

**The Paradox of the International Waste Trade: A Case Study of the US and
Indonesia**

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Introduction

In a society where mass consumption and consumerism has become the norm, waste generation has become one of the leading contributors to waste pollution, climate change and human diseases that have long-term effects. Global waste generation is rapidly increasing, as it is estimated that “waste generation will drastically outpace population growth by more than double by 2050.”¹ Without the proper management systems for global waste, trash continues to end up in landfills or the ocean, endangering both humans and the environment. According to the World Bank, without urgent action, “global waste will increase by 70% from current levels by 2050, amounting to an estimated 3.4 billion tons.”²

The mismanagement of various kinds of waste may lead to multiple environmental damages and human hazards that can be irreparable in the future, as waste contains various toxins and other substances that are harmful to human health. Electronic waste alone can contain more than “100 different substances, many of which are toxic such as lead, mercury, hexavalent chromium, selenium, cadmium and arsenic.”³ These contaminants have the potential to cause the development of “cancer, immune system suppression, reproductive and developmental complications.”⁴ Furthermore, run off water that carries waste and other substances from acidic ash can end up in the soil, which causes groundwater contamination or affects aquatic biodiversity in the ocean.⁵ These contaminants may end up ingested by aquatic life, and end up in human waterways and the human body.

¹ Gregorio Rafael P. Bueta, “Waste Trade in Southeast Asia” (The Philippines: EcoWaste Coalition, August 21, 2022).

² Ibid 4.

³ Onwughara Innocent Nkwachukwu and Chukwu Henry Chima, “Focus on Potential Environmental Issues on Plastic World towards a Sustainable Plastic Recycling in Developing Countries,” *International Journal of Industrial Chemistry* 4, no. 34 (2013), <http://www.industchem.com/content/4/1/34>.

⁴ Ibid 10.

⁵ Ibid 6.

Today, there is an estimate of 46,000 pieces of plastic floating in every square kilometer of the ocean worldwide.⁶ However, only a small handful of the world's plastic has ever been recycled,⁷ while others continue to disintegrate into smaller pieces. Plastic that has been broken down into even smaller plastic pieces, called microplastics, have infiltrated the human bodies through the animals that humans ingest and the materials that humans utilize on a daily basis such as plastic bottles, bags and other single-use plastic materials. Considering the rate at which waste is generated, waste management systems must catch up in order to ensure that the negative effects of mismanaged waste remain curbed.

Despite the harms that waste may impose, there remains a capacity for global waste to become profitable, as many countries are interconnected through the waste trade. Following the push for recycling and movement away from single-use products, many countries have resorted to sending their recyclable waste to be managed in other countries. Within the trade, it benefits both the importer and exporter, as the exporter can easily get rid of their waste while the importer gets paid and receives cheap materials to be used again in the industrial sector.

There are four main types of waste that get exported by developed countries: plastic, cardboard, paper and electronic waste. For each type of waste, there are different rules for recycling and managing, and often it depends on each region or country's waste management systems. If the waste cannot be recycled, it is sent to various landfill sites and left to decompose. After the categories of waste are sorted through and recycled, it is then used as cheap input for industrial growth. However, exported waste often ends up getting contaminated by toxins and other types of waste, rendering it impossible to recycle and reuse for other industrial purposes in developing countries.

⁶ Ibid 9.

⁷ Shunli Wang, Jenna Jambeck, and Amy L. Brooks, "The Chinese Import Ban and Its Impact on Global Plastic Waste Trade," *Science Advances* 4 (June 2018).

Since the costs of recycling are cheaper in developing countries, waste is then sent to poorer countries. By doing so, richer countries are able to dispense their waste and reduce the number of nationally produced waste, while developing countries are compensated for managing and discarding their garbage for them.⁸ After the waste has been exported and sorted through by the importing country, the value of recycled materials differ based on its quality and level of contamination from other types of waste. In Indonesia, the materials will either be picked up by third-party companies to be sold again as cheap industrial input or by trash-pickers who can sell it to other parties. Therefore, within the Indonesian waste trade, there are various revenue streams in which stakeholders may profit.

