



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. 4 - April 2023

This fourth bulletin focuses on the paper and paperboard market and the related waste.



PERSPECTIVES

The global production of paper and paperboard has remained generally stable since 2010, averaging around 400 million metric tons per year. However, it increased more than 4% between 2020 and 2021, to approximately 417.3 million metric tons [1]. In 2021, 203 million metric tons, or 48% of the total production, of paper originated from recycled or recovered paper.[2] With many countries increasing their recycling rate targets, this percentage may increase further in the future. However, paper waste can only be recycled three to eight times,[3] and some paper waste cannot be recycled at all, so an input of virgin fibre will always be necessary.

The global pulp and paper market is projected to register a compound annual growth rate of 0.7% between 2022 and 2029, from US\$351.53 billion in 2021 to US\$373 billion in 2029.[4] Although the annual projected increase is not very high, it will still trigger an increase in the generation of paper and paperboard waste globally.

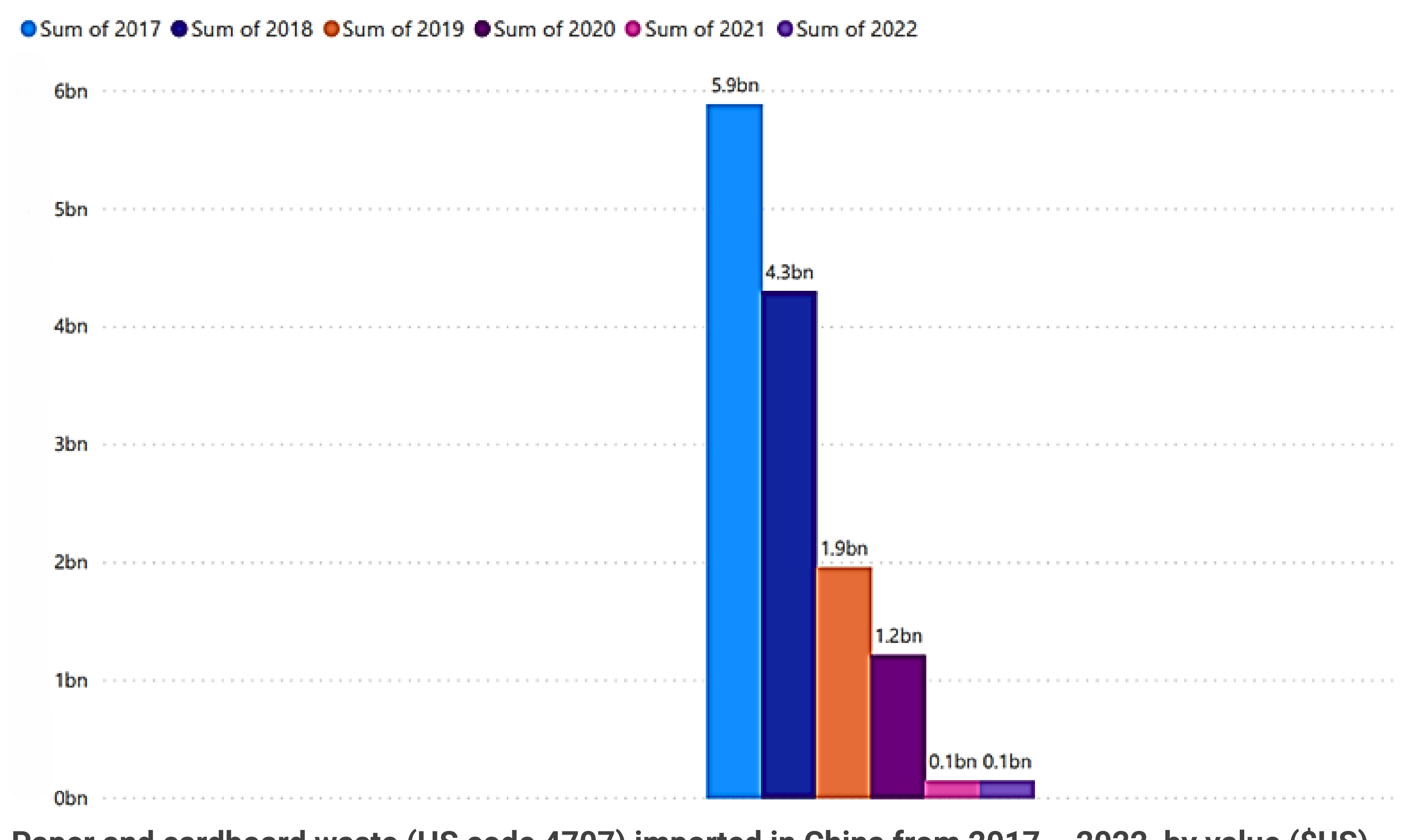
As the World Economic Forum reported in 2022,[5] paper is one of the most often recycled materials, accounting for half (by weight) of all materials collected for recycling. More than 50 million metric tons of paper were recovered for recycling in 2021, achieving a 68% recycling rate. In the European Union, the paper recycling rate reached 71% in 2021.[6]

Still, a portion of paper waste and its industrial by-products are lost to landfill or are released into the environment. In recent years, paper and cardboard represented 17% of the waste composition (global average) among municipal solid waste, according to the World Bank.[7] These are valuable resources that paper manufacturers could harness as inputs into future production processes or could be sold to other industries for use in other ways.

