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## The New Face of Waste Colonialism: A Review of Legal Regulations Governing the Import of Waste into India

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# THE NEW FACE OF WASTE COLONIALISM: A REVIEW OF LEGAL REGULATIONS GOVERNING THE IMPORT OF WASTE INTO INDIA

—Lekha Sridhar and Parul Kumar<sup>1</sup>

*The term “waste colonialism” was coined by activists in the late 1980s to describe the practice of developed nations dumping toxic wastes in developing and low-income countries, despite the fact that these countries had no technological or regulatory means to deal with the waste. Today, the toxic waste trade has been replaced by large volumes of post-consumer plastic, paper and e-waste trade. Countries like Japan, United States of America, and the United Kingdom have become world leaders of plastic waste export.*

*Till 2017, China was by far the world leader in waste import, till the country banned most types of waste causing exports to other developing countries (including India) to rise dramatically. However, India’s capacity to safely recycle this imported waste remains in doubt. A large part of the waste management chain is managed through informal workers and enterprises (who have no labour protection or social security), especially at the collection and segregation stage. Further, about 40 per cent of domestic waste goes uncollected due to poorly implemented laws. Of this, 56 per cent of recyclable wastes generated, and only 5 per cent of India’s total e-waste gets recycled.*

*By analyzing domestic and international regulations on waste trade, we seek to demonstrate that the new forms of waste trade echo the exploitation of developing countries from the ‘80s, and have caused the need for one, stronger*

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*international regulations so as to prevent exploitation of low-income countries, and two, the urgent need for wider implementation of segregation and collection policies to support domestic import bans.*

|   |     |  |     |
|---|-----|--|-----|
| Background .....                            | 102 | Strengthen the Basel Convention: ..... | 126 |
| Can waste be properly managed? .....        | 105 | Strengthen domestic import             |     |
| Why is the movement of waste a form of      |     | regulations and enforcement .....      | 127 |
| colonialism? .....                          | 110 | Improve data collection and institute  |     |
| History of transboundary waste export ..... | 112 | community monitoring .....             | 128 |
| Legal provisions governing the              |     | Improve domestic waste segregation     |     |
| transboundary movement of waste .....       | 113 | and collection .....                   | 128 |
| The Basel Convention .....                  | 113 | International cooperation for          |     |
| Waste recycling in India – the impact       |     | technology transfer and capacity       |     |
| of regulations on import .....              | 117 | building .....                         | 129 |
| Recommendations .....                       | 126 | Conclusion .....                       | 130 |

## I. BACKGROUND

The growth in consumer products, from electronics to the food and beverage industry, has been growing at an unprecedented rate over the last three decades. According to the World Trade Organisation, between 2000-2008, world merchandise exports grew by 22 per cent with a significant percentage of trade coming from developing countries.<sup>2</sup> Furthermore, because of growing incomes, liberalized economic policies, production of materials that increase the shelf-life of perishable goods, and internet-based sales and marketing, developing countries like India have had tremendous growth in domestic consumption. By 2025, it is forecasted that India will be the third-largest consumer economy in the world as its consumption may triple to USD 4 trillion.<sup>3</sup>

This consumer economy has contributed significantly to countries' gross domestic products, generated jobs in manufacturing and services, opportunities for entrepreneurs to grow businesses, and also brought access to internet connectivity and food with a stable shelf life to millions. However, the downside is that several kinds of trash are making their way into landfills and the environment, causing an immense impact on human life and biodiversity.

Proper management of waste has now emerged as a major area of concern for countries across the world. The Intergovernmental Panel on Climate Change's report AR5 (2014) found that in 2010, waste contributed to 3 per cent of the global emissions, and had grown by 13 per cent in the preceding

<sup>2</sup> World Trade Organization, International Trade Statistics, 2011, [https://www.wto.org/english/res\\_e/statis\\_e/its2011\\_e/its11\\_toc\\_e.htm](https://www.wto.org/english/res_e/statis_e/its2011_e/its11_toc_e.htm).

<sup>3</sup> *About Indian Economy Growth Rate & Statistics*, INDIA BRAND EQUITY FOUNDATION (Oct. 2019), <https://www.ibef.org/economy/indian-economy-overview>.

decade.<sup>4</sup> In addition, there are also serious repercussions on the natural ecosystem and human health from improperly disposed plastics, batteries, electronic goods, construction and demolition wastes, and chemicals. Impacts include irreparable damage to benthic flora and marine fauna, a build-up of toxic chemicals through the food chain, heavy metal contamination, air pollution (from burning waste), freshwater contamination due to landfill leachate, and increasing microplastic contamination in soil, fresh and marine water.<sup>5</sup> Exposure to these contaminants cause various health impacts to the local population including substantial digestive, cardiovascular, neurological, and respiratory illnesses and long-term exposure causing increased risk of endocrine disruption, cancer, lowered immunity, impaired reproductive functions, and congenital abnormalities among new-born children.<sup>6</sup> Many of these pollutants, especially persistent organic pollutants, can remain in the ecosystem for millennia and are virtually impossible to remove.<sup>7</sup> Improper disposal of plastic has also been linked to worsening flood conditions in cities like Mumbai, due to plastic waste clogging storm drains.<sup>8</sup>

Due to their impact on natural systems, most developed countries have put in place rigorous regulations for the management and disposal of wastes within their territorial boundaries.<sup>9</sup> Mandatory *in situ* segregation, bottle deposits, extended producer responsibility, recycling/incineration facilities, and disposal facilities are among the regulations used by these countries. However, this has also led to increasing costs of waste management for municipalities as well as NIMBYism.<sup>10</sup> As a result, international waste trade has emerged as a highly profitable sector. The waste trade has been touted as a net positive, as developed countries are now able to manage their waste at lower costs, use the waste (especially electronic waste or “e-waste” and metal scraps) as raw

<sup>4</sup> Gabriel Blanco et al., *Drivers, Trends and Mitigation, in CLIMATE CHANGE 2014: MITIGATION OF CLIMATE CHANGE. CONTRIBUTION OF WORKING GROUP III TO THE FIFTH ASSESSMENT REPORT OF THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE* 385 (O. Edenhofer et al. eds. 2014).

<sup>5</sup> Mutasem El-Fadel et al., *Environmental Impacts of Solid Waste Landfilling*, 50 (1) J ENVIRON MANAGE 1, 3, 8, 10, 11, 13 (1997).

<sup>6</sup> *Impacts of Mismanaged Trash*, UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, <https://www.epa.gov/trash-free-waters/impacts-mismanaged-trash>; Lucy Mcallister, *The Human and Environmental Effects of E-Waste*, Population Reference Bureau (Apr. 4, 2013), <https://www.prb.org/e-waste/> (last visited Oct. 27, 2018); L. Fazzo et al., *Hazardous waste and health impact: A systematic review of the scientific literature*, 16(1) J. ENVIRON. HEALTH 107, 110, 112 (2017).

<sup>7</sup> World Trade Organization, Persistent Organic Pollutants (POPs), [https://www.who.int/food-safety/areas\\_work/chemical-risks/pops/en/](https://www.who.int/food-safety/areas_work/chemical-risks/pops/en/) (last visited Oct. 27, 2018).

<sup>8</sup> Manoj Nair, *Will Maharashtra's plastic ban reduce monsoon flooding?*, HINDUSTAN TIMES (Mar. 26, 2018 00:28 AM), <https://www.hindustantimes.com/mumbai-news/will-maharashtra-s-plastic-ban-reduce-monsoon-flooding/story-Op4ENCaUHZsh9hvnYe1NIO.html> (last visited Oct. 27, 2018).

<sup>9</sup> Francesco Di Maria et al., *Waste Management in Developed and Developing Countries: The Case Study of Umbria (Italy) and The West Bank (Palestine)*, 3 DETRITUS 171, 172 (2018).

<sup>10</sup> NIMBYism or ‘Not in my backyard’ refers to opposition from local residents to a project considered undesirable; Jennifer R. Kitt, *Waste Exports to the Developing World: A Global Response*, 7 GEO. INT’L ENVTL. L. REV. 485, 485-486 (1995).

materials in their industries, and generate new industries and jobs.<sup>11</sup> However, as experience has shown, developed countries tend to export to countries with weaker environmental regulations and labour costs, to the detriment of the local populations.<sup>12</sup> In fact, one study showed that a country's relative laxity of environmental regulation can lead to increased waste exports from a bilateral partner.<sup>13</sup>

This paper will examine the regulatory, financial and geo-political issues that support a system of waste colonialism where developed countries' unsustainable consumption of goods is supported by developing countries who tend to have weaker environmental regulations, and where large sections of low-income groups are willing to recycle for lower costs, though often at greater health hazards to themselves. We examine the import of two kinds of waste into India: electronic waste and plastic waste, the ramifications of such import on the importing country, and the international and domestic regulatory structure governing waste management that has allowed this trade.

The term in the title, "waste colonialism" or "toxic waste colonialism" was coined by activists in the late 1980s and early 1990s<sup>14</sup> to describe the practice of developed nations dumping toxic wastes in developing and low-income countries, despite the fact that these countries had no technological or regulatory means to deal with the waste. By analyzing domestic and international regulations on waste trade, we seek to demonstrate that the new forms of waste trade echo the exploitation of developing countries from the '80s, and have caused the need for *one*, stronger international regulations so as to prevent exploitation of low-income countries, and *two*, the urgent need for wider implementation of segregation and collection policies to support domestic import bans. Plastic and e-waste were selected for the study due to the grave environmental and health impacts of recycling them, especially when they are managed or recycled improperly.

It is estimated that by 2100, the world will generate three times as much waste as it does today, at more than 11 million tonnes of garbage per day.<sup>15</sup>

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<sup>11</sup> Organisation for Economic Co-operation and Development, *International Trade and the Transition to a Circular Economy* (Oct. 2018), <https://www.oecd.org/environment/waste/policy-highlights-international-trade-and-the-transition-to-a-circular-high-economy.pdf> (last visited Oct. 27, 2018).

