc waste and scrap (HS code 7902), tin waste and scrap (HS code 8002) and waste and scrap of precious metals (HS code 7112).



## PERSPECTIVES

Metals are highly sought-after raw materials worldwide because of how indispensable they are to the supply chains of modern manufacturing production.<sup>[1]</sup> Traditionally, the European Union and the United States dominated the metal market. But China's economic growth has made it today's largest trader of metal raw materials.<sup>[2]</sup> The metal and metal waste markets experience considerable price fluctuations due to various factors. During the COVID-19 outbreak, for instance, the strict containment measures and economic slowdown, especially in China, decreased metal demand and prices in 2020. Record prices, however, were recorded in 2022 following the Russian Federation's invasion of Ukraine, which created enormous uncertainty around supply.<sup>[3]</sup>

Recycled secondary materials compete with primary ones in the metals industry. Scrap materials are cost-effective, due to the lower energy requirements and reduced exploration and mining costs. As primary metal production expenses rise over time, metal waste is an economically attractive solution and cost-effective to produce, due to the lower energy requirements and reduced exploration and mining costs. As primary metal production expenses rise over time, metal waste is an economically attractive solution.<sup>[4]</sup>

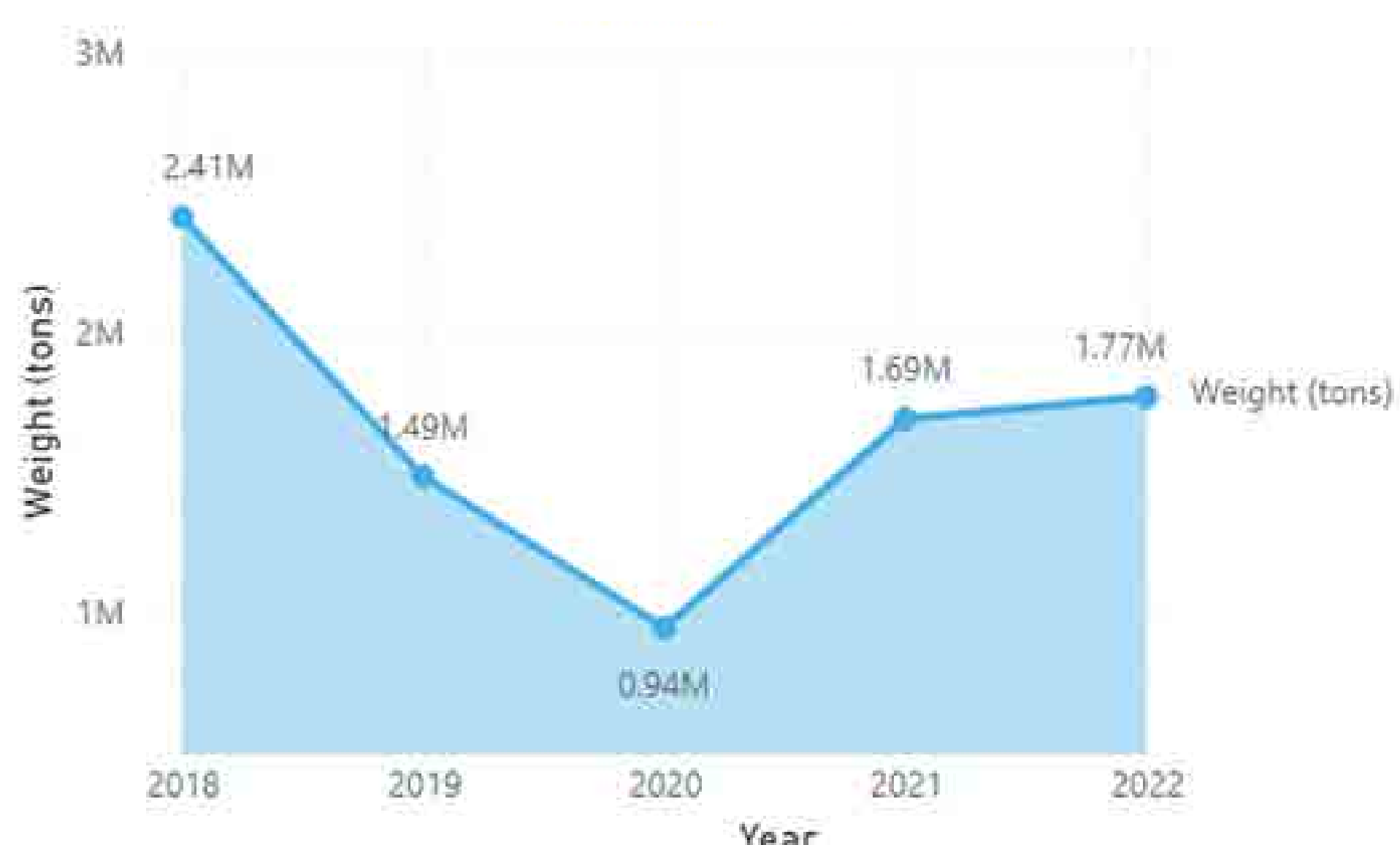
## GLOBAL METAL WASTE FLOWS

In 2017, China announced an import ban on certain solid waste, including specific types of metal waste,<sup>[5]</sup> with a complete ban on metals taking effect in 2019.<sup>[6]</sup> Scrap steel, aluminium and copper were among eight items moved from an unrestricted import list to a restricted one. The impact was significant, particularly on the importing of ferrous metal waste – the most traded metal waste, which decreased substantially, from more than 1.3 million metric tons in 2018 to 27,000 metric tons in 2020. Consequently, the ASEAN region experienced an increase in ferrous metal waste imports starting in 2017, with volumes reaching a peak of more than 9.7 million metric tons in 2019.

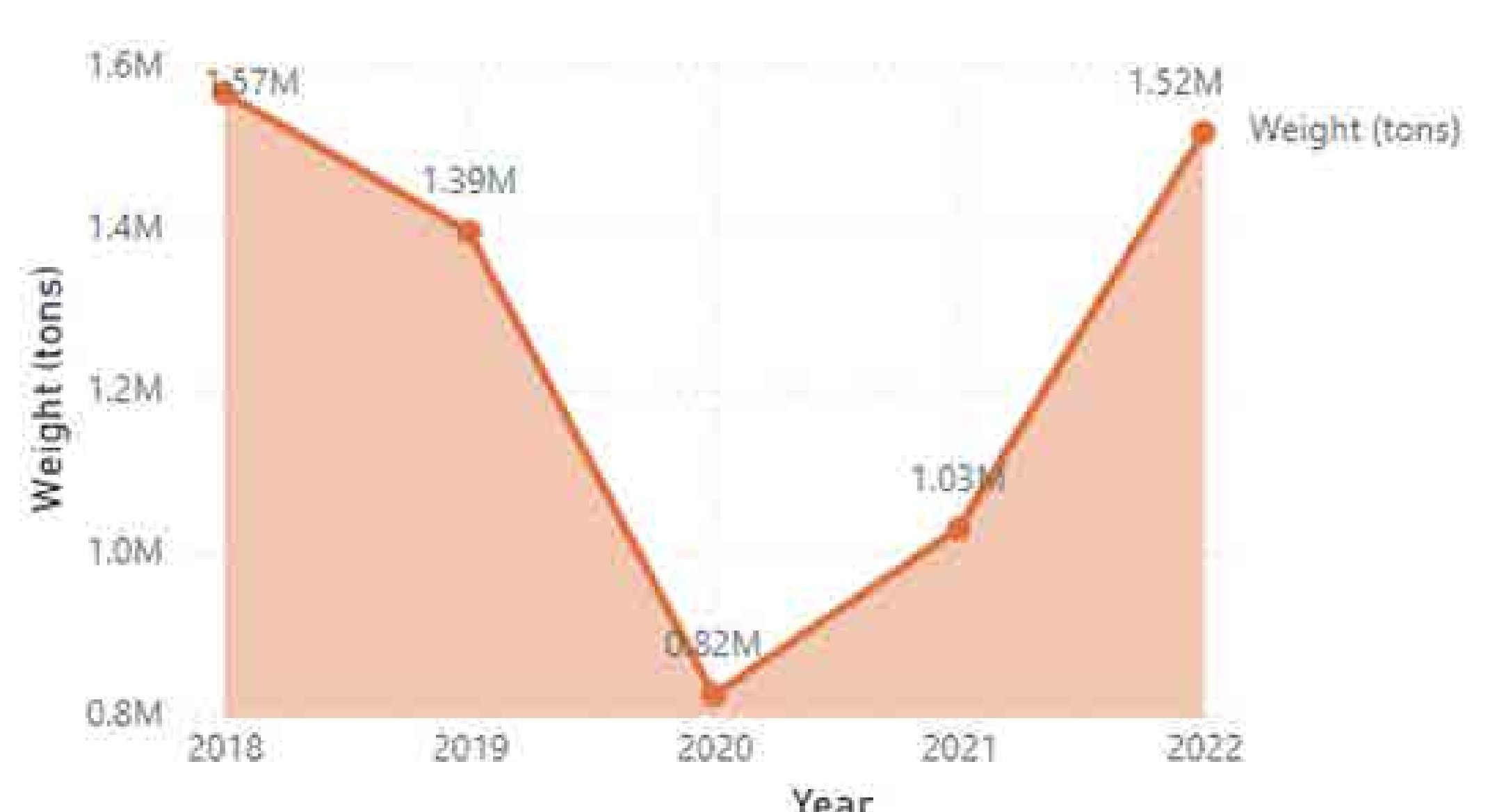


Comparison of ferrous metal waste imports in China and ASEAN region, 2016–2021 (US\$ million) [7]  
Source: UN Comtrade.