Global paper waste flows

Past highlights in the global trade in paper waste include China's prohibition at the end of 2017 of unsorted wastepaper imports (HS 4707900090), [8] as part of the China ban, followed by a total ban of all solid waste imports in 2021 that included scrap paper.[9]

China was the main importer of HS code 4707 (waste and scrap, paper and paperboard) from 2018 to 2020, but its imports fell from nearly USD5.9 billion in 2017 to slightly more than USD132 million in 2021.

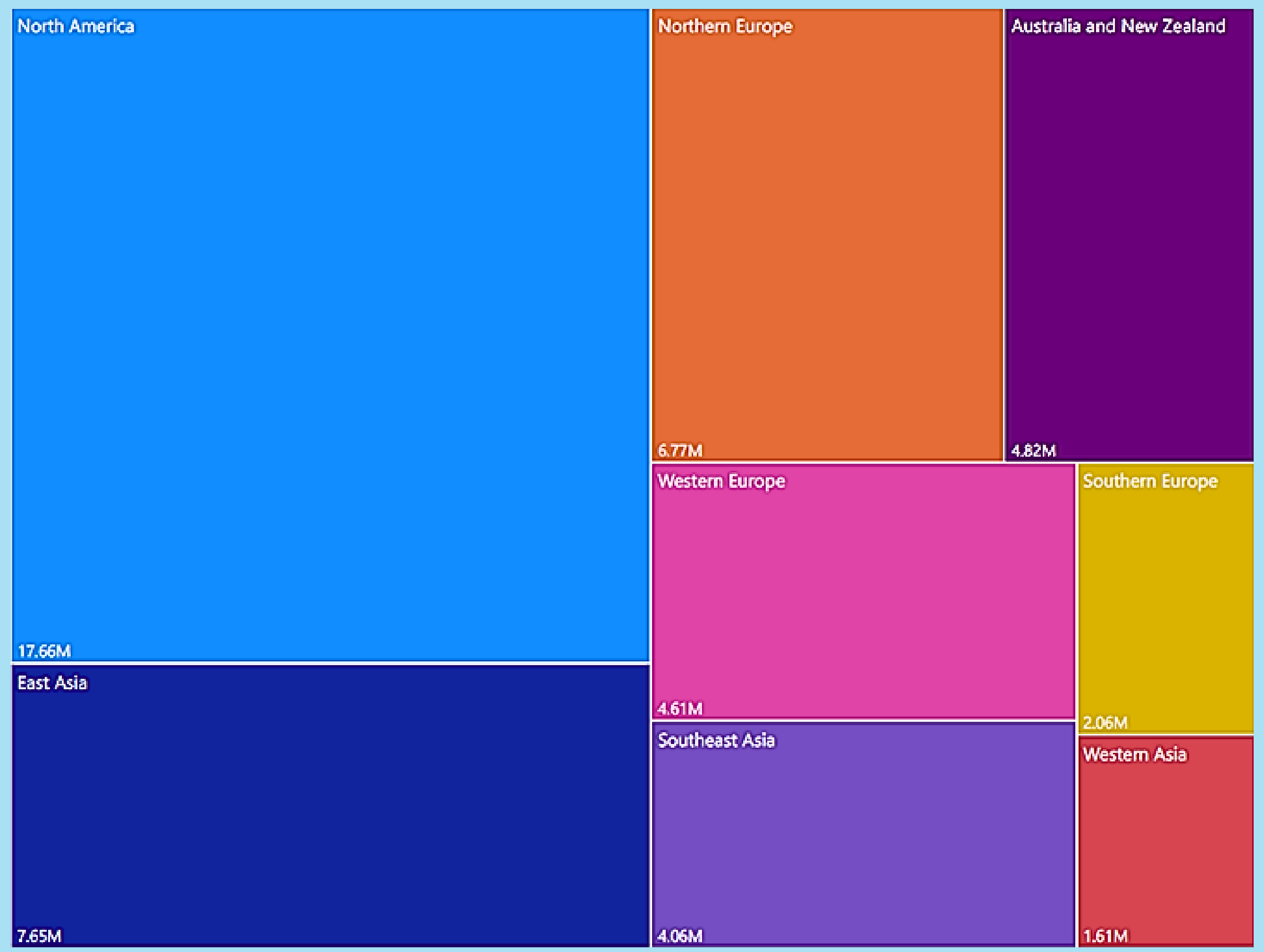
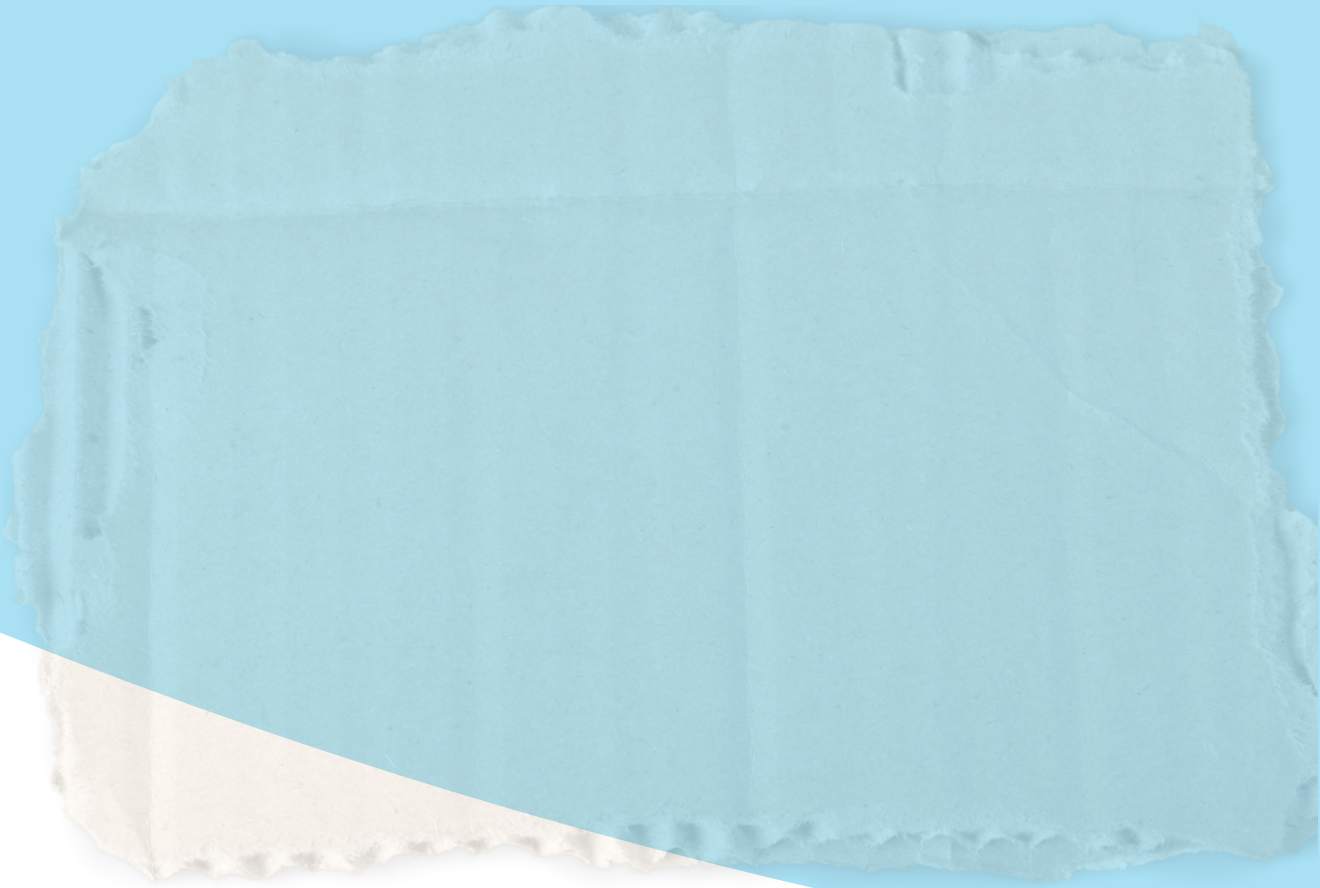


