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THE BASEL CONVENTION ON THE CONTROL OF TRANSBOUNDARY MOVEMENTS OF HAZARDOUS WASTES AND THEIR DISPOSAL: A LEGAL MISFIT IN GLOBAL SHIP RECYCLING JURISPRUDENCE

Ishtiaque Ahmed[†]

Abstract: The Basel Convention has tempted developed nations into the practice of exporting hazardous waste into undeveloped nations' territories simply for money in the name of recycling. Being extremely business unfriendly, particularly for the recycling industry, this convention has not been welcomed by many developing nations, leading to serious policy and legal uncertainty in those jurisdictions. However, in the absence of any dedicated, enforceable international legal instrument, the Basel Convention currently remains the foundation of ship-recycling jurisprudence in the domestic courts of all dominant, ship-recycling states and the rest of the world, and the basis for curbing the movement of end-of-life ships proceeding to undeveloped states for recycling. Considerable debate exists amongst major stakeholders about the Basel Convention's application to end-of-life ships. Stakeholders associated with global shipping and the ship-recycling industry, including the governments of ship-owning states, firmly maintain that the Convention does not apply to the cross-border movement of end-of-life ships. On the other side, environmental activists strongly argue that the Convention should regulate end-of-life ships as hazardous waste. Through a doctrinal analysis breaking down key terms and provisions, this article seeks to address the contentious questions on the Basel Convention's relevance to end-of-life ships and their movement.

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I. INTRODUCTION

The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal, known as the Basel Convention, is an international treaty designed to control the movement of hazardous waste between nations, and particularly from developed to developing nations.¹ The Basel Convention was a product of international concern about Western nations' excessive dumping of hazardous waste in impoverished, developing nations during the 1970s and 1980s.² Outrage over this practice increased with the number of reported incidents, with *The Khian Sea* incident perhaps drawing the greatest attention worldwide.³

As it is extremely business unfriendly, the Basel Convention has been a great concern of the global recycling industry. In the absence of any other dedicated, enforceable international legal regime on ship recycling, the Convention remains the basis of current global ship recycling jurisprudence in the domestic courts of all dominant ship recycling states and the rest of the world.

This article seeks to address the challenging questions on the relevance of the Basel Convention to end-of-life ("EOL") ships and their last journey toward the recycling facility by analyzing some of treaty's key terms and provisions. The Convention is a mismatched and inappropriate legal machinery to regulate the global industry of ship recycling for several reasons, namely its terminological difficulties, incompatibility with maritime trade and the nature of EOL ships, and the practical difficulty of incorporating the Convention's strict provisions on such high-value recyclable waste as an EOL ship. The article postulates that reliance on the Convention as regulation of EOL ship recycling would not help safeguard the environment from shipbreaking activities nor promote the sustainable growth of the ship recycling industry.

¹ Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal art. 4.2(e), Mar. 22, 1989, 1637 U.N.T.S. 9 [hereinafter Basel Convention].

² U.N. Environmental Programme, *Overview*, UNITED NATIONS (2011), <http://www.basel.int/TheConvention/Overview/tabid/1271/Default.aspx>; M.J. Peterson, Case Study, *Transboundary Trade in Hazardous Substances and Waste-Case Summary*, 1 INT'L DIMENSIONS ETHICS EDUC. SCI. & ENGINEERING 1, 7 (2010).

³ *About Us*, BASEL ACTION NETWORK, <http://ban.org/about-us> (last visited Mar. 8, 2020).

II. THE ORIGIN OF THE BASEL CONVENTION

In August 1986, a ship carrying 15,000 metric tons of toxic incinerator ash departed Philadelphia, Pennsylvania⁴ after other U.S. states refused to take accept the waste (for cash) because they were suffering from the same problem of expensive landfills.⁵ The owner of the ship tried to dispose of the waste in the Bahamas, but while the ship was on route, the island nation, realizing the cargo's toxicity, rescinded its offer to unload the waste.⁶ The ship carrying the load of toxic ash then attempted to offload at the ports of Bermuda, Puerto Rico, the Dominican Republic, Honduras, and the Netherlands Antilles; all ports denied it permission.⁷ Turning back from these countries, the ship managed somehow to unload 4,000 tons of ash in Haiti on the pretense that it was fertilizer.⁸ Upon realizing the deception, Haiti immediately returned the ash, and the ship then headed to the east coast of Africa, hoping to discharge the rest of the toxic waste in Cape Verde, Guinea-Bissau, or Senegal. But, again, the ship was refused.⁹

The vessel then began an uncertain journey to far East Asia, with the hope of disposing the load at the ports of Borneo, Indonesia, or the Philippines.¹⁰ All ports denied the load.¹¹ The ship then traveled south, attempting to dump in Sri Lanka, who also rejected it. After a twenty-seven-month world tour¹² by sea with successive refusals by dozens of poor countries in different continents across the world, the saga ended.¹³ The ship arrived in Singapore empty, with 11,000 tons of garbage missing somewhere at high sea in the Indian Ocean.¹⁴ Surprisingly, the vessel was thereby able to

⁴ Mark Jaffe, *Garbage Barge (Khian Sea)*, THE ENCYCLOPEDIA OF GREATER PHILADELPHIA, <http://philadelphiaencyclopedia.org/archive/garbage-barge-khian-sea/>.

⁵ Alex Santoso, *World's Most Unwanted Garbage: Cargo of the Khian Sea*, NEATORAMA (Aug. 15, 2007, 10:52 AM), <http://www.neatorama.com/2007/08/15/worlds-most-unwanted-garbage-cargo-of-the-khian-sea/>.

⁶ *Id.*

⁷ *Id.*

⁸ *Id.*

⁹ *Id.*

¹⁰ *Id.*

¹¹ *Id.*

¹² BASEL ACTION NETWORK, *supra* note 3.

¹³ Hope Reeves, *The Way We Live Now: 2-18-01: Map; A Trail of Refuse*, N.Y. TIMES, (Feb. 18, 2001), <http://www.nytimes.com/2001/02/18/magazine/the-way-we-live-now-2-18-01-map-a-trail-of-refuse.html>.

¹⁴ Jaffe, *supra* note 4.

manage the best deal at no cost of its own. This case shows a grave inadequacy of international legal instruments in dealing with the control of hazardous waste moving across borders and being disposed in places other than its point of origin.

Another notable occurrence, among others, is the *Koko* incident in Nigeria. A Nigerian businessman negotiated with an Italian businessman to store tons of hazardous waste—containing dioxins, polychlorinated biphenyl (“PCB”), and other lethal chemicals—on his private farmland in Nigeria, disguising it as construction.¹⁵ Before it was discovered and cleared, the toxic waste had already caused widespread damage to the environment and human health, including causing congenital disabilities, cancer, lung cancer, and widespread deaths in the area.¹⁶ The growing industrialization of developed countries, resulting in the gradual disappearance of the landfill sites, rising prices for waste treatment and disposal, and increased labor wages, led to the passage of stringent environmental regulations.¹⁷ Incidents such as *Koko* at the same time were coupled with the occurrence of innumerable cases of health and human hazards in the handling of various toxic chemicals and substances, such as asbestos, polyvinyl chloride (“PVC”), polycyclic aromatic hydrocarbon (“PAH”), and others. Hundreds of million-dollar class action claims were filed by mesothelioma victims and their families, claiming large compensatory damages against their employers.¹⁸ In the face of mounting legal battles costing millions, these

¹⁵ Stephanie Buck, *In the 1980s, Italy Paid a Nigerian Town \$100 a Month to Store Toxic Waste—And It’s Happening Again*, TIMELINE (May 26, 2017), <https://timeline.com/koko-nigeria-italy-toxic-waste-159a6487b5aa?gi=2911e4233>.

¹⁶ Jason L. Gudofsky, *Transboundary Shipments of Hazardous Waste for Recycling and Recovery Operations*, 34 STAN. J. INT’L L. 219, 220 (1998).

¹⁷ Jonathan Krueger, *The Basel Convention and the International Trade in Hazardous Wastes*, 4 Y.B. INT’L CO-OPERATION ON ENV’T & DEV. 43, 43–44 (2001).

¹⁸ See *McCarn & Ors v. Secretary of State for Business, Innovation and Skills* (2014) ScotCS 64 (Scot.) (surviving spouse of mesothelioma victim, who was exposed to asbestos during the course of his employment in the shipbuilding industry, raised a claim under § 4(3)(b) of the Damages (Scotland) Act 2011—which allows for compensation awards to victims’ relatives for loss of financial support, distress and anxiety, grief and sorrow, and loss of “society and guidance”—and was awarded £80,000 and £35,000 for each of her two children). See also Robert Verkaik, *Trafigura Faces 105m Legal Bill Over Dumping of Toxic Waste*, Independent (May 11, 2010), <http://independent.co.uk/news/uk/home-news/trafigura-faces-163105m-legal-bill-over-dumping-of-toxic-waste-1970544.html>; MESOTHELIOMA FUNDS, <http://mesotheliomatrustfund.us/> (last visited Jan. 14, 2020) (in the United States, large compensatory damages (so far more than \$30 billion) are awarded to workers victimized by asbestos-containing materials while working in industries that produce or use asbestos); *Media Alert – Ground Breaking Ruling Shows Way Forward for Asbestos Victims*, SHIPRECYCLING (Feb. 23, 2012), <http://recyclingships.blogspot.com/20>

toxic traders and industrial nations were helpless and had few options available for feasible alternatives.¹⁹

Attempts were made to dispose of the waste, hiding its hazardous character in economically vulnerable countries. Such cover ups remained unknown in greater detail because of ignorance or the absence of awareness, due in part to a lack of technological capabilities to determine the long-term environmental damage resulting such hazardous wastes.²⁰ Among the developing countries, the nations of Africa were the first to be targeted as possible destinations for such shipments of hazardous waste from western and northern developed regions of the globe in 1980.²¹ This practice is popularly described now as toxic colonialism²² or environmental racism.²³

III. THE ADVENT OF THE INTERNATIONAL WASTE CONVENTION

Before the Convention, hazardous waste was governed by the international principle of “good neighborhood” or “*Sic utere tuo, ut alienum*

12/02/media-alert-groundbreaking-ruling-shows.html (in Europe, compensatory damages awarded to workers in developed countries for asbestos-related diseases may include heightened criminal punishment against industries’ owners who knowingly subject workers to asbestos exposure without adequate safeguards).

¹⁹ Basel Action, *Exporting Harm: The High-Tech Trashing of Asia*, YOUTUBE (May 16, 2013) (<https://youtube.com/watch?v=yDSWGV3jGek> (last visited Mar. 8, 2020)).

²⁰ Jim Puckett, *The Basel Ban: A Triumph Over Business-As-Usual*, BASEL ACTION NETWORK (Oct. 1, 1997), http://wiki.ban.org/The_Basel_Ban:A_Triumph_Over_Business-As-Usual. (last edited Aug. 3, 2015).

