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Global Waste Trade Chaos: Rising Environmentalism or Cost-Benefit Analysis?

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Abstract

International garbage disputes are rare. Lately, however, the world witnesses waves of newsworthy trash saga. From the Philippines shipping containers of rubbish back to Canada, to Malaysia planning to return tons of garbage back to countries of origin, to China's near-total ban of plastic waste import, it is hard not to wonder whether this is a real sign of rising environmentalism. Have countries begun to think that the environment is worthy of a similar priority as the economy? This Insight argues that behind the seemingly growing pro-environment attitudes, it still remains to be seen whether this trend is sustainable in the long run. Considering that the global waste trade is a multi-billion dollar industry, the balance may tip to favour the economic activities again once the dust has settled back.

The paper first looks at a brief description of the global waste trade industry. It then discusses some of the contemporary development in the global waste industry particularly on the issues of waste smuggling and China's plastic waste import ban. It describes related experiences in Indonesia, Malaysia, Vietnam, the Philippines and Thailand.

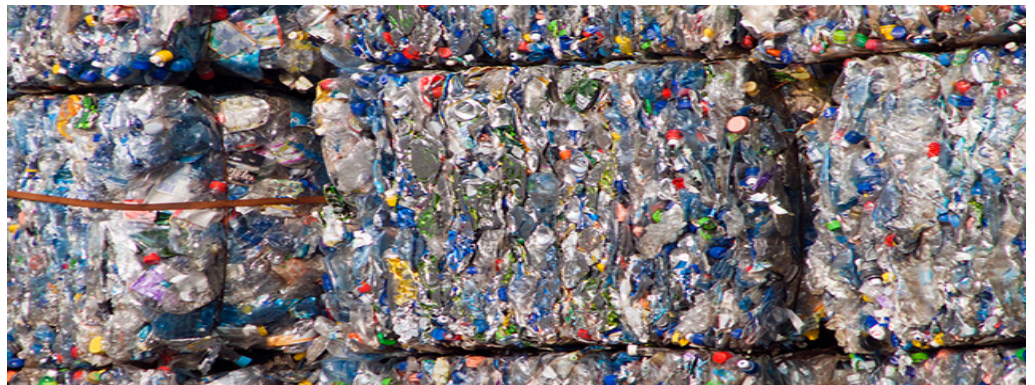


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Global Waste Trade Industry

The formation of the global waste trade industry began with a very simple economic principle. Garbage is produced daily and needs to be discarded. As there are some types of litter that can be recycled and re-sold for income, a waste recycling industry becomes a necessity. Besides economic reasons, recycling helps environmental causes too. Since the costs of recycling can be cheaper in developing countries, litter then gets transported to poorer countries. Rich countries get rid of their garbage from their backyards, and developing countries get money for treating and discarding this garbage for them. Ethical issues aside, global waste trade seems to be the most effective way to allocate resources to manage waste. This view was famously expressed by then World Bank president Lawrence Summers in 1991. In his confidential memo, Summers was quoted to have written: “I think the economic logic behind dumping a load of toxic waste in the lowest-wage country is impeccable and we should face up to that...I’ve always thought that countries in Africa are vastly under polluted; their air quality is probably vastly inefficiently low compared to Los Angeles... Just between you and me, shouldn’t the World Bank encouraging more migration of the dirty industries to the Least Developed Countries?”²

From an environmental justice perspective, the idea of richer countries disposing their garbage in poorer countries is outrageous. The fact that global waste market exists, however, signals that there is something more to the story. Global waste trade is a multi-billion dollar industry. The United Nations Commodity Trade Database recorded that world’s plastic waste³ export and import in 2017 was valued at USD 4.5 billion and USD 6.1 billion respectively.⁴ In 1993, global plastic waste market began to accelerate with China importing almost half of it in the period between 1988 and 2016.⁵

Southeast Asia experiences similar reality. The quantity of plastic waste imports to Indonesia, Malaysia, Thailand, Vietnam and the Philippines started to expand in 2003 as seen in Figure 1 below. The cumulative value of this upward-trending import stood at USD10.76 billion from 1988 to 2017.⁶ Among these five countries, Thailand recorded the highest trade value as seen in Figure 2.