<sup>12</sup> Derek Kellenberg, *The Economics of the International Trade of Waste*, 7(1) ANNU. REV. RESOUR. ECON. 109, 113-114 (2015)

<sup>13</sup> Derek Kellenberg, *Trading wastes*, 64(1) J. ENVIRON. ECON. MANAG. 68, 77-78 (2012).

<sup>14</sup> Tam Dalyell, *Thistle Diary: Toxic wastes and other ethical issues - Comment from Westminster by Tam Dalyell*, NEW SCIENTIST (Jul. 4, 1992), <https://www.newscientist.com/article/mg13518285-900-thistle-diary-toxic-wastes-and-other-ethical-issues-comment-from-westminster-by-tam-dalyell/> (last visited Oct. 27, 2018).

<sup>15</sup> Masaru Goto, *Global Waste on Pace to Triple by 2100*, WORLD BANK (Oct. 30, 2013), <http://www.worldbank.org/en/news/feature/2013/10/30/global-waste-on-pace-to-triple> (last visited Oct. 27, 2018).

This presents an opportunity for countries and for global institutions to develop circular economy policies that do not rely on the relative lack of regulation in low-income countries but are truly circular in the global sense. This also presents an opportunity for developing countries like India to regulate the production and end-of-life disposal of all consumer products. The paper will conclude with recommendations for legal and policy actions that should be taken for better waste governance that can benefit all stakeholders.

### **A. Can waste be properly managed?**

As mentioned in the previous section, the proper management of waste is a necessary component to ensure that there is no negative environmental or health impact. This section examines what proper management of waste for plastic and e-waste, look like.

Waste management has three aspects, that are regulated by municipal and government bodies in most jurisdictions:

- a) collection, transport, treatment and disposal of waste,
- b) control, monitoring, and regulation of the production, collection, transport, treatment, and disposal of waste, and
- c) prevention of waste production through in-process modifications, re-use, and recycling.<sup>16</sup>

This trifecta is more popularly known in common parlance and popular media as “Reduce, Re-use and Recycle”.

While few waste products can be recycled 100 per cent, there are available technologies and good practices for recycling plastic and e-waste causing minimal impact on the environment and human health. However, access to these technologies can be low in developing countries<sup>17</sup> and due to poor enforcement of environmental regulations, improper management of waste can have a negative impact on the environment and human health. As a result, the waste import policies of a country must be viewed in the context of its prevalent recycling practices. This section will briefly describe plastic and e-waste recycling methods and possible environmental impacts of improper management methods.

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<sup>16</sup> OECD Glossary of Statistical Terms, *Waste Management*, <https://stats.oecd.org/glossary/detail.asp?ID=2900> (last visited Oct. 27, 2018).

<sup>17</sup> United Nations Environment Program, *Global Environment Outlook 6 Regional Assessments*, <https://www.unenvironment.org/resources/global-environment-outlook-6-regional-assessments> (last visited Oct. 27, 2018).

## 1. How is plastic waste recycled?

Plastic is a highly versatile polymeric material that uses oil and gas (roughly 4 per cent of the global production) as feedstock.<sup>18</sup> There are many types of plastics like polyethylene, polyurethane, polyvinyl chloride, and polystyrene to name a few, and are used in a wide range of applications. Plastic waste has become an issue of public concern as a major portion of plastic is used to make disposable items of packaging or other short-lived products that are discarded within a year of manufacture.<sup>19</sup>

It is also assumed that recycling happens in a ‘closed-loop’, i.e. the waste product is converted into a usable good of a similar type. While this is theoretically possible for most types of plastics, the reality is that due to the mix of different grades of plastics, as well as the use of inks and dyes, and cost issues, closed-loop recycling only happens for clear polyethylene terephthalate (PET) bottles. All other types of recycling can be more strictly referred to as ‘downcycling’, as the plastics are converted to goods of lower plastic quality such as doormats, bags, etc., thus only delaying the inevitable fate of the plastic product – to either be incinerated, end up in a landfill, or in the environment. Recycling also does not necessarily mean that a product has been converted to a usable good: many countries also consider the use of plastic waste in waste-to-energy plants as energy ‘recovery’, and therefore a form of quaternary recycling, further complicating the commonly understood meaning of recycling.<sup>20</sup>

It should also be mentioned that recycling itself is not without an ecological footprint. Contaminants in the recycling stream, usually due to human error and poor sorting practices, can reduce the value of the recycled products, if not render them worthless. Even without human error, recycling can result in high levels of carbon emissions and other effluents<sup>21</sup> (much of which can be reduced by the use of appropriate air scrubbers and other environmental management technologies). These issues are further exacerbated in developing countries where the lack of modern recycling facilities and improper application of anti-pollution laws often mean that plastic and other recyclables are processed in high inefficient small and medium enterprises that do not have the appropriate equipment.

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<sup>18</sup> Eric Beckman, *The world of plastic in numbers*, WORLD ECONOMIC FORUM (Aug. 13, 2018), <https://www.weforum.org/agenda/2018/08/the-world-of-plastics-in-numbers> (last visited Oct. 27, 2018).

<sup>19</sup> Jefferson Hopewell et al., *Plastics recycling: Challenges and opportunities*, 364(1526) PHILOS. TRANS. R. SOC. LOND. B. BIOL. SCI. 2115, 2115-2116 (2009).

<sup>20</sup> Katharina Wecker, *Plastic waste and the recycling myth*, DEUTSCHE WELLE (Oct. 12, 2018), <https://www.dw.com/en/plastic-waste-and-the-recycling-myth/a-45746469> (last visited Oct. 27, 2018).

<sup>21</sup> A.S.F. Santos et al., *Characterization of effluents through a typical plastic recycling process: An evaluation of cleaning performance and environmental pollution*, 45(2) RESOUR CONSERV RECYCL 159, 165, 168 (2005).

Plastic incineration is also often touted as a form of ‘energy recovery’ as plastic has a high calorific value and can be used in waste-to-energy plants. However, mixed plastics (that may contain chlorinated plastic-like PVCs) cannot be incinerated in waste to energy plants that do not meet necessary environmental standards, as they can generate dioxins and furans which are dangerous to human health.<sup>22</sup> In fact, according to the Ministry of Environment Forests and Climate Change (“MoEFCC”), around 30 per cent of incinerators are in operation without air pollution control devices, contributing to cities’ air pollution crises.<sup>23</sup>

According to official estimates, India generates at least 25,940 tonnes of plastic waste daily. Annual plastic consumption is expected to increase from 12 million tonnes to 20 million tonnes by 2020.<sup>24</sup>

Currently, it is estimated that about 40 per cent of this waste per day goes uncollected due to weak and poorly implemented laws. One Study in 2012 calculated a high percentage of overall recycling (an estimated overall recycling percentage of 56 per cent of recyclable wastes generated), though this was largely attributed to the informal waste collected network who generally tend to prioritize valuable waste like newspapers and metals over plastic.<sup>25</sup> As per an estimate of the Central Pollution Control Board (“CPCB”), 15,342 tons of plastic waste were generated in India in 2014-15, of which 9,205 was reportedly recycled, leaving the remaining 6,137 uncollected and forming litter.<sup>26</sup> According to the CPCB report, the reasons for this are due to lack of enforcement of Rules by State Pollution Control Boards, lack of availability of suitable technology for recycling/disposing of low-quality plastics.<sup>27</sup>

Like much of the recycling industry in India, a large part of the plastic waste supply chain is managed through informal workers and enterprises, especially at the collection and segregation stage.<sup>28</sup> Due to the lack of enforce-

<sup>22</sup> Rinku Verma et al., *Toxic Pollutants from Plastic Waste — A Review*, 35 *PROCEDIA ENVIRON. Sci.* 703, 705 (2016).

<sup>23</sup> Ministry of Environment and Forests, *Report of the Committee to Evolve Road Map on Management of Wastes in India* (March 2010), <http://www.nswai.com/docs/Roadmap-Mgmt-Waste.pdf>.

<sup>24</sup> Urmi Goswami, *An 8.3-bn tonne problem: How to manage plastic waste*, *ECONOMIC TIMES* (Jun. 1, 2018) <https://economictimes.indiatimes.com/industry/indl-goods/svs/paper/-/wood/-/glass/-plastic/-marbles/our-plastic-pollution-problem/articleshow/64420276.cms> (last visited Oct. 27, 2018).

<sup>25</sup> Ranjith Kharvel Annepu, *Sustainable Solid Waste Management in India* (Jan. 2012), [http://www.seas.columbia.edu/earth/wtert/sofos/Sustainable%20Solid%20Waste%20Management%20in%20India\\_Final.pdf](http://www.seas.columbia.edu/earth/wtert/sofos/Sustainable%20Solid%20Waste%20Management%20in%20India_Final.pdf) (last visited Oct. 27, 2018).

<sup>26</sup> Central Pollution Control Board, *Overview of Plastic Waste Management* (Jun. 2013), <https://cpcb.nic.in/displaypdf.php?id=cGxhc3RpY3dhc3RlL21hbmFnZWlbnRfcGxhc3RpY3dhc3RlL-nBkZg==> (last visited Oct. 27, 2018).

<sup>27</sup> *Id.*

<sup>28</sup> Ramanan Krishnamoorti, *Plastics Recycling: Could the Future be in India?*, *FORBES* (Mar. 12, 2018, 12:40 PM), <https://www.forbes.com/sites/uhenergy/2018/03/12/>

ment of segregation at source regulations, the waste collectors – who have no labour protection or social security and remain unrecognized by authorities – are forced to segregate the waste by hand in unsanitary conditions at the garbage tips or landfill sites, risking injuries and disease.<sup>29</sup> As a result, they tend to collect only the most valuable recyclables (metal, e-waste, PET bottles, etc.) to sell to scrap dealers. Most of the waste recyclers also come from historically marginalized communities like Dalits. Many of these communities also live near landfill areas and suffer from environmental and health impacts due to waste incineration, leachate, and vector-borne diseases.<sup>30</sup>

In many cities, even the recycling process is done by micro, small and medium enterprises. Nearly 250,000 people are employed in the Dharavi slums in Mumbai by the recycling industry (of which around 10,000 are employed in plastic recycling).<sup>31</sup> It should be noted that while this industry has provided livelihoods to many, the workshops often run without any environmental or worker safety measures in place.<sup>32</sup>

## 2. How is e-waste recycled?

E-waste is defined as “anything with a plug, electric cord or battery.”<sup>33</sup> This is, therefore, a wide range of gadgets, from electric toothbrushes to smartphones.<sup>34</sup> The proper disposal and management of e-waste is increasingly becoming an issue requiring improved regulation and enforcement at both the domestic and global levels. It is not uncommon for developed countries to not recycle their e-waste due to the absence of facilities, high labour costs, and strict environmental regulations, leading them to export e-waste to developing countries.<sup>35</sup> The procedure for dismantling e-waste typically involves a com-

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plastics-recycling-could-the-future-be-in-india/#7db5d9d42e18 (last visited Oct. 27, 2018).