²¹ Stewart S. Myers, *Where Are the Regulations for Shipping Hazardous Waste to Africa*, 4 GEO. INT’L ENVTL. L. REV. 401, 401 (1992); Marguerite M. Cusack, *International Law and the Transboundary Shipment of Hazardous Waste to the Third World: Will the Basel Convention Make a Difference?*, 5 AMERICAN UNIV. INT’L. L. REV. 393, 395 (1990).

²² See Laura A. Pratt, *Decreasing Dirty Dumping? A Reevaluation of Toxic Waste Colonialism and the Global Management of Transboundary Hazardous Waste*, 35 WILLIAM & MARY ENVTL. L. & POLICY REV. 581, 587 (2011) (finding that the phrase ‘Toxic colonialism’ was originated by Jim Puckett, describing the dumping of the industrial wastes of the developed Western nations on the territories of the developing countries of the global south). See also Basel Action Network, *Basel Advocacy* (2015) <https://www.ban.org/advocacy> (explaining Jim Puckett, Basel Action Network’s Executive Director, is the only person to have attended all the Basel conference meeting since the inception of the Basel Convention. He is an expert in and advocate for environmental justice, academics and policy analysts.).

²³ See Tara Ulezalka, *Race and Waste: The Quest for Environmental Justice*, 26 TEMP. J. SCI. TECH. & ENVTL. L. 51, 51 (2007) (explaining that environmental racism is a phenomenon where minority neighborhood bears disproportionately larger environmental burden in comparison to the white neighborhood).

non leaders.”²⁴ This principle holds that states must control activities within their jurisdiction to ensure that those activities do not harm the resources of other states.²⁵ This principle is very broad, unspecific, and, before the Convention, there was virtually no enforcement mechanism for its violation.²⁶ Although this principle became customary international law, due to the difficulty of enforcing it, a dedicated international instrument for dealing with the sensitive issue of transboundary movement of hazardous waste became essential.²⁷ Global cooperation is critical to dealing with such international transactions.²⁸ To maintain the delicate balance of justice between developed and developing countries, the Basel Convention of the Transboundary Movement of Hazardous Waste was adopted in 1989.²⁹ Despite fierce objections by many developed countries, the Convention was adopted with an overwhelming majority of the developing and least-developed countries on March 22, 1989, and finally entered into force in 1992 upon the deposit of the twentieth instrument of accession.³⁰

IV. THE BASEL BAN: A COMPLETE PROHIBITION OF TRANS BOUNDARY MOVEMENT OF HAZARDOUS WASTES FROM THE RICH TO THE POOR NATIONS

The Basel Convention was adopted in the era of a stronger global campaign (from 1986 to 1994) for the free market of goods across international borders specially engineered by member states of the General Agreement on Tariffs and Trade (“GATT”).³¹ The movement for the Basel

²⁴ IFEOMA ONYERIKAM, ACHIEVING COMPLIANCE WITH THE BASEL CONVENTION ON TRANSBOUNDARY MOVEMENT OF HAZARDOUS WASTES 1, 6 (April 2007), <https://ssrn.com/abstract=984067>.

²⁵ *Id.*

²⁶ Gudofsky, *supra* note 16, at 222.

²⁷ *See* Ifeoma Onyerikam, *supra* note 24, at 7 (discussing problems associated with the application of customary law).

²⁸ *See generally* Jason Lloyd, *Toxic Trade: International Knowledge Network and Development of the Basel Convention*, 3 INT’L. PUB. POLICY REV. 17 (2007).

²⁹ Sangeeta Sonak, Mahesh Sonak & Asha Giriyan, *Shipping Hazardous Waste: Implications for economically developing countries*, 8 INT’L ENVTL. AGREEMENTS 143, 145 (2008).

³⁰ U.N. Environmental Programme, *Overview*, *supra* note 2.

³¹ The General Agreement on Tariffs and Trade (“GATT”) is a legal agreement between countries, whose overall purpose was to promote global trade by eliminating or reducing trade restrictions such as quotas or tariffs. *See* Marrakesh Agreement Establishing the World Trade Organization, Apr. 15, 1994, 1867 U.N.T.S. 154; *see also* General Agreement on Tariffs and Trade, October 30, 1947, 61 Stat. A-11, 55 U.N.T.S. 194 (explaining the GATT agreement came into force in 1948); *WTO Legal Texts*, WORLD TRADE ORGANIZATION, https://www.wto.org/english/docs_e/legal_e/legal_e.htm (explaining most of the WTO

Convention was led by G77 countries³² and environmental groups, particularly Greenpeace,³³ against the interests of GATT countries, who steadfastly resisted the Convention by alleging that was clearly a green trade restriction.³⁴ African nations, along with other developing countries, however, wanted a complete ban, arguing that the Basel Convention, by creating an Article 11 exception, permitted hazardous waste shipments under the pretext of recycling.³⁵ Hazardous waste cases, such as *Khian Sea* and *Koko*, raised reasonable suspicion that the developing countries—desperate to grow financial capabilities and curtail poverty, corruption, and lax legal enforcement—would at some point create easy back doors by entering different independent agreements, which would use the pretext of recycling to move waste materials.³⁶ The arguments of the former Executive Secretary, Secretariat of the Basel Convention, Dr. Rummel-Bulska are relevant to this

agreements were the result of the 1986–94 Uruguay Round negotiations, signed at the Marrakesh ministerial meeting in April 1994).

³² See *The Group of 77 at the United Nations, About the Group of 77*, <https://www.g77.org/doc> (last visited Mar. 9, 2020). (The Group of 77 (G77) at the UN is a coalition of 135 developing countries, designed to promote its members' collective economic interests and build an improved joint negotiating capability in the UN. Originally there were 77 founding members of the organization.)

³³ See GREENPEACE, <https://www.greenpeace.org/international/> (last visited Feb. 23, 2020) (explaining Greenpeace is a non-governmental environmental organization with offices in over 55 countries and an international coordinating body in Amsterdam).

³⁴ James M. Sheehan, *Trashing Free Trade: The Basel Convention's Impact on International Commerce*, COMPETITIVE ENTERPRISE INST. (Sept. 9, 1996), <https://cei.org/content/trashing-free-trade-basel-conventions-impact-international-commerce>. See also Ray Evans, *Basel Convention: Why National Sovereignty is Important*, *Proceedings of the Fourth Conference of the Samuel Griffith Society*, 4 THE SAMUEL GRIFFIN SOCIETY 1, 10 (1994).

³⁵ Puckett, *supra* note 20 (African states OAU walked out claiming that they would not sign the Basel Convention as this has legalized toxic trade and they would instead initiate their own treaty banning waste imports to Africa). See U.S. DEP'T. OF STATE, *Basel Convention on Hazardous Waste*, U.S. DEP'T. OF STATE ARCHIVE (Jan. 20, 2001–Jan. 20, 2009) <https://2001-2009.state.gov/g/oes/env/c18124.htm> (interpreting the Basel Convention quite differently. It maintains that the international movement of equipment for repair, refurbishment, or remanufacturing does not constitute movement of waste, and thus is not impacted by the Convention or its procedures. It attempted to establish the argument that waste shipment for recycling undergo repair, refurbishment, or remanufacturing so these are not waste at all); Abigail Aguilar, press release on *Greenpeace Calls for Ratification of Basel Ban Amendment Following Discovery of Canadian Toxic Shipment*, GREENPEACE PHILIPPINES (Feb. 11, 2014) <https://www.greenpeace.org/philippines/press/1055/greenpeace-calls-for-ratification-of-basel-ban-amendment-following-discovery-of-canadian-toxic-shipment/> (reporting that 90% of the hazardous waste found their ways from the developed to the developing countries under the guise of recycling which Greenpeace termed as the “recycling loophole”).

³⁶ *Id.*

context.³⁷ According to Dr. Rummel-Bulska, the objective of the Basel Ban³⁸ was to provide a strong incentive for countries to reduce transboundary movement of hazardous waste and to consolidate the policies aimed at disposing of those wastes as close as possible to their points of generation.³⁹

The efforts of the developing and African countries yielded fruit: the vide decision of II/12 of the Basel Conference of the Parties (“COP”) adopted the “Basel Ban” resolution.⁴⁰ However, the binding effect of this measure was concerning as it was not included as an amendment to the Convention. Subsequently, in vide decision III/1, the Basel COP resolved the issue by formally including the Basel Ban vide Article 4A to the Convention’s main text as an amendment, via Article 4A, imposing a total ban on all exports of all hazardous waste, whether for recycling or mere disposal, in whatever shape from OECD⁴¹ to non-OECD countries.⁴²

In this way, owing to the efforts of developing countries, the Basel Ban has finally been adopted and included as an amendment.⁴³ However, due to the opposition exerted by several developing countries, who feared losing the business of recycling materials, the amendment failed to receive

³⁷ See *Biography of Dr. Iwona Rummel Bulska*, UNIV. OF NAIROBI, https://profiles.uonbi.ac.ke/rummel_bulska/ (Dr. Iwona Rummel-Bulska Bio is a former Executive Secretary, Secretariat of the Basel Convention).

³⁸ See BASEL CONVENTION, *The Basel Convention Ban Amendment*, U.N. ENVTL PROGRAMME, <http://www.basel.int/Implementation/LegalMatters/BanAmendment/Overview/tabid/1484/Default.aspxBase1> (Ban Amendment was originally adopted by the parties to the Basel Convention in 1995. Beginning in December 2019, the Ban Amendment to the Basel Convention will prohibit shipments of hazardous waste from OECD countries to non-OECD countries for disposal or recovery).

³⁹ Anne Daniel, *Transboundary Movement of Hazardous Waste*, 4 Y.B. INT’L ENVTL. L. 228, 229 (1994).

⁴⁰ *What is the Ban Amendment?*, BASEL ACTION NETWORK (Dec. 4, 2019, 4:03 PM), http://wiki.ban.org/Ban_Amendment (explaining that the United States, Canada, Australia, Germany, Japan, and the United Kingdom overwhelmingly opposed the adoption of the Basel Ban); see also Jim Puckett, *supra* note 18 (explaining that despite being an unabashedly discriminatory trade barrier, the Basel Ban was passed by a consensus of 65 countries during an era noted for the proliferation of global free trade agreements (e.g., GATT, NAFTA, APEC etc.)).

⁴¹ See OECD, <https://www.oecd.org/about/> (last visited Feb. 23, 2020) (OECD is the Organization for Economic Cooperation and Development. It’s an association of 35 nations in Europe, the Americas, and the Pacific.).

⁴² Amendment to the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal, art. IV, Sep. 22, 1995, Doc. UNEP/CHW.3/35; Third Meeting of the Conference of the Parties to the Basel Convention on the Control of Transboundary Movements of Hazardous Waste and Their Disposal, *Decision Adopted by the Third Meeting of the Conference of the Parties to the Basel Convention*, ¶ 3, U.N. Doc UNEP/CHW.3/35 (Nov. 28, 1995).