² Lawrence Summers, confidential World Bank memo, December 12, 1991, quoted in Nixon, Rob, (2011), *Slow Violence and the Environmentalism of the Poor*, Cambridge, MA and London: Harvard University Press, p. 1.

³ The categories of plastic chosen here follow the same categories used in Brooks, Amy L., Shunli Wang, Jenna R. Jambeck, (2018), *The Chinese Import Ban and Its Impact on Global Plastic Waste Trade*, *Science Advances* (4):eaat0131. They are waste polyethylene (PE), waste polyvinyl chloride (PVC), waste polystyrene (PS), and other plastics.

⁴ UN Commodity Trade Database, HS code. No. 391510, 391520, 391530, and 391590, <https://comtrade.un.org/data/> Accessed 12 June 2019.

⁵ Brooks, Amy L., Shunli Wang, Jenna R. Jambeck, (2018), *The Chinese Import Ban and Its Impact on Global Plastic Waste Trade*, *Science Advances* (4):eaat0131

⁶ UN Commodity Trade Database, HS code. No. 391510, 391520, 391530, and 391590, <https://comtrade.un.org/data/> Accessed 12 June 2019.

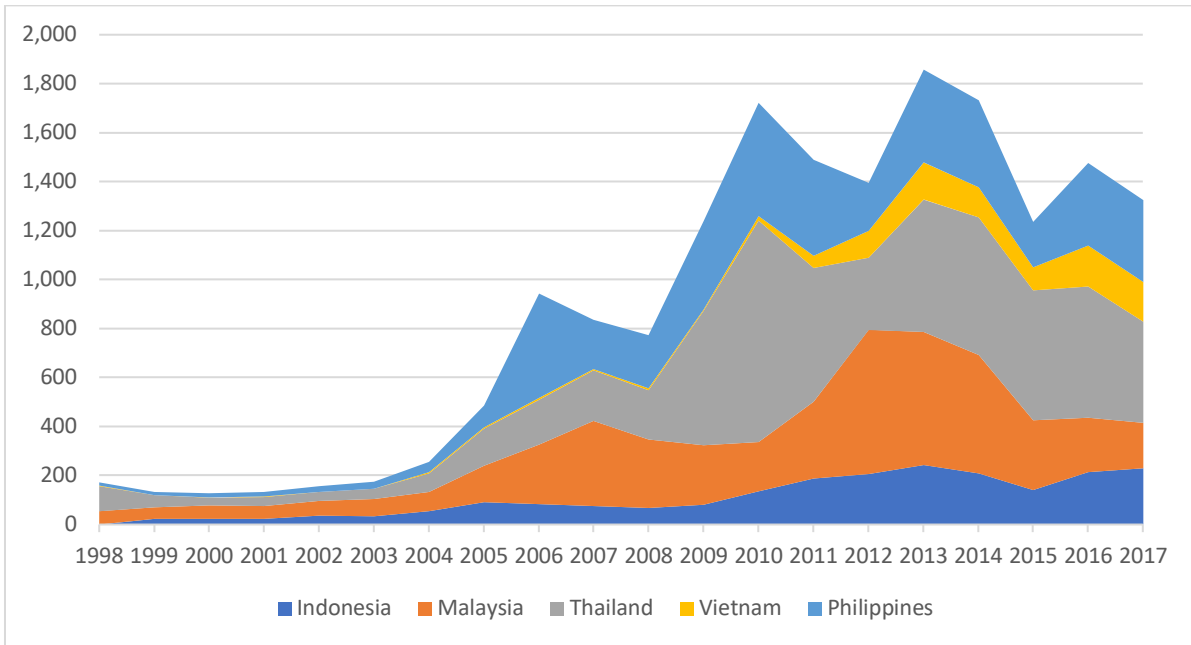


Figure 1: Plastic Waste Import Quantity (in million kilograms), year-on-year, 1998-2017⁷