<sup>29</sup> Akhileshwari Reddy, *A law for waste pickers*, DOWNTOEARTH (Apr. 12, 2018), <https://www.downtoearth.org.in/news/waste/a-law-for-waste-pickers-60103> (last visited Oct. 27, 2018).

<sup>30</sup> Subhra Priyadarshini, *A tour of India's waste mountain*, NATURE (Mar. 14, 2018), <https://www.nature.com/articles/d41586-018-03012-y> (last visited Oct. 27, 2018).

<sup>31</sup> Yue Zhang, *The credibility of slums: Informal housing and urban governance in India*, 79 LAND USE POLICY 876, 884 (2017); Knowledge and News Network, *There are hardly any plastic processing units in Dharavi: Study* KNOWLEDGE AND NEWS NETWORK (Apr. 5, 2016), <http://knindia.co.in/news/newsdetails/knowledge-resource/there-are-hardly-any-plastic-processing-units-in-dharavi-study> (last visited on Oct. 31, 2019).

<sup>32</sup> Dan McDougall, *Waste not, want not in the £700m slum*, THE GUARDIAN (Mar. 4, 2017), <https://www.theguardian.com/environment/2007/mar/04/india.recycling> (last visited Oct. 27, 2018).

<sup>33</sup> World Economic Forum, *A New Circular Vision for Electronics: Time for a Global Reboot* (Jan. 2019), [http://www3.weforum.org/docs/WEF\\_A\\_New\\_Circular\\_Vision\\_for\\_Electronics.pdf](http://www3.weforum.org/docs/WEF_A_New_Circular_Vision_for_Electronics.pdf) (last visited Oct. 27, 2018).

<sup>34</sup> *Id.*

<sup>35</sup> Florin-Constatin Mihai and Maria-Grazia Gnoni, *E-Waste Management as a Global Challenge (Introductory Chapter)* (Jun. 2016), <https://www.intechopen.com/books/e-waste-in-transition-from-pollution-to-resource/e-waste-management-as-a-global-challenge-introductory-chapter-> (last visited Oct. 27, 2018).

ination of manual and automated processes,<sup>36</sup> though it has been suggested that the process can be made completely automated through trained robots.<sup>37</sup> Naturally, such automation would lead to higher capital and operational costs for the dismantling and recycling process.

It is estimated that outside of the formal e-waste recycling sector being developed in India's major cities, the informal recycling operations have long existed, with over one million poor people engaged in manual recycling operations (with many from marginalised communities).<sup>38</sup> Discarded electronic devices are a source of valuable raw material such as gold, copper, nickel, and other strategic rare minerals like indium and palladium,<sup>39</sup> and the process of "mining" these precious metals has led to "backyard recyclers" in countries such as India using hazardous methods to recover these metals.<sup>40</sup> On the other hand, e-waste also contains hazardous substances like mercury, cadmium, and lead.<sup>41</sup>

With low literacy levels and poor awareness of the impact of the operations undertaken by them, this informal sector is exposed to severe health impacts and poses environmental damage through its operations.<sup>42</sup> Unsafe practices such as bathing circuit boards in nitric and hydrochloric acid to recover gold have caused the poisoning of waterways and communities.<sup>43</sup> Methods such as acid burning and open incineration create toxic gases that have a severe negative impact on health and the environment.<sup>44</sup> The unregulated treatment of e-waste in India has led to a host of problems, such as the contamination of

<sup>36</sup> Green Tumble, *How is E-Waste Recycled: The Recycling Process* (Jul. 12, 2015), <https://greentumble.com/how-is-e-waste-recycled-the-recycling-process/> (last visited Oct. 27, 2018).

<sup>37</sup> Cambridge Consultants White Paper, *Recycling: Automating the Sorting and Separation of E-Waste*, <https://www.cambridgeconsultants.com/sites/default/files/uploaded-pdfs/recycling-e-waste.pdf> (last visited Oct. 27, 2018); See also Peter Raschio, *A new era of automation in recycling processing*, RECYCLING PRODUCT NEWS (Apr. 3, 2018), <https://www.recyclingproductnews.com/article/27890/a-new-era-of-automation-in-recycling-processing> (last visited Oct. 27, 2018).

<sup>38</sup> United Nations University, *The Global E-Waste Monitor – 2017* (2017), <https://www.itu.int/en/ITU-D/Climate-Change/Documents/GEM%202017/Global-E-waste%20Monitor%202017%20.pdf> (last visited Oct. 27, 2018).

<sup>39</sup> A New Circular Vision for Electronics, *supra* note 33, at 7.

<sup>40</sup> Brook Larmer, *E-Waste Offers an Economic Opportunity as Well as Toxicity*, THE NEW YORK TIMES MAGAZINE (Jul. 5, 2018), <https://www.nytimes.com/2018/07/05/magazine/e-waste-offers-an-economic-opportunity-as-well-as-toxicity.html> (last visited Oct. 27, 2018).

<sup>41</sup> A New Circular Vision for Electronics, *supra* note 33, at 13.

<sup>42</sup> Global E-Waste Monitor 2017, *supra* note 38, at 68.

<sup>43</sup> Larmer, *supra* note 40.

<sup>44</sup> Miles Park, *Electronic waste is recycled in appalling conditions in India*, THE CONVERSATION (Feb. 15, 2019), <http://theconversation.com/electronic-waste-is-recycled-in-appalling-conditions-in-india-110363> (last visited Oct. 27, 2018).

soil and groundwater,<sup>45</sup> river contamination,<sup>46</sup> and severe health hazards for the persons engaged in unsafe treatment of e-waste,<sup>47</sup> including respiratory problems arising from working in smoke-filled conditions for long hours which often result in fatalities.<sup>48</sup> In areas where the e-waste dismantling takes place, drains have been reported to be filled with dumped waste, often catching fire in the drier months.<sup>49</sup> Since the dismantling and management of e-waste pose significant health and environment hazards, it is important to regulate e-waste, including its influx into a country's territory through transboundary trade.

## II. WHY IS THE MOVEMENT OF WASTE A FORM OF COLONIALISM?

Many countries have historically had a long history of waste collection and recycling, as paper, metals, and glass were the commonly used packaging material.<sup>50</sup> Much of this changed after World War II, as production of cheap (and disposable) packaging material grew. This was an area of concern for many European countries, where lack of space for landfill led to countries like Germany instituting one of the first landfill limit regulations in Europe in 1993, as other European countries followed suit in the following years.<sup>51</sup> By 2016, Germany was recycling 64 per cent, landfilling a negligible percentage of its waste, and incinerating the remainder. This has been touted as an environmental accomplishment, with Germany being recognized as the 'global leader' in recycling.<sup>52</sup> However, this story is incomplete as, by 2016, Germany had also become one of the world leaders of plastic waste export, thereby simply transferring its waste to other countries without actually managing its waste stream.

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<sup>45</sup> Susmita Saha, *Delhi's e-waste problem*, INDIA WATER PORTAL (Jan 21, 2018), <http://www.india-waterportal.org/articles/delhis-e-waste-problem> (last visited Oct. 27, 2018).

<sup>46</sup> Amita Bhaduri, *Why does the world's e-waste reach India?*, YOUR STORY (Nov. 30, 2017), <https://yourstory.com/2017/11/e-waste/> (last visited Oct. 27, 2018).

<sup>47</sup> Jaideep Shenoy, *India among the top five countries in e-waste generation: ASSOCHAM-NEC study*, TIMES OF INDIA (Jun. 4, 2018), <https://timesofindia.indiatimes.com/india/india-among-the-top-five-countries-in-e-waste-generation- ASSOCHAM-NEC-study/articleshow/64448208.cms> (last visited Oct. 27, 2018).

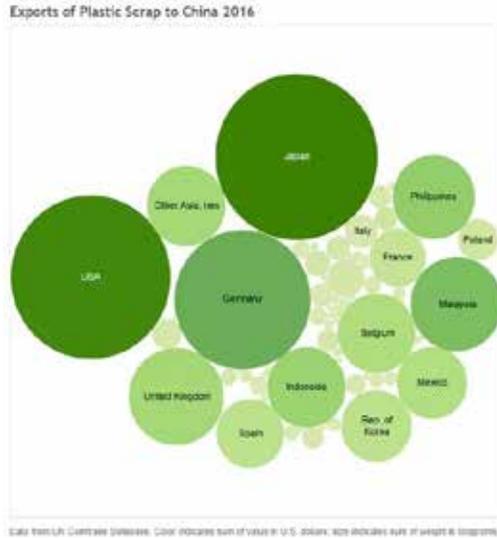
<sup>48</sup> Park, *supra* note 44.

<sup>49</sup> Park, *supra* note 44.

<sup>50</sup> Olivia Waxman, *The History of Recycling in America is More Complicated than You may Think*, TIME (Nov. 15, 2016), <http://time.com/4568234/history-origins-recycling/> (last visited Oct. 27, 2018).

<sup>51</sup> *Landfill*, UMWELT BUNDESAMT (Apr. 5, 2016), <https://www.umweltbundesamt.de/en/topics/waste-resources/waste-disposal/landfill> (last visited Oct. 27, 2018).

<sup>52</sup> *Germany is the world's leading nation for recycling*, CLIMATE ACTION (Dec. 11, 2017), <http://www.climateaction.org/news/germany-is-the-worlds-leading-nation-for-recycling> (last visited Oct. 27, 2018).