⁴³ *What is the Ban Amendment?*, BASEL ACTION NETWORK, *supra* note 40.

the required number of supporting votes to enter into force.⁴⁴ Thus, although not enforced, the Basel Ban amendment is necessarily a part of the Convention and still open for ratification and enforcement by participating states.⁴⁵

V. APPLICATION OF THE BASEL CONVENTION ON END-OF-LIFE SHIPS

The Basel Convention imposes considerable restrictions on the cross-border movement of hazardous waste. Under the Basel COP decision regarding the Convention, an EOL ship is considered a hazardous waste.⁴⁶ Stakeholders have sought to ascertain whether the Convention applies to an EOL ship, and how far the Convention can restrict the movements of such toxic mobile waste making their last journey toward recycling facilities. As noted below, players worldwide in the shipping and ship recycling industries subscribe to one of two diametrically opposite opinions.

Groups associated with the ship recycling industry opine that the Basel Convention was designed exclusively to deal with shore-based hazardous goods and their respective, cross-border transport-related issues, and this international instrument of transboundary movement of hazardous waste is entirely out of step with the EOL ship recycling process.⁴⁷ It has also been argued that this international instrument has measurably failed to recognize the specific international character of maritime navigation and the peculiarities of ship-breaking activities.⁴⁸ On the other hand, stakeholders with no business ties to the ship breaking industry, such as environmental

⁴⁴ *Id.*

⁴⁵ U.N. Environmental Programme, *Overview*, *supra* note 2.

⁴⁶ U.N. Environmental Programme, *Report on the Conference of the Parties to the Basel Convention on the Control of Transboundary Movement of Hazardous Wastes and Their Disposal*, ¶ VII/26, U.N. Doc. UNEP/CHW.7/33 (Jan. 25, 2005) (deciding that an EOL ship may become waste as defined in art. 2 of the Basel Convention and simultaneously, it may be defined as a ship under other international rules).

⁴⁷ See Nikos Mikelis, *What Will 2018 Bring to the Ship Recycling Industry?*, THE MARITIME EXECUTIVE (Jan. 7, 2018), <https://www.maritime-executive.com/editorials/what-will-2018-bring-to-the-ship-recycling-industry#gs.bvoAHKA> (assessing that the Denmark accession to the HKC is an attempt to break away the jurisdiction of the Basel Convention). See also GMS Leadership, *IHS*, YOUTUBE (Sept. 6, 2018), https://www.youtube.com/watch?v=WgIQxIND36A&feature=emb_logo (interview with Dr. Nikos Mikelis claiming that the Basel Convention will lose its relevance for EOL ship movement once the Convention enters into force).

⁴⁸ Interview with Captain Anam Chowdhury, Advisor to the BSBA, MITI Enterprise, in Chittagong, Bangladesh (Aug. 5, 2016); Interview with Yasmin Sultana, Joint Secretary of the National Project Director, SENSREC Project, Ministry of Industry, Bangladesh (June 15, 2016).

non-governmental organizations (“NGOs”),⁴⁹ labor activists,⁵⁰ and other proponents of the Basel Convention, have tried to establish that EOL ships are hazardous waste under international law.⁵¹ Many of the prohibited items listed in the Basel Convention are adequately present on EOL ships.⁵² Moreover, this is the only international and binding instrument that is relevant to EOL ships’ movements at sea. Notably, one hundred and eighty-six countries are parties⁵³ to the Convention, making it one of the most widely ratified treaties to date.⁵⁴

It should be noted that currently the only comprehensive international convention regarding EOL ship recycling is the Hong Kong Convention 2009 (“HKC”),⁵⁵ which has not yet entered into force. As such, some argue that the Basel Convention will have continued relevance and will apply even after the HKC is entered into force.⁵⁶ Others argue that the Convention will lose its relevance to the HKC and would no longer apply to ship recycling.⁵⁷ Still others believe the Basel Convention will continue to be relevant at least for downstream management of ship breaking waste in recycling states. These debates have seriously pervaded the global ship recycling industry

⁴⁹ See *EU & Rest of the World*, NGO SHIPBREAKING PLATFORM (2018), <http://www.shipbreakingplatform.org/south-asian-laws-and-guideline/> (arguing that the Basel Convention must be given effect on ship recycling matters); see also Gopal Krishna, *Why India, Bangladesh and Pakistan Should Adhere to Basel Convention & Not Ratify Hong Kong Convention on Ship Breaking*, J. EARTH SCI. ECON. & J. 1, 2 (2013), available at <http://www.toxicwatch.org/2013/09/why-india-bangladesh-and-pakistan.html> (arguing toxic watch is categorical to maintain that Bangladesh, India and Pakistan must adhere to Basel Convention and avoid ratification of the HKC).

⁵⁰ Interview with Md. Shahin, Coordinator, Young Power in Social Action (YPSA), Chittagong, Bangladesh (Aug. 6, 2016).

⁵¹ Bangladesh Environmental Lawyers Association (BELA) v. Bangladesh, Writ Petition (Civil) No. 7260 [2008] Ucca ādālata bibhāga [High Court Division of the Supreme Court of Bangladesh] (15) (Bangl.) (maintaining that it will continue to stick to the Basel Convention on ship breaking matters).

⁵² *Id.* at 13.

⁵³ *Parties to the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal*, BASEL CONVENTION (May 5, 1992), <http://www.basel.int/Countries/StatusofRatifications/PartiesSignatories/tabid/4499/Default.aspx>.

⁵⁴ Noah M. Sachs, *Out of Sight, Out of Mind: Ratifying the Basel Convention on Transboundary Waste*, CTR. FOR PROGRESSIVE REFORM (May 1, 2012), <http://www.progressivereform.org/CPRBlog.cfm?idBlog=08A5B515-BA05-B72A-9AE04583A239DE21>.

⁵⁵ See generally Shreya Mishra, *Non-Entry into Force of the Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships, 2009: An Analysis from the Perspective of India, Pakistan and Bangladesh*, 2 J. INT’L MAR. SAFETY, ENVTL. AFF. & SHIPPING 22 (2018).

⁵⁶ GMS Leadership, *IHS*, *supra* note 47.

⁵⁷ Interview with Captain Anam Chowdhury, *supra* note 50; Interview with Yasmin Sultana, *supra* note 50.

with no concrete agreement on the issues, resulting in an anomaly in the ship recycling jurisprudence worldwide.

Nevertheless, the Basel Convention has been a dominant international instrument. It forms the basis of current ship recycling jurisprudence in all domestic courts across South Asia and the rest of the world in the absence of any dedicated, enforceable international legal instrument in this regard.⁵⁸

VI. THE BASEL CONVENTION AND END-OF-LIFE SHIPS

According to the Basel Convention, waste is hazardous if it falls within the category listed in Annex I and only if it shows any of the characteristics mentioned in Annex III⁵⁹ of the Convention—such as flammability, explosivity, toxicity, and eco-toxicity—or if the waste is defined as hazardous under national law.⁶⁰

The Convention defines transboundary movement as the movement of hazardous waste or other wastes from an area under the national jurisdiction of a state to or through a space under the national sovereignty of another country.⁶¹ As such, river or seaborne journeys and journeys by road, rail, or air are no different in this respect.⁶² Incidents where disposal takes place from one jurisdiction to another are invariably covered by this provision.⁶³ This also includes the situation when the transportation takes place within a single state territory, but the shipment involves touching a jurisdiction of another state.⁶⁴

The Convention deals with situations where the trans-frontier movement of hazardous waste creates additional risk for the country of

⁵⁸ BELA v. Bangladesh, Writ Petition (Civil) No. 7260 [2008] Ucca ādālata bibhāga [High Court Division of the Supreme Court of Bangladesh] (15) (Bangl.) at 15. *See also* Research Found. for Science Tech. and Nat. Res. Policy v. Union of India & ORS., (1995) 39 SCC 657, 2–4 (India) (confirming the Basel Convention undoubtedly effectuates the fundamental rights guaranteed under Article 1 of the Indian Constitution and establishing clear mandate upon the executive branch to take steps to conform Indian law to the Basel Technical Guidelines).

⁵⁹ Basel Convention, *supra* note 1, art. 1.1(a) (categorizing wastes as stream-wise and constituents-wise).

⁶⁰ *Id.* art. 1.1(b).

⁶¹ *Id.* art. 2.3.

⁶² *Id.* arts. 2.3, 2.9.

⁶³ *Id.* art. 2.3.

⁶⁴ Gudofsky, *supra* note 16, at 236.

disposal for lack of adequate facility or capability to handle those in an environmentally sound manner, causing damage to human health and that territory's environment. This protection extends to transit and coastal states, who are in danger of possible exposure to hazardous waste due to volume of movement across their territories and the associated risks involved in such shipments.⁶⁵ The Basel Convention parties are therefore obliged to reduce the creation of hazardous waste as much as possible considering their social, technical, and economic circumstances.⁶⁶ It is invariably incumbent upon the states to conduct a balancing exercise in these regards, but how this duty would be interpreted or discharged in a factual matrix is not precisely clear.

The state parties, on the other hand, are restricted from exporting hazardous waste to countries that have no adequate capacity to dispose of the waste in an environmentally sound manner and may jeopardize the country's environment and human health.⁶⁷ State parties need written prior informed consent ("PIC") before they ship any hazardous waste to the country of import where the waste can be potentially recycled or disposed safely.⁶⁸ There is a duty upon the exporters to inform all transit states involved in the shipment.⁶⁹ The pre-conditions to shipping are also essential. Either the exporting state meets the limitations (i.e., the state is themselves incapable of disposing of and recycling the waste at the point of generation due to financial and technical inability)⁷⁰ or the waste is required as raw material by an importing state for its recycling industries.⁷¹ The primary purpose is to ensure that the importing state can handle and dispose of the waste in an environmentally sound manner within its territories. This overriding obligation falls on the exporting nation and, per the Convention, may not under any circumstances be transferred to the countries of import or transit.⁷²

Onboard EOL ships, there exist many Convention-listed hazardous materials, many as integral parts of a vessel. These include asbestos, zinc,

⁶⁵ Basel Convention, *supra* note 1, art. 6.4.

⁶⁶ *Id.* art. 4.2(a).

⁶⁷ *Id.* arts. 4.8, 4.10.

⁶⁸ *Id.* arts. 6.1, 6.2.

⁶⁹ *Id.* arts. 6.4, 6.5(c).

⁷⁰ *Id.* art. 4.9(a).

⁷¹ *Id.* art. 4.9(b).