In 2020, China relaxed its import restrictions on some types of metal waste, such as high-grade copper, aluminium and brass scrap, allowing their importation as of 1 November that year.<sup>[8]</sup>



China's imports of HS 7404 copper scrap, 2018–2022 (metric tons)  
Source: Trademap



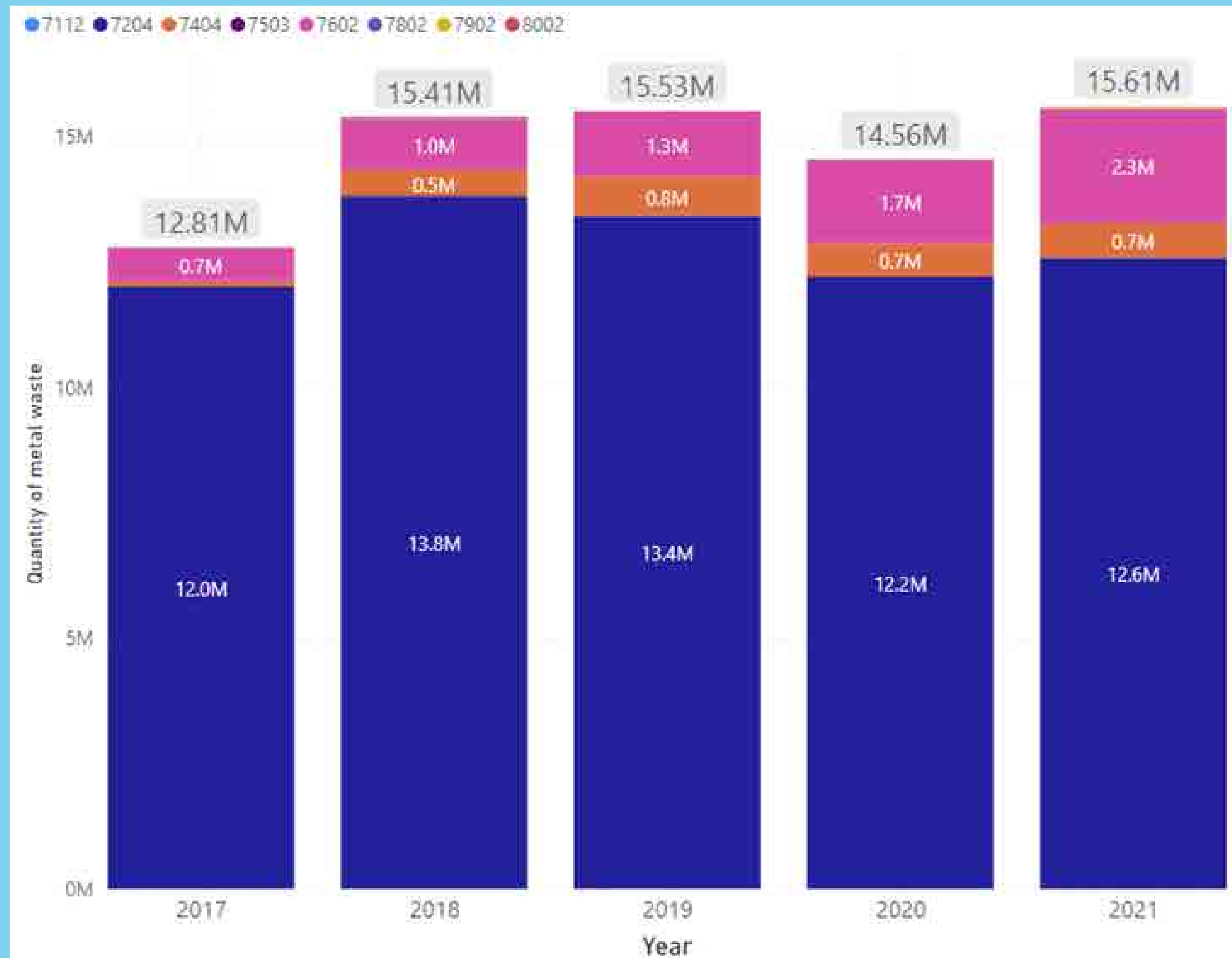
China's imports of HS 7602 aluminium scrap, 2018–2022 (metric tons)  
Source: Trademap

In 2021, the top exporters of ferrous metals (HS code 7204) by quantity were the United States (more than 17 million metric tons), the United Kingdom and Germany (more than 8 million metric tons each), along with the Netherlands and France (more than 7 million metric tons each).

As for the top importers, Turkey led the way with almost 25 million metric tons, followed by Bangladesh (at 8.4 million metric tons), Italy (at 6.5 million metric tons) and Belgium and the United States (at approximately 5.2 million metric tons each). India and Germany both imported more than 5 million metric tons, while the Republic of Korea reached 4.8 million metric tons. Thailand, Malaysia and Indonesia were also among the top 20 importers in 2021 based on quantity.

Importantly, when considering the 2021 imports by value, Viet Nam secured the fifth position, trailing Turkey, India, Belgium and Italy.<sup>[9]</sup>

## Metal waste flows into the ASEAN region

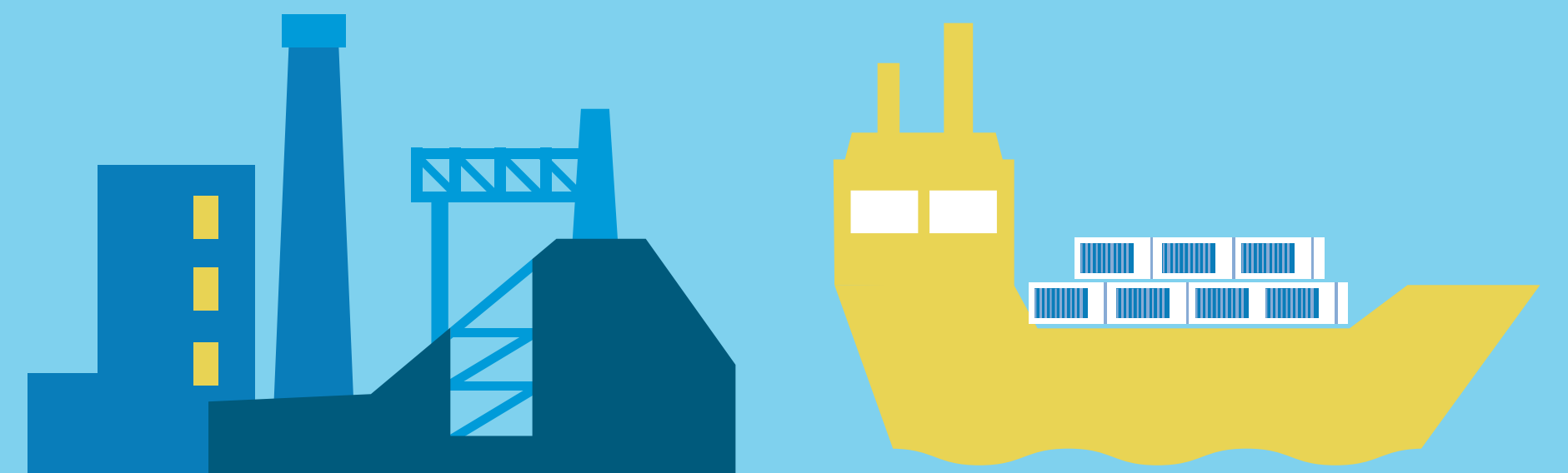


Total quantity of metal waste (eight selected HS codes) imported into ASEAN countries, 2017–2021 (million metric tons)