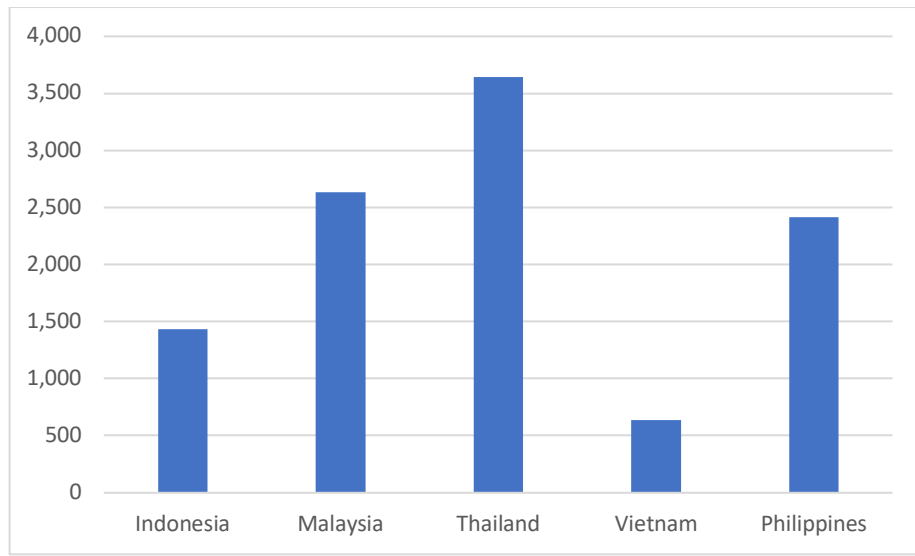


Figure 2: Plastic Waste Import Value (in million US\$), cumulative, 1988-2017⁸

The UN Commodity Trade database records only the legal transactions. The true value of the global waste market is arguably more than what is shown as the illegal ones remain unaccounted for. Clandestine practices and businesses in the market are well known.⁹ In 2012, the European Environmental Agency reported that about 250,000 tons of illegal electronic waste were shipped out of the European Union to West Africa and Asia every year and that the trend of waste smuggling was on the rise.¹⁰ At this point, it is apparent that the garbage recycling industry, regardless of its 'dirty' outlook,

⁷ UN Commodity Trade Database, HS code. No. 391510, 391520, 391530, and 391590, <https://comtrade.un.org/data/> Accessed 12 June 2019.
⁸ UN Commodity Trade Database, HS code. No. 391510, 391520, 391530, and 391590, <https://comtrade.un.org/data/> Accessed 12 June 2019.
⁹ Rosenthal, Elisabeth, (2009), Smuggling Europe's Waste to Poorer Countries, The New York Times, 26 September <https://www.nytimes.com/2009/09/27/science/earth/27waste.html> Accessed 12th June 2019.
¹⁰ European Environment Agency, (2012), EU Exporting More Waste, Including Hazardous Waste, 6 November <https://www.eea.europa.eu/highlights/eu-exporting-more-waste-including#tab-news-and-articles> Accessed 12th June 2019.

is in fact a very lucrative business. It draws legal and illegal players alike. The simple economic equation, minus the ethical, legal and justice aspects, seems to deliver profitable results.

Waste Smuggling

In late May 2019, the Philippines sent 69 containers of trash back to Canada.¹¹ The containers were shipped from Canada to the Philippines in 2013 and 2014 as part of global waste recycling trade. Smuggling, however, was at the centre of the ensuing dispute between the Philippines and Canada as non-recyclable materials were found mixed inside the containers. Knowing that these non-recyclable materials had no economic value and would only end up in dump sites, the Philippines demanded that the containers were to be returned to Canada. The problem took years to solve. It was not until the Philippines called back home its ambassador to Canada¹², and President Duterte threatened to wage war against Canada¹³ and leave the garbage-filled containers in the Canadian waters¹⁴, that these finally left the Philippines' Subic Bay bound to Canada.