⁷² *Id.* art. 4.10.

lead oxide, arsenic chromates, tributyltin, glass-wool, PCB, PVC, and other high-grade toxic substances.⁷³ As soon as an owner decides to dispose of a ship, it becomes hazardous waste and falls under the Convention's jurisdiction,⁷⁴ regardless of whether the ship remains entirely seaworthy and navigable or not. Consequently, all the Basel restrictions promptly apply, including the PIC requirement. Obtaining written PIC is a problematic procedure mired with uncertainty: strict consent procedures must be observed and any violation renders the shipment illegal trafficking⁷⁵ and attracts criminal liability.⁷⁶ Further, all coastal states have just sixty days to consent unless they have chosen to waive the requirement.⁷⁷ An ocean-going EOL ship destined to be recycled must either wait at shore or at sea pending permission of each coastal state. Unlike a package of shore-based hazardous waste, sixty days' waiting per transit is wholly inconsistent with the reality of ocean-going ships—mostly for economic reasons.⁷⁸ Waiting for an indefinite period for permission to move to the recycling facility undisputedly is a significant financial burden to discharge for the international shipping communities.

Moreover, the required consent of each transit state may not be guaranteed. There may be more than a dozen transit states involved in a ship's last journey. Sometimes, the decision to sell a ship for recycling can be instantaneous, often taken only during a voyage, which makes it more critical to adjust this legally imposed hurdle, where each day demurrage at port or elsewhere with the ship's full running condition or under towage costs reaching \$30,000 USD or more per day.⁷⁹ For example, if an owner of a foreign ship decides to dispose of it after arrival at the port of Rangoon, Myanmar, and enters a contract with a recycler in Pakistan, it must wait for

⁷³ Samantha L Jones, *A Toxic Trade: Ship Breaking in China*, CHINA ENVTL. HEALTH PROJECT FACT SHEET (2007), https://www.wilsoncenter.org/sites/default/files/shipbreaking_feb1.pdf.

⁷⁴ U.N. Environmental Programme, *Report on the Conference of the Parties to the Basel Convention on the Control of Transboundary Movement of Hazardous Wastes and Their Disposal*, *supra* note 46.

⁷⁵ Basel Convention, *supra* note 1, art. 9.1.

⁷⁶ *See e.g.*, *Basel Convention*, CHEMEUROPE.COM (2017), https://www.chemeurope.com/en/encyclopedia/Basel_Convention.html (explaining the Convention did not provide any enforcement provision, leaving it upon the party to decide).

⁷⁷ Basel Convention, *supra* note 1, art. 6.4.

⁷⁸ PACIFIC BIN SHIPPING LIMITED, INTERIM REPORT 2017 at 8 (2017) (the aggregate overhead to keep a ship floating is around \$680 per day).

⁷⁹ Reuben Goossens, *SS Norway, ex SS France News & Updated Timeline*, SSMARITIME (2012), <http://www.ssmaritime.com/norway-timeline2.htm>.

permission from authorities in Bangladesh, India, and Sri-Lanka. As the ship has already been declared hazardous waste, its commercial operation will be restricted for practical reasons. There might also be situations where non-party transit states impose restrictions upon the passage of dilapidated EOL ships due to the high risk of pollution. A party transit state may also fail to respond in time, further restricting innocent passage on grounds of serious environmental pollution.⁸⁰ EOL ships may also be required to comply with other special rules as permitted by national law.

The application of the Basel Convention has therefore brought about a situation of turmoil in the EOL ship recycling industry. Green activists who endeavored to invoke the Convention's jurisdiction to inhibit EOL ships' last journey have not been successful in bringing a satisfactory claim in any domestic court. On the other hand, the shipping industry has provided steadfast resistance against the invocation of the Basel Convention over the EOL ships.⁸¹ The jurisprudence in this area remains unclear and unpredictable. The complex issues and confusing provisions in the Convention, including the distinctive characterization of EOL ships, have posed a notorious challenge. In a very negligible number of cases in leading ship recycling countries, an action to stop a ship's entry to the recycling facility has been successful. Nevertheless, there remains constant the threat of arrest of EOL ships anywhere in the world, even after the ship is beached at the recycling yard in a recycling state, leading to a turbulence in the business of recyclers irrespective of the outcome of legal challenges. This uncertainty and chaos related to the Basel Convention's application to EOL ships has predominantly led to the creation of intermediaries in the ship recycling marketplace called cash buyers.⁸² The cash buyers' intervention relieves shipowners from the vagaries of law by charging these fly-by-night entities with the hassles of delivering an EOL ship to a recycling country.

⁸⁰ United Nations Convention on the Law of the Sea art. 211.4, Dec. 10, 1982, 1833 U.N.T.S. 397 [hereinafter UNCLOS] (explaining a coastal state may for the prevention, reduction and control of marine pollution from foreign vessels require special rule for EOL ships to comply, for example, stringent regulations for ship using flag backlisted by the Paris MOU, Tokyo MOU etc.).

⁸¹ See David Schelly & Paul B. Stretesky, *An Analysis of the "Path of Least Resistance" Argument in Three Environmental Justice Success Cases*, 22 SOC'Y & NAT. RES. 369, 369 (2009).

⁸² Shashank Agrawal, *The Role of a Cash Buyer in Ship Recycling*, MARINE INSIGHT (Nov. 12, 2019), <https://www.marineinsight.com/careers-2/the-role-of-a-cash-buyer-in-ship-recycling/> (last visited Mar. 6, 2020) (cash buyers purchase vessels with 100% cash from ship owners and then sell the vessel to a recycler in any one of the ship-recycling countries).

In addition, the loose drafting of the Basel Convention's provisions has provided plenty of opportunities for contracting parties to manipulate the wording based on their needs and circumstances. Environmental activists often claim that hazardous waste typically follows the path of least resistance.⁸³ Wealthy developed nations are tempted to discharge or dispose of waste in underdeveloped and poorer nations for money because these nations may have an immediate need for the waste as raw materials.⁸⁴ For these poverty-stricken countries and people, the need to put food on the table is a daily necessity and comes first, before the benefit of a pollution free world, which is indeed a shared benefit but comes much later.⁸⁵ Hence a wholesome impartial judgment may not be expected from either party involved in hazardous waste transactions owing to their apparent conflicting interests. The degree of this conflict naturally varies based on the pressures each party is exposed to, either from the syndrome of the developed or the developing country as described above.

As a result, hazardous waste has been constantly moving from developed to developing countries—predominantly China, India, Pakistan, Bangladesh, Turkey, Vietnam, the Philippines, and many African states.⁸⁶ A Greenpeace report indicates that tons of hazardous waste from different metal scraps were continually dumped in China during 2005, and all the hazardous waste was recycled manually.⁸⁷ Containers filled with used electronic equipment were exported to the poor countries in Africa and Asia.⁸⁸ Some of this equipment was resold and the remains were dumped

⁸³ Robin Saha & Paul Mohai, *Historical Context and Hazardous Waste Facility Siting: Understanding Temporal Patterns in Michigan*, 52 SOC. PROBLEMS 618, 620 (2005).

⁸⁴ James Brooke, *Waste Dumpers Turning to West Africa*, N.Y. TIMES, July 17, 1988 at 1 (explaining that the government of Guinea-Bissau agreed in 1988 to receive donation of USD 600 million in exchange of accepting more than fifteen million tons of toxic waste. The amount was equal to four times of its Gross National Product.).

⁸⁵ *Why Environmental Quality is Poor in Developing Countries: A Primer*, ENERGY POLICY INST. AT THE UNIV. OF CHI. (May 26, 2016), <https://epic.uchicago.edu/news-events/news/why-environmental-quality-poor-developing-countries-primer>.

⁸⁶ Onyerikam, *supra* note 25, at 17.

⁸⁷ K. BRIGDEN, ET AL., RECYCLING OF ELECTRONIC WASTE IN CHINA AND INDIA: WORKPLACE AND ENVIRONMENTAL CONTAMINATION 3 (Greenpeace International, 2005).

⁸⁸ Adam Minter, *The Burning Truth Behind an E-Waste dump in Africa*, SMITHSONIAN.COM (Jan.13, 2016), <https://www.smithsonianmag.com/science-nature/burning-truth-behind-e-waste-dump-africa-180957597/>; see also *After Dump, What Happens To Electronic Waste?*, NAT'L PUB. RADIO (Dec. 21, 2010), <https://www.npr.org/2010/12/21/132204954/after-dump-what-happens-to-electronic-waste>.

directly in landfills,⁸⁹ while others were burnt, releasing dangerous substances into the environment.⁹⁰ These actions raise the question of whether these substantial dumping activities and direct landfilling can be called recycling at all?

The Basel Convention does not specify the threshold level of hazardous waste, the presence of which should attract the Convention's prohibitory jurisdiction.⁹¹ This means that any amount of hazardous waste, even negligible, may fall within the Convention's jurisdiction on hazardous waste. In practice, there is considerable inconsistency in the application of the Basel Convention on EOL ships because the range of interpretations of its provisions. For example, the use of the word "may" in Article 4(10) has placed in doubt an apparent mandatory obligation, leaving it to the parties to determine its requirements.⁹² According to Article 4(8), "each party shall require that hazardous wastes or other wastes, to be exported, are managed in an environmentally sound manner in the State of import or elsewhere."⁹³ This provision begs the question of whether the duty applies to importers as well. Under the Convention, hazardous wastes could be discharged elsewhere,⁹⁴ implying that there might be no importer in some scenarios. This assumes that the exporter is logically and fully responsible for taking care of the hazardous waste and ensuring it does not create a health hazard or environmental issue at the point of disposal. On balance, the overriding responsibility can be drawn from Article 4(10),⁹⁵ which imposes overall responsibility on the exporting state.

Further, all scrap ships, irrespective of type, contain Convention-listed hazardous waste substances in their inbuilt structure.⁹⁶ However, Article 1(1)(b) stipulates that hazardous wastes not defined per Annex I are to be

⁸⁹ Minter, *supra* note 89.

⁹⁰ *Id.*

⁹¹ See Evans, *supra* note 35, at 3.

⁹² LARRY M. EIG, CONG. RESEARCH SERV., RL 97589, STATUTORY INTERPRETATION: GENERAL PRINCIPLES AND RECENT TRENDS 10 (2014).

⁹³ Basel Convention, *supra* note 1, art. 4.8.

⁹⁴ *Id.*

⁹⁵ *Id.* art. 4.10 ("The obligation under this Convention of States in which hazardous wastes and other wastes are generated to require that those wastes are managed in an environmentally sound manner may not under any circumstances be transferred to the States of import or transit.").

⁹⁶ See Int'l Maritime Org., Shipbreaking: A Global Environmental, Health and Labor Challenge, Greenpeace Report for the IMO MEPC Forty-Fourth Session (2000).

defined by domestic law.⁹⁷ Even if an EOL ship falls under the Article 1.1(a) in one jurisdiction, it may not be considered hazardous waste by another jurisdiction.

A. Controversy of Legal Terminology Surrounding the Concept of Waste

The Basel Convention has used several legal terminologies, the meaning of which have been notoriously difficult for domestic courts to discover. The concepts are also subjective, creating considerable challenges for lawmakers and judiciaries around the world to adopt a standard view. For instance, whether a material is just waste or hazardous waste and what constitutes environmentally sound waste management. Domestic courts are left to decide these definitions and answer these questions created by the Convention.