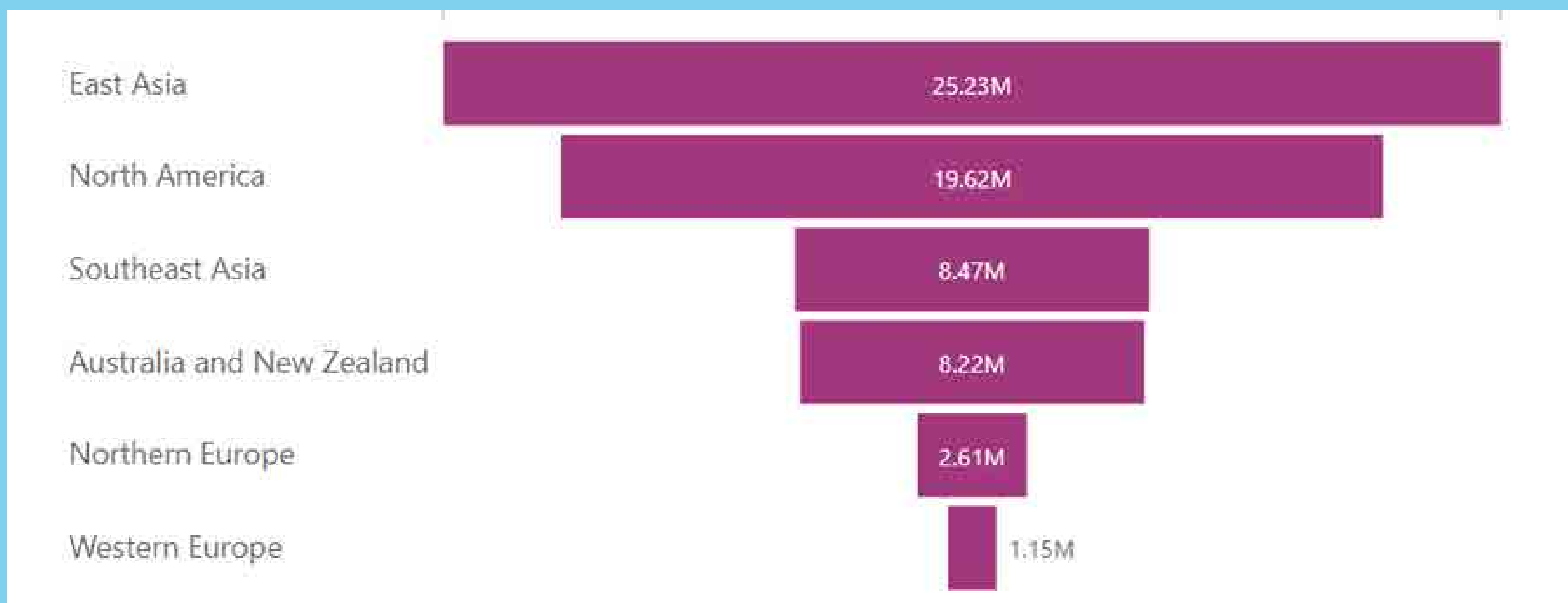
Source: UN Comtrade (accessed March 2023).

Between 2017 and 2021, more than 73.9 million metric tons of metal waste (for eight selected HS codes [10]) were imported into the ASEAN region. After increasing between 2017 and 2019, the quantity of metal waste traded slightly decreased in 2020 but increased again in 2021. This was probably due to the COVID-19 outbreak, which limited international trade and the need for metals because many industry sectors had put operations on hold.

Ferrous metal waste and scrap (HS code 7204) was the most imported waste stream into ASEAN countries between 2017 and 2021, followed by aluminium waste and scrap (HS code 7602) and copper waste and scrap (HS code 7404).



ASEAN countries mainly receive metal waste from within Asia, especially East Asia (25.2 million metric tons) and Southeast Asia (8.5 million metric tons). North American waste has a hefty presence also, at 19.6 million metric tons.



Imports of metal waste (eight selected HS codes) in the ASEAN region, from world regions, 2017–2021 (million metric tons)

Source: UN Comtrade (accessed March 2023).

The main importing country of metal waste in the ASEAN region between 2017 and 2021 was Viet Nam (at 28.8 million metric tons), followed by Malaysia (at 19.7 million metric tons), Thailand (at 13.4 million metric tons) and Indonesia (at 10.6 million metric tons).

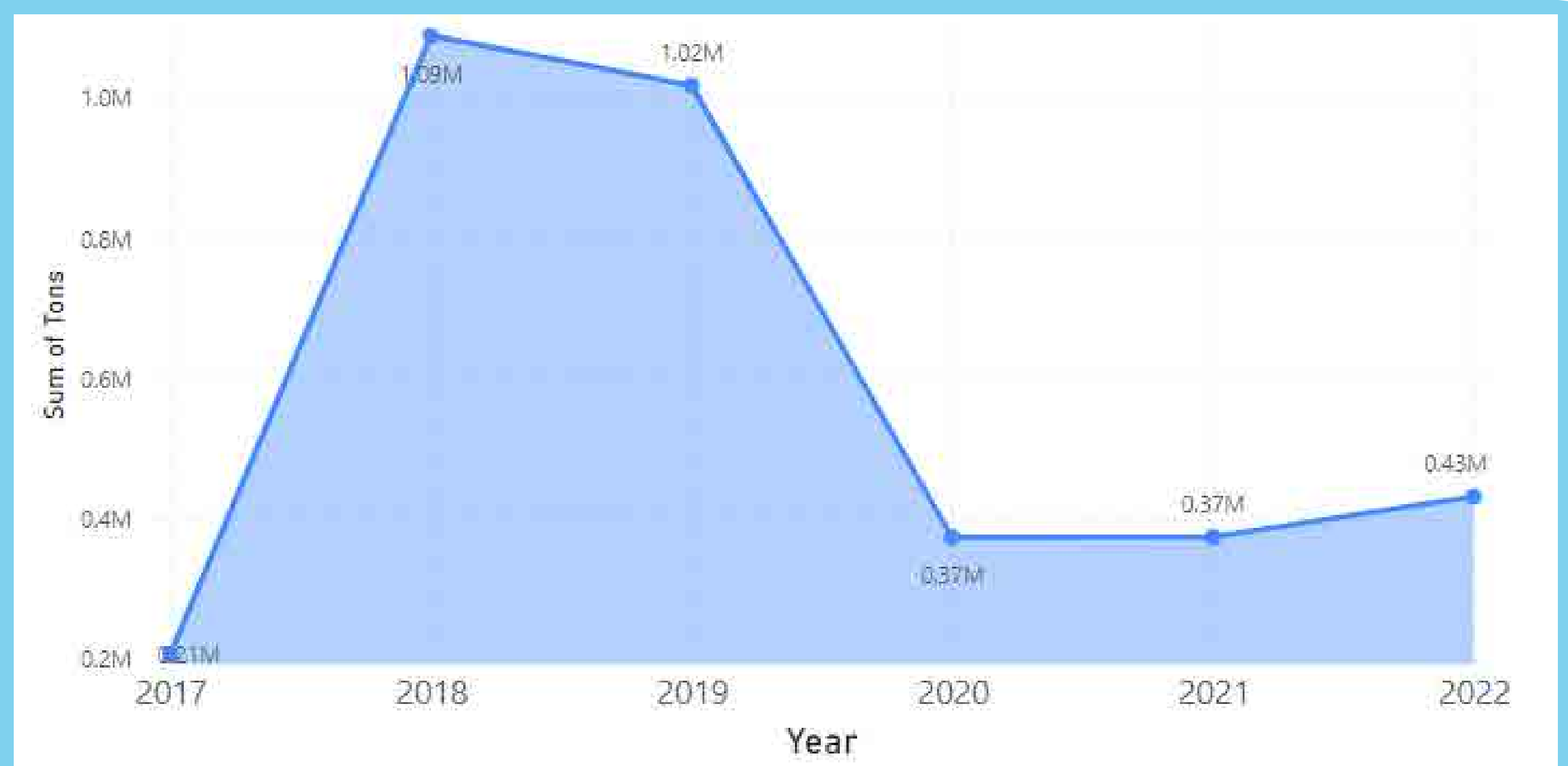


ASEAN countries' imports of metal waste, 2017–2021 (million metric tons)

Source: UN Comtrade (accessed March 2023).