In 2009, a similar situation happened between Brazil and the United Kingdom.¹⁵ Unlike the Philippines' case where the smuggled items were non-recyclable materials, the illegal items found in the 89 containers shipped to Brazil fell under toxic category. This is where the two incidents are sharply different. The 1992 Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal (the Basel Convention), which is the main international agreement regulating transfer of waste across countries, specifically bans toxic materials. The Basel Convention did not, however, regulate plastic waste transfer. Thus, while the Brazil's experience was clearly illegal, the Philippines' case was less straightforward. The legal aspect was one of the reasons why trash containers did not leave the Philippines' port sooner.

China's Plastic Waste Import Ban

While the Philippines-Canada garbage dispute was still ongoing, another parallel issue came into spotlight. It was China's ban on plastic waste import. In 2017, the Chinese government enacted the National Sword policy to regulate the import of industrial waste, electronic scrap and plastic trash for economic and environmental reasons.¹⁶ Eradicating smuggling is one of the policy's main objectives. In mid-2017, after China announced in the World Trade Organisation that will no longer accept certain types of solid waste,¹⁷ the policy came into force in 2018.¹⁸ Since China had been the major waste importer all these years, the ban threw the global waste trade industry into chaos. The import restriction is projected to result in 111

¹¹ AFP, (2019), Philippines Ships 69 Containers of Trash Back to Canada, Channel News Asia, 31 May <https://www.channelnewsasia.com/news/asia/philippines-ships-69-containers-of-trash-back-to-canada-11583340> Accessed 12th June 2019.

¹² Newton, Paula and Sandi Sidhu, (2019), Philippines Recalls Ambassador to Canada over Trash Row, 16 May <https://edition.cnn.com/2019/05/16/asia/philippines-canadian-ambassador-trash-intl/index.html> Accessed 12th June 2019.

¹³ Eschner, Kat, (2019), Trash Talk: Philippine President to 'Declare War' on Canada in Waste Dispute, The Guardian, 24 April <https://www.theguardian.com/world/2019/apr/24/philippine-president-rodrigo-duterte-to-declare-war-on-canada-in-waste-dispute> Accessed 12th June 2019

¹⁴ Reuters, (2019), Philippines Threatens to Dump Rubbish Back in Canadian Waters as Row Deepens, The Guardian, 23 May <https://www.theguardian.com/world/2019/may/23/philippines-threatens-to-dump-rubbish-back-in-canadian-waters-as-row-deepens> Accessed 12th June 2019.

¹⁵ The Telegraph, (2009), 'Toxic Waste' Returns to Britain from Brazil, 21 August <https://www.telegraph.co.uk/news/earth/earthnews/6064632/Toxic-waste-returns-to-Britain-from-Brazil.html> Accessed 12th June 2019.

¹⁶ Penchard, Richard, (2017), China Starts National Sword Campaign to Target 'Foreign Waste' Smuggling, Resource, 23 February <https://resource.co/article/china-starts-national-sword-campaign-target-foreign-waste-smuggling-11689> Accessed 13th June 2019.

¹⁷ Reuters, (2017), China Notifies WTO of Ban on Plastic, Paper, Textile Waste Imports, 18 July <https://www.reuters.com/article/china-environment/china-notifies-wto-of-ban-on-plastic-paper-textile-waste-imports-idUSL5N1K94IS> Accessed 13th June 2019.

¹⁸ Margolis, Jason, (2018), Mountains of U.S. Recycling Pile Up as China Restricts Imports, USA Today, 2 January <https://www.usatoday.com/story/news/world/2018/01/02/mountains-u-s-recycling-pile-up-china-restricts-imports/995134001/> Accessed 13th June 2019.

million metric tons of plastic waste needing to find new dumping sites by 2030.¹⁹