Prejudiced by dubious legal terminology used in the Basel Convention and different vested interests, domestic authorities and courts have frequently succumbed to inconsistencies. The needs and circumstances of people in different parts of the world vary significantly. An object can be precious and valuable in one market but be worthless in another. For example, one EOL ship was considered hazardous waste in Denmark but not in India.⁹⁸ Even between developing countries the same ship can be considered hazardous waste.⁹⁹ In some instances, NGOs' powerful activism and increased media coverage have influenced a court's decision, rather than any criteria of law. In India, courts have excluded inbuilt structural materials, whatever their embedded characteristics, from the definition of hazardous waste under the Basel Convention.

The decisions of the Bangladeshi Supreme Court concerning ship recycling were also based on the Basel Convention, but for different reasons. In *MT Enterprise*, the court disagreed with the findings of a special committee formed by the Director General of Bangladesh's Department of Shipping. The Director maintained that the hazardous waste onboard the ship was part of the ship itself and the ship's ordinary operation.¹⁰⁰ The

⁹⁷ Basel Convention, *supra* note 1, arts. 1.1(b), 2.1, 3.1(e).

⁹⁸ See MICHAEL GALLEY, *SHIP BREAKING: HAZARDS AND LIABILITIES* 137–40 (Springer, 2014).

⁹⁹ *Id.*

¹⁰⁰ *BELA v. Bangladesh*, Writ Petition (Civil) No. 7260 at 2.

director argued that the hazardous waste did not meaningfully possess any Annex III characteristics so long as they were securely attached to the structure of the ship, and thereby did not pose a threat to human beings and the environment under ordinary conditions.¹⁰¹ The Bangladeshi Supreme Court rejected these arguments, reasoning that an EOL ship's Annex III characteristics may not necessarily threaten the ship's crew during normal operations, but they do threaten workers in the ship breaking industry, who work manually and are exposed to the materials firsthand.¹⁰² The threat of harmful exposure is greater when shipbreaking is carried out manually by unskilled laborers lacking sufficient personal protective equipment ("PPE") and using simple tools and techniques.

B. Exposure to Annex III Characteristics and the Basel Convention's Jurisdiction

In line with the above reasoning, whether EOL ships with their inbuilt structural contents are hazardous depends on the threat of exposure to dangerous Annex III-characteristic materials for people involved at recycling facilities. Understandably, the risk materializes after the recycling process begins, predominantly at the recycling facility. For the Basel Convention to apply, a ship's alleged hazardous waste characteristics must exist at the point of cross-border movement. This contrasts with the ruling of the Bangladeshi Supreme Court, which found an EOL ship becomes dangerous only when it is disturbed at the point of breaking and becomes hazardous to the environment and the people who handle the materials during dismantling.¹⁰³ This applies to asbestos, one of the most objectionable substances, which poses a threat only when disturbed by agitation.¹⁰⁴ Asbestos is not dangerous when it is fitted in household ceilings or inside the cofferdams or walls of ship accommodations.¹⁰⁵ The Basel Convention appears to be intended to apply to substances that are readily dangerous to

¹⁰¹ *Id.*

¹⁰² *Id.* at 13.

¹⁰³ *Id.* at 9.

¹⁰⁴ *Asbestos Exposure and Cancer Risk*, NAT'L. CANCER. INST., <https://www.cancer.gov/about-cancer/causes-prevention/risk/substances/asbestos/asbestos-fact-sheet> (last visited Mar. 3, 2020).

¹⁰⁵ *See When Asbestos is Dangerous?*, OREGON ST. UNI. ENVTL. HEALTH & SAFETY, <http://ehs.oregonstate.edu/asb-when>.

human health and the environment under natural circumstances and are in cross-border movement. In that sense, the hazardous waste definition for an EOL ship is fulfilled at the recycling facility only after the transboundary movement is over.

The Bangladeshi Supreme Court's findings on the relevant timing of the exposure poses another problematic question that calls attention to the very applicability of the Basel Convention to EOL ships. In other words, the problem is simply linked to the relevant timing of a ship's Annex III characteristics.¹⁰⁶ According to the Basel Convention, the relevant time should strictly be associated with EOL ship's transboundary movement. The Supreme Court in the instant WP 7260/2008¹⁰⁷ ignored this point and fully attempted to apply the Basel Convention to EOL ships in Bangladesh without exception. But, exposure to hazardous waste only occurs when workers take over a dead ship and attempt to tear it apart at a recycling facility, using predominantly manual labor without any protective gear. The extent to which inbuilt hazardous waste and the contribution of unskilled laborers with inadequate PPE contribute to the generation of risk must be evaluated further. As in the case of onboard crews, risk of exposure could equally be reduced at recycling facilities by applying advanced technology, protective gear, and adequate training—or possibly even removing the hazardous waste entirely using unmanned machinery, which may eliminate the risk of exposure entirely. In such a case, the EOL ship would not be considered hazardous waste according to the Supreme Court of Bangladesh, assuming the question is a legal test. Apparently, the answer should not solely depend on whether manned or unmanned work was used. So, it appears that the capacity of the country and their process of recycling may bear strongly on the question of whether an EOL ship is hazardous waste or not. This would again lead to a more severe inconsistency, without a doubt.

¹⁰⁶ Basel Convention, *supra* note 1, at Annex III (listing substances with Annex III characteristics of EOL ships, including explosives; flammable liquids; flammable solids; substances or wastes likely to spontaneously combust; substances or wastes which, in contact with water, emit flammable gases; oxidizing substances; organic peroxides; (acute) poisonous substances; infectious substances; corrosives; liberation of toxic gases in contact with air or water; (delayed or chronic) toxins; and eco-toxins).

¹⁰⁷ See generally *BELA v. Bangladesh*, Writ Petition (Civil) No. 7260 at 1 (explaining the writ petition filed by BELA challenging the decision of the Government of Bangladesh against the import of scrap ship in Bangladesh for breaking and recycling purposes without taking adequate protective measures and proper regard to the health and safety of workers in shipbreaking facilities and the coastal environment in shipbreaking region).

It is logical to argue that the Basel Convention has predicted a constant and operating threat from hazardous substances with Annex III characteristics. These characteristics must be classified as harmful both independently and in combination with other hazardous material or non-hazardous substance without any degree of intervention of human beings in the natural environment. Otherwise, a significant variance of interpretation is possible when applied to EOL ships.

C. Waste Status of EOL Ships in Bangladesh's Jurisdiction

The Basel Convention does not indicate the minimum content of hazardous substances that must be present to be objectionable.¹⁰⁸ The absence of clarification about the degree of threat, or the Annex III characteristics, has prompted courts to approve a questionable standard set by reputable international NGOs. Bangladesh's superior court relied on a Greenpeace list, among other organizations' lists, to determine whether a ship is indeed hazardous waste and should attract the Basel Convention, which would then require permission for its import into Bangladesh.¹⁰⁹

If, for any reason, identification of a specific EOL ship by Greenpeace is not possible, or if the NGO fails to list on its website as hazardous waste for any reason whatsoever, the difficulty of importing disappears, regardless of the amount of hazardous waste onboard.¹¹⁰ As a matter of law in Bangladesh, the hazardous waste status of an EOL ship depends sometimes on the said NGO reports without public accountability. If any ship is included on the Greenpeace list, even erroneously or fallaciously, it is then considered hazardous per Bangladesh's current domestic law. This seems to contribute to further uncertainty. This position of law may provide a foreign NGO with a scope of maneuvering the requirement of a sovereign nation and affect the interest of the recycling industry as well with no public accountability or opportunity to be challenged by the industry. On the other hand, in India, no NGO listing or influence seems to affect the hazardous character of an EOL ship.

¹⁰⁸ Evans, *supra* note 35, at 1 (explaining the impact of the ban and defining hazardous waste).

¹⁰⁹ BELA v. Bangladesh, Writ Petition (Civil) No. 7260 at 22.

¹¹⁰ Interview with Mohammad Ali Shahin, Bangladesh Coordinator, NGO Ship Breaking Platform, Chittagong, Bangladesh (Aug. 1, 2016).

VII. WASTE STATUS OF AN END-OF-LIFE SHIP UNDER BASEL'S JURISDICTION

These notable inconsistencies merit a closer analysis of how far the waste jurisdiction of the Basel Convention is adaptable to EOL ships by considering the very definitions of “waste” and “hazardous waste” as propounded in the convention and its underlying jurisprudence. According to the Convention, wastes are substances that are disposed of or are intended to be disposed of or are required to be disposed of by a provision of national law.¹¹¹

To be a hazardous waste under the Basel Convention, an EOL ship must first fall within the Convention's definition of waste. The convention provides a specific list of constituent materials,¹¹² but the definition of waste is predominantly connected to certain operations termed “disposal operations.”¹¹³ Annex IV of the Basel Convention mentions two exhaustive lists of disposal operations under Sections A and B. Items listed under Section A do not lead to any resource recovery, reclamation, or recycling operation, while items under Section B may lead to such beneficial retrieval. The character of each disposal operation can be carefully noted to assess the types of activities the convention intended to cover in order to helpfully comment if a recycling operation of EOL ship can sensibly be accommodated in the same line of reasoning.

The Basel Convention's lists of disposal operations are specific and exhaustive, and each one is coded with unique numbers from D1 to D15. Under the Section A list, there are fifteen specific operations recognized.¹¹⁴ These operations include landfill operations, biodegradations of liquid or sludgy discard in soil, deep injections, surface impoundments, specially-engineered landfills, and releases of material into bodies of water (except seas and oceans). The operations also include materials released into seas or oceans, including seabed insertions, biological treatments in the form of compounds and mixtures, and physio-chemical treatments resulting in the final compound or mixtures that are discarded by means of any of the above-mentioned procedures. The list further incorporates incinerations on land

¹¹¹ Basel Convention, *supra* note 1, art. 2.

¹¹² *Id.* at Annex I.

¹¹³ *Id.* at Annex IV.

¹¹⁴ *Id.*

and at sea, permanent storage, the blending or mixing prior to submission, repackaging prior to introduction of any processes, and storage pending any of the processes in Section A list.¹¹⁵ It is important to note that the disposal operations under list A are exhaustive. Additionally, it appears from the Section A list that all the disposal operations have specific but universal character. Each of the procedures deals with a single or compound liquid or solid substance or a mixture of such materials that can necessarily and readily undergo the mentioned procedures without further transformation.

On the other hand, the Section B list mentions different procedures that lead to the recycling or reclamation of useful materials. Section B includes operations that can recover fuel or energy, reclamation of solvents, reclamation of organic substances, recycling or reclamation of metals or metal compounds, and recycling or reclamation of other inorganic materials. Section B also incorporates the regeneration of acids, the recovery of components used for pollution abatement, the restoration of elements from catalysts, and the reuse of previously used oils. Further, land treatments that benefit agriculture or ecology, the use of residual materials from any of the above operations, exchanges of waste for submission to any of the processes above, and, lastly, any accumulation of materials for any of the above intended operations are also included in the list.¹¹⁶ Like the list in Section A, Section B's list is exhaustive and all the procedures are coded explicitly by a number from R1 to R13.