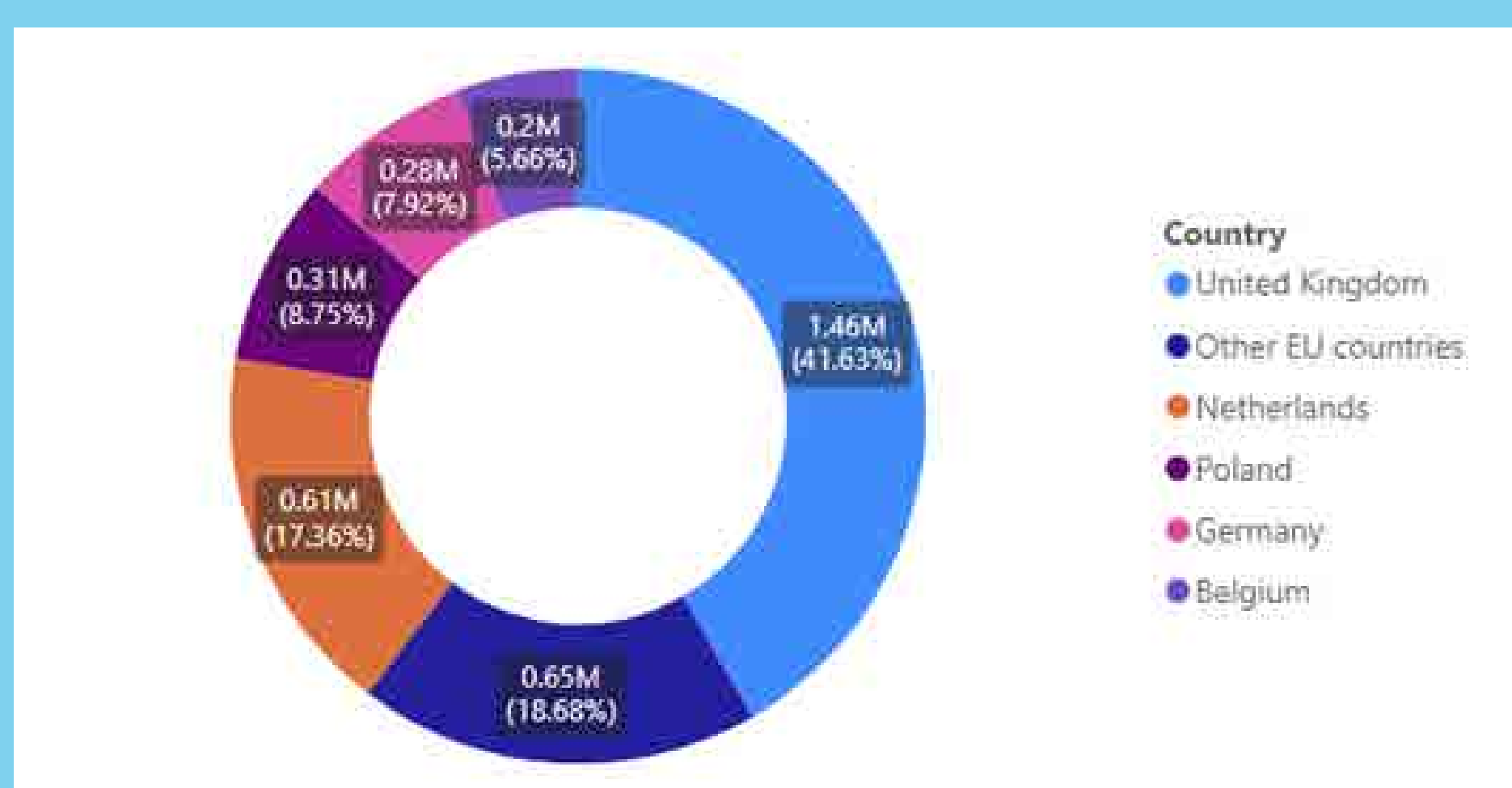
## Metal waste flows from the European Union to ASEAN countries

The European Union exported 3.49 million metric tons of metal waste to the ASEAN region from 2017 to 2022. The overall exports from the European Union to the ASEAN region fluctuated over the years: The increase between 2017 and 2018 (from 0.20 to 1.09 million metric tons) likely relates to China's announcement of its import ban on certain solid waste, including some types of metal waste, by the end of 2018 [11]. The decrease between 2019 and 2020 (from 1.01 to 0.36 million metric tons) could be the result of the enactment and implementation of regulations regarding solid waste imports and increased controls in countries in Southeast Asia.

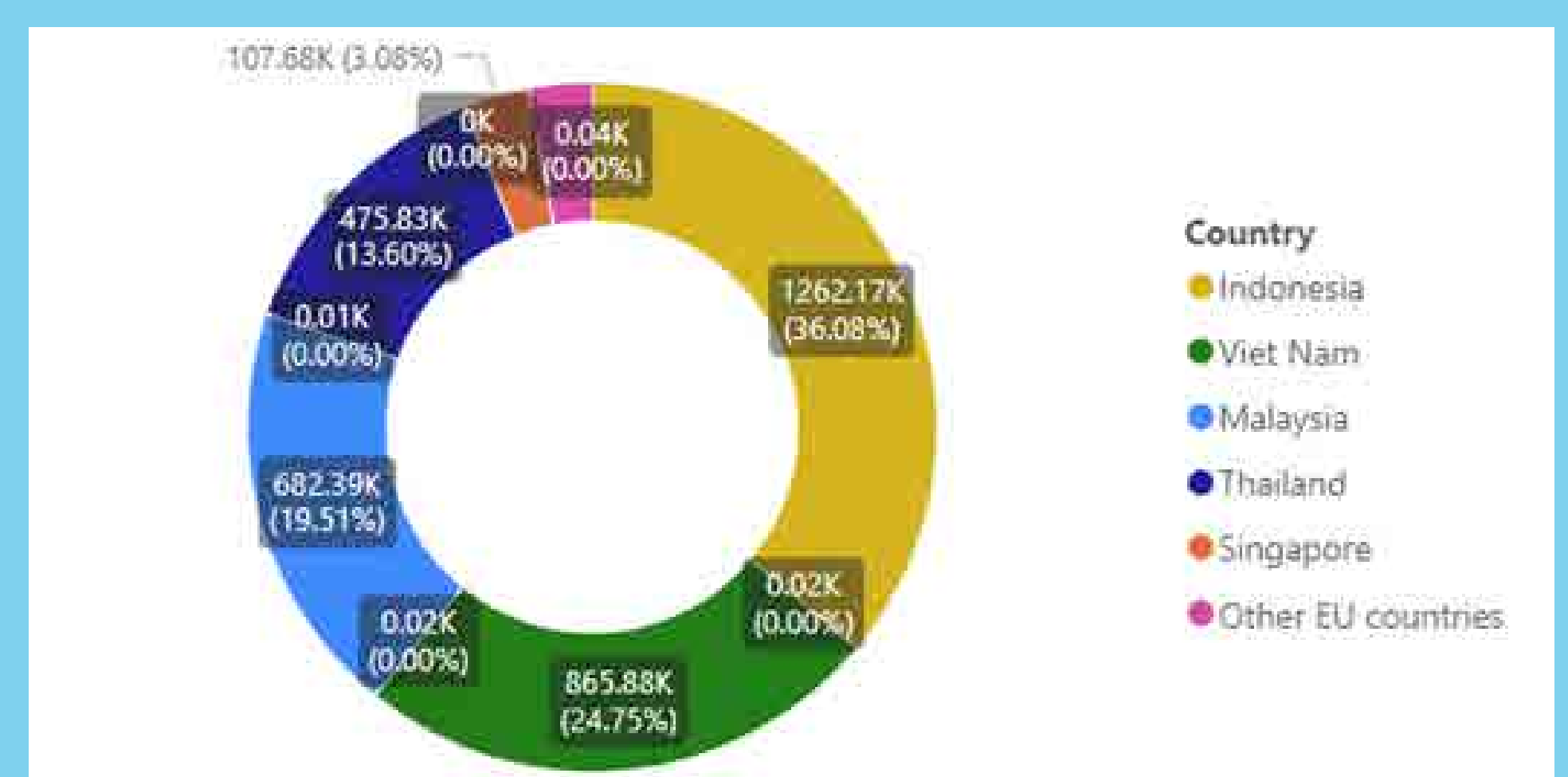


Export fluctuations of metal waste (eight selected HS codes) from 28 European Union countries to ASEAN countries, 2017–2022 (million metric tons)  
Source: Eurostat (accessed March 2023).