Before 2017, China was the main importer of waste coming from Western countries. The Chinese economy experienced rapid growth from the global waste trade. Nevertheless, ever since China introduced the ban on the import of global waste in 2017, Indonesia has become one of the main importers of global recyclable waste. An ASEAN report found that “imports of plastic waste [in Indonesia] also rose in 2018 by as much as 141%, or an additional 283,000 tons,”⁹ following the Chinese ban. The continued imports of global waste is extremely worrying, as Indonesia already struggles to effectively manage domestic household and industrial waste. The Indonesian government has attempted to limit the legal import of contaminated waste, unsuccessfully, as illegal smuggling continues to happen within the waste trade. Illegal smuggling combined with mismanagement of imported waste brings the future of the waste trade into question and will cause large amounts of waste in developed countries to pile up.

In the case of the global waste trade, both the exporter and the importer of global waste must bear the responsibility and ensure that the waste can, in fact, be reused for other purposes.

⁸ Ibid 15.

⁹ Bueta 13.

With the push towards green and circular economies and greater sustainability, developing countries who still rely on natural resources, like fossil fuels, for economic growth have a bigger challenge to address compared to developed countries who can afford the switch to renewables. Therefore, developed countries must assist developing countries to have a smoother transition towards a greener economy especially in an industry like the waste trade.

This paper will address the research question: “how can the benefits of importing waste in Indonesia exceed its costs, and ensure that all stakeholders involved are profiting from the industry?” The paper will also investigate deeper the effects of the global waste trade on human, economic, and environmental security in Indonesia, specifically West Java, as I will be visiting the Bantar Gebang landfill to interview workers and citizens in the area.

Background Information

The waste trade generally began in the 70s, and within a decade, an “estimated 30 to 45 million tons of toxic wastes were shipped to non-OECD countries from industrialized nations” (OECD). Only around the 1990s did the industry start to explode in China. Once emerging markets found that the cheap and imported materials could be used profitably, and used to manufacture more goods for sales and export in the future, the Chinese government started importing more waste from Western countries. One of China’s richest women, Zhang Yin, founded the company *Nine Dragons Paper*, which receives paper waste from the US and European countries and ships it to China to be made into corrugated cardboards. With an increase in the demand for recycled materials, the supply of imported waste steadily increased as well.

Initially, the waste trade industry saw little to no regulation. However, once it was revealed around the world that developed countries would send toxic waste to developing countries, international outrage led to the creation and adoption of the Basel Convention. The Basel Convention was created in 1989 with the aim to protect humans and the environment from the effects of the transboundary movements and management of hazardous and other wastes. The convention also sets strict export and import guidelines and quality standards for the international waste trade. As of 2018, more than 190 states are parties to the convention. However, both Haiti and the United States are the only two countries that have signed the convention but refused to ratify it.

The United Nations treaty, called the *Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal*, details the obligations and protocols that parties must follow to minimize the adverse effects of the waste trade. The convention now requires signatories to go through a detailed Prior Informed Consent (PIC) Procedure, which consists of four requirements and involves prior communication and confirmation between the exporters and importers. With the PIC procedure in place, it is expected that governments will communicate and agree with each other before sending any waste to be recycled, and to prevent wrong containers from being sent. Following the PIC procedure, all the waste must be pre-sorted and cleaned before transport. Another obligation for signatories of the convention is to self-report their data of waste imports, however, not all parties follow this obligation. Although the treaty is not legally binding, the treaty provides a platform for dialogue and information-sharing, and has the potential to pressure parties or the international community that do not yet follow the convention.

Within the Basel Convention, the Environmental Network for Optimizing Regulatory Compliance on Illegal Traffic (ENFORCE) agency was created to promote compliance with the Basel Convention. Since the convention deals with transboundary issues, a multinational organization is required to deal with the cross-boundary affairs of the international waste trade. The members of the agency include a representative of one of the five United Nations regions that are parties to the convention as well as another five representatives from the regional centers of the Basel Convention.¹⁰ Doing so ensures representation from all regions, and a fair negotiation process between the parties.

Following the creation of the convention and other agencies, and the push for stricter import and export standards, China implemented the Green Fence policy to raise the standard “temporary restriction on waste imports that required significantly less contamination.”¹¹ The goal of the policy was to improve the quality of waste that China was receiving and reduce illegal trading in the industry. In 2017, China amended the policy and implemented a total ban on the import of nonindustrial plastic waste. Since China was the main importer of waste from Western countries, a large portion of the waste was displaced to other countries who were not equipped to handle a large influx of recyclable waste in an already fragile state. Due to the Chinese ban, it is estimated that a “cumulative 111 million MT of plastic waste will be displaced by 2030,” equal to “nearly half (47%) of all plastic waste that has been imported globally since reporting began in 1988.”¹² These statistics illustrate the damage that the Green Fence policy had done on the global waste trade industry, as countries who were previously not equipped had to start taking in waste to compensate for the losses from the policy.