It is apparent that, unlike the list A operations, these categories of processes have a universal character of beneficial reuse, as opposed to outright disposal, having no commercial value attached to the procedure. A closer look reveals that, Section B also reflects a further characteristic representing a group of a single substance in bulk, a mixture of solid material in bulk, or a single liquid or mix of liquefied contents before the recycling or recovery operation actually begins. All undergo the recycling or recovery operations separately before being beneficially used. Each of the waste materials relates to a specific procedure identified by a unique code number as well. It is thus important to identify the significance of the Basel

¹¹⁵ *Id.*

¹¹⁶ *Id.*

Convention's coded & exhaustive list of A and B as mentioned above and their relations with EOL ships.

A. Is an EOL Ship in its Abridged Condition a Hazardous Waste?

EOL ship recycling generates various waste substances that may fall within most of the mentioned procedures identified in the unique codes above. It is very important to note that the materials undergoing such disposal operations are component parts of the ship, not the whole ship itself in its unabridged form. As per the approach of the Basel Convention, waste is attributed to a specific material that is undergoing one of the specified operations. So, attributing the title "waste" to different parts of the ship and maintaining the same claim for the whole ship as a one-piece material are two completely different things.

Ostensibly, a ship in its unabridged condition is not undergoing any of the coded and prescribed disposal procedures under the Basel Convention. However, the COP has already declared that a ship in one piece is per se hazardous waste.¹¹⁷ This invariably is a gross anomaly of interpretation of the standard set by the Basel Convention. This is one of the cruxes of the problem that the industry and the proponents of the Basel Convention have failed to consider. The list B procedures begin with a note that apparently creates a grand distinction between the Basel conception of waste and EOL ships. This note clarifies that the section B list encompasses all such operations concerning materials legally defined as, or considered to be, hazardous waste by domestic law of a contracting state, in default of which the said materials would have been destined for operations included in Section A.¹¹⁸ In other words, had these substances not possessed the benevolent recycling character, all of these materials would have been necessarily disposed outright following one of the fifteen operations on the exhaustive and coded list of the procedures mentioned explicitly in section A. Hence the designation as "hazardous waste" is a pre-condition to using the List B disposal operations for the material to be considered as waste under Basel Convention. This reasoning has allowed several nation states to

¹¹⁷ U.N. Environmental Programme, *Report on the Conference of the Parties to the Basel Convention on the Control of Transboundary Movement of Hazardous Wastes and Their Disposal*, *supra* note 46.

¹¹⁸ Basel Convention, *supra* note 1, at Annex IV (listing operations which may lead to resource recovery, recycling reclamation, direct re-use or alternative uses).

keep many beneficial hazardous wastes out of their domestic hazardous waste jurisdiction to avoid the stricture of the Basel Convention.¹¹⁹

To be listed under list B for disposal, each coded material must pass through one of the A-listed disposal operations in the absence of possessing a benevolent characteristic. It would be tremendously tricky to match which specific code is suitable for which material, such as a whole ship in one piece in its abridged condition. An EOL ship contains several substances that can be passed through one or more of the disposal procedures mentioned in list A, but that does not allow the whole ship to relate arbitrarily to a specific code. In fact, an EOL ship in its unabridged condition cannot be fitted in any of the prescribed codes under Annex IV of the Basel Convention. This is an essential categorization as current international law attributes the whole ship as hazardous waste and subjects it to the Basel Convention.

It also can be noted that the only relevant disposal operation in list B that may come a little closer to an EOL ship is code R4, which covers “*reclamation of metals and metal components.*”¹²⁰ But an EOL ship recycling does not solely lead to metals or metal compounds that cannot logically be fitted to only Code R4. Thus, arbitrarily categorizing EOL ships as a Code R4, reserved for metals or metal compounds, would be inexcusable. As a unit, the ocean-going ship is the most significant human-made moving object on the planet and consists of several thousand individual materials,¹²¹ including distinct types of machinery onboard, each of which is made of many complex and tangible materials. Arguably, many of those materials deserve to be separately coded in line with Annex IV and its jurisprudence.

Undeniably, the Basel Convention has used extensive definitions of waste and hazardous waste, but it does not make any sensible distinction

¹¹⁹ John Thomas Smith II, *The Challenges of Environmentally Sound and Efficient Regulation of Waste, The Need for Enhanced International Understanding*, 5 J. ENVTL. L. 91, 95–96 (1993) (explaining this line of interpretation has been followed by the United States who apparently sought the inclusion of the note quoted above in Basel to exclude from the reach of Basel convention, those recyclable secondary materials under their domestic regulation from the definition of hazardous waste in their local legislation).

¹²⁰ Basel Convention, *supra* note 1, at Annex IV.

¹²¹ Interview with Abdul Khaleque, Yard Manager, PHP Ship Breaking Ind. Ltd., at Chittagong, Bangladesh (Aug. 10–15, 2016); Interview with MA Hashem, Director, Mother Steel Limited, at Chittagong, Bangladesh (Aug. 10–15, 2016); Interview with Monjur Morshed, Owner, OWW Trading and Ship Breaking, at Chittagong, Bangladesh (Aug. 10–15, 2016).

between these two extremes, such as a categorical waste material—akin to total garbage—and a singularly beneficial recyclable waste.

The Basel Convention's far-reaching definition inhibits many beneficial recycling activities and raises stronger arguments about the conflict with long-established jurisdiction such as GATT, the North Atlantic Free Trade Agreement ("NAFTA"), World Trade Agreement and other EU treaties designed to promote free trade and remove the unnecessary barriers between international businesses.¹²² However, the scope of this article is not intended to go into the detail of these international trade jurisdictions.

VIII. THE UNDERLYING JURISPRUDENCE OF THE BASEL CONVENTION

The legal terminologies used in the Basel Convention, such as "waste," "hazardous waste," or "environmentally sound management," have been disputed around the world for their loose meanings.¹²³ A short discussion of this issue reveals that the Basel Convention has succumbed to the pre-existing disharmony and absenteeism in the common understanding of these terminologies in the field of waste management in the past. These definitions followed similar wording used in the EU framework directives in 1975.¹²⁴ Their impacts are alarming when applied to many beneficial recycling industries, of which EOL ship recycling logically should remain at the forefront.

In the European Union and the international forum, opinions vary sharply on the fundamental question of the definition of waste, hazardous waste, and environmentally sound management, and the appropriate scope of regulation of the recyclable secondary materials.

Environmental activists' arguments have always been that a ban is the only way to stop sham recycling.¹²⁵ This position has no alternative, as

¹²² Sheehan, *supra* note 34, ¶ 2.

¹²³ Puckett, *supra* note 20; Smith II, *supra* note 119, at 95.

¹²⁴ Smith II, *supra* note 119, at 95.

¹²⁵ See *Legitimate Hazardous Waste Recycling Versus Sham Recycling*, U.S. ENVTL. PROT. AGENCY (Nov. 26, 2019), <https://www.epa.gov/hw/legitimate-hazardous-waste-recycling-versus-sham-recycling> (finding that, as opposed to legitimate recycling, the sham recycling may include situations when a secondary material is ineffective or only marginally effective for the claimed use; used in excess of the amount necessary; or handled in a manner inconsistent with its use as a raw material or commercial product substitute).

various groups support the ban as more than reasonable.¹²⁶ Many feared that liberal exclusion of the recyclable materials from the strict control of waste management regimes encourages sham recycling, which is little more than outright disposal actions.¹²⁷ The degree of beneficial recovery might be too low to be accountable as a rational and sensible recyclable material deserving real protection and different treatment.¹²⁸ This has, in fact, been a real challenge for the international community to strike a fair balance between beneficial recycling and pure disposal operations.

On the other hand, the industry groups argue that the waste definition should exclude the recyclable materials destined for beneficial use.¹²⁹ The inclusion of the “recyclable materials” in the definition of waste has faced vigorous challenges in different parts of the world depending on various apparent linguistic corruptions. For example, the United States is one of the two biggest e-waste producers in the world¹³⁰ and most of the electric equipment, computers, home appliances, and smartphones in there are thrown out and never recycled,¹³¹ and almost all of that hazardous e-waste is exported to China, India, Pakistan, Vietnam, and other developing nations.¹³² On the other hand, the U.S. Department of State asserts that international movement of e-waste, including equipment for repair, refurbishment, or remanufacturing, does not amount to the movement of waste and is not impacted by the Basel Convention.¹³³ According to the U.S. State

¹²⁶ *BAN Ensures Ships Are Recycled Properly Instead of Being Dismantled on Beaches or Sunk in the Oceans*, BASEL ACTION NETWORK, (2015), <https://www.ban.org/green-ship-recycling> (maintaining that BAN aims to ensure that old ships are recycled responsibly, instead of exported to less developing countries, as outlawed by the Basel Ban).

¹²⁷ Smith II, *supra* note 119, at 93; *see also* Tom Kelly, *Toxic Exports: The International Waste Trade*, THE GREEN LEFT WEEKLY AUSTL. (Feb. 23, 1994), <https://www.greenleft.org.au/content/toxic-exports-international-waste-trade>.

¹²⁸ Jason Koebler, *A Shocking Amount of E-Waste Recycling is a Complete Sham*, VICE (2013), https://motherboard.vice.com/en_us/article/aeky44/much-of-americas-e-waste-recycling-is-a-sham.

¹²⁹ Smith II, *supra* note 119, at 94.

¹³⁰ *See* Kelly Dolan, *Garbage A Costly American Addiction*, FORBES (Apr. 13, 2012), <https://www.forbes.com/sites/kerryadolan/2012/04/13/garbage-a-costly-american-addiction/#19448e0c5b1c> (finding garbage is currently the largest export in the United States); Michael Casey, *United States, China Are Biggest Producers of E-Waste*, CBS NEWS (Apr. 20, 2015), <https://www.cbsnews.com/news/united-states-china-are-biggest-producers-of-e-waste/>.

¹³¹ Casey, *supra* note 131.