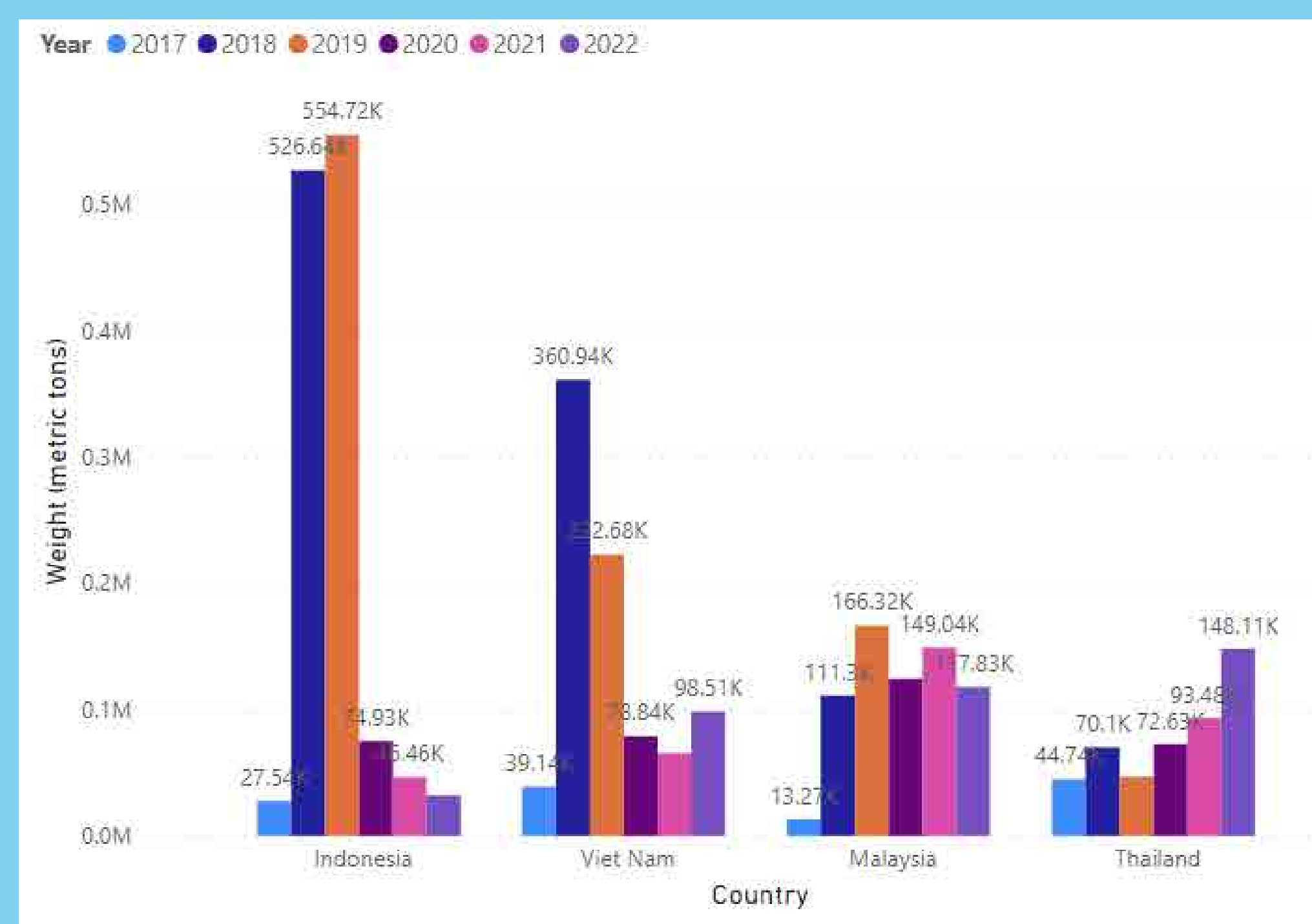
The United Kingdom, the Netherlands, Poland, Germany and Belgium were the top-five European countries exporting to the ASEAN region between 2017 and 2022, accounting for more than 80% of the total metal waste coming from the European Union. Indonesia, Viet Nam, Malaysia and Thailand were the primary importers, accounting for 95% of all metal waste received from the European Union.



Top-five exporting European Union countries of metal waste to ASEAN, 2017–2022  
Source: Eurostat (accessed March 2023).



Top-five ASEAN importing countries of metal waste from the European Union, 2017–2022  
Source: Eurostat (accessed March 2023).



Imports from the European Union, by quantity variations into four countries, 2017–2022 (metric tons)  
Source: Eurostat (accessed March 2023).

## The ASEAN intra-regional trade of metal waste

For the period 2017-2021, the ASEAN intraregional trade of metal waste represents around 11.4% of the global imports into the region (at 8.45 million tons out of 73.9 million metric tons). Singapore is the main exporting country within the ASEAN region (at 3.19 million tons), followed by the Philippines (at 1.32 million tons). On the other hand, Thailand is the main country importing waste metal from other ASEAN countries (at 2.17 million tons between 2017 and 2021), followed by Indonesia (at 1.87 million tons).

## HIGHLIGHTS OF MEASURES IN PLACE IN SELECTED ASEAN COUNTRIES

### Indonesia

The importation of metal waste and scrap into Indonesia is governed by the Ministry of Trade's Regulation on Import Provision and Procedure (No. 20/2021 and No. 25/2022). Like other non-hazardous waste, metal waste imports must be homogenous and free from hazardous or contaminated materials. Importers need recommendations from the Ministry of Industry and the Ministry of Environment and Forestry to obtain an import license.

For exporting metal waste from Indonesia, the Ministry of Trade's Regulation No. 19/2021 on Export Policy and Regulation applies. The Regulation includes provisions on export requirements and prohibits exporting certain metal waste (HS codes 7204.10.00, 7204.29.00, 7204.30.00, 7204.41.00 and 7204.49.00). However, waste originating from Batam Island is treated as an exception and allowed to be exported due to its status as a free trade zone for metal, machinery, electronics and construction industries.[12]

## Malaysia

The Ministry of Investment, Trade and Industry (MITI) implemented the Guidelines for Importation and Inspection of Metal Scraps on 10 January 2022 to protect the environment. The Guidelines apply to ferrous, copper and aluminium scrap imported into Malaysia for manufacturing purposes. These imports require inspection and a Certificate of Approval (COA) under Customs (Prohibition of Imports) (Amendment)(No. 2) Order 2022. The COA ensures that imports of high-quality scrap are free from hazardous scheduled waste. In 2022, 5,794 COAs were issued, resulting in a significant reduction (up to 92%) in COA-subjected metal scrap imports by the end of the year. This is an encouraging sign for curbing the importation of mixed scrap. To address circumvention risks, Malaysia continues to explore measures against unscrupulous importers.

## Thailand

Metal waste importation is allowed under the condition that it is homogenous and not contaminated with hazardous substances or mixed with other types of waste (such as paper, wood or tires). Provided that the metal waste meets these conditions, importers do not need to obtain an import license from the Department of Industrial Works of the Ministry of Industry. The Department of Industrial Works is responsible for the control of hazardous substances under Account 5.2 (Chemical Wastes), as per the Ministry of Industry's 2013 notification containing a list of hazardous substances. Metal waste contaminated with hazardous substances falls under this list.

## Viet Nam

Prime Minister's Decision No. 13/2023/QĐ-TTg, dated 22 May 2023, promulgates the list of waste permitted for importing as production material, including metal scraps with specific HS codes. This new regulation replaces Decision No. 28/2020/QĐ-TTg, effective from 1 June 2023. The HS codes covered are:

- Waste and scrap of cast iron: HS 7204 10 00;
- Waste and scrap of alloy steel: of stainless steel: HS 7204 21 00;
- Waste and scrap of alloy steel: other HS 7204 29 00;
- Waste and scrap of tinned iron or steel: HS 7204 30 00;
- Other waste and scrap: turnings, shavings, chips, milling waste, sawdust, filings, trimmings and stampings, whether or not in bundles: HS 7204 41 00;
- Waste and scrap: other types: HS 7204 49 00.

Imported waste permitted under previously issued environmental licenses with different names (but the same HS codes) remains valid until the license's expiry date.

From the effective date of this Decision, granulated slag (slag sand) used for iron or steel manufacturing (HS code 2618 00 00) may be imported for cement production that follows the relevant building materials laws. Radioactive waste cannot be mixed with the scrap, as specified in Circular No. 22/2014/TT-BKHCHN, dated 25 August 2014.

When importing metal scrap, it is strictly prohibited to mix in impurities, such as chemicals, flammable substances, explosives, hazardous medical waste, weapons, bombs, mines, ammunition, sealed cylinders and gas cylinders. The regulation also refers to radioactive waste as specified in Vietnam National Standard QCVN 05:2010/BKHCHN and Circular No. 15/2010/TT-BKHCHN, dated 14 September 2010, along with Circular No. 08/2018/TT-BTNMT, dated 14 September 2018, on the promulgation of national technical regulations on the environment.