Paper and cardboard waste (HS code 4707) imported in China from 2017 – 2022, by value (\$US)



Paper waste imports in the ASEAN

The ASEAN region mainly receives paper waste from North America. From 2017 to 2021, the region imported 17.6 million metric tons from North America, which was almost equal to the overall sum from three regions: East Asia (7.6 million metric tons), Northern Europe (6.7 million metric tons) and Western Europe (4.6 million metric tons). The intra-regional trade within Southeast Asia was at 4 million metric tons.



Top paper waste imports into the ASEAN region from world regions, 2017-2021 (million metric tons)

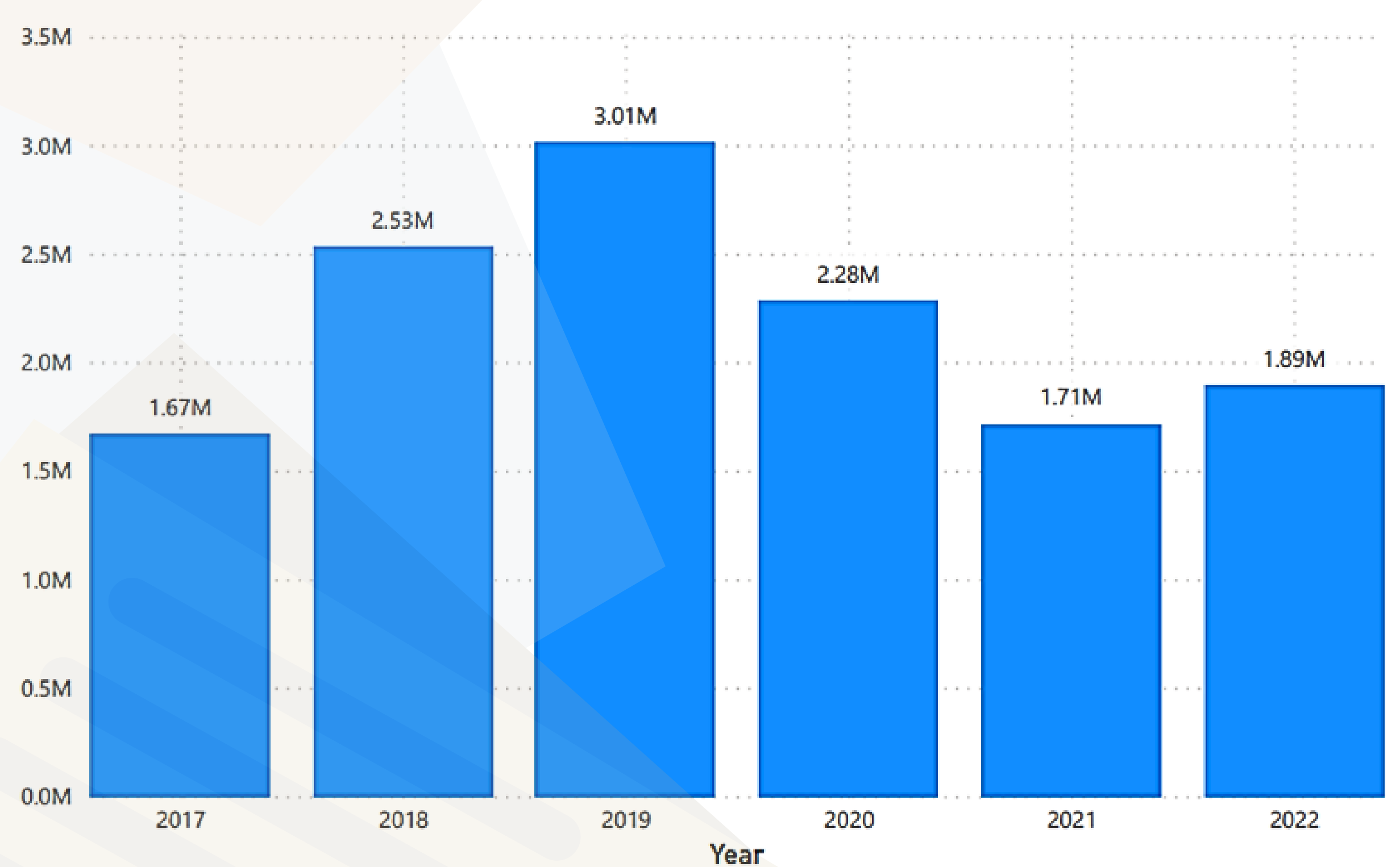
Source: UN Comtrade database (accessed March 2023)

Paper and paperboard waste flows from the European Union to ASEAN countries

The European Union[10] exported 13 million metric tons of paper and paperboard waste to the ASEAN region from 2017 to 2022. The top eight European countries exporting to the ASEAN region accounted for 83.5% of the total paper waste from the European Union for the given period.