China's regional neighbours do not need to wait until 2030 to see the fallout. As China's plastic waste import dropped by 99.1 percent in 2018 compared to the previous year,²⁰ Malaysia, Vietnam, Indonesia, and Thailand experienced a noticeable import increase in 2018.²¹ Illegal waste recycling establishments, purportedly hailing from China, have sprouted out in different parts of Malaysia.²² In a recent high profile case, containers of restricted plastic waste were given permit-free labels and got smuggled into Malaysia.²³ Upon the discovery of these illegal materials at its port, Malaysia plans to send 3,000 tons of plastic waste back to where they came from.²⁴ A similar illicit activity also happened in Indonesia where smuggled plastic waste, which made up of about 60-70 percent of the total waste volume, was found mixed with paper waste.²⁵

The increasing volume of unwanted plastic waste in these countries has brought the long-known smuggling activities in the global waste industry into broad daylight. This added weight to a parallel problem on marine plastic pollution. The issue had earlier received global attention following a report that shows 8 million metric tons of plastic litter entering the ocean every year.²⁶ In a meeting convened from 29 April to 10 May 2019, the Basel Convention signatories agreed to amend the agreement by including plastic waste transfer in the regulation.²⁷ This significant move renders the import of certain types of plastic illegal, akin to the import of toxic waste.

Similarly, Southeast Asian governments responded with counter-measures that aim particularly at limiting import of waste. Malaysian government will issue a ban on the import of non-recyclable materials including plastic.²⁸ Vietnam will no longer issue permits for waste import.²⁹ Thailand will completely halt plastic waste imports by 2021.³⁰ Indonesia's Environment and Forestry Minister Siti Nurbaya Bakar has recently urged the Ministry of Trade to revise the relevant ministerial regulation and ban plastic waste import.³¹

¹⁹ Brooks, Amy L., Shunli Wang, Jenna R. Jambeck, (2018), The Chinese Import Ban and Its Impact on Global Plastic Waste Trade, *Science Advances* (4):eaat0131

²⁰ Staub, Colin, (2019), China: Plastic Imports Down 99 Percent, Paper Down A Third, 29 January. <https://resource-recycling.com/recycling/2019/01/29/china-plastic-imports-down-99-percent-paper-down-a-third/> Accessed 13th June 2019.

²¹ Hook, Leslie and John Reed, (2019), Why the World's Recycling System Stopped Working, *The Financial Times*, 25 October <https://www.ft.com/content/360e2524-d71a-11e8-a854-33d6f82e62f8> Accessed 13th June 2019.

²² Ananthalakshmi, A., Emily Chow, (2018), Swamped with Plastic Waste: Malaysia Struggles as Global Scrap Piles Up, *Reuters*, 25 October <https://www.reuters.com/article/us-malaysia-waste/swamped-with-plastic-waste-malaysia-struggles-as-global-scrap-piles-up-idUSKCN1MZ0P4> Accessed 13th June 2019.

²³ Yusof, Amir, (2019), We Will Send Back Plastic Waste Smuggled into Malaysia: Environment Minister, 23 April <https://www.channelnewsasia.com/news/asia/malaysia-send-back-smuggled-plastic-waste-yeo-bee-yin-11471454> Accessed 13th June 2019.

²⁴ Reuters/Bernama/aw, (2019), Malaysia to Return 3,000 Tonnes of Plastic Waste to Countries of Origin, Says Importers Are 'Traitors', 28 May <https://www.channelnewsasia.com/news/asia/malaysia-returns-3000-tonnes-plastic-waste-importers-traitors-11572690>

²⁵ Global Alliance for Incinerator Alternatives (GAIA), (2019), Discarded Communities on the Frontlines of the Global Plastic Crisis, Berkeley: GAIA

²⁶ Ocean Conservancy, (2019), Fighting for Trash Free Seas, <https://oceanconservancy.org/trash-free-seas/plastics-in-the-ocean/> Accessed 14th June 2019.

²⁷ Basel Convention, (2019), Plastic Waste, Marine Plastics Litter and Microplastics: Overview, <http://www.basel.int/Implementation/Plasticwastes/Overview/tabid/6068/Default.aspx> Accessed 13th June 2019.