## Case study

### *Catching falsely labelled non-ferrous metal scrap and e-waste bound for Thailand from Italy*

During an *Unwaste* project's study tour in October 2022, Customs representatives from four Southeast Asian countries visited the Port of Genoa. The Italian Customs officers described their experience with an illegal shipment case involving 26.5 tons of metal scrap labelled as "non-ferrous" (B1010 Basel Convention; 19 12 03 EWC-Stat and List of Waste) that was to be sent from Genoa to Thailand.

Upon inspection, the Italian Customs authorities discovered e-waste that is prohibited for shipment mixed in with the metal scrap. The container was halted, and thanks to the *Unwaste* project, the Italian authorities engaged Thai Customs to investigate the shipping and receiving companies.

This case underscores the significance of bilateral and international cooperation in combating cross-border illicit activities. The exchange of information between Customs authorities can prevent such shipments and expose the criminal actors and networks behind these uncontrolled transboundary movements. The following interviews with the officials involved in this case provide further details.



Evidence of e-waste hidden in the container of declared non-ferrous metal scrap detected in a container at the Port of Genoa bound for Thailand  
Photo © ADM, Port of Genoa

## Interview with representatives from Italian Customs and information from Thai Customs and the Thai Department of Industrial Works

### ITALY

**Q: How did you detect the metal scrap shipment and discover the presence of the non-declared items, such as e-waste? Was it part of routine control procedures or did it result from a specific risk analysis?**

Customs officers stopped three containers, with one of them being inspected during the *Unwaste* delegation's visit to Genoa in October 2022. The decision to inspect was based on a risk analysis conducted by the Anti-fraud Office of Genoa Customs. The analysis involves consulting all Customs declarations related to waste exports or goods derived from processed waste declared as non-waste. The first check ensures that the declared waste is accepted and how it is accepted by the receiving country, as per European Commission Regulation CE 1418/2007. Additionally, an extensive screening is carried out for both the exporting and importing companies.

More specifically, the three containers were blocked based on the following risk parameters:

- The environmental authorization of the exporting company indicated that they were involved in treating and recycling e-waste and end-of-life vehicles. This raised concerns, as the processing activities declared were not consistent with the aluminium waste stated in the shipping documents.
- There was a significant increase in the gains of the exporting company during the latest fiscal year, which also contributed to the decision to block the containers.

Based on the physical and visual checks, the inspectors verified that, instead of the declared 81,140 kg of aluminium waste (BC code B1010), the shippers intentionally mixed several types of waste, mainly e-waste, including printed circuit boards, transformers, light counters, sockets, electric wires with plastic casing, ferrous and non-ferrous metals and plastic elements.

**Q: Which elements were crucial in the cooperation with Thai Customs, and how do you think these types of bilateral exchange could be strengthened?**

Cooperation with Thai Customs wasn't initially sought to halt the shipments. However, collaboration proved invaluable in controlling the importing company. To enhance such cooperation, establishing a "smart" point of contact in all receiving countries would be beneficial. This contact could facilitate obtaining [the following] necessary information more efficiently within a shorter time frame.

- Authorization status and functioning of foreign importing companies, ensuring waste goes to proper management sites compliant with the receiving country's laws.
- Validation of foreign environmental authorizations provided by exporters to ensure their authenticity.
- Clarification of required import waste authorizations categorized by type – this information supported the Italian Customs to halt multiple illegal waste-exporting shipments.
- Procedures and controls on waste in receiving countries [European Commission Regulation CE 1418/07, column D].
- Confirmation if exported goods from processed waste, declared as non-waste under European Union legislation [such as Legislative Decree 152/2006, article 184 bis], are considered non-waste in the receiving country as per their national laws.



Discussion between Italy's Customs and Monopolies Agency (ADM) and Southeast Asian officials during the *Unwaste* study tour visit at the Port of Genoa, October 2022

Photo © ADM, Port of Genoa

### THAILAND

**Key elements of cooperation with the Italian Customs regarding the shipment case of "non-ferrous" metal scraps, which were found to be mixed with other types of waste, including e-waste.**

The *Unwaste* project requested for information from the **Thai Customs** Officer who had participated in the *Unwaste* study tour, and the **Department of Industrial Works**, about the case and measures for metal scrap management in Thailand.

**Q: What was your initial assessment upon seeing the waste container and declared documents?**

*Thai Customs Department:* After examining the evidence, it was evident that the shipment contained mixed-metal goods, including electronics waste which is considered a violation of the Ministry of Commerce's announcement on the determination of e-waste as prohibited products from importation into the Kingdom B.E. 2563. The metal scraps were declared as non-ferrous in the document, so it violated Customs Act B.E. 2469 due to falsely declaring the goods. However, determining whether these items are hazardous or not on a visual inspection may pose challenges.

**Q: What was your verification process following Italy's detection and retention of the shipment?**

*Thai Customs Department:* First, Thai Customs checked the exporting company's profile history using the Thai Customs Electronic System to verify their origin in Italy. Subsequently, the company was placed on a watchlist, and a risk profile was established. This allows Customs officers to inspect future shipments from this company upon arrival at the port. Following Italy's detection and alert, no new shipments from this company originating in Italy have been found by Thai Customs.

**Q: From this experience during the study tour, do you have any recommendations to improve the cooperation process for future prevention of illegal waste arriving in Thailand?**



Discussion between ADM and Southeast Asian officials during the *Unwaste* study tour visit at the Port of Genoa, October 2022 (Photo © ADM, Port of Genoa)

*Thai Customs Department:* Thailand recently ratified the Basel Convention Ban Amendment. The Pollution Control Department serves as the focal point, and the Department of Industrial Works acts as the competent authority of the Basel Convention. The Customs Department, as the front-line authority, will collaborate with relevant organizations under this international framework. Given the complexity of determining whether goods are illegal waste, hazardous or non-hazardous, both departments' expertise and cooperation with experts from other countries are essential.

**Q: In your view, which are the main origin regions of metal scrap entering Thailand? What is the trend of illegal imports of metal scrap into Thailand?**

*Thai Customs Department:* A preliminary examination of imported metal scrap HS codes 7404 and 7204 shows that the primary origins in the past five years are the United States and Japan. Also, after implementation of national measures and legislation concerning e-waste and plastic waste in 2018, the trend of illegal imports of metal scraps into Thailand has not shown a significant increase.

**Q: Do you have specific measures related to metal scrap, in terms of regulating the shipments but also in view of strengthening the recycling of metals and the circular economy in your country?**

*Department of Industrial Works:* The metals scraps in this case are not considered chemical wastes account number 5.2 under the Ministry of Industry's announcement on the List of Hazardous Substance B.E. 2556 under the Hazardous Substance Act B.E. 2535. However, the Department of Industrial Works is concerned about the import of metal scraps that may contain other materials for the purpose of the extraction of valuable parts that can be re-exported to other countries. Meanwhile, the remaining unusable parts will be destroyed or incinerated. This residual waste will create problems for the environment and disrupt the circular economy framework.