Graph 1: Exports of Plastic Scrap to China 2016<sup>53</sup>

Waste exporting countries justified this practice with claims about employment generation, cheap material recovery, and that if developing countries did not want to receive the waste, they could simply ban the practice. These arguments, however, did not account for the fact that there was an inherent power imbalance between high and low-income countries, and exporting waste was, therefore, nothing but a form of colonialism. It has also been argued that an essential function of colonialism is access to land by the colonizing power - and by exporting waste to low-income countries, it is nothing but indirect access to land and the transfer of pollution to the low-income countries.<sup>54</sup> In other words, if the waste exported by a developed country to a developing country ultimately ends up in the developing country's landfills, the developed countries have successfully managed to shift their landfill to a poorer country's territory.

For over a quarter of a century, this global *status quo* on waste management has seen developed countries increasingly rely on China (and to a lesser extent, other developing countries like India). Indeed, many Chinese recyclers preferred recycling imported trash over domestic trash since they tended to be better sorted.<sup>55</sup> During this time, consumption of plastics across the world

<sup>53</sup> World Economic Forum, *Germany recycles more than any other country* (Dec. 18, 2017), <https://www.weforum.org/agenda/2017/12/germany-recycles-more-than-any-other-country/> (last visited Oct. 27, 2018).

<sup>54</sup> Max Liboiron, *Waste colonialism*, DISCARD STUDIES (Jan. 11, 2018), <https://discardstudies.com/2018/11/01/waste-colonialism/> (last visited Oct. 27, 2018).

<sup>55</sup> Zhe Liu et al., *Are exports of recyclables from developed to developing countries waste pollution transfer or part of the global circular economy?*, 136 RESOURCES, CONSERVATION AND

grew by more than three times, from 100 million tonnes in 1990 to 322 million tonnes in 2015,<sup>56</sup> with plastics being used extensively in the food and beverage industries and the textile industry, to name a few. Similarly, with significant increases in the use of electronic and electrical devices, the annual global e-waste generation in the year 2016 was 44.7 million metric tonnes or the equivalent of almost 4,500 Eiffel Towers.<sup>57</sup>

## A. History of transboundary waste export

Waste was not always exported to other countries, especially recyclable wastes. It was only in the late 1990s and early 2000s that waste export of plastic really took off. This also coincided with China developing its waste management facilities so much so that, by 2011 China accepted 2 million tonnes of plastic scrap from the United States of America (“USA”) alone.<sup>58</sup> Chinese recyclers’ appetite for plastic scrap was driven partly by the tipping fee received per tonne of scrap and partly because domestic segregation could not yet generate sufficient quantities of well-segregated waste.<sup>59</sup> Meanwhile, in developed countries, recycling companies were shutting down, partly driven by competition from China and partly driven by low oil prices.<sup>60</sup> Similarly for e-waste, due to the valuable metals and components, import was welcomed until the country began to suffer the negative consequences of environmental pollution, such as those mentioned in the previous section.<sup>61</sup>

However, before the China recycling juggernaut was underway, developed and developing countries were in a tussle over the export of toxic and hazardous waste to countries either for final disposal or for recycling even though many countries did not have the facilities for this. This coincided with increasing environmental, health and labour regulations and public awareness in developed countries that made it extremely expensive or impossible to dispose of hazardous wastes within their own borders. Poorer countries meanwhile, although they had no use for hazardous wastes i.e. they could not be recycled to any useful components but were eager to increase their foreign

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RECYCLING 22, 23 (2018).

<sup>56</sup> Beckman, *supra* note 18.

<sup>57</sup> Global E-Waste Monitor 2017, *supra* note 38, at 4.

<sup>58</sup> Debra Winter, *The Violent Afterlife of a Recycled Plastic Bottle*, THE ATLANTIC (Dec. 4, 2015), <https://www.theatlantic.com/technology/archive/2015/12/what-actually-happens-to-a-recycled-plasticbottle/418326/> (last visited Oct. 27, 2018).

<sup>59</sup> David Stanway, *China’s plastic recyclers go abroad as import ban bites*, REUTERS (Jun. 26, 2018), <https://www.reuters.com/article/us-china-pollution-waste/chinas-plastic-recyclers-go-abroad-as-import-ban-bites-idUSKBN1JM0L9> (last visited Oct. 27, 2018).

<sup>60</sup> Jennifer Schlesinger, *Trash problems: Recycling in crisis*, CNBC (Mar. 29, 2016), <https://www.cnbc.com/2016/03/27/trash-problems-recycling-in-crisis.html> (last visited Oct. 27, 2018).

<sup>61</sup> Zhuang Pinghui, *China’s most notorious e-waste dumping ground now cleaner but poorer*, SOUTH CHINA MORNING POST (Sept. 22, 2017), <https://www.scmp.com/news/china/society/article/2112226/chinas-most-notorious-e-waste-dumping-ground-now-cleaner-poorer> (last visited Oct. 27, 2018).

exchange earnings.<sup>62</sup> The USA alone was exporting up to 9 million tonnes of toxic wastes to low-income countries by the late 1980s.<sup>63</sup> Most of the countries that were receiving the waste – in Asia, Africa, and Latin America either had extremely weak environmental regulations or had no technology to safely dispose of the waste.<sup>64</sup> Journalists and NGOs exposed this toxic industry, highlighting particularly shocking instances such as the country of Guinea-Bissau offered USD 600 million (which was several times its gross national product) to receive and dispose of several tonnes of waste from British pharmaceutical industries.<sup>65</sup> These instances highlighted the power imbalance between the rich developed countries and poor developing countries, and the resulting outcry against what was seen as a form of “toxic waste colonialism” led to the adoption of the Basel Convention.

It would be incorrect to say that all transfers of waste are a form of colonialism. For instance, if a country was to export waste to a country that had sufficient technology to process the waste without damage to its people or environment, and had sufficient environmental, customs, and labour regulations in place to properly manage the imported waste, it would not be a form of waste colonialism. In practice, however, instances of developing countries being equipped with superior infrastructure and technology for processing imported waste are rare.

### III. LEGAL PROVISIONS GOVERNING THE TRANSBOUNDARY MOVEMENT OF WASTE

In light of the increasing transport of waste from developed to developing countries, both international regulations and domestic Indian regulations governing what kinds of waste can be imported into the country are of relevance and will be discussed in detail in this section.

#### A. The Basel Convention

The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal (the “Basel Convention”) was adopted by signatories in the year 1989 and came into force in 1992. At present, 186 countries are signatories to the Agreement.<sup>66</sup> The Basel Convention gives recognition to the international commitment to addressing the transboundary

<sup>62</sup> Jennifer Clapp, *The Toxic Waste Trade with Less-Industrialised Countries: Economic Linkages and Political Alliances*, 15(3) *THIRD WORLD Q.* 505, 506 (1994).

<sup>63</sup> *Id.*

<sup>64</sup> Jennifer Kitt, *Waste Exports to the Developing World: A Global Response*, 7 *GEO. ENVTL. L. REV.* 485, 512 (1995).

<sup>65</sup> Arti Vir, *Toxic Trade with Africa*, 23(1) *ENVIRONMENTAL SCIENCE & TECHNOLOGY* 23, 24 (1989).

<sup>66</sup> Parties to the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal 1673 UNTS 126.

movement of hazardous wastes and their disposal in other States, particularly developing countries.<sup>67</sup> It is founded on the principle that “hazardous wastes and other wastes should, as far as is compatible with environmentally sound and efficient management, be disposed of in the State where they were generated”.<sup>68</sup> Further, it recognizes that any transboundary movement of hazardous and other wastes should take place only under conditions, with the ‘prior informed consent’ of the importing country, which do not pose a danger to human health and the environment, and in compliance with the provisions of the Basel Convention.<sup>69</sup>

The Basel Convention has been criticized as being ineffective to unenforceable. *First*, the Convention’s standard of ‘prior informed consent’ does not address the issue of power imbalances between countries. By not outright banning the export of categories of toxic waste, the Convention leaves room for low-income countries to import toxic waste since poorer countries may readily provide the consent notwithstanding that environment and health concerns as waste imports would allow them to increase foreign exchange earnings. *Second*, the lack of a comprehensive non-compliance mechanism with punitive measures has been criticized as rendering the Convention ineffective (though punitive measures may have made fewer countries sign on to the Convention in the first place, due to sovereignty concerns).<sup>70</sup> *Third*, several categories of waste (including plastic till recently and some kinds of e-waste) have been excluded from its scope. *Fourth*, one of the world’s biggest traders in waste, the USA, is not a party to the Convention. *Fifth*, although the Convention requires the exporting country to satisfy itself that the importing country has sufficient infrastructure to properly dispose of the waste, this requirement is not followed in most cases. *Finally*, and most importantly, empirical data shows that the Convention has had negligible effect on international waste trade.<sup>71</sup> Although it is difficult to pinpoint any single reason for the Convention’s lack of success, the relative cost benefits of transferring waste to developing countries, and the inability of many low-income countries to enforce import bans may have rendered it ineffective. Nevertheless, even though it is imperfect, the Convention remains important to public discourse on waste colonialism.

The following sub-sections will briefly discuss the regulation of plastic and e-waste under the Convention.

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<sup>67</sup> *Id.*, Preamble.

<sup>68</sup> Basel Convention, *supra* note 66 at Preamble.

<sup>69</sup> Basel Convention, *supra* note 66 at Preamble.

<sup>70</sup> Alan Andrews, *Beyond the Ban – Can the Basel Convention adequately Safeguard the Interests of the World’s Poor in the International Trade of Hazardous Waste?*, 5(2) LAW, ENVIRONMENT AND DEVELOPMENT JOURNAL 167, 172-176 (2009).

<sup>71</sup> Derek Kellenberg and Arik Levinson, *Waste of Effort? International Environmental Agreements*, (Jul. 29, 2013), [http://www-leland.stanford.edu/group/SITE/SITE\\_2013/2013\\_segment\\_6/2013-segment\\_6\\_papers/kellenberg.pdf](http://www-leland.stanford.edu/group/SITE/SITE_2013/2013_segment_6/2013-segment_6_papers/kellenberg.pdf) (last visited Oct. 27, 2018).