²⁸ The Star, (2018), Govt to Ban Import of All Non-Recyclable Waste, 17 October <https://www.thestar.com.my/news/nation/2018/10/17/govt-to-ban-import-of-all-nonrecyclable-waste/> Accessed 13th June 2019.

²⁹ Vu, Khanh, (2018), Vietnam to Limit Waste Imports as Shipments Build Up at Ports, *Reuters*, 26 July <https://www.reuters.com/article/us-vietnam-waste/vietnam-to-limit-waste-imports-as-shipments-build-up-at-ports-idUSKBN1KG0KL> Accessed 13th June 2019.

³⁰ Reed, John, (2018), Thailand to Ban Foreign Plastic Waste from 2021, *The Financial Times*, 14 October <https://www.ft.com/content/06b5a136-ce09-11e8-b276-b9069bde0956> Accessed 13th June 2019.

³¹ Rahayu, Lisye Sri, (2019), Atasi 'Impor' Sampah Plastik, Menteri LHK Minta Permendag Direvisi (*To Solve Plastic Waste 'Import', Minister of Environment and Forestry Asked Trade Ministerial Regulation to be Revised*), *Detiknews*, 10 June <https://news.detik.com/berita/d-4580955/atasi-impor-sampah-plastik-menteri-lhk-minta-permendag-direvisi> Accessed 13th June 2019.

Environmental Consciousness or Cost-Benefit Analysis?

Given the multi-billion dollar nature of the global waste trade industry, one might wonder whether environmental awareness is truly behind this sudden distaste towards waste import. After all, economic development and environmental sustainability are often in tension.³² In the case of China, how will it recover potential revenue loss caused by the ban? Imported garbage added about 10 to 13 % to the weight of waste produced domestically, and China finds it challenging to manage.³³ This suggests that domestic waste is able to fill the profit gap left by the ban, and accepting imported trash may create additional costs instead.

Prior to the discovery of smuggled litter, Malaysia appeared to see China's ban as an opportunity to expand its waste recycling industry. It was perceived as a potential avenue for profits and revenues from multiple sectors including logistics, legal, accounts, insurance, and customs fees.³⁴ Subsequent mushrooming of illegal businesses that contributed nothing to the state coffers but instead incurred enforcement, monitoring, and cleaning up costs to the government tipped the cost-benefit analysis. Rather than serving as a profitable activity that can help address environmental problems, unwanted waste recycling businesses appear to place heavy burdens not only on the government but also on the affected communities around waste recycling facilities.³⁵

Similarly in Indonesia, waste recycling businesses have been serving as a profitable source of income to many communities.³⁶ Its profitability keeps people out of poverty despite the various health consequences they are suffering. This could probably be behind the reasons why Indonesia does not immediately place a stringent plastic waste import ban like its Thailand, Malaysia, and Vietnam counterparts.

Although the economic logic informs the transfer of trash from richer to poorer countries, it does not necessarily mean that the latter is the dominant player in the market. Quite the contrary, eight out of the top 10 plastic waste importers are high-income countries. These include the United States, Netherlands, Germany, Belgium, Canada and Italy.³⁷ This shows that advanced economies themselves benefit from global waste trade market. Indeed, they are in a much better position to develop and possess environmentally-sound recycling technologies. In fact, China's plastic waste import ban provides opportunities to waste recycling players in the United States to expand their businesses.³⁸ Developed countries are at the top of the pecking order as they collect higher grade recyclable materials first before letting the less valuable ones go down the stream and sail to developing countries.³⁹

³² Caballero-Anthony, Mely, (2018), *Negotiating Governance on Non-Traditional Security in Southeast Asia and Beyond*, New York: Columbia University Press.

³³ Brooks, Amy L., Shunli Wang, Jenna R. Jambeck, (2018), *The Chinese Import Ban and Its Impact on Global Plastic Waste Trade*, *Science Advances* (4):eaat0131

³⁴ Mahmud, Aqil Haziq, (2018), *Malaysia Moves to Reap the Benefits of Processing Global Plastic Waste*, *Channel News Asia*, 30 December <https://www.channelnewsasia.com/news/asia/malaysia-world-plastic-waste-recycling-china-11048810> Accessed 13th June 2019.