¹⁰ Ibid 15.

¹¹ Brooks et. al 1.

¹² Ibid 2.

Further, it is also estimated that the Green Fence policy caused a “\$446 million USD and \$298 million USD reduction in export and import trade values, respectively.”¹³ The effects of the policy and the Chinese ban on import of wastes highlighted the fragility of the global waste trade, as all of the stakeholders involved heavily depended on a single importer. As a result, the waste trade now involves other importers. Among the ASEAN countries, Malaysia, Thailand and Indonesia are the top importers of plastic waste from G7 countries. Turkey and the Philippines are also importers of developed countries’ waste. Nevertheless, the capability of these lower-income countries to take in waste and successfully re-manufacture them remains a question to be answered.

Economics of the Waste Trade

One of the first economists to evaluate the effects of economic determinants on the waste trade is Jen Baggs in her paper titled “*International Trade in Hazardous Waste.*” In her paper, Baggs models the waste trade industry as a monopolistically competitive market with product variety for each type of waste. Within this competitive market, Baggs found that larger economies tend to trade more waste compared to smaller economies. The intuition follows that larger economies generate more waste as a by-product of greater consumption and production. As a result, they have a greater supply of waste to be exported to accepting countries. Since larger economies generate more waste and have a larger capacity to export it, it implies a comparative advantage for larger economies to engage in the waste trade.¹⁴ With a comparative advantage in exporting waste, larger economies thus tend to export larger amounts of waste.

¹³ Ibid 3.

¹⁴ Derek Kellenberg, “The Economics of the International Trade of Waste,” *Annual Review of Resource Economics* 7 (2015): 109–25.

There are other economic determinants of international waste trade that are important to note, such as the level of national income, environmental regulation and transportation costs, that determine the level of import and export a country is engaged in. The paper found that “developing countries of the world import a disproportionately large volume of the world’s waste and scrap when viewed in proportion to their income.”¹⁵ This could be attributed to the fact that higher income countries tend to have better environmental regulations, and therefore “the higher a country’s income and, thus, the presumed level of environmental regulation, the less hazardous waste a country will import.”¹⁶ With higher environmental regulations, countries may not need to export waste to manage, as their waste infrastructure in the country may already be sufficient to deal with their domestic waste. However, this is not always the case, as other economic determinants play a role in whether or not a country exports their waste.

Further, transportation costs are also a significant determinant in whether or not a country will choose to export their waste. Exporting waste requires paying for the disposal fee combined with the transportation costs. Countries will only choose to export “if the foreign gate fee of disposal, plus the transport costs to a foreign location, is less than the domestic gate fee plus the cost of transport to a domestic disposal location.”¹⁷ Therefore, even a small marginal change in the weight, distance or cost to export could affect one country or company’s decision to export their waste.

In the United States alone, according to a report from 2019 released by the EREF Data & Policy Program, “the national average municipal solid waste (MSW) landfill tip fee is \$55.36 per ton.”¹⁸ In 2018 alone, according to the Environmental Protection Agency, the United States

¹⁵ Ibid 112.

¹⁶ Ibid 115.

¹⁷ Ibid 116.

¹⁸ Debra L. Kanther, “Analysis of MSW Landfill Tipping Fees: April 2019” (Environmental Research & Education Foundation, n.d.), erefdn.org.

generated 294.2 million tons of MSW.¹⁹ Based on this data, the United States would have had to pay more than \$16 trillion US dollars in order to send all of that to the landfill. Therefore, instead of sending their waste to the landfill and spending a costly amount, companies would hire waste trading organizations to set up an exchange with the importing country. Ultimately, “the waste trading company would offer to pay the recipient, sometimes a government, a...sum in foreign exchange for accepting the waste.”²⁰ In doing so, the US saves a large amount of money, and prevents them from having to manage extra waste.

An economic hypothesis that illustrates this concept is the Pollution-Haven Hypothesis. The hypothesis suggests that less developed countries would become the likely locations for polluting industries because they offer less strict environmental laws in order to attract firms, and therefore costs to export the waste become much cheaper. A paper written by Brooks et. al (2018) about the Chinese waste trade underlines how

“wealthier nations, with more robust waste management infrastructure, are sending plastic waste to countries that are still developing economically with less-developed waste management infrastructure. Relatively high domestic management costs in exporting countries versus the cheaper processing fees...[makes it]...cheaper to transport recycled materials by ship to China than it is to transport domestically by truck or rail.”²¹

This is significant as countries will look for the cheapest option possible, and that means sourcing their waste to developing countries where there are no proper waste management systems in place. This could potentially be harmful as it may remain unclear whether or not the waste that gets imported is being recycled and manufactured into other industrial goods, and leaves many loopholes that may be taken advantage of by those who want to profit more.