## 1. How is plastic waste regulated under the Convention?

At the time of signing the Basel Convention in 1989, plastic waste did not pose a very significant problem globally. Due to its negligible impact, plastic waste was not expressly regulated under the Basel Convention. Categorised under Annex IX of the Convention, which lists ‘non-hazardous’ wastes, countries were free to ship plastic without the prior informed consent of the importing country (subject to the country’s domestic regulations, if any).

It was only thirty years after the signing of the Basel Convention, in 2019, that the regulation of plastic waste was introduced in the Basel Convention for the first time. In light of the environmental impacts to developing countries due to the burgeoning plastic trade, the Parties to the Convention agreed to an amendment that would require exporting countries to obtain Prior Informed Consent (PIC) from importing countries receiving contaminated, mixed, or unrecyclable plastic waste.<sup>72</sup> However, there has been opposition to the amendment from US-based plastic recyclers who have pointed out that the USA, a major importer, and exporter of plastic, is not a member to the Convention.<sup>73</sup> Under the Convention, countries that are not party to the Convention may not export or import regulated wastes to treaty countries unless the country has a bilateral agreement that imposes the same or higher standards than Basel. To date, the USA has avoided the treaty by entering into bilateral agreements and by become party to the OECD multilateral waste agreement,<sup>74</sup> and may possibly continue to do the same for plastic. Waste recycling companies have also argued that inclusion of plastic under the Convention would cause immense hardship to the global recycling industry.<sup>75</sup> Further, due to the inherent inadequacies of the Basel Convention which have been discussed in the previous section, this amendment may not translate into very meaningful changes to prevent the deluge of plastic entering developing countries.

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<sup>72</sup> Emily Holden, *Nearly all countries agree to stem flow of plastic waste into poor nations*, THE GUARDIAN (May 10, 2019), <https://www.theguardian.com/environment/2019/may/10/nearly-all-the-worlds-countries-sign-plastic-waste-deal-except-us> (last visited Oct 27, 2018).

<sup>73</sup> Although the United States was one of the first signatories of the Basel Convention, it has not become party to the Convention. It is perceived that this is because proposed domestic legislation to fulfil the Convention could not be agreed upon by the US Congress, also lost support of the private sector. See *The Basel Convention and the Need for United States Implementation*, <https://digitalcommons.law.uga.edu/cgi/viewcontent.cgi?referer=https://www.google.com/&httpsredir=1&article=1433&context=gjicl>.

<sup>74</sup> United States Environmental Protection Agency, *Frequently Asked Questions on International Agreements on Transboundary Shipments of Waste*, <https://www.epa.gov/hwgenerators/frequent-questions-international-agreements-transboundary-shipments-waste#basel>.

<sup>75</sup> DeAnne Toto, *ISRI lobbies against Basel Convention proposals on plastic scrap shipping*, RECYCLING TODAY (Aug 31, 2018), <https://www.recyclingtoday.com/article/isri-warns-about-basel-convention-proposals-effect-on-plastics-recycling/> (last visited Oct. 27, 2018).

## 2. How is e-waste regulated under the Convention?

As with plastic, electronic waste was not a global problem at the time the Basel Convention was entered into in 1989. In recent times, the parties to the Basel Convention have made some efforts to start addressing the issue of electronic waste, particularly its management in an environmentally sound manner and preventing its illegal traffic to developing countries.<sup>76</sup> The official website of the Basel Convention notes: “It has been documented that e-wastes are shipped to developing countries where it is often not managed in an environmentally sound manner, thus posing a serious threat to both human health and the environment.”<sup>77</sup>

Although the Basel Convention does not define the term “electronic waste”, certain types of waste electrical and electronic assemblies or scrap possessing hazardous characteristics have been designated as “hazardous waste” under Annex VIII of the Basel Convention.<sup>78</sup> Certain other types of electrical and electronic assemblies are not classified as waste under Annex IX of the Convention, provided that they do not contain hazardous material to the extent of displaying hazardous characteristics.<sup>79</sup> Under the Basel Convention, the transboundary movement of hazardous and other wastes is strongly discouraged and permitted only upon the fulfilment of some selected conditions. The export of such waste requires the written consent of the state of import,<sup>80</sup> and should not be allowed in circumstances where the importing country is a developing country that has prohibited the import of hazardous and other wastes.<sup>81</sup> Additionally, such exports should not be allowed or actively prohibited if the exporting state has reason to believe that the waste “will not be managed in an environmentally sound manner”.<sup>82</sup>

The Basel Convention casts an obligation upon the states that are a party to it to take appropriate measures to ensure that the transboundary movement of hazardous and other wastes is permitted only in a narrow set of three circumstances (posited as alternative and not cumulative conditions).<sup>83</sup> *First*, the exporting state should lack the technical and/or another capacity, necessary facilities, and disposal sites to dispose of the waste in an environmentally sound and efficient manner.<sup>84</sup> *Second*, the waste sought to be exported should

<sup>76</sup> Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal y1673 UNTS 126, *Overview*, <http://www.basel.int/Implementation/Ewaste/Overview/tabid/4063/Default.aspx>

<sup>77</sup> *Id.*

<sup>78</sup> Basel Convention, *supra* note 66, Entry A1 180, List A, Annex VIII, read with Annex III.

<sup>79</sup> Basel Convention, *supra* note 66, Entry B1 110, List B, Annex IX read with Annex I and Annex III.

<sup>80</sup> Basel Convention, *supra* note 66, Art. 4(1)(c).

<sup>81</sup> Basel Convention, *supra* note 66, Art. 4(2)(e).

<sup>82</sup> Basel Convention, *supra* note 66, Arts. 4(2)(e) and 4(2)(g).

<sup>83</sup> See Basel Convention, *supra* note 66, Art. 4(2)(9).

<sup>84</sup> Basel Convention, *supra* note 66, Art. 4(2)(9)(a).

be required as raw material for recycling or recovery industries in the importing state.<sup>85</sup> *Third*, the transboundary movement should be in accordance with “other criteria” to be decided by the state parties, provided that these criteria do not conflict with the objectives of the Basel Convention.<sup>86</sup>

The Basel Convention also imposes, on the waste exporters, a duty to re-import, “[w]hen a transboundary movement of hazardous wastes or other wastes to which the consent of the States concerned has been given, subject to the provisions of this Convention, cannot be completed in accordance with the terms of the contract,” provided that the importing country cannot make arrangements for the disposal of the hazardous or other waste in an environmentally sound manner.<sup>87</sup>

In spite of some degree of regulation of electrical waste imports by the Basel Convention, large amounts of e-waste continue to be shipped across international borders.<sup>88</sup> National legislations on the permissibility of importing or exporting e-waste vary considerably across countries – among developing countries, some have banned the import of e-waste, some have permitted such imports, and some have omitted to ratify the issue.<sup>89</sup>

## **B. Waste recycling in India – the impact of regulations on import**

Although India ratified the Basel Convention on June 24, 1992, and the Ministry of Environment and Forests enacted rules under domestic regulation, hazardous waste like waste oil, PCBs and asbestos continued to pour into the country simply because import regulations had not been updated. It was even reported that as late as 1998, not a single ‘prior informed consent’ request had been submitted and many ports remained unaware of the Convention<sup>90</sup> till the Supreme Court directed the Central Government to enforce the Rules in 1997.<sup>91</sup>

India’s waste management and import regulations are largely in consonance with the Basel Convention, and in the case of plastics, more stringent. Most pollution and waste management regulations are enacted in the rules under the Environment (Protection) Act, 1986. For the import and export of waste, the Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 apply to both plastics and e-waste, among other types of waste. The rules do not require legislative approval to be amended. The following

<sup>85</sup> Basel Convention, *supra* note 66, Art. 4(2)(9)(b).

<sup>86</sup> Basel Convention, *supra* note 66, Art. 4(2)(9)(c).

<sup>87</sup> Basel Convention, *supra* note 66, Art. 8.

<sup>88</sup> A New Circular Vision for Electronics, *supra* note 33, at 13.

<sup>89</sup> Mihai and Gnoni, *supra* note 35.

<sup>90</sup> Ravi Agarwal, *India: The World’s Final Dumpyard!*, 1(1) BASEL ACTION NEWS (1998).

<sup>91</sup> *Research Foundation for Science Technology & Natural Resources Policy v. Union of India*, (2007) 8 SCC 583.

section discusses the trajectory of regulation of plastic and e-waste imports, and the ramification of the regulations.

## 1. Regulation of plastic waste import under Indian law

Given the monumental and growing problem of India's domestic plastic problem, many civil society organisations have advocated for a total ban on the import of plastic waste so as to incentivize recycling industries to use domestically generated waste. Despite the magnitude of the problem, India continued to permit the import of plastic scrap into the country and until recently, had even become one of the top destinations for import.<sup>92</sup>

In this regard, it is useful to understand India's own regulations on the import of plastic waste and the future of these regulations in the face of mounting pressure both from within the country due to increased consumption as well as from developed countries who would need long-term, viable solutions for managing their waste.

Plastic waste recycling has been regulated in India since 1999, with the notification of the Plastics Manufacture, Sale and Usage Rules, 1999. The Rules mandated the recycling of plastics in accordance with the Bureau of Indian Standards.<sup>93</sup> Since then, the Rules were amended to include various provisions like the minimum thickness of plastic bags and registration of plastic bag manufacturing units, till it was superseded by the Plastic Waste (Management and Handling) Rules, 2011.

In 2016, the government notified three important regulations that governed what was ostensibly the production, post-consumer collection and import of plastic:

- The current Plastic Waste Management Rules, 2016 (“the Plastic Rules”) on March 16, 2016. Among other things, the 2016 Rules introduced the concept of ‘extended producer responsibility’ for multi-layer plastic packaging.<sup>94</sup> The responsibility of collecting the waste falls primarily on the “Producers, Importers and Brand Owners who introduce the products in the market” along with registration and oversight by the State Pollution Control Boards, as per the Rules. The Rules ostensibly aim to reduce the manufacture of unrecyclable plastics and increase the rate of recycling in the country by placing the burden of

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<sup>92</sup> *China biggest importer of plastic waste, India among top 10*, MONEY CONTROL (Jun. 26, 2018), <https://www.moneycontrol.com/news/business/china-biggest-importer-of-plastic-waste-india-among-top-10-2636281.html> (last visited Oct. 27, 2018).