The overall export of paper and paperboard waste from the European Union to the ASEAN region increased by a third from 2017 to 2019: from 1.6 million metric tons in 2017 to 2.5 million metric tons in 2018 (+34%), reaching a peak of 3 million metric tons in 2019 (+16%). After peaking, there was a substantial decrease in 2020, at 2.28 million metric tons (-32%), and in 2021, at 1.71 million metric tons (-33%).[11] Part of the initial increase may have been due to the inclusion of mixed paper in the 2018 China ban.

The subsequent decrease can be explained by countries in Southeast Asia enacting and implementing regulations regarding solid waste imports and increasing the control measures. The increase in 2022 followed the 2021 ban on wastepaper imports that China imposed. [12]



EU28 exports to ASEAN countries, 2017-2022 (million metric tons)

Source: Eurostat (accessed March 2023)

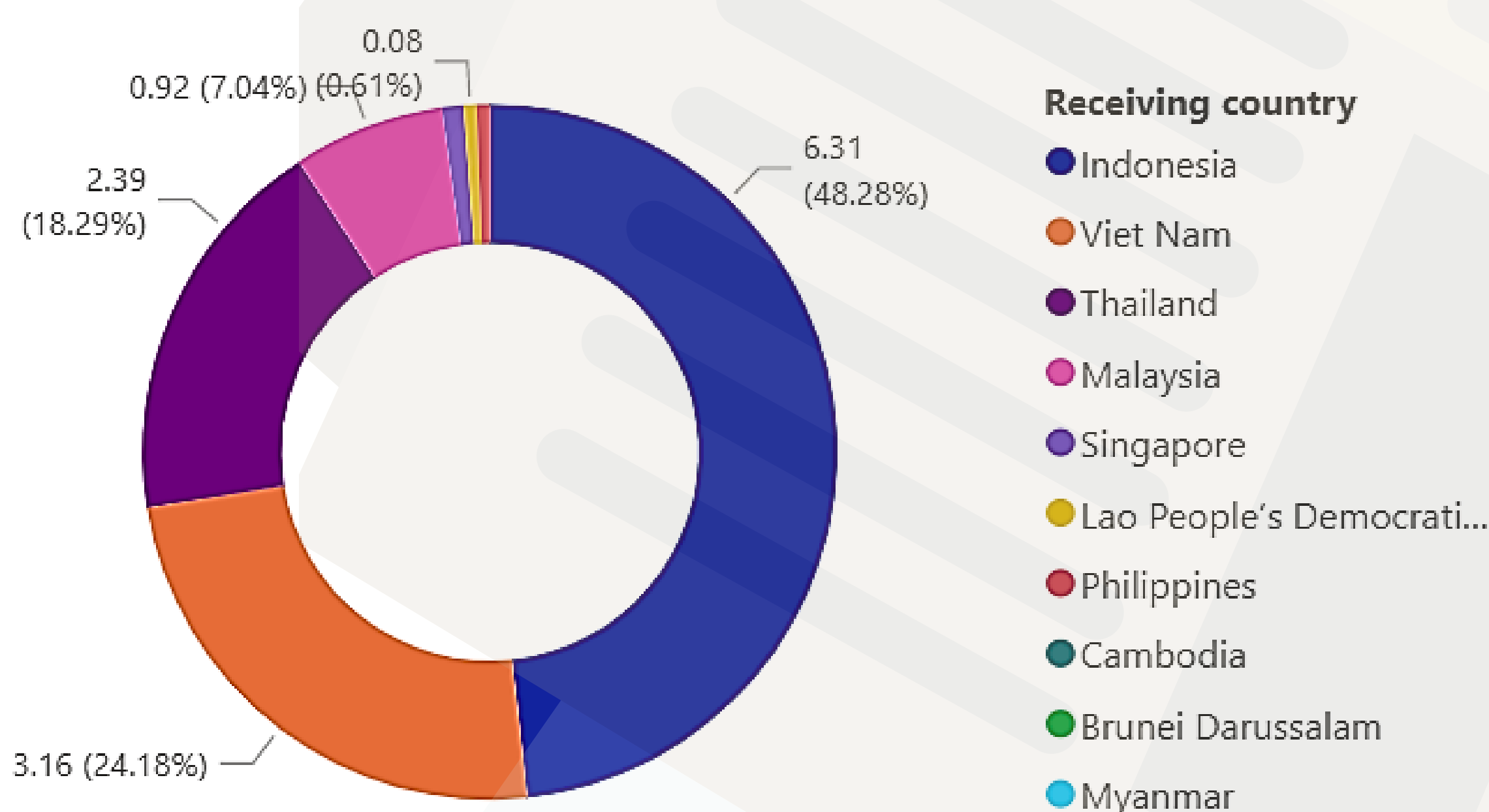
Among the EU countries, Germany was one of the first wastepaper exporter globally (in the top 10), but the country is not among the main European exporters to the ASEAN region. Germany, in fact, is mainly exporting within the European Union. See below the main importers of EU paper waste in the ASEAN and the top EU exporters.