¹⁹ “Advancing Sustainable Materials Management: 2018 Fact Sheet” (US Environmental Protection Agency, 2018).

²⁰ Jennifer Clapp, “The Toxic Waste Trade with Less Industrialised Countries: Economic Linkages and Political Alliances,” *Third World Quarterly* 15, no. 3 (September 1, 1994).

²¹ Brooks et. al 15.

The search for the cheapest possible option plays into the concept of “race to the bottom,” where countries will try to spend the least possible amount of money, even if it means sacrificing good working conditions or ensuring a good pay for the workers who are involved. In the waste trade, the cheapest possible option is definitely economical, however, it does not ensure that all the waste that gets exported becomes recycled. Once it is in the hands of the importing government, exporting countries do not have an obligation to follow their waste anymore. Therefore, although the option is the cheapest, it may not be the most environmentally sound, despite the way that it is marketed to be good for the environment.

Following economic determinants, there are several tradeoffs that must be considered. As mentioned in the beginning of this paper, handling waste requires strict adherence to quality standards and guidelines in order to avoid the intake of toxins and other substances that could harm the human body. Consequently, the waste trade has been criticized for dumping hazardous waste into developing countries and leaving poor and lower-income citizens to deal with toxic waste. Former US Secretary of the Treasury, Lawrence Summers, was heavily criticized by the public for promoting waste dumping towards developing countries. This is because developing countries generally do not have the capacity to recycle waste effectively as they do not have robust waste management infrastructures and institutions set into place.

Economists have argued that because of the environmental differences, combined with the overall cheaper transportation and disposal costs in developing countries, it has created a waste-haven effect on developing countries. The waste-haven effect suggests that developing countries are becoming waste havens for their developed counterparts due to differences in environmental regulations and standards. Due to these differences, researchers have argued that

developed countries are taking advantage of the loopholes within the waste management systems in developing countries.

Despite the waste-haven argument, as Summers previously noted, the waste trade industry can be mutually beneficial for both the exporter and the importer and profitable for many who are involved, especially poorer and lower-income citizens who depend on the waste industry for their livelihoods. The waste trade industry is able to compensate poorer nations for use of its land, potentially by creating more jobs and higher investment in these industries which would increase income, which are crucial foundations of prosperity as well as environmental improvement.²² Summers highlights that:

*“the potential gains from trade in hazardous wastes for richer countries stem from the reduction in disposal costs and health risks, while the potential gains for developing countries stem from increased incomes that induce higher savings rates and, thus, greater rates of capital accumulation.”*²³

There are potential gains for both sides to enjoy as not only can developed countries benefit from reducing various costs, developing countries can also mutually benefit through increased income and level of capital. This is significant because with increasing levels of income and greater rates of capital accumulation, economic and national development is expected to follow. One key concept that illustrates this process of economic development is the Environmental Kuznets Curve.

²² Jay Johnson, Gary Pecquet, and Leon Taylor, “Potential Gains from Trade in Dirty Industries: Revisiting Lawrence Summers’ Memo,” *Cato Journal* 27, no. 3 (2007), <https://www.cato.org/sites/cato.org/files/serials/files/cato-journal/2007/11/cj27n3-6.pdf>.

²³ *Ibid* 406.



The Environmental Kuznets Curve highlighting the relationship between environmental degradation and per capita income.²⁴

The Kuznets Curve hypothesis proposes an inverted U-shaped relationship between environmental degradation and income per capita. The curve, pictured above, suggests that in the beginning, environmental degradation will worsen while economic growth is happening. However, at the peak of the curve where per capita income is the highest, the environment will improve once again. In the context of the international waste trade, the importer may initially experience environmental degradation.

However, the curve suggests that in the end, economic growth will redress the environmental impacts of early stages of economic development. In Indonesia, there has been a shift in the overall value-priority of the population, in that citizens and the government have increasingly changed their values towards the environment. Companies have increasingly complied with ESG regulations, and the Indonesian government has shifted their governmental agenda to prioritize more sustainable pursuits. Nevertheless, some aspects of the environment, such as the waste industry, remain neglected by the government.