³⁵ Global Alliance for Incinerator Alternatives (GAIA), (2019), *Discarded Communities on the Frontlines of the Global Plastic Crisis*, Berkeley: GAIA

³⁶ Global Alliance for Incinerator Alternatives (GAIA), (2019), *Discarded Communities on the Frontlines of the Global Plastic Crisis*, Berkeley: GAIA

³⁷ Brooks, Amy L., Shunli Wang, Jenna R. Jambeck, (2018), *The Chinese Import Ban and Its Impact on Global Plastic Waste Trade*, *Science Advances* (4):eaat0131NA

³⁸ Associated Press, (2019), *China's Ban on Scrap Imports Revitalises US Recycling Industry*, *South China Morning Post*, 19 May <https://www.scmp.com/news/china/politics/article/3010817/chinas-ban-scrap-imports-revitalises-us-recycling-industry> Accessed 14th June 2019.

³⁹ Brooks, Amy L., Shunli Wang, Jenna R. Jambeck, (2018), *The Chinese Import Ban and Its Impact on Global Plastic Waste Trade*, *Science Advances* (4):eaat0131

Regardless of their capability to manage their own trash, developed countries continue to export out their garbage elsewhere. The cheaper costs associated with dumping waste in developing countries are often made possible by very lax industrial standards and practices in recipient countries. Unlike in developed countries, waste recycling businesses in developing countries are often part of the informal sector. They engage the poorer segments of the society to manually scour for recyclable materials among piles of garbage. The necessary health and safety standards can be totally non-existent. Although this undoubtedly places the workers in serious occupational risks and hazards, it can further lower down the operational costs. There is little to no consideration on environmental impacts. Regardless of the various irregularities, communities involved continue to profit from the activities.⁴⁰

Southeast Asian countries seem to be well aware of the profitability of this business. Although waste management capacity differs greatly across the member states of the Association of Southeast Asian Nations (ASEAN) as shown in Table 1 below, plastic waste import value to the region grew steadily over the years as seen in Figure 3.

Waste Management Aspect	Brunei Darussalam	Cambodia	Indonesia	Lao PDR	Malaysia	Myanmar	Philippines	Singapore	Thailand	Vietnam
1. Policy on Integrated Waste Management	NA	NA	NA	NA	NA	NA	NA	A	NA	NA
2. Policy on Solid Waste Management	NA	NA	NA	NA	NA	NA	A	A	A	NA
3. Institutional arrangement to handle/manage wastes	A	A	A	NA	A	A	A	A	A	A
4. Regulatory framework for waste management	NA	NA	A	NA	A	NA	A	A	A	A
5. Budget support for waste management	A	NA	NA	NA	A	NA	A	A	A	A
6. Training program for waste management	NA	NA	NA	NA	NA	NA	NA	A	NA	NA
7. Private sector participation	NA	NA	NA	NA	A	NA	A	A	A	NA
8. Community participation	NA	NA	A	NA	NA	NA	A	NA	A	A
9. Information system	NA	NA	NA	NA	NA	NA	NA	A	NA	NA

Table 1: Summary of Waste Management Status in the ASEAN Countries⁴¹

⁴⁰ Global Alliance for Incinerator Alternatives (GAIA), (2019), Discarded Communities on the Frontlines of the Global Plastic Crisis, Berkeley: GAIA

⁴¹ United Nations Environment Programme (UNEP), (2004), State of Waste Management in South East Asia, Osaka, Shiga: UNEP, p. 33.