<sup>93</sup> Bureau of Indian Standards, IS 14534: 1998, *Indian Standards Guidelines for Recycling of Plastics* (1998), <https://archive.org/details/gov.in.is.14534.1998/page/n3> (last visited Oct. 27, 2018).

<sup>94</sup> Although EPR has been mandated by the rules, it has not yet been implemented.

the collection of multilayer plastics (which are difficult to recycle) on the producers and mandating a minimum thickness for plastic bags.

- In conjunction with the Plastic Rules, the government also notified the Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 (the Hazardous Waste Rules) on April 4, 2016. The Hazardous Waste Rules categorize waste on the basis of the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal, wherein wastes are either totally prohibited for import, after prior informed consent of the importing country, with the prior consent of the MoEFCC, or freely importable. The Hazardous Waste Rules provide that the import of “hazardous and other wastes” from any country to India shall not be permitted for the purpose of disposal, but that such import shall be permitted “only for recycling, recovery, reuse, and utilization including co-processing.” Plastic wastes were previously classified under Part B (i.e. only requiring consent of the MoEFCC) were now moved to Schedule VI of the new Hazardous Waste Rules (i.e. Hazardous and Other wastes prohibited for import). By prohibiting imported plastic, the government presumably expected an increase in the rate of recycling of domestic plastic waste.
- Finally, the Solid Waste Management Rules, 2015 (“the SWM Rules”) were notified on April 8, 2016. The SWM Rules created duties for all waste generators including households, residents’ associations, street vendors, etc. The main onus for waste collection is on local authorities and village Panchayats of census towns and urban agglomerations for waste collection as well as setting up waste processing facilities.

Ideally, the three sets of Rules together ought to have increased the rate of recycling and decreased the rate of production of unrecyclable plastics. However, this was prevented for two major reasons. *First*, many parts of the Plastic Rules (included extended producer responsibility) were not immediately enforceable, so as to give manufacturers some years to prepare. *Second*, almost immediately after the Hazardous Waste Rules were enacted, it was amended on July 6, 2016, to include the following provision:

*“6A. The import of solid plastic waste .... excluding post consumer wastes, is permitted to units in Special Economic Zones notified by the Central Government.”*

Till April 2016, there had been no prohibition on the import of plastic wastes, especially to Special Economic Zones (SEZs). The Special Economic Zones Rules, 2006 permitted existing plastic waste recyclers to continue plastic waste imports (for re-use/recycling). While the Rules placed limits on the

quantum of other plastic wastes imported in 2013,<sup>95</sup> there was no limit placed on the import of PET bottle waste/scrap (as PET is highly recyclable with minimal waste). While the move to ban plastic waste imports had environmental reasons, there was no official reason provided for why the government partially rescinded the plastic import ban. However, given that the SWM Rules had recently gone into effect, and the Plastic Rules had not yet fully come into effect, it may be surmised that recycling industries were unable to receive sufficient plastic waste from domestic sources.

The impact of permitting SEZs to continue importing PET waste was only felt after the Chinese ban on plastic, after which imports more than quadrupled.

### *The China Ban*

On January 1, 2018, the Chinese government did something radical— it banned all import of 24 categories of waste for recycling, citing the environmental impact of the recycling industry and the problem of improperly sorted waste causing increasing costs for the country. Subsequently, the ban was extended to a total of 32 categories of waste, which included hardware, stainless steel waste, and titanium.<sup>96</sup>

The decision reverberated across the Western world, especially in the USA, the United Kingdom, and Germany, as these countries exported a significant percentage of their plastic, metal and electronic waste to China for recycling. After the ban, municipalities scrambled to put in place new measures. The price of plastic waste collapsed.<sup>97</sup> Since the ban, most developed countries are yet to put in place any concrete, long-term plans. In the USA alone, it was estimated that around 37 million tonnes of plastic would be ‘homeless’.<sup>98</sup> Some states in the USA responded to the Chinese policy by lifting the ban on plastic waste in landfills while others are no longer collecting plastic for recycling. Meanwhile, recycling firms and councils in the UK reported growing piles of plastic waste with no viable solution in sight. The Chinese government for its part has strengthened its resolve to continue the current policy and has stated

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<sup>95</sup> Ministry of Commerce and Industry, SEZ Division, Order No. C.6/10/2009-SEZ, *Policy on Units in SEZs carrying on recycling of plastic scrap or waste*, (Sept. 17, 2013), <http://sezindia.nic.in/upload/uploadfiles/files/35Policy%20on%20units%20in%20SEZs.pdf> (last visited Oct. 27, 2018).

<sup>96</sup> *China expands ban on waste imports*, THE STRAITS TIMES (Nov. 19, 2018), <https://www.straitstimes.com/asia/east-asia/china-expands-ban-on-waste-imports> (last visited Oct. 27, 2018).

<sup>97</sup> Leslie Hook and John Reed, *Why the world's recycling system stopped working*, FINANCIAL TIMES (Oct. 25, 2018), <https://www.ft.com/content/360e2524-d71a-11e8-a854-33d6f82e62f8> (last visited Oct. 27, 2018).

<sup>98</sup> Jason Daley, *China's Plastic Ban Will Flood Us with Trash*, SMITHSONIAN MAGAZINE (Jun. 21, 2018), <https://www.smithsonianmag.com/smart-news/chinas-plastic-ban-will-flood-us-trash-180969423/> (last visited Oct. 27, 2018).

its intent to include other categories of waste in the ban.<sup>99</sup> Instead, these countries have resorted to finding other countries to accept their waste. Countries like Vietnam and Malaysia reported enormous increase in waste and are mulling their own ban.<sup>100</sup>

In India, since only PET scrap was permitted for import, according to one news source, from 2017 to 2018, the import of PET scrap quadrupled from 12,000 tonnes in FY 2016-17 to 48,000 tonnes in FY 2017-18.<sup>101</sup> However, this figure is a conservative estimate in comparison with the Institute of Scrap Recycling Industries (ISRI)'s data. ISRI stated that U.S. plastic exports alone to India for the first 11 months of 2018 totaled more than 120,000 tonnes (worth more than \$46 million).<sup>102</sup> This increase can be attributed to the China ban.

In 2019, 25,000 tonnes had already been imported before the government finally plugged the SEZ loophole on March 5, 2019.<sup>103</sup> The ban attracted criticism from the owners of 30-odd plastics recycling units, re-processors in the Special Economic Zones (SEZs) and Export Oriented Units. "We have done R&D and developed new customers abroad. We have also invested and [sic] new machines to serve the new clients. On the basis of the renewal of Letter of Authorisation from the ministry, such units have lined up heavy investments towards Capital Goods. The ban is resulting in idling of the imported costly machinery which has been installed already."<sup>104</sup>

What is clear from the regulatory tangle described above is that a combination of factors like poor segregation and collection domestically, the failure to implement EPR and the timing of the China ban essentially opening the floodgates to enormous quantities of plastic waste into a country where recycling percentages are poor, to begin with. Furthermore, the ban earlier this year could not have come sooner, as it is also clear the developed countries are unable to manage their waste domestically and are instead simply looking to

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<sup>99</sup> Susmitha Suresh, *US Plastic Waste Export, Banned by China, Skyrockets to Developing Countries*, IBTIMES (May 10, 2018), <https://www.ibtimes.com/us-plastic-waste-export-banned-china-skyrockets-developing-countries-2722690> (last visited Oct. 27, 2018).

<sup>100</sup> *How recycling is changing in all 50 states*, WASTE DIVE (Jun. 5, 2019), <https://www.wastedive.com/news/what-chinese-import-policies-mean-for-all-50-states/510751/> (last visited Oct. 27, 2018).

<sup>101</sup> Jacob Koshy, *Plastic waste imports to India go up: report*, THE HINDU (Jan. 21, 2019), <https://www.thehindu.com/news/national/surge-in-import-of-plastic-waste-report/article26053592.ece> (last visited Oct. 27, 2018).

<sup>102</sup> Katie Pyzyk, *India extends timeline for plastic scrap import ban*, WASTE DIVE (Mar. 12, 2019), <https://www.wastedive.com/news/india-extends-timeline-for-plastic-scrap-import-ban/549908/> (last visited Oct. 27, 2018).

<sup>103</sup> The ban was conditionally extended till August, 2019 for those importers whose shipments were already in transit.

<sup>104</sup> *Sudden ban strikes Indian plastics recyclers hard*, RECYCLING MAGAZINE (Apr. 16, 2019), <https://www.recycling-magazine.com/2019/04/16/sudden-ban-strikes-indian-plastics-recyclers-hard/> (last visited Oct. 27, 2018).

export to countries that have not yet banned their import.<sup>105</sup> Therefore, the only available avenue for developing countries to control waste import is to strictly ban plastic imports and enforce regulations domestically, rather than relying on developed countries to manage their own waste domestically or on any international conventions.

It should be noted that the status of the ban in India is precarious as it is enforced through delegated legislation under the Environmental Protection Act, 1986 and can, therefore, be amended or diluted at any time without requiring Parliamentary assent.