²⁴ This theory has been proposed as the curve, and environmental concerns in Indonesia have been rising. However, there is no concrete evidence to suggest that the curve is, in fact, true.

The main issue that the waste industry faces due to the lack of regulation is the illegal waste trade. Since there are differences in transportation and disposal costs, taxes and regulations, these differences “create substantial opportunities for financial gain by arbitraging cost differences through illicit trafficking of waste.”²⁵ Once the waste is exported, it is left to the hands of those in developing countries, and there is no way to trace the movements within the country and/or further movement away from the country. Opportunities for illegal smuggling also arise in developing countries, as they often lack the resources for effective “monitoring, investigation, and prosecution of these illegal waste imports.”²⁶ Consequently, research on the international waste trade may become convoluted.

Moreover, although the Basel Convention does provide guidelines and standards for the international waste trade, it is not guaranteed that illegal smuggling of international waste can be halted. According to data from a 21-year panel of bilateral waste trade flows for 117 countries, Kellenberg & Levinson (2014) finds no concrete evidence that the Basel Convention or the Ban Amendment has had a causal impact on waste trade flows.²⁷ This may be attributed to the fact that many exporters have not ratified the convention. Therefore, even if more than 180 countries have ratified the convention, if the biggest exporters of waste are not ratifiers of the convention, the convention does not hold much power to change any policies or contribute towards any significant changes.

²⁵ Kellenberg 117.

²⁶ Bueta 13.

²⁷ Kellenberg 118.

The Waste Trade in Indonesia

Waste remains one of the biggest problems that plague Indonesia, as the government does not have the capacity to manage it effectively. Indonesia produces about 7.8 million tons of waste annually, but according to a survey done by the Indonesia National Plastic Action Partnership, “only 10% (680,000 tons) [of the waste] was recycled in the approximately 1300 recycling centers operating in the country.”²⁸ Despite the amount that was recycled in 2017, the rest of the plastic waste was not properly sorted through and dumped into landfills, causing more than 620,000 tons of waste to end up in the sea, damaging the already fragile environment.

Indonesia’s problem of waste is exacerbated by the influx of foreign waste, as they do not have the robust infrastructure and resources that are necessary to manage such a large amount of waste with an ever growing population. Annually, the amount of plastic waste alone that gets imported can reach up to 3,000 tons. Further, this amount that gets imported has a monthly management fee that can reach up to Rp. 337,500,000 or equivalent to \$23,000 USD. Whereas for imported waste that is proven to be B3 waste, the monthly management fee can reach up to Rp. 480,000,000, or equivalent to \$33,000 USD.²⁹ Waste management can only be carried out in a limited manner, and not all cities in Indonesia can carry out the same level and quality of waste management.

To analyze this issue more deeply, one must consider the value chain of imported waste in Indonesia. The value chain of waste in Indonesia begins at the exporting countries, where it is received by the forwarding agents and the shipping line. The waste is then received at Indonesian

²⁸ Al Dina Maulidya, Melina Nur Fitriah, and Eva Yusnita Chandra, “The Urgency of Indonesia to Control Imports of Non-Hazardous and Toxic Waste (B3) in 2019,” *Global-Local Interactions: Journal of International Relations* 1, no. 2 (July 2020): 22–31.

²⁹ Ibid.

ports and examined by Indonesian customs to ensure that exporters have the correct license and the legal documents necessary for import.

Since the Basel Convention remains an overarching convention and does not provide the specifics for each country, licenses and regulations remain a country-specific issue. In Indonesia, the Minister of Trade regulates the import of foreign waste and requires countries to acquire a special import license. The Indonesian government only allows the import of non-B3 Waste, short for *Bahan Berbahaya Beracun*, or toxic and hazardous waste. In the past, the Indonesian government has sent back containers of waste that were either B3 waste or contaminated with B3 waste, both of which did not follow the government guidelines. Further, exporters must get a government-issued license that ensures the waste will go on to a processing or manufacturing facility to be reused.