Top eight European Union exporters of paper and paperboard waste (HS 4707) to the Southeast Asian region (2017-2022)

| COUNTRY | MILLION METRIC TONS | % TOTAL EUROPEAN UNION |
|-----------------|---------------------|------------------------|
| TOTAL | 13.08 | 83.53 |
| Italy | 3.45 | 26.40 |
| Netherlands | 2.21 | 16.92 |
| United Kingdom* | 1.92 | 14.73 |
| France | 1.27 | 9.71 |
| Spain | 1.21 | 9.28 |
| Belgium | 0.62 | 4.74 |
| Denmark | 0.11 | 0.85 |
| Poland | 0.11 | 0.86 |

Source: Eurostat data (accessed March 2023)

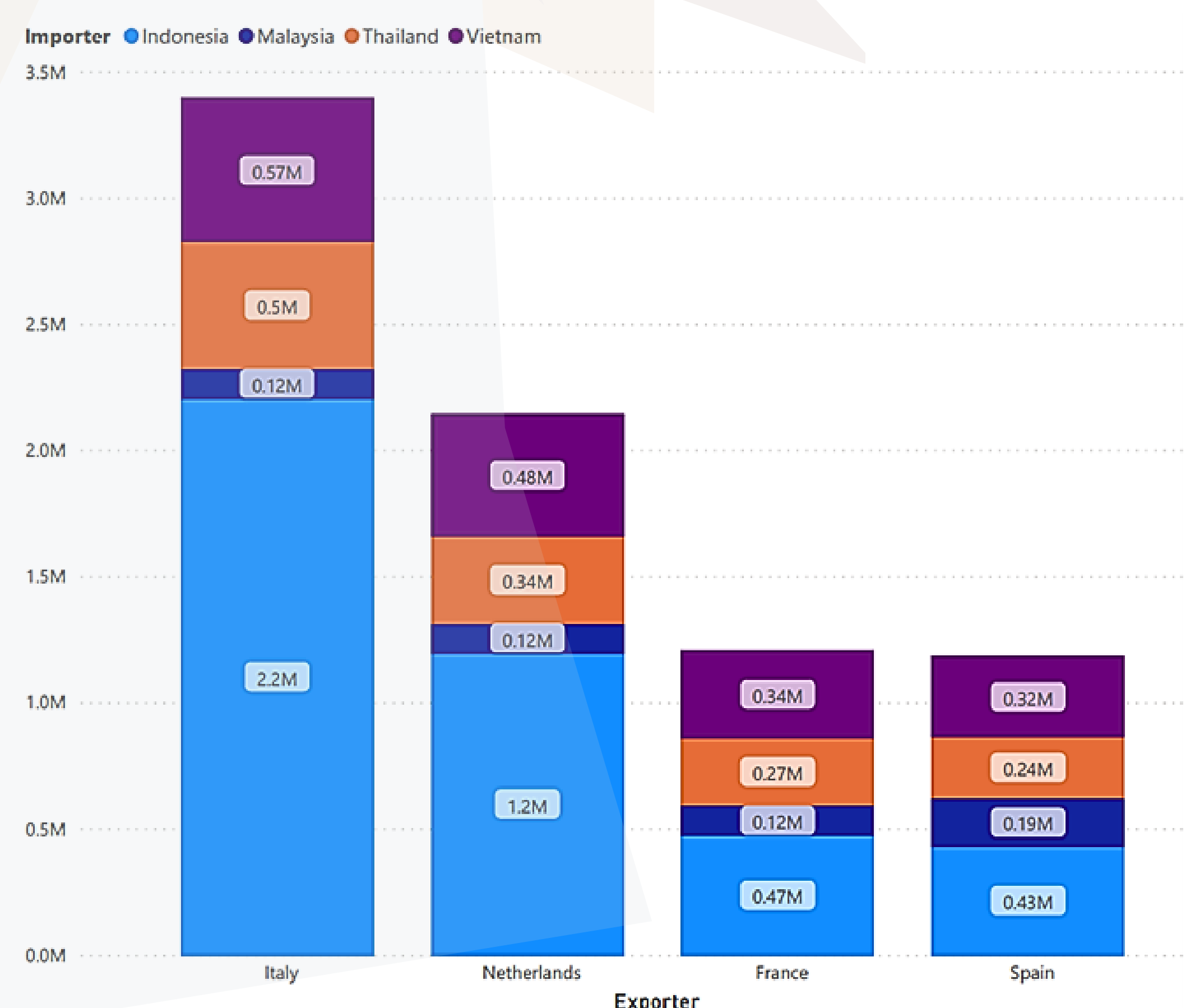
*The European Union entry in Eurostat included the United Kingdom up to 2020