¹³² Basel Action, *supra* note **Error! Bookmark not defined.**

¹³³ U.S. DEP'T. OF STATE ARCHIVE, *supra* note 35; *See* Eric Hopson & Jim Puckett, *Scam Recycling E-Dumping on Asia by US Recyclers*, BASEL ACTION NETWORK (2016),

Department, this strategy hampers the beneficial recovery of used materials and the saving of energy-scarce resources and the reduction of the size of waste streams requiring difficult environmentally sound disposal.¹³⁴ The report of the Basel Action Network (“BAN”) also reveals that exporting those directly to Asia generates ten times more revenue than recycling domestically.¹³⁵ The only other option in the United States is domestic landfilling.¹³⁶

Despite tremendous pressures from different environmental activists to include all sorts of recyclable materials, irrespective of their beneficial character, the predominant legal position and jurisprudence developed in national states, particularly in northern and western developed nations, seems to favor giving a space to the benevolent recycling products to protect them from the stricture of overbearing waste regulation. In the United States, the Resources Conservation and Recovery Act (“RCRA”) requires federal regulation management of “solid waste,” which is “hazardous.”¹³⁷ The statute defines solid waste as “any garbage, refuse (from pollution control facility) and [any] other *discarded materials*”¹³⁸

This apparently simple definition has generated prolonged debate as to the meaning of “discarded materials.” The industry claims that the materials that are recycled are not discarded. The industry groups have challenged successive legislation of the U.S. Environmental Protection Agency (“EPA”) that have attempted to define recycled materials as waste. This has been usually countered by environmental activists. The struggle between industry versus environmental and labor activists has resulted in litigation and judicial decisions that led the EPA to take a balanced position between the approaches.¹³⁹

For control and management of hazardous wastes, and to make a clear distinction between the beneficial recycling and disposable waste, the EPA

recycling.com/images/BANReportTwo.pdf (reporting United States e-waste export is a full-fledged scam recycling).

¹³⁴ U.S. DEP’T. OF STATE ARCHIVE, *supra* note 35.

¹³⁵ Basel Action, *supra* note **Error! Bookmark not defined.**

¹³⁶ *Id.*

¹³⁷ Smith II, *supra* note 119, at 93.

¹³⁸ Resources Conversation and Recovery Act, 42 U.S.C. § 6903(27) (2014).

¹³⁹ Smith II, *supra* note 119, at 94.

adopted a complicated definition of waste that stressed two factors.¹⁴⁰ First, is the essential hazardous character of the material, and second, is the degree of reuse or recycling to which a substance is destined.¹⁴¹ The intensity of a material's hazardous character and the capability of its precise beneficial outcome seem to be the deciding factors. In other words, the degree of aggregate utility is the fundamental criteria isolating the recyclable from the pure waste regime.¹⁴² For instance, most industrial by-products, spent materials, and pollution control sludges that are reused in the industrial process from which they are generated are not regulated as wastes.¹⁴³ Also, on-site activities that may be necessary to reclaim such materials to make them reusable typically are not considered any form of waste management in the United States.¹⁴⁴ If a hazardous secondary material can be directly reused as a substitute for raw materials in an industrial process at a site other than its place of generation without having to undergo reclamation, then these materials are also not considered in as waste.¹⁴⁵ However, two types of reuse of hazardous secondary materials are always deemed to be under the waste management regime: fertilizer, which will be placed directly in the ground, and substances used as fuel or as fuel ingredient.¹⁴⁶

Attempts have been made by the legislators to give leeway to commercial interests regarding the recyclable materials, but this has not been an easy task given different international understandings, economic needs, standards-of-life issues, diversified vested interests, and conflicting demands of global stakeholders.

EU jurisprudence is also worth considering as the Basel Convention's current definition of waste is crafted from the existing jurisprudence of the European Community ("EC"). The member states of the EC faced similar difficulties in creating sensible and comprehensive waste definitions.¹⁴⁷

¹⁴⁰ *Id.*

¹⁴¹ *Id.*

¹⁴² *Id.*

¹⁴³ *Id.*

¹⁴⁴ *Id.*

¹⁴⁵ *Id.*

¹⁴⁶ *Id.*

¹⁴⁷ *Id.*

Ambiguities in the EC's 1975 Frame Work Directive on waste¹⁴⁸ led to a different national definition resulting commercial distraction.¹⁴⁹ The directive defines waste as any substance the holder of which "disposes of or requires [disposing] of under the provisions of the national law in force."¹⁵⁰ To make sense on the meaning of disposal, the directive, in turn, attempted to define it as all operations that waste undergoes, such as collection, storage, transport and treatment maintenance, and even transformation process necessary to reclaim or recycle.¹⁵¹ But, apparently the EU directive failed to make clear what is waste and what is disposal, as both definitions seem circular¹⁵² and lack independence. This does not help clarify whether there is any difference between traditional or conventional waste and recyclable waste. Attempts to make distinctions have not been successful in the European Union.

In 1993, the European Union attempted to remove the ambiguities of the earlier directive regarding the status of recyclables.¹⁵³ The new directive set forth a revised definition of waste as any substance or object falling within specific broad categories outlined in an annex, which the holder discards, or intends to discard or is required to discard.¹⁵⁴ The amended EC directive, however, did not define the meaning of discard.¹⁵⁵ The use of the word "discard" also proved problematic under U.S. law.¹⁵⁶ This is because environmentalists have maintained that all secondary materials, including spent materials, sludge, and by-products that may potentially be discarded, should be regulated as waste even when destined for beneficial recycling, whereas industry proponents contend that materials to be recycled are clearly not discarded materials.¹⁵⁷

It appears that there is a trend in the laws of different developed nations to liberate the recyclable materials from the stricture of the Basel

¹⁴⁸ *Id.* (the European Community ("EC") was an organization of European countries that existed until November 1993 when it was replaced by the European Union).

¹⁴⁹ *Id.*

¹⁵⁰ Council Directive 75/442 art. 1(a), 1975 O.J. (L 194) 1, 3 (EC).

¹⁵¹ *Id.* art. 1(3), at 3.

¹⁵² Smith II, *supra* note 119, at 94.

¹⁵³ *Id.*

¹⁵⁴ Council Directive 91/156, art. 1(a), 1991 O.J. (L 78) 32, 33 (EC).

¹⁵⁵ Smith II, *supra* note 119, at 95.

¹⁵⁶ *Id.*

¹⁵⁷ *Id.*

Convention by creating an exception for recycling materials. But keeping recycling materials entirely outside the Convention's jurisdiction would require a complex set of different regulations to avoid permitting recyclables to indirectly bypass environmental legislation. This approach has been favored by the United States.¹⁵⁸

Another approach is to define waste inclusively, irrespective of its recyclable capabilities, and then differentiate the regulatory treatment of general waste and recyclable waste. This approach seems to have been taken by the European Union.¹⁵⁹

The former approach is acceptable in the sense that it avoids useful secondary materials succumbing to the strict definition of waste, which has been prejudiced by the international waste regime.¹⁶⁰ Once a material is branded as waste, the community mobilizes to prevent its presence in their society.¹⁶¹ This subtle difference is rarely recognized by the ordinary citizens, who often create blanket opposition spreading a negative message to communities diminishing the prospect of profitable recycling operations.¹⁶² The Basel Convention's definition is a slipshod attempt that is overly broad in encompassing all types of wastes irrespective of their degree of recyclability or beneficial use under the same umbrella and runs counter to the opportunity to create a market for beneficial recycling. EOL ship recycling is clearly an example of this problem.

IX. HAZARDOUS WASTE OR HAZARDOUS MATERIALS?

In addition to the conflicting conceptions of waste, the international community has faced considerable difficulty in fixing the standard of the hazardous character of waste in a similar way. A waste management regime should be able to distinguish between waste and hazardous waste with reasonable certainty.¹⁶³ This distinction would allow governments to focus limited regulatory and enforcement resources on the types of waste management posing the greatest risk to human health and the

¹⁵⁸ *Id.* at 96.

¹⁵⁹ *Id.*

¹⁶⁰ *Id.*

¹⁶¹ *Id.*

¹⁶² *Id.*

¹⁶³ *Id.*

environment.¹⁶⁴ However, international communities' opinions diverge considerably on the meaning of the hazardous character of waste.

In the United States, hazardous waste must exhibit one or more of the following characteristics: ignitability, corrosivity, reactivity, or toxicity, or a characteristic that appears on a precise and extensive list published by the EPA.¹⁶⁵

This system provides the regulated community with clear-cut guidance as to which waste requires heightened management as hazardous waste. It also encourages maintaining uniformity among the states. However, it does not explain a threshold limit that would render a material hazardous. In the absence of such a threshold, any waste falling within a listed description must be managed as hazardous waste, even if it contains a negligible number of hazardous constituents and does not exhibit any of the four characteristics of "hazardous."¹⁶⁶

Apparently, lawmakers have failed to set the minimum content of hazard involved in specific waste substance. Two notable presumptions have perhaps worked behind this failure. The first is the so-called "mixture rule," by which a mixture of any amount of hazardous material typically makes the entire solid or liquid mixture hazardous.¹⁶⁷ The mixture rule implies an intermingling of two or more separate constituents that is not separable except by use of some sophisticated technological assistance. Another presumption underlying the system is the so-called "derived rule."¹⁶⁸ Under the derived rule, any residue of the treatment, storage, or disposal of a listed hazardous waste is also hazardous waste.¹⁶⁹

According to EPA requirements, any contaminated soil or groundwater that contains hazardous waste must also be managed under a

¹⁶⁴ *Id.*

¹⁶⁵ EPA Hazardous Waste Characteristics, 40 C.F.R. §§ 261.21–.24; 261.31–.33 (1992).

¹⁶⁶ Smith II, *supra* note 119, at 97.

¹⁶⁷ See 40 C.F.R. § 261.3(a)(2) (explaining that from the perspective of mixture theory and biological hazard, a few drops of a poisonous substance, such as toxic venom secreted by animals such as a king cobra in a drum of milk, is logically enough to convert the whole amount of such item deadly stuff for the human health).

¹⁶⁸ 40 C.F.R. §§ 261.3(c)(2)(i); 261.3(d)(2).

¹⁶⁹ *Id.*

hazardous waste regime, regardless of its actual dangerous content.¹⁷⁰ These presumptions imply a possibility of contamination of a non-hazardous material by recognized hazardous materials where the content of the hazardous element is irrelevant. Hence the process of decontamination implies removing the hazardous part of the mixture from the non-hazardous part. The concepts underlying the words such as “contamination” or “mixture” are therefore predominantly behind these presumptions.¹⁷¹ In an EOL ship, up to five percent of constituents are recognized hazardous waste or substances¹⁷² and the rest of the materials can be termed as nonhazardous waste. It would be inappropriate to accept that any hazardous waste found in an EOL ship can contaminate, coalesce, mix, or blend the entire nonhazardous part of it following the mixture rule or derived rule, or by adopting the concepts of contaminations discussed above.¹⁷³

Similarly, in the European Union, it was up to the nation states to ultimately define the meaning of the hazardous waste, and thus the definition varies significantly.¹⁷⁴ States attempted to create harmony in the definition of hazardous waste within the community by inserting a list of generic elements. If there was a constituent element with any non-hazardous waste, then the entire content could be termed as hazardous and would come under the purview of the hazardous waste regime.¹⁷⁵ It is important to note the use of generic terms. If any of the ingredients within that grouping or genus is present, the entire substance will be classified as hazardous waste.

The word “constituent” is also important. According to the plain meaning of the word, constituent denotes one part of a substance or combination.¹⁷⁶ More specifically, a constituent is a mixture of two or more

¹⁷⁰ Chem. Waste Mgmt., Inc v. U.S. E.P.A., 869 F.2d 1526, 1530 (D.C. Cir. 1989).