The regulations Act Number 18 of 2008 concerning Waste Management and Act Number 32 of 2009 concerning Environmental Protection and Management emphasizes that the imported waste must be clean and not contaminated with hazardous and toxic materials.³⁰ Furthermore, they also need the API-P import license granted by the Ministry of Trade in Indonesia. Waste imports are only allowed for the holders of a valid Production-Importer License (Angka Pengenal Importir-Produsen/API-P) that is issued by the Ministry (Source). Within this license are the specific requirements for global waste to be imported, including a 2% maximum contamination in plastic and paper waste shipments. Once the license is acquired, importers still need to pay the import tax, which is 2,5% multiplied by the value of imports. The Indonesian government has returned various shipments that did not comply with the regulations set by the ministry, and even waste that was illegally imported into Indonesia. Once the containers have been inspected, it is then released and transported to the recycling factories or the landfill. If the

³⁰ Maulidya et al 25.

documents are incomplete or the import is found to be illegal, the containers will get sent back to the originating country.³¹

After the containers of waste have been approved by Indonesian customs, it is released and transported to the recycling and manufacturing companies. For PT. Pindo Deli, a pulp and paper mill company that takes in imported waste, they get paid a management fee of Rp. 500,000,000, equivalent to \$33,800 USD, from the exporting country as they must pay the rest of the management fee for the province.³²

After receiving the waste from the importing country, they begin the recycling process. The process for cardboard recycling in PT. Pindo Deli begins with the general process of collecting and sorting. If the containers do not include sorted trash, it is done by the trash pickers and sold to the company through the middlemen. Cardboard materials are then shredded and pulped (mixed with and soaked in water) to soften the cardboard. After pulping is done, the substance is then filtered to remove any foreign materials such as plastics or tape. The substance is mixed with water again in order to achieve the right consistency for use, all while also adding more chemicals to get the cardboard to the right quality. Finally, it is then pressed, rolled and dried as the substance contains a lot of water at this stage. Once the substance has become dried paper, it can then be used to make toilet paper, recycled cardboards, etc.³³ The company PT. Pindo Deli mainly uses the imported waste to make recycled paper.

On the other hand, the sorting process for recycling plastic and making sure it is reusable is done through mechanical methods, where they are chipped into granules and melted down before being molded into something new. However, the process of melting plastics changes its

³¹ Bueta 14.

³² Anggita 33.

³³ Jan Baeyens, Anke Brems, and Ref Dewil, "Recovery and Recycling of Post-Consumer Waste Materials. Part 1. Generalities and Target Wastes (Paper, Cardboard and Aluminium Cans)," *International Journal of Sustainable Engineering* 3, no. 3 (2010): 148–58.

properties and reduces the quality of the material. As a result, plastic bottles that are recycled cannot be made into plastic bottles, instead, the recycled plastic can only be used for lower grade products such as water pipes, park benches and traffic cones. After two or three times of recycling, the recycled plastic can no longer be used. Researchers have been trying to figure out how to stop the reduction of the quality, in order for the remade products to be the same.³⁴

If the waste does not reach recycling factories, it is sent to the landfill. According to the workers that I interviewed in the Bantar Gebang landfill, the waste in the landfill either stays there, is burned or used for compost depending on what type of waste is received. However, the Bantar Gebang landfill cannot keep up with the rate of trash coming into the landfill. It is said that in 2027, the landfill will be at full capacity unless the government improves its waste management systems.³⁵ Therefore, the government must find other ways to manage their waste, as the landfill option is not a sustainable one.

Illegal Waste Trade in Indonesia

The illegal importation of waste in Indonesia remains a serious problem that has yet to be addressed by the Indonesian government, as it continues to worsen due to the lack of monitoring and regulation. According to the Directorate General of Customs and Excise, between June 2019 and February 2020, 431 containers of waste were re-exported to the country of origin, which is almost double the number of containers from the previous year.³⁶ This is only the number of illegal containers that were found by the agency—the true number of illegal exports remains unknown.

³⁴ Ibid 152.

³⁵ Maulidya et. al 25.

³⁶ Maulidya et. al 27.

There are different strategies that exporters employ in order to illegally export waste, especially toxic waste, illegally. One way that companies export is through falsifying documents. In 2009, PT Jace Octavia Mandiri, a recycling company, exported several containers of waste from South Korea. In the legal documents, the company noted that the contents of the containers were *ferrosand* waste, which was to be reused for other industrial purposes. Once the environmental agency in the area, *Bapedal*, and customs inspected the container, they found that the contents of the container was not ferrosand waste, but *copper sludge*. This type of waste is a cheaper substitute of ferrosand waste, but it falls under the B3 waste category, and is therefore illegal to export to Indonesia. Copper sludge was found to be extremely harmful to those who are in close contact with it, and ended up causing an outbreak within the citizens who lived in the area.³⁷ If there had been no complaints, the case of illegal importation may have remained unknown to the rest of the world.