Main ASEAN countries receiving EU28 paper waste, 2017-2022 (million metric tons)

Source: Eurostat (accessed March 2023)

The graph at the right shows a comparison of the top four European Union exporting countries to the top four ASEAN receiving countries: Italy and Indonesia had the strongest trading relationship, with Italy exporting 2.2 million metric tons of paper and paperboard waste to Indonesia between 2017 and 2022. The Netherlands is also a big exporter to Indonesia (at 1.2 million metric tons), followed by Italy exporting to Viet Nam (at 0.56 million metric tons).



Top four European Union countries exporting and ASEAN importing countries of paper waste (HS 4707), 2017-2022 (million metric tons)

Source: Eurostat (accessed March 2023)

In 2020, Italy reached and exceeded the European Union target for recycling paper and paperboard waste (at 87.3%, against the target of 85%), thanks to the more than 600 recycling plants located in the country. Total paper waste collected in Italy in 2020 was approximately 7 million metric tons, while the amount of paper waste processed in the recycling plants amounted to 6.77 million metric tons, of which 4.96 million metric tons were sent to the internal market and 1.81 million metric tons were exported. [13]

ASEAN intraregional trade of paper and paperboard waste

Looking at the ASEAN intraregional trade of paper waste, Singapore is the main exporting country, at 2.45 million metric tons of paper waste sent to other ASEAN countries between 2017 and 2021. However, because Singapore is a known re-exporting hub, some of the waste may have originated in other regions, such as North America, Northern or Western Europe or East Asia (based on overall trends).

On the other side, the main importing countries in the ASEAN region from 2017 to 2021 were Indonesia (at 1.15 million metric tons), Malaysia (at 1.05 million metric tons) and Thailand (at 0.98 million metric tons).

HIGHLIGHTS OF MEASURES IN PLACE IN SELECTED ASEAN COUNTRIES

Indonesia

The importation of paper waste as one of six allowable waste commodities into Indonesia is regulated under the Ministry of Trade Regulation No. 20 of 2021, in conjunction with the Ministry of Trade Regulation No. 25 of 2022 on Import Policy and Regulation. The requirements for the importation of waste and the HS codes are specified in the annex of the Regulation. Paper waste allowed to be imported under HS Code 4707 (recovered (waste and scrap) paper or paperboard) consists of:

- HS Code 4707.10 : Unbleached kraft paper or paperboard or corrugated paper or paperboard
- HS Code 4707.20 : Other paper or paperboard made mainly of bleached chemical pulp, not coloured in the mass
- HS Code 4707.30 : Paper or paperboard made mainly of mechanical pulp (for example, newspapers, journals and similar printed matter)
- HS Code 4707.90 : Other, including unsorted waste and scrap.

Malaysia

The Ministry of International Trade and Industry (MITI) issued the *Guidelines for the Importation, Inspection of Paper Waste* in January 2022. All wastepaper to be imported is subject to an inspection process and issuance of the certificate of approval from SIRIM QAS International [14], as per the Customs (Prohibition of Imports)(Amendment)(No. 2) Order 2022.

The importation of wastepaper into Malaysia only allows for the following tariff codes:

- HS Code 4707.10: Unbleached kraft paper or paperboard or corrugated paper or paperboard
- HS Code 4707.20: Other paper or paperboard made mainly of bleached chemical pulp, not coloured in the mass
- HS Code 4707.30: Paper or paperboard made mainly of mechanical pulp (for example, newspapers, journals and similar printed matter)

The paper waste with tariff code HS 4707.90 on other, including unsorted waste and scrap is **not allowed** to be imported into Malaysia.

Thailand

Paper waste is allowed to be imported into Thailand. However, if found to be non-homogeneous or contaminated with other types of waste, it falls under HS 38.25.10 for municipal solid waste, which is banned in Thailand.

Applicable HS codes for paper waste that can be imported into Thailand are:

- HS code 4706.20: Pulps of fibres derived from recovered (waste and scrap) paper or paperboard or of other fibrous cellulosic material
- HS code 4707: Recovered (waste and scrap) paper or paperboard
- HS code 4707.10.00: Unbleached kraft paper or paperboard or corrugated paper or paperboard
- HS code 4707.20.00: Other paper or paperboard made mainly of bleached chemical pulp, not coloured in the mass
- 4707.30.00: Paper or paperboard made mainly of mechanical pulp (for example, newspapers, journals and similar printed matter)
- 4707.90.00: Other, including paper scrap and scrap that is unsorted.