### *Regulation of e-waste imports under Indian law*

India generates a sizeable amount of e-waste domestically. India has one of the fastest-growing electronics industries in the world, with low-budget Information Technology gadgets such as smartphones becoming increasingly accessible and affordable to a large segment of society, and consequently contributing to a growing volume of equipment that will be discarded.<sup>106</sup> In 2016, India's domestic generation of e-waste was 2 million tons.<sup>107</sup>

ASSOCHAM estimates that from the year 2020, India will generate 52 lakh metric tonnes of e-waste per annum.<sup>108</sup> It is estimated that due to the poor recycling infrastructure and weak legislative framework, only 5% of India's total e-waste gets recycled.<sup>109</sup> The unorganized sector and scrap dealers, who prefer to dismantle the e-waste rather than recycle it, manage the remaining 95% of the e-waste.<sup>110</sup>

The e-Waste (Management) Rules, 2016, which are concerned with the management of electronic waste at the domestic level in India, define "e-waste" to mean "electrical and electronic equipment, whole or in part discarded as waste by the consumer or bulk consumer as well as rejects from manufacturing, refurbishment, and repair processes."<sup>111</sup> These Rules set out a framework of obligations for different actors in the e-waste chain: the manufacturers, producers, collection centres, dealers, refurbishers, recyclers, dismantlers, consumers, etc.

In contrast, the Hazardous Waste Rules which are concerned with the movement of waste across India's national boundaries, omit to define "e-waste", or

<sup>105</sup> Pyzyk, *supra* note 102.

<sup>106</sup> Global E-Waste Monitor 2017, *supra* note 38, at 19, 68.

<sup>107</sup> Global E-Waste Monitor 2017, *supra* note 38, at 68.

<sup>108</sup> *India's e-waste growing at 30% per annum: ASSOCHAM-cKinetics study*, ASSOCHAM (Jun. 3, 2016), <http://www.assocham.org/newsdetail.php?id=5725> (last visited Oct. 27, 2018).

<sup>109</sup> Shenoy, *supra* note 47.

<sup>110</sup> Shenoy, *supra* note 47.

<sup>111</sup> E-Waste (Management) Rules, 2016, GSR 338(E), R. 3(r).

expressly bring it within the ambit of the definition “hazardous waste”. The Hazardous Waste Rules deem illegal the import of hazardous or other wastes into India in a number of circumstances.<sup>112</sup> These include importing the waste without the requisite permission of the Central Government or obtaining such permission through falsification, misrepresentation or fraud.<sup>113</sup> Such imports are also illegal when the consequence is the “deliberate disposal (i.e. dumping) of hazardous or other waste in contravention of the Basel Convention and of general principles of international or domestic law.” However, the analysis below shows that the import of certain types of e-waste is effectively permitted in India.

Under Part B of Schedule III (corresponding to Annex IX of the Basel Convention) of the Hazardous Waste Rules, several categories of “used electrical and electronic assemblies” are permitted for import without requiring prior informed consent<sup>114</sup>.

Additionally, under Part D of Schedule III, several categories of electronics are permitted for import without seeking the permission of the MoEFCC. One of the categories of used electrical and electronic assemblies involves importing these electronics for the purposes such as repair, rental, testing, research and development, warranty replacement and then, after completing these objectives, re-exporting the electronics, within a period of one or three years from the date of import.<sup>115</sup>

Schedule VIII of the Hazardous Waste Rules sets out the requisite documents for this category of waste. It is pertinent to note that, while the documents include the importers’ undertaking for re-export and a certificate from the exporting company for accepting the re-exported electronics, these merely form the pre-requisite for the import process.<sup>116</sup> There appears to be a regulatory gap with respect to the *post-facto* verification or enforcement of the export, and the potential penalization for a failure to do so.

The import of used laptops, personal computers, mobiles, and tablets is also permitted, up to one each per organization per year.<sup>117</sup> But there is no

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<sup>112</sup> Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016, R. 15.

<sup>113</sup> Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016, R. 15(1)(i) and R. 15(1)(ii).

<sup>114</sup> Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016, Entry B1110, Part B, Sch. III.

<sup>115</sup> Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016, Entry B1110, Part D of Sch. III.

<sup>116</sup> See Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016, Cls. (a), (b), (d), (e), Entry B1110, Cl. (k), Sch. VIII.

<sup>117</sup> Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016, Entry B1110, Part D, Sch. III.

requirement to provide any documentation to verify this.<sup>118</sup> The import of used multifunction print and copying machines is allowed without a restriction on number, but subject to providing some documents under Schedule VIII of the Hazardous Waste Management Rules.<sup>119</sup>

Under the Foreign Trade Policy, 2015, the import of second-hand personal computers, and laptops (including their re-furbished and re-conditioned spares), along with photocopier machines, and digital print and multifunction print and copying machines is restricted, and made subject to authorizations.<sup>120</sup>

A study by ASSOCHAM found that India's Delhi-NCR region alone gets 85% of the e-waste of the developed world.<sup>121</sup> The largest share of the e-waste imports is reported to come from the United States of America (42%), followed by China (30%), Europe (18%) and other countries including Taiwan, South Korea, and Japan (10%).<sup>122</sup> It merits noting that developing countries are also now producing sizeable quantities of e-waste on their own, and such imports only serve to add to a growing waste stream that these developing countries may not have adequate infrastructure or resources to safely handle. The e-Waste (Management) Rules, 2016 require Indian manufacturers and producers of any electrical and electronic equipment to collect and process the e-waste resulting from these products.<sup>123</sup> However, a recent report found that the e-waste collection centres of most multinational electronics companies were not traceable or non-existent.<sup>124</sup> This implies that the e-waste generated domestically in India is not being adequately processed, and e-waste imports from foreign countries are ultimately adding to a growing mass of un-processed e-waste in the country.

Three broad categories of e-waste imports in India may be delineated. The institutional failure and implementation gap in each of these categories vary and will be discussed below.

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<sup>118</sup> Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016, Entry B1110, Cl. (h), Sch. VIII.

<sup>119</sup> Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016, Entry B1110, Cl. (k), Sch. VIII.

<sup>120</sup> Foreign Trade Policy, 2015, Cl. 2.31, I(a).

<sup>121</sup> *US & China account for 70% of India's e-waste imports*, BUSINESS STANDARD (Mar 4, 2016), [https://www.business-standard.com/content/b2b-manufacturing-industry/us-china-account-for-70-of-india-s-e-waste-imports-116030400460\\_1.html](https://www.business-standard.com/content/b2b-manufacturing-industry/us-china-account-for-70-of-india-s-e-waste-imports-116030400460_1.html) (last visited Oct. 27, 2018).

<sup>122</sup> *Id.*

<sup>123</sup> See Ch. III of the E-Waste (Management) Rules, 2016 titled 'Responsibilities', which sets out the responsibilities of the manufacturer, producer, collection centres, dealers, refurbishers, consumers, dismantlers, recyclers, and the State Government.

<sup>124</sup> Shivam Patel, *Big tech firms had e-waste centres but only on paper, many addresses fake: Delhi probe*, INDIAN EXPRESS (Sept. 11, 2019), [https://indianexpress.com/article/india/tech-firms-e-waste-centres-addresses-fake-delhi-probe-5981091/lite/?\\_\\_twitter\\_impression=true](https://indianexpress.com/article/india/tech-firms-e-waste-centres-addresses-fake-delhi-probe-5981091/lite/?__twitter_impression=true) (last visited Oct. 27, 2018).

The first category involves situations where e-waste is illegally imported by Indian entities, without providing the necessary documentation, or complying with the procedure under the Hazardous Waste Rules. These would qualify as “illegal imports” under Rule 15 of the Hazardous Waste Rules.

The Central Bureau of Investigation (CBI) carried out raids in various locations in Kolkata and Kochi at the beginning of 2018, as part of a probe into illegal e-waste import.<sup>125</sup> The CBI found that, across these locations, a total of Rs. 100 crores worth of equipment had been imported in three years.<sup>126</sup> The raids yielded approximately 25,000 photocopiers from the United States of America and Germany, which had been imported into Kochi port.<sup>127</sup>

Among the Kolkata raids, it was found that the same agency was importing e-waste under multiple bogus company names.<sup>128</sup> Similarly, an illegal e-waste trader in Delhi was reported to register new names for his company every month, to minimize the risk of confiscation of imported computers.<sup>129</sup> Notably, the United States of America is the only developed country that has not ratified the Basel Convention, leading to a large proportion of its e-waste being exported to other countries, particularly Asian countries.<sup>130</sup>

The second category of e-waste imports involves the import of electronics for the ostensible purpose of repair, rental, testing, research and development, warranty replacement thereof, and then, after completing these tasks, re-exporting the electronics to the original country, within a stipulated period of time. However, since the Hazardous Waste Rules do not contain provisions for monitoring the return of these electronics products through export, or penalizing any omissions to do so, this can be exploited as an easy route for dumping e-waste in India. The duty of re-import under Article VIII of the Basel Convention does not have an equivalent provision in the domestic legislation of India. At the recent COP of the Basel Convention in Geneva, India took the lead in objecting to a provision in the technical guidelines that classified used

<sup>125</sup> *Import of e-waste: CBI raids multiple places*, THE HINDU (Jan 4, 2018), <https://www.thehindu.com/news/cities/Kochi/import-of-e-waste-cbi-raids-multiple-places/article22361958.ece> (last visited Oct 27, 2018).

<sup>126</sup> *Customs officials among 8 booked by CBI for e-waste imports through Kochi port*, HINDUSTAN TIMES (Jan 3, 2018), <https://www.hindustantimes.com/india-news/customs-officials-among-8-booked-by-cbi-for-e-waste-imports-through-kochi-port/story-fALVskxQfQIQs6G5IH34AN.html> (last visited Oct. 27, 2018).

<sup>127</sup> *Id.*

<sup>128</sup> Hindustan Times, *supra* note 126.

<sup>129</sup> *Tricks of the e-waste trade*, DOWN TO EARTH (Jun 28, 2005), <https://www.downtoearth.org.in/coverage/tricks-of-the-ewaste-trade--325> (last visited Oct 27, 2018).