Another method exporters employ is through smuggling B3 waste in non-B3 waste containers. In 2009, another company called PT. Hwa Hok Steel imported metal scrap into Indonesia. On the containers, the company wrote on the label that it was purely metal scrap to be imported. However, it was found that the import was badly contaminated with B3 waste, which is illegal to export to Indonesia. In the case of the waste trade, once the container has been labeled and approved for export, there is not much that the government can do. These cases led to outrage within environmental groups in Indonesia, as they pressured the Indonesian government to tighten its regulations.³⁸

The reasons why the illegal waste trade in Indonesia continues to grow can be attributed to the fact that there is a lack of strict regulations, as well as other factors, such as the geography

³⁷ Nehru Anggita and Fendy Eko Wahyudi, "Analisis Sikap Good Faith Non-Compliance Indonesia Dalam Upaya Implementasi Konvensi Basel," *Journal of International Relations* 4, no. 3 (August 2018): 332–40.

³⁸ *Ibid* 334.

of Indonesia. The location and archipelagic form of Indonesia makes it much easier for countries to export illegally without any repercussions. Indonesia spans across more than 17,000 islands that range from large and densely populated ones to very small ones where there are not many inhabitants. Within the islands, it is extremely difficult to tightly monitor all of its regions, especially its waste management systems.³⁹ This is not only a problem for the waste trade in Indonesia, in fact, this has been one of the biggest problems Indonesia as a country has faced for generations before.

Furthermore, between these islands, there is no standard of waste management between the central and regional government. Areas and docks in smaller cities can be found to not have the proper tools to manage the waste, or the resources to deal with the required monitoring. Since there is no equal understanding about the management and import of foreign waste between the various governments, each region may handle the import of waste very differently. Indonesia greatly suffers from a decentralized and fragmented governance that cannot adequately handle the influx of foreign waste. Consequently, although regulations may be stricter in the capital city of Jakarta, it is harder to determine whether or not regional governments will follow these guidelines, as they may import without the approval of the central government.⁴⁰

Another factor that continues to enable the illegal waste trade in Indonesia is the lack of coordination between Indonesia and the body of the Basel Convention, including the countries that have ratified the treaty. Between 2009-2012, the Indonesian government did not report any data about the imports of foreign waste to the Secretariat of the Basel Convention.⁴¹ Despite the lack of reporting, the agency could not do anything, even try to pressure the Indonesian government. Without any indication that there was waste being imported into Indonesia, the

³⁹ Ibid 335.

⁴⁰ Ibid.

⁴¹ Maulidya et. al 23.

agency cannot enforce the regulations of the convention, and cannot determine whether or not Indonesia is committed to ensuring a safe and legal waste trade. The lack of commitment and inability to report back to the secretariat demonstrates a lack of legitimacy on the part of the Indonesian government to the other signatories of the treaty, even when Indonesia has the potential to be a leader in the move towards greener and more sustainable economies.

Another example of the lack of coordination between countries was in 2012, when a company from the Netherlands exported a container of waste that was contaminated by B3 waste. After the Ministry of Environment in Indonesia reported the case to the Dutch authorities, they conducted a private investigation on the origins of the waste. However, they never sent back the results of the investigation to the Indonesian government.⁴² Without any coordination between the two governments, the case could not be dealt with and the illegal exporters could not be punished. These cases make it much more difficult to eradicate the illegal waste trade that continues to grow, even with various rules and regulations in place.

Nevertheless, the waste trade industry supports the lives of many Indonesian citizens, especially in the informal recycling sector. Among those that benefit within the waste industry in Indonesia are the *pemulung*, or people who pick trash and sell it to be recycled. Trash pickers are not formally recognized by the government, and in most areas of Indonesia still do not have guaranteed access to social security. Further, there is the social stigma that surrounds being a trash picker. Therefore, the social stigma combined with the lack of support from the government make it much more difficult for trash pickers to support themselves.

For this project, I visited the Bantar Gebang landfill and had the opportunity to interview several trash pickers and citizens of the area to investigate how they are affected by the waste trade. The landfill is the size of more than 200 football fields, and every day around 7,000 tons of

⁴² Ibid 24.

trash come to the landfill.⁴³ Although the landfill is in Bekasi, the status of the land still belongs to the Jakarta government, as the waste that gets sent to the landfill is from Jakarta. Among the trash pickers I interviewed was Godom, who has since his trash picking days, become a worker for the government in the environmental services section.