Viet Nam

Scrap, including paper, is permitted to be imported into Viet Nam as production material under Decision 28/2020/QĐ-TTg, issued by the prime minister. That Decision articulates the waste permitted for importation as production material. The following waste and scrap paper or paperboard is permitted:

- HS Code 4707 – Recycled paper or paperboard (scrap and scrap in pieces)
- HS Code 47071000 – Kraft paper or corrugated board, bleached kraft paper
- HS Code 4707.10: Recycled paper or paperboard (waste or scrap in pieces): kraft paper, unbleached
- HS Code 4707.20: Recycled paper or paperboard (waste or scrap in pieces): paper or board made from paper powder that is collected from chemical bleaching process, not fully undyed
- HS Code 4707.30: Recycled paper or paperboard (waste or scrap in pieces): paper or board made from paper powder that is collected from a mechanical process
- HS Code 4707.90: Recycled and recovered paper or paperboard (waste or scrap in pieces): other, including unsorted waste and scrap in pieces
- Recovered (waste and scrap) paper or paperboard: other, including unsorted waste and scrap (HS Code 4707.90.00;)

Interview with Ahmad Akmal Muhamad, Ministry of Investment, Trade and Industry in Malaysia

The Ministry of Investment, Trade and Industry is responsible for the development of Malaysia's paper industry. In January 2022, the Ministry issued guidelines on the importation of paper waste [15] intended for manufacturing and the production of finished products or goods by various paper-based industries. All paper waste intended to be imported into the country is subject to an inspection process for the issuing of a certificate of approval, as per the Customs Prohibition of Imports – Amendment No. 2, Order 2022.

Unwaste talked with Mr. Ahmad Akmal Muhamad, Senior Principal Assistant Director with the Ministry's Industry Development Division, about the guidelines, what brought about their development and what the initial results have been.

What were some of the main challenges related to inspecting and detecting imports of paper waste in Malaysia?

AAM: "Prior to the implementation of the Guidelines for Importation and Inspection of Paper Waste, there was no major issue in relation to the importation of paper waste. But the Ministry observed the surge of investment in the recycling of paper waste and processing of paper pulp in Malaysia. The influx of new approved investment triggered concerns to the Ministry and relevant agencies. According to the Malaysian Pulp and Paper Manufacturers Association, the total manufacturing capacity, including recycling, is an estimated 20 million tons. The Ministry introduced the Guidelines for importation of paper waste and certificate of approval issuance to control the inflows of illegal paper waste and importation of unsorted and non-homogenous paper waste."

What are the most significant results the Ministry has observed after the first year of implementation of the Guidelines?

AAM: "The first six months had its challenges [because] the pre-approved shipments prior to the implementation of the Guidelines and the certificate of approval application had to be managed on a case-by-case basis. A set of criteria parameters had to be cross-checked before the pre-approved shipments could be shipped. In the first six months, the Ministry observed a significant reduction in the importation of paper waste as companies without a manufacturing license were unable to import paper waste without the certificate of approval. It was a wake-up call for the industry to be fully compliant [because] the issuance of a certificate of approval and license for importation are only allowed for clean and homogenous paper waste, with inspections to be carried out by certified and competent agencies. There are much fewer complications and bad cases of importation. The demography of the industry and companies is now well documented in the system. The result has been beyond expectation."

Can you explain some of the issues for an effective implementation of a circular economy framework and how the framework that the Malaysian Government has developed will help strengthen governance in the country's paper waste trade? And what would you like to see in the near future?

AAM: "The circular economy framework aims to achieve net-zero carbon emissions and to reduce the usage of virgin materials and waste generation. Ideally, the importation of paper waste into the country should be reduced, but at the same time, we cannot overlook the need to achieve a balance for the recycling industry to grow and promote circularity in the system. Hence, the demand for paper waste should be supplemented by local supply through improvement of local collection and recycling of paper waste; adoption of an extended producer responsibility system; addressing product design and production processes that use recycled materials or fewer materials; and shifting the whole value chain to the cradle-to-cradle approach by adopting advanced manufacturing and improved processes.

The main challenge is that circular economy practices are not popular among some of the industry players, and they do not see the real value yet. The second challenge is on the involvement of different ministries in relation to paper waste importation. [The Ministry of Investment, Trade and Industry] governs the issuance of approvals and licenses for production, and the solid waste management falls under the purview of another ministry. There is a need for streamlining initiatives between different ministries, as well as between the federal government and states.

In three to four years, we hope that the circular economy framework for manufacturing and waste is successfully implemented, with significant improvement to the recycling rate in the country, that the implementation across ministries and across states is well harmonized, that the negative perception on waste importation and waste management in Malaysia can be addressed and that the circular economy policy framework can be effectively communicated."

CASE STUDY - Indonesia

In June 2019, Indonesia's Directorate General of Customs and Excise re-exported five containers of paper waste labelled as "waste paper-mixed paper" after it was found to be mixed with garbage.[16] The 123 480 kilograms of paper waste were imported by a company, PT AS, from the United States, to be used as raw material in the paper-recycling industry. The illegal waste was seized at Tanjung Perak Port in Surabaya, West Java, by a Customs officer when the shipment was directed to the Customs Red Lane for physical inspection. The inspection was conducted together with the Ministry of Environment and Forestry personnel, leading to the discovery of garbage in the wastepaper, such as plastic packaging, shoes, IV bottles, oil packaging and single-use plastic bottles.