<sup>130</sup> *E-Waste Offers an Economic Opportunity as Well as Toxicity*, THE NEW YORK TIMES MAGAZINE (Jul 5, 2018), <https://www.nytimes.com/2018/07/05/magazine/e-waste-offers-an-economic-opportunity-as-well-as-toxicity.html> (last visited Oct 27, 2018).

electrical and electronic equipment directed for direct reuse, repair, refurbishment or failure analysis as non-waste.<sup>131</sup>

The third category of e-waste imports involves the import of electronic equipment in the guise of using it for charitable or educational purposes. For example, the Hazardous Waste Management Rules permit the import of used laptops, personal computers, mobiles, and tablets, up to one each per organization per year. Such import does not involve an obligation to provide documentation. It is reported that developed countries export discarded electronic items to developing countries as charity or scrap.<sup>132</sup> There are instances of developed countries exporting used electronic products in a concealed state, or as “donations” of second-hand electronics to educational institutions.<sup>133</sup> These second-hand electronics making their way to India in the guise of charity or educational donations offer a convenient back-door entry to use India as an e-waste dumping ground. This clandestine route of import also hinders the precise calculation of the quantum of e-waste entering India.<sup>134</sup>

#### IV. RECOMMENDATIONS

##### A. Strengthen the Basel Convention:

- (a) Although the Basel Convention has not been effective, it remains the best possible chance for developing countries to level the playing field. Prior informed consent by the importing country (typically a developing nation) may not be the relevant criterion or form an adequate deterrent for waste export by developing countries. As detailed above, large-scale export of waste from developed countries to the developing countries continues to take place, defeating the intention of the Basel Convention. We are witnessing a global waste crisis, where developed countries are not implementing an adequate waste management framework at the domestic level, and developing countries are being flooded with excessive waste. Given the failure of the standard of prior informed consent, the Parties to the Convention have proposed an amendment that would totally prohibit the transboundary movement of certain types of waste into low-income countries:

*“Each Party listed in Annex VII shall prohibit all transboundary movements of hazardous wastes which are destined*

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<sup>131</sup> *India sets tone in Geneva as COP meetings adopt amendments to restrict e-waste dumping on developing countries*, EXPRESS NEWS SERVICE (May 17, 2019), <https://indianexpress.com/article/india/e-waste-dumping-india-at-geneva-conventions-plastic-waste-developing-countries-5731899/> (last visited Oct. 27, 2018).

<sup>132</sup> Veenu Joon et al., *The Emerging Environmental and Public Health Problem of Electronic Waste in India*, 7(1) JH & P 1, 3 (2017).

<sup>133</sup> *Id.*

<sup>134</sup> Joon et al. *supra* note 132.

*for operations according to Annex IV A, to States not listed in Annex VII.*

However, Annex VII has not yet entered into force as the required number of countries have yet not ratified it. Ratifying this amendment would go a long way in protecting countries that do not have sufficient domestic regulations or enforcement to prevent the influx of waste. Even though it would not apply to all categories of waste, it remains a necessary step.

- (a) The Basel Convention came into existence as far back as 1989, before the internet era, when it was not possible to foresee the e-waste crisis that has now unfolded on a large-scale in the twenty-first century. There is a need to revisit the Convention to specifically address the issue of e-waste, including the different categories (for example, laptops, smart-phones, and other gadgets).
- (b) Finally, although it may be impossible given the opposition by many developed countries (and some industries in developing countries), there is also a need to fundamentally change the nature of the Convention from one of ‘consent’ to one that casts a greater burden of responsibility on the country generating waste. A future amendment could consider placing an upper limit on the percentage of waste a country can export to low-income countries. There is an inherent mismatch between the bargaining power between developed and developing countries, and placing greater responsibility on developed countries would go a long way toward addressing it.

## **B. Strengthen domestic import regulations and enforcement**

- (a) As the China ban proved, waste exporting countries have no incentive to strengthen and expand their waste recycling facilities, or even reduce the quantum of waste generated as they can simply export to another country with weaker regulations. In fact, there have also been several documented instances of illegal dumping of waste, including non-recyclables in South-East Asian countries.<sup>135</sup> While developing countries (including India) may be pressured by local recycling industries to permit imports due to the incentives, the social costs are too high as countries without strong regulations stand to become a ‘dumping ground’.

<sup>135</sup> Michael Taylor, *Dumping plastic waste in Asia found destroying crops and health*, REUTERS (Apr 23, 2019) <https://www.reuters.com/article/us-asia-recycle-plastics/dumping-plastic-waste-in-asia-found-destroying-crops-and-health-idUSKCN1RZ02J> (last visited Oct 27, 2018); Jan Dell, *157,000 Shipping Containers of U.S. Plastic Waste Exported to Countries with Poor Waste Management in 2018*, PLASTIC POPULATION COALITION (Mar 6, 2019) <https://www.plasticpollutioncoalition.org/pft/2019/3/6/157000-shipping-containers-of-us-plastic-waste-exported-to-countries-with-poor-waste-management-in-2018> (last visited Oct 27, 2018); Alan Yuhas, *After Duterte’s Threats Over Tons of Old Trash, Canada Says It’s Working on It*, NEW YORK TIMES (Apr 26, 2019) <https://www.nytimes.com/2019/04/26/world/asia/duterte-canada-trash.html?smtyp=cur&smid=tw-nytimes> (last visited Oct 27, 2018).

In fact, even permitting highly recyclable waste like PET is problematic, as there have been documented instances of poor quality/unrecyclable/hazardous waste being mixed into the plastic scrap, thereby not only reducing the value of the recycling but also vastly increasing the environmental impact of the waste. As a result, the only option open to developing countries at present is to totally ban all plastic/e-waste import and strengthen checks at ports of entry to ensure proper enforcement.

- (b) Developed countries should also institute bans on exports to countries without technology/environmental laws to handle waste management properly. The burden to conduct the due diligence about the adequacy of the recycling infrastructure in the country of import should be cast on the exporting country.

### **C. Improve data collection and institute community monitoring**

- (a) Since the proliferation of waste from developed countries into developing countries is a sensitive topic with potential geopolitical ramifications, it is not widely discussed, and data on the quantum and nature of waste crossing country barriers is usually suppressed. In the course of researching this topic, huge limitations in data were noted. Once more data is publicly available, increased awareness about the topic can be expected to follow, based on which greater pressure can be exerted on legislators and policy-makers across countries, particularly by civil society groups.
- (b) Additionally, the Convention must incorporate mechanisms for record-keeping on the movement of waste between countries. Publicly accessible data and transparency in record-keeping are pre-requisites for increased accountability of countries. As a starting point, it is of utmost importance to have greater and more granular data about the movement of e-waste from developed countries to developing countries, so that international and national regulations can be framed accordingly.
- (c) At the domestic level, the failure of State Pollution Control Boards to fulfil their mandate to monitor industries must be addressed through increased funding and capacity building. However, due to the informality of the industry, it may not be possible for the Boards to fully monitor the industry. As a result, there is also a need to strengthen community monitoring mechanisms and involve local communities in the maintenance of a clean and healthy environment.

### **D. Improve domestic waste segregation and collection**

- (a) The primary reason offered by recycling industries in India for supporting waste import (especially plastic) is that domestic wasteis

insufficient/of poor quality/improperly segregated, and therefore not suitable for recycling. The recycling industries, therefore, argue that it is necessary for them to import additional waste for their recycling business. Waste imported in India adds to large quantum of India's own waste, much of which ends up in landfills. It is crucial that India drastically strengthens its own waste segregation and waste processing regulations, including their monitoring and enforcement before it imports waste from other countries and directs resources into processing that waste. The management and proper disposal of domestic waste must take precedence over that of imported waste.

- (b) Similarly, for e-waste, many proponents claim that it is extremely valuable and ought to be encouraged for import. However environmentally safe e-waste processing is complex, in that it requires more technical facilities. Furthermore, given that India is already generating vast quantities of e-waste without adequate facilities to process them, importing waste would endanger local ecology and the health of those in the industry. Strict regulation of the e-waste processing industry, coupled with monitoring is required to ensure the industry has no social cost.

#### **E. International cooperation for technology transfer and capacity building**

- (a) It is often argued by proponent that waste import and export is a form of "global circular economy" and that it can generate jobs as well as cheap raw materials for developing countries. However, experience has shown that the raw materials come at the cost of pollution in the local environment, and the jobs come without any labour law protection and pose hazards to the health of the workers. The terms of the import should, therefore, be more equitable. The Basel Convention and related national legislations should now contemplate market-based mechanisms, such as taxes and fees, which should be specifically earmarked for improving the waste management infrastructure and employment benefits to the workers directly engaged in this industry in the countries that are importing waste. If the cost of exporting waste increases, as a result, developed countries may be constrained to look inwards to improve their domestic waste processing framework before outsourcing this problem to developing countries.
- (b) In addition, developed countries, especially those like Germany who are leaders in recycling technologies should strengthen official developmental assistance programmes, technology transfer and capacity building on waste recycling technologies in developing countries. Once countries are more on an even footing with regard to environmentally sound waste processing, the dream of a 'global circular economy' may indeed be fulfilled.

## V. CONCLUSION

The export of waste by rich countries with high consumption patterns to poorer countries has emerged as a pernicious problem of the twenty-first century, promoting a new kind of neo-colonialism in the sphere of waste management. Due to the sensitive nature of the problem, and its potential geopolitical ramifications, the transboundary movement of waste rarely gets due attention and is not always appropriately characterized as a form of neo-colonialism. This paper was an attempt to analyze the various aspects of the export of two types of waste by developed countries: plastic waste and electronic waste. The international treaty governing transboundary movement of waste, the Basel Convention, was signed in 1989, and thirty years later, it falls woefully short in addressing many of the issues arising out of these waste exports, and in tackling waste colonialism. At the time of writing this article, regulation of plastic waste had only been recently contemplated under the Basel Convention for the first time; yet this may be a case of ‘too little too late’.

In order to address waste colonialism, not only must the international legal regime be adequately strengthened, but the domestic waste management laws of both developed and developing countries should be improved and better implemented in order to promote the proper collection, segregation and disposal of waste within a country’s own territorial boundaries. In this article, an attempt has been made to discuss the problem at the international level, and also contextualize the problem for India, which is struggling with managing its own domestic waste, while at the same time exporting considerable amounts of plastic and e-waste, both legally and illegally. In order to meaningfully tackle this global problem, there is an urgent need to strengthen the Basel Convention as well as domestic waste management and waste import regulations, improve data collection and monitoring of waste, and focus on international cooperation and technology transfer for waste management. This paper aims to contribute to the limited body of research on the topic and seeks to inform future policy-making in the field.