In the past, Godom worked from 7:30am to 4:00pm and was only able to make around Rp. 140,000 everyday, equivalent to \$9. The amount varied depending on how long during the day he worked and the type of recyclables he was able to collect. They collect all types of plastics and cardboards, however, the type of waste that makes the most money is aluminum. The waste that they collect is then sold to their boss, who acts as the intermediary between the trash pickers and the recycling companies who then use the waste that is collected for production.

The trash pickers talked of how living nearby the landfill affected their lives. The stench of trash in the area was overpowering, but there were much more workplace hazards that they suffered from. Everyday, thousands of trash excavators line the hills of the trash, and trash pickers must be careful to avoid it. They had gotten used to the smell, however, another trash picker I interviewed called Agung noted that in the past the waste from the landfill had gotten into their waterways since it was not properly managed. This is extremely dangerous as citizens heavily depend on the waterways for food and daily necessities.

Despite these hazards, the government has improved their support for the citizens and the trash pickers as well. Every three months, the government of the region of Bekasi provides the people who live in the area of the landfill Rp. 1,300,000 equivalent to \$87 USD, as compensation for the health hazards from living near a landfill. Moreover, the government is finally granting social security for trash pickers. Previously, trash pickers did not have access to the *Badan*

⁴³ Maulidya et. al 27.

Penyelenggaraan Jaminan Sosial (BPJS), or social security. During the interview, the trash pickers noted a sense of optimism for the future, as they believe that with social security and more recognition from the government, trash pickers are more empowered and will have more of a platform to organize.

Recommendations

Despite the several flaws in the waste trade and management system in Indonesia, there is still potential for the system to be improved through changes in various policies. It is evident that Indonesia still needs to raise its capacity of waste management that is environmentally sound. Especially since the illegal smuggling of waste is still a largely unresolved problem, and is difficult to be overcome despite the efforts of the Indonesian government. Improving the waste management system would increase the benefits that are realized within the country and the waste industry. To ensure that waste management in Indonesia is environmentally sound and socially viable without the existence of illegal smuggling of waste, various stakeholders will need to be proactive and involved in the process.

To begin with, increased collaboration with other countries should be improved upon, as countries can share different methods of managing and recycling waste. Indonesia has the potential to refer to bigger countries on how to manage its waste and further manufacture it for use in the future. Countries also have the potential to share their reports on waste management to provide insights for each other. Although in the articles of the Basel Convention sharing country reports is mandatory, not all signatories follow the regulations. Entering other bilateral or even regional agreements will be extremely beneficial for both parties.

Further, the exporting country has the obligation to monitor their exports of waste, and ensure that their waste ends up in a licensed recycling company with the capacity to reuse their waste. Since part of the purpose of exporting waste to a foreign country is to manage waste in a more environmentally sound manner, exporting countries must follow the chain of its exports. Major exporting countries, such as the United States, should be held accountable for its exports—exports that are possible to be used for recycling and reused for other industries.

The final recommendation is to create an integrated waste management system that involves all stakeholders such as the government, companies and trash pickers as well. The first step is by supporting the waste pickers through formalization. One way to do this is through recognizing waste picking as a job at the national level. Once they are formalized, waste pickers will have the platform to organize and negotiate for better working conditions. With a platform, waste pickers will be able to collaborate with other major stakeholders in the waste industry such as the government and other companies.

By changing the Indonesian policies that dictate the outcome of the waste industry in Indonesia, waste management and recycling in Indonesia can be environmentally sound, socially and economically viable. Further, with the change in policies, Indonesia will not become the main site for illegal dumping, and instead, will become a model for the waste trade industry that other countries can follow. Ultimately, the human, economic and environmental security of all that is involved will be improved upon through these changes in the policies.

Conclusion

The waste trade industry in Indonesia is an industry that still needs to be addressed and regulated by the government, as they need to be more proactive in ensuring no illegal containers of waste come into Indonesia. Due to Indonesia's growing waste problem, foreign waste will add more burden to the government and the people of Indonesia if it is not properly monitored. Although the government has given a compensation fee for citizens living nearby the landfill, the waste trade also still needs to be more heavily regulated to make sure that the waste does end up getting recycled, and not end up in the landfills where it further endangers citizens in the area. Further, the exporting countries have an obligation to follow their exported waste, as the waste trade involves both parties. Finally, the informal recycling sector of trash pickers, if tapped into and supported by the Indonesian government, has a large potential to be economically and socially viable. There is still room for improvement for both Indonesia and the exporting countries, however, if done correctly, the waste trade industry will be extremely beneficial for the economic development of Indonesia.

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