## News and events

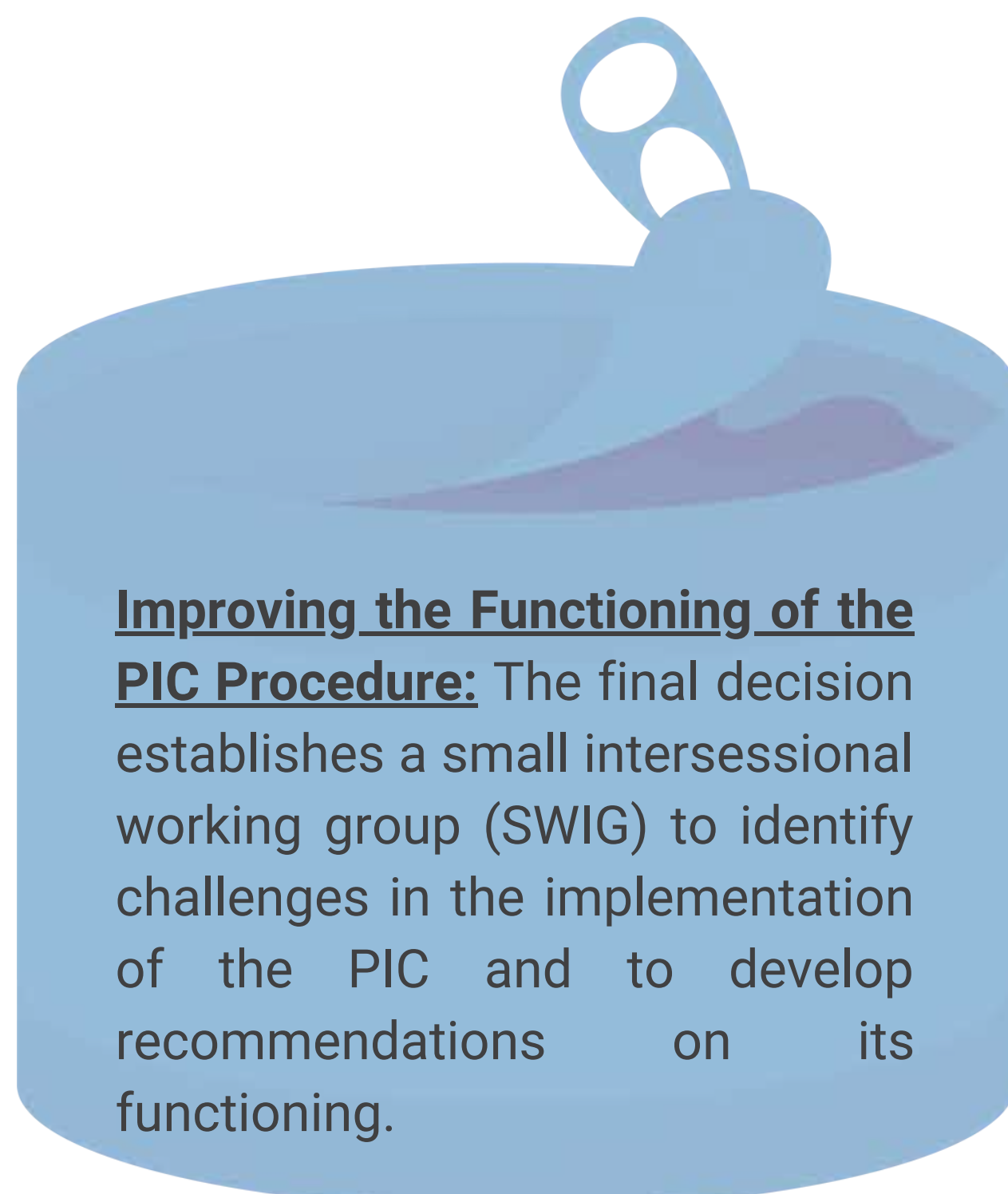
On 7 June 2023, Thailand joined 102 other countries in ratifying the Ban Amendment to the Basel Convention. This Amendment prohibits the export of hazardous wastes from developed countries (OECD and European Union members and Liechtenstein) to developing countries. Thailand's ratification signifies a strong stance against the importation of hazardous waste.

### Basel Convention COP

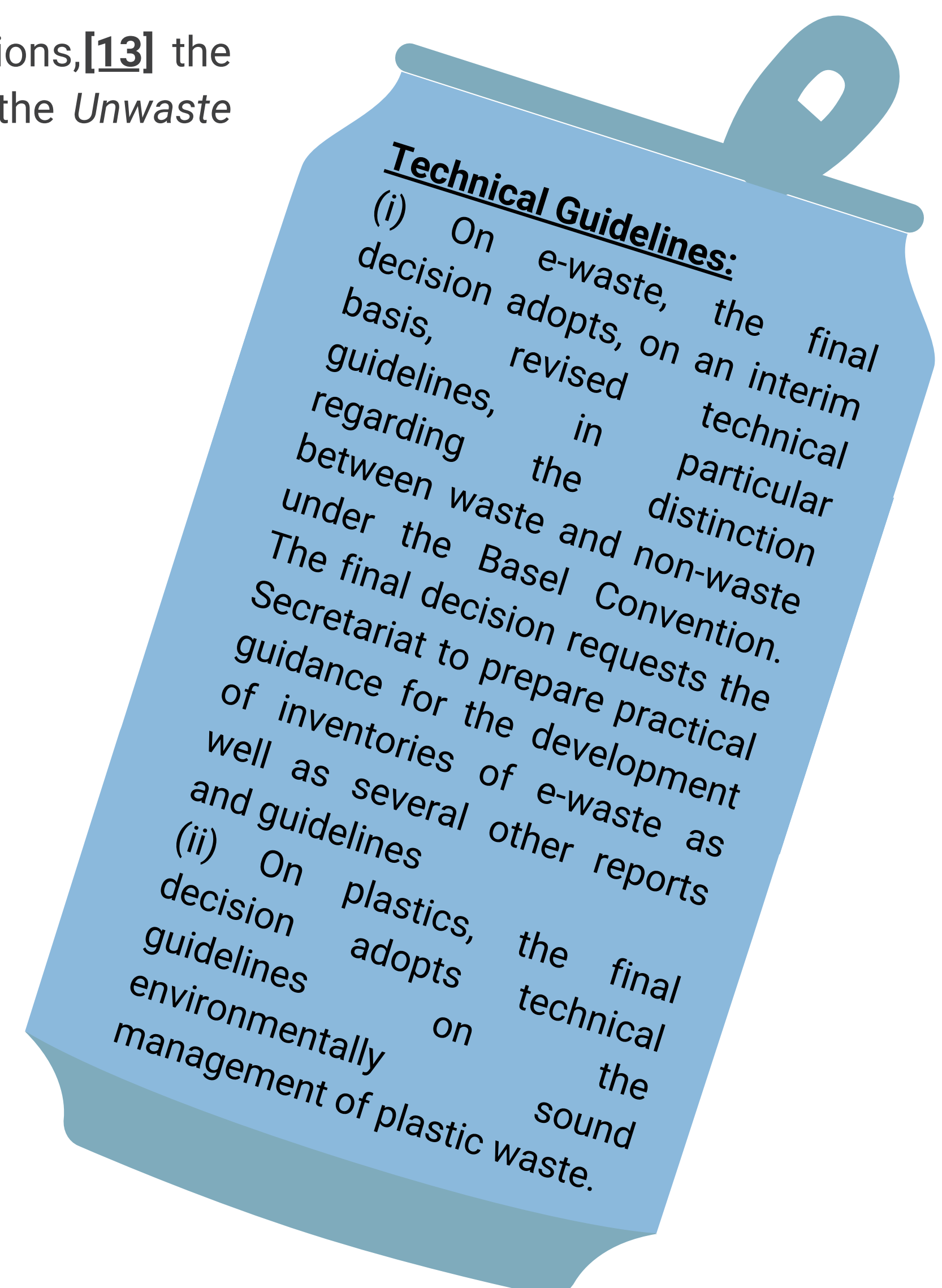
The 2023 meetings of the three Conferences of the Parties to the Basel, Rotterdam and Stockholm Conventions attracted a range of participants. Each treaty, together and individually, addresses issues at the core of their mandate. The COPs adopted joint decisions on technical assistance and financial resources and advanced their work on the illegal trafficking and trade of hazardous chemicals and wastes. In particular, the Basel Convention COP adopted several decisions, the most significant of which is the technical guidelines on plastic wastes.

### Main resolutions

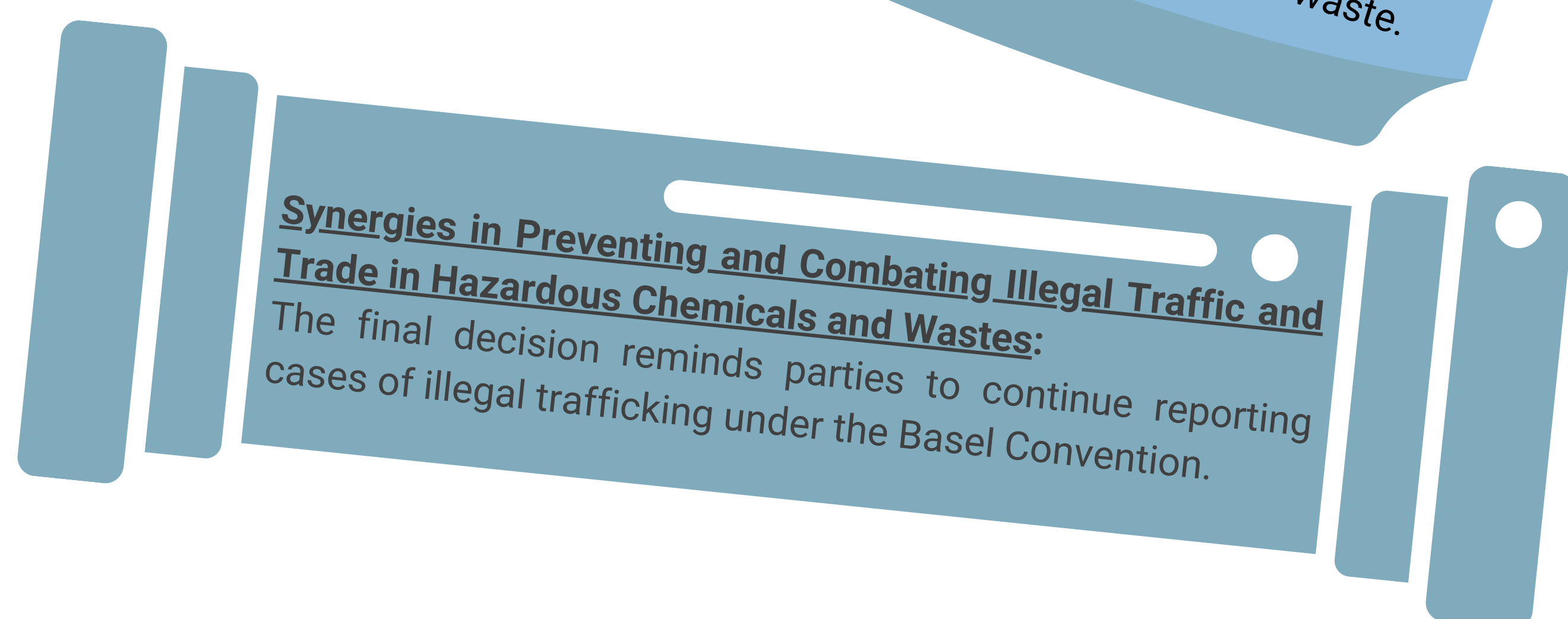
Although the Basel Convention COP adopted several important resolutions,<sup>[13]</sup> the ones highlighted here are considered of relevance in the framework of the *Unwaste* project.