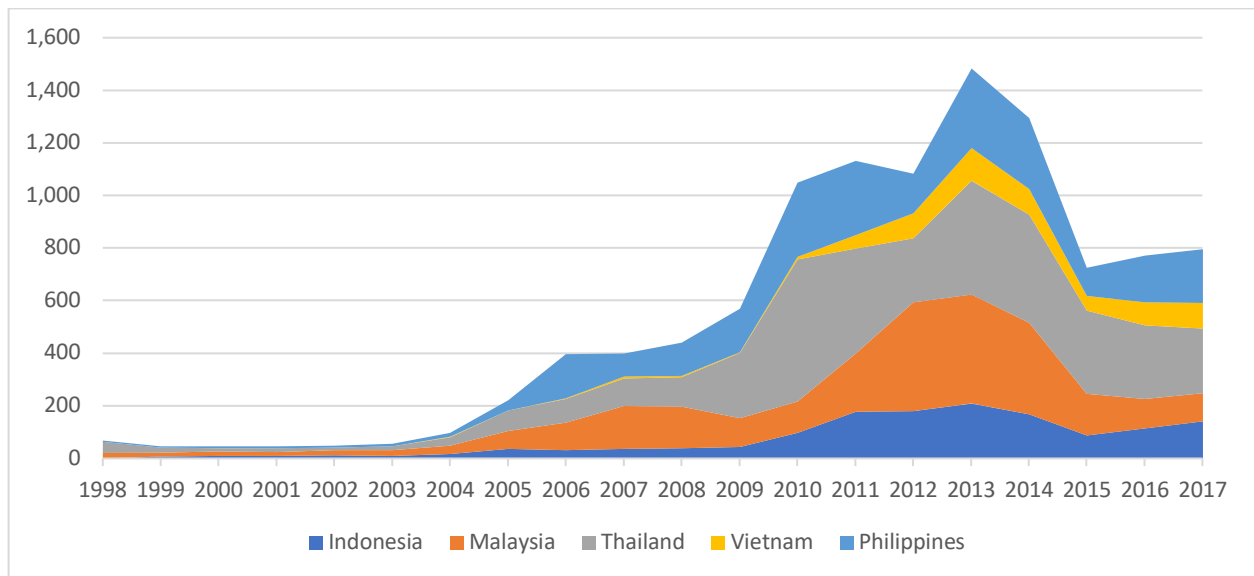


Figure 3: Plastic Waste Import Value (in million US\$), year-on-year, 1988-2017⁴²

Table 1 shows that the majority of ASEAN countries do not engage the private sector in waste management industry. This further highlights the informal nature of this sector. The policy on solid waste management is not available in most countries and some countries do not have budget support at all. In general, a majority of ASEAN countries lack the skills, capacity, and financing and technological resources for proper waste management.⁴³ This could possibly explain why Indonesia, the Philippines, Vietnam, Thailand, and Malaysia are among the top 10 countries that contributed the most quantity of plastic waste to the ocean.⁴⁴ Regardless of the overall lack of capacity, the profitability of waste recycling industry seems to provide the incentive for most Southeast Asian countries to continue importing garbage. Back to the economic logic, both richer and poorer countries benefit from this arrangement.

Considering all these factors, it is hard to conclude whether the latest trend to limit waste imports truly reflects the spirit of environmentalism. More importantly, it is unclear whether such ban will last and will lead to more rigorous law enforcement to crack down illegal smuggling in global waste trade market. As consumerism remains and goods continue to be produced, both recyclable and non-recyclable wastes will always be generated. Since they will have to find a home to be discarded, one can imagine that profitable waste trades, both legal and illegal, are likely here to stay. One may not despair, however. Increasing global attention on plastic waste and garbage trade issues will act as a counterforce leading to possibly more innovative solutions in waste management standards and practices, better bio-degradable materials, and even a changing attitude towards the use of disposable materials.

⁴² UN Commodity Trade Database, HS code. No. 391510, 391520, 391530, and 391590, <https://comtrade.un.org/data/> Accessed 12 June 2019.

⁴³ United Nations Environment Programme (UNEP), (2004), State of Waste Management in South East Asia, Osaka, Shiga: UNEP

⁴⁴ Jambeck, Jenna R., Roland Geyer, Chris Wilcox, Theodore R. Siegler, Miriam Perryman, Anthony Andrady, Ramani Narayan, Kara Lavender Law, (2015), Plastic Waste Inputs from Land into the Ocean, *Science* (347)(6223), pp. 768-771.

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