¹⁷¹ Smith II, *supra* note 119, at 97.

¹⁷² R. Scott Frey, *Breaking Ships in the World-System: An Analysis of Two Ship Breaking Capitals, Alang, India and Chittagong, Bangladesh* 11 (Ctr. for Study of Soc. Justice (CJSS), Working Paper No. 13, 2013).

¹⁷³ One of the most objectionable toxic elements is asbestos, which contaminates the environment and human body. Asbestos, along with all the other hazardous substances found in a ship, cannot sensibly be said to contaminate or infect the other parts of the ship, like its furniture, machinery, engines, etc. Obviously, the human force’s environment is not part of the EOL ship.

¹⁷⁴ Smith II, *supra* note 119, at 97.

¹⁷⁵ Directive 91/689, art. 1(4), 1991 O.J. (L 377) 20, 20.

¹⁷⁶ *Constituent*, CAMBRIDGE DICTIONARY, <https://dictionary.cambridge.org/dictionary/english/constituent> (last visited Jan. 25, 2020).

discrete physical or chemical substances that might combine into a new single substance where the hazardous and nonhazardous substances form the constituent part of it.¹⁷⁷ In addition, hazardous constituent parts of a substance, which are expressed in a generic term, must have hazardous or some harmful characteristics or property. Both the EC Directive¹⁷⁸ and the Basel Convention depend upon characteristics tests of “hazardous” to delimit the universe of hazardous waste. The effectiveness of these approaches will turn upon the practical functioning of the tests. Those that measure physical properties, e.g., flammability and corrosivity, should not present problems of implementation. However, tests of toxicity or “ecotoxicity” entail scientific and political judgment regarding acceptable risk.¹⁷⁹ It can be seen from the IMO SENSREC report (Environmental impact assessment by IMO and the MOI)¹⁸⁰ how difficult it has been to prove eco-toxicity resulting from EOL ship recycling in developing countries like Bangladesh because of a lack of scientific evidence, financial resources, and political will.¹⁸¹

The Basel Convention defines hazardous waste using waste stream and hazardous characteristics in much the same manner as the EC Directive. Indeed, the lists and features of both instruments share common antecedents. However, the EC Directives’ are somewhat more extensive, possibly

¹⁷⁷ *Id.*

¹⁷⁸ *Directive*, WIKIPEDIA (last visited Feb. 23, 2020) (explaining a directive is a legal instrument of the European Union which requires member states to achieve a particular result without dictating the means of achieving that result. It can be distinguished from regulations, which are self-executing and do not require any implementing measures).

¹⁷⁹ Smith II, *supra* note 119, at 98.

¹⁸⁰ See *Safe and Environmentally Sound Ship Recycling in Bangladesh- Phase I*, INT’L MAR. ORG., www.imo.org/en/OurWork/Environment/MajorProjects/Pages/Ship-recycling.aspx (“The International Maritime Organization (IMO) and the Government of the People's Republic of Bangladesh (GOB) represented by the Ministry of Industries (MOI) are jointly implementing a project entitled ‘Safe and Environmentally Sound Ship Recycling in Bangladesh – Phase I’ (in sort SENSREC Project – Bangladesh)”).

¹⁸¹ See Int’l Maritime Org. [IMO], TC 1514 (105) *Environmental Impact of Ship Recycling Industry in Bangladesh*, (Dec. 2016), <http://www.imo.org/en/OurWork/Environment/MajorProjects/Documents/Ship%20recycling/WP1b%20Environmental%20Impact%20Study.pdf> (opining that after over three decades of EOL ship recycling operation in massive scale on the sea beach, the condition of ecotoxicity is within an acceptable limit and may not be detrimental to the environment); see also Ishtiaque Ahmed, *Unravelling Socio-economic and Ecological Distribution Conflicts in Ship Breaking in Bangladesh for Addressing Negative Externalities in Law and Policy Making*, MINN. J. INT. LAW (forthcoming 2020).

reflecting advances in knowledge between adoption in 1989 and approval in 1991.¹⁸²

The EC's Hazardous Waste Directive embraced an approach similar to the one initially proposed in the United States in 1978, which held that materials appearing on hazardous waste lists would no longer be subject to hazardous waste standards once they ceased exhibiting any sign of hazardous characteristics. The EPA rejected that approach as erroneous, determining that scientifically acceptable protocols did not exist to measure more than the four characteristics ultimately prescribed in U.S. regulations.¹⁸³

The characteristic tests were initially developed for some specific products in mind; they may not function properly when applied to wastes that can appear in a diverse array of waste forms and matrix¹⁸⁴ and no example can be more classic and relevant to this argument than the case of EOL ships. It has been estimated that an EOL ship hosts over two thousand different materials in its carcass.¹⁸⁵

Presumably, the characteristics test also implies an exit or entry criteria where wastes included in the list may no longer be considered hazardous when their holder demonstrates that they no longer exhibit one of the fourteen properties. This suggests that if the characteristic is eliminated, then the waste will lose its "hazardous" title.¹⁸⁶

An exit or entry criteria implies a chemical action or reaction of substances. Hazardous materials can combine into other hazardous or non-hazardous materials and in compound form may lose the characteristic listed therein, rendering it as nonhazardous waste. Again, two hazardous substances can combine, and the resultant substance may lose either characteristic and become a nonhazardous and natural substance, like acid in an alkaline solution. These ideas work well with chemical substances that may change from one listed characteristic to another by a chemical reaction

¹⁸² Smith II, *supra* note 119, at 98.

¹⁸³ *Id.*

¹⁸⁴ *Id.*

¹⁸⁵ Interview with S. M. Jalal, Manager, Mother Steel Limited (Shipbreaking and Recycling), in Chittagong, Bangladesh (Aug. 10, 2016).

¹⁸⁶ Smith II, *supra* note 119, at 97.

with other chemical components. Therefore, comparing the whole ship with a single or compound chemical substance following the characteristic exit-entry or listing-delisting criteria is a gross oversight and undoubtedly an affront to common sense.

Even if the above-mentioned characteristic theory, mixture theory, or listing-delisting theories are applied forcefully, rationalization for incorporating an EOL ship under the Basel Convention's regime fails. Hazardous materials used onboard ocean-going vessels mostly remain in inbuilt structural parts, safe and secured. No recognized hazardous material present onboard in its inbuilt construction pose any immediate threat to the ship's crew and the environment while at sea. All hazardous materials when combined into other nonhazardous material to form a unit, a ship in one piece, arguably becomes neutral and does not pose any danger or show any hazardous character known in the generic list. An EOL ship in its fully operating condition, and until it reaches the recycling yard, usually maintains the same shape and composition as an ordinary ship in navigation for all practical and legal purposes.¹⁸⁷

This goes for asbestos, along with other hazardous contents, which is securely fitted in a ship's hull. Asbestos glass-wool used in an engine room or a ship's bulkhead as insulation materials and asbestos carried as cargo on board do not exhibit the same hazardous characteristic in the same way as discussed above. The characteristic tests in the European Union and United States do not apply well to the waste that can appear in the diverse array of forms and metrics.¹⁸⁸ As argued above, application of characteristic tests is notoriously doubtful when it comes to the case of an EOL ship that is ultimately a distinct and typical model of hazardous waste predicted by the international communities and in the Basel Convention. In an EOL ship, the hazardous shipboard substances do not show these hazardous characteristics even after it terminates its journey and is beached for recycling, but only when it is manually torn apart by external forces. It appears that a fundamental problem is attributable to the irresponsible method of breaking of ships, not simply the ship itself.

¹⁸⁷ Interview with A.K.M Fakhru Islam, Chief Engineer & Ship Surveyor, Department of Shipping, Government of Bangladesh, in Dhaka, Bangladesh (July 10, 2016).

¹⁸⁸ Smith II, *supra* note 119, at 98.

Hence, attributing the entire EOL ship as hazardous waste as soon as the owner decides to dispose of it is inconsistent with the very concept of the definition of hazardous waste and the jurisprudence on which the Basel Convention is based. The Convention's definitions of waste and hazardous waste are the common antecedents of the existing domestic, regional, and international laws. The Convention has used a *mutatis muntandis* clause¹⁸⁹ and does not attempt to overregulate the concept of waste and keep the definition naturalized or narrowed.¹⁹⁰ No comprehensive list of substances (but a list of a waste stream) has been provided to define what materials are wastes and subject to the Convention.¹⁹¹ The Convention relies on the list of materials and the characteristic tests to define hazardous waste. None of the concepts discussed above support the inclusion of an EOL ship under this regime. The decision of the COP of the Basel Convention to attach EOL ships to the regime is therefore seriously questionable. The COP's attachment under both waste and non-waste has posed severe practical problems to the global enforcement of international waste law of EOL ships.

The Basel conception of transboundary movement of hazardous waste is applicable to all modes of carriage, either by sea, land, or air.¹⁹² This premise also has posed a formidable challenge to EOL ship recycling. For all these channels, the land gateway has been used to invoke the jurisdiction over an objectionable hazardous shipment. When the hazardous waste acquires a mobile character, like a ship at sea, enforcement does not simply work. A ship, anywhere in the ocean can turn into a hazardous waste as soon as the owner forms an intention to dispose of it.¹⁹³ There is no mechanism in international law to read the mind of the shipowner while the ship is sailing at high sea. The Basel Convention does not make clear whose intention is relevant, whether it is the ship owner's, the shipmaster's, or the company's. Moreover, the Convention does not rely on flag state enforcement but a shore-based gateway (i.e., a land-based enforcement mechanism). The failure of the Danish government to apply the strict jurisdiction of the Basel

¹⁸⁹ *Mutatis Muntandis*, CAMBRIDGE DICTIONARY, <https://dictionary.cambridge.org/dictionary/english/mutatis-mutandis> (last visited Mar. 26, 2020) (defining *mutatis muntadis* as a clause used when comparing two or more things to convey that although changes will be necessary in order to take account of different situations, the basic point remains the same).

¹⁹⁰ Gudofsky, *supra* note 16, at 229.

¹⁹¹ Basel Convention, *supra* note 1, at Annex I.

¹⁹² *Id.* art. 12.9.

¹⁹³ *Id.* art. 2.1.

Convention over the fraudster ships Riky,¹⁹⁴ Rugen,¹⁹⁵ and Droning Margrethe¹⁹⁶ sufficiently demonstrates that the Convention is an ineffective weapon for regulating motorized waste like an EOL ship.

The Basel Convention has contributed to great anxiety and complacency for high-value recyclable hazardous waste like an EOL ship by entrusting the importing state, which may have potential conflicts of interest, with defining hazardous waste.¹⁹⁷ Imposing strict and prohibitory rules against a shipment of hazardous waste from developed to developing countries has been offset by giving states the right to define waste and hazardous waste through domestic legislation.¹⁹⁸