**Improving the Functioning of the PIC Procedure:** The final decision establishes a small intersessional working group (SWIG) to identify challenges in the implementation of the PIC and to develop recommendations on its functioning.



**Technical Guidelines:**  
 (i) On e-waste, the final decision adopts, on an interim basis, revised technical guidelines, in particular regarding the distinction between waste and non-waste under the Basel Convention. The final decision requests the Secretariat to prepare practical guidance for the development of inventories of e-waste as well as several other reports and guidelines  
 (ii) On plastics, the final decision adopts technical guidelines on the environmentally sound management of plastic waste.



**Synergies in Preventing and Combating Illegal Traffic and Trade in Hazardous Chemicals and Wastes:**  
 The final decision reminds parties to continue reporting cases of illegal trafficking under the Basel Convention.

### Side events

On 4 May 2023, the UNODC *Unwaste* project, in collaboration with the Directorate General of Solid Waste, Hazardous Waste and Hazardous Substance Management of the Indonesian Ministry of Environment and Forestry, organized a side event during the Basel Convention's COP16. The event, titled **Cooperation to Combat Illicit Waste Flows to Southeast Asia: Contribution to Sound Management of Waste and to the Implementation of the Basel Convention**, brought together representatives from Indonesia, Thailand and Italy to exchange experiences in dealing with illegal waste shipments. They emphasized the importance of national and international cooperation in managing waste effectively under the Basel Convention.

During the event, representatives from UNODC, the United Nations Environment Programme and the Basel Convention Secretariat also presented their initiatives aimed at promoting international cooperation to support countries in responding to illegal waste trafficking. Communication and exchange of policies, regulations and procedures regarding waste shipments between countries of origin and destination were highlighted as crucial aspects. For more details, please refer to [unodc.org/res/environment-climate/asia-pacific/unwaste.html/Enhancing\\_cooperation\\_ppt.pdf](https://unodc.org/res/environment-climate/asia-pacific/unwaste.html/Enhancing_cooperation_ppt.pdf).



Representatives from UNODC, the Indonesian Ministry of Environment and Forestry, the United Nations Environment Programme and the Basel Convention Secretariat present their respective initiatives on illegal waste trafficking during a Basel Convention's COP16 side event. (Photo © UNODC)



UNODC research branch provides a global overview on waste crime and how it affects the environment. (Photo © BRS Secretariat)

*Unwaste* project staff also participated in another side event at the Basel Convention's COP16. Organized by the Environmental Network for Optimizing Regulatory Compliance on Illegal Traffic (ENFORCE) and the UNODC research branch, the side event focused on enforcing the Basel Convention and combating the illegal traffic in hazardous and other wastes. It provided a global data overview on waste crime and emphasized the importance of improved data collection to enhance enforcement efforts.

## PUBLICATIONS AND MEDIA

The following publications and news items are related to waste in Southeast Asia. They are drawn from desk research and information sent by stakeholders involved in the *Unwaste* project.

### Publications

- **Europol**, *Criminal Networks in EU Ports: Risks and Challenges for Law Enforcement* (April 2023)
- **Diyasha Sengupta, and others**, *Circular Economy and Household E-waste Management in India: Part II: A Case Study on Informal E-waste Collectors (Kabadiwalas) in India* (September 2023)
- **Chi Huey Ng, and others**, "*Plastic waste and microplastic issues in Southeast Asia*", *Frontiers in Environmental Science*, vol. 11 (April 2023)
- **UNITAR, and others**: *National E-waste Monitor 2023: Kazakhstan*

### Multimedia

- **Indonesian Waste Platform**, "*Open Burning of Plastic*" (June)

### News

- **Europol**, "*43 members of Italian organized crime arrested*" [waste trafficking] (June)
- **Enhancing Collection of Small W/EEE Batteries project**, "*ECOSWEEE project organized its first Advisory Board (AB) meeting*" (26 June)
- **Calvin Yang**, "*Singapore: Pilot recycling plant uses fruit peels to break down metal waste in lithium batteries*", *CNA* (29 March)

## NOTES

[1] See <https://ec.europa.eu/eurostat/web/products-eurostat-news/-/ddn-20220425-1> and [www.forex.com/ie/news-and-analysis/top-ten-most-traded-global-commodities/](http://www.forex.com/ie/news-and-analysis/top-ten-most-traded-global-commodities/).

[2] More information on China's trade volumes, including of metal raw materials, is available on the National Bureau of Statistics of China website, [www.stats.gov.cn/english/](http://www.stats.gov.cn/english/). See also <https://link.springer.com/article/10.1007/s13563-022-00321-7>.

[3] See <https://blogs.worldbank.org/opendata/global-metal-markets-weakening-demand-amid-constrained-supply> and [www.oecd.org/ukraine-hub/policy-responses/the-supply-of-critical-raw-materials-endangered-by-russia-s-war-on-ukraine-e01ac7be/](http://www.oecd.org/ukraine-hub/policy-responses/the-supply-of-critical-raw-materials-endangered-by-russia-s-war-on-ukraine-e01ac7be/).

[4] Patrik Söderholm, and Tomas Ekvall, "*Metal markets and recycling policies: Impacts and challenges*", *Mineral Economics*, vol. 33 (2020), pp. 257–272.

[5] Aya Yoshida, "*China's ban of imported recyclable waste and its impact on the waste plastic recycling industry in China and Taiwan Province of China*", *Journal of Material Cycles and Waste Management*, vol. 24, No. 6 (2021), pp. 1–10.

[6] See [http://english.www.gov.cn/state\\_council/ministries/2018/12/30/content\\_281476457753318.htm](http://english.www.gov.cn/state_council/ministries/2018/12/30/content_281476457753318.htm).

[7] Note: The figure uses value (US\$) instead of quantity (metric ton) because quantity data were missing in UN Comtrade for several of the years reviewed.

[8] See <https://www.scmp.com/economy/china-economy/article/3106804/china-lifts-import-ban-scrap-metals-coronavirus-recovery>.

[9] See <http://www.trademap.org/>

[10] The analysis of metal waste flows focused on eight metal waste streams: ferrous metals (HS code 7204), copper (HS code 7404), nickel (HS code 7503), aluminium (HS code 7602), lead (HS code 7802), zinc (HS code 7902), tin (HS code 8002) and precious metals (HS code 7112).

[11] Aya Yoshida, "*China's ban of imported recyclable waste and its impact on the waste plastic recycling industry in China and Taiwan*", *Journal of Material Cycles and Waste Management*, vol. 24 (2022), pp. 73–82.

[12] More information on the Batam Free Trade Zone and its leading industries are available at the BP Batam website, <https://bpbatam.go.id/en/investment/investment-opportunities/investment-advantages/key-industries/>.

[13] See <https://enb.iisd.org/basel-rotterdam-stockholm-conventions-brs-cops-2023-summary#brief-analysis-meetings>

## About the *Unwaste* project

*Unwaste* project aims to fight trafficking in waste between the EU and Southeast Asia by promoting cooperation and partnerships, in support of ongoing efforts towards a circular economy transition, in line with the relevant policy frameworks.

More information [here](#).

[Unwaste Trendspotting Alert No. 1](#)

[Unwaste Trendspotting Alert No. 2](#)

[Unwaste Trendspotting Alert No. 3](#)

[Unwaste Trendspotting Alert No. 4](#)