Also in 2019, the Directorate General of Customs and Excise re-exported eight containers with a total weight of 210 340 kilograms of paper waste that had been shipped from Brisbane, Australia, by the company PT MDI through Tanjung Perak Port in Surabaya, West Java.[17] The waste violated the waste importation rules due to it being mixed with hazardous waste and garbage. During the inspection, the officers also found non-paper waste, such as electronic waste, used diapers, footwear and plastic bottles.

CASE STUDY - Thailand

In 2022, 130 metric tons of illegal waste were found in Laem Chabang Port in Chon Buri Province [18]. The shipment, which originated in Australia, was declared "wastepaper-mixed paper" under Customs code 4704.90.00, but it was actually municipal waste containing used paper mixed with other types of garbage, such as used food containers, face masks, napkins and cloth bags.

Municipal waste (under code 3825.10) is banned from importation into Thailand. The Minister of Natural Resources and Environment ordered the shipment to be returned to Australia and the authorities to take legal action against the importing company.



PUBLICATIONS AND MEDIA

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

Publications

- **IPEN**; March 2023, *Plastic Waste Trade: The Hidden Numbers*
- **Minderoo Foundation**; March 2023, *Plastic Waste Makers Index 2023*
- **Annals of Global Health**; March 2023, *The Minderoo-Monaco Commission on Plastics and Human Health*
- **OECD**; March 2023, *Monitoring trade in plastic waste and scrap*
- **UNEP**; March 2023, *UNITAR 2050 Electronic and Electrical Waste Outlook in West Asia*
- **European Commission**; March 2023, *Report from the Commission to the Council and the European Parliament on the implementation of Regulation No. 1013/2006 on shipments of waste generation, treatment and transboundary shipment of hazardous waste and other waste in the Member States of the European Union and the United Kingdom, 2016–2019*
- **World Bank**; March 2023, *Indonesia: East Asia and Pacific P157245, Improvement of Solid Waste Management to Support Regional and Metropolitan Cities (Procurement Plan – EN)*

Multimedia

- **UNODC**; April 2023, *Unwaste video: Tackling Waste Trafficking to Support a Circular Economy*
- **IPEN Toxics Free Future**; October 2022, video: *Plastics, Plastic Waste and Chemicals in Africa*

News

- **ANC Digital News**; April 2023, *Philippines Coast Guard collects 3,644 sacks of waste in Mindoro oil spill clean-up*
- **UNODC**; February 2023, *Launch in Southeast Asia of the UNODC Legislative Guide on Combating Waste Trafficking*

NOTES

[1] See www.statista.com/statistics/270314/global-paper-and-cardboard-production/.

[2] See www.statista.com/statistics/1332963/global-paper-production-fiber-consumption/#:~:text=Global%20paper%20production%20was%20estimated,recycled%2C%20or%20recovered%2C%20paper%20s

[3] See www.bir.org/the-industry/paper

[4] See www.statista.com/statistics/1073451/global-market-value-pulp-and-paper/

[5] See www.weforum.org/agenda/2022/06/recycling-global-statistics-facts-plastic-paper/

[6] See www.cepi.org/wp-content/uploads/2022/09/EPRC_Press-Release_2021-Monitoring-Report_FINAL.pdf

[7] See <https://documents1.worldbank.org/curated/en/697271544470229584/pdf/What-a-Waste-2-0-A-Global-Snapshot-of-Solid-Waste-Management-to-2050.pdf>

[8] See <https://docs.wto.org/dol2fe/Pages/SS/directdoc.aspx?filename=q:/G/TBTN17/CHN1211.pdf&Open=True>

[9] See https://english.mee.gov.cn/News_service/media_news/202012/t20201208_811909.shtml

[10] The European Union entry in Eurostat included the United Kingdom up to 2020. It was included in the analysis here because, in the period analysed (2017–2020), it was still part of the European Union.

[11] See Eurostat (accessed March 2023) <https://ec.europa.eu/eurostat>

[12] See www.wto.org/english/tratop_e/tpr_e/s415_e.pdf

[13] See https://www.unirima.it/wp-content/uploads/2022/02/Rapporto-Unirima-2021_Sintesi.pdf

[14] SIRIM QAS International Sdn. Bhd. is Malaysia's leading certification, inspection and testing body. SIRIM is an agency under the purview of the Ministry of International Trade and Industry.

[15] <https://www.sirim-qas.com.my/wp-content/uploads/2022/01/Guideline-for-Importation-and-Inspection-of-Waste-Paper-REVISION-07012022-CLEANCOPY.pdf>

[16] See www.beacukai.go.id/berita/bea-cukai-reekspor-lima-peti-kemas-berisi-kertas-bekas-bercampur-limbah-dan-sampah-rumah-tangga.html

[17] See www.beacukai.go.id/berita/bea-cukai-tanjung-perak-tindak-210-ton-importasi-kertas-bekas-yang-terkontaminasi-limbah-bahan-berbahaya-dan-beracun-b3-dari-australia.html

[18] See www.nationthailand.com/in-focus/40018276

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](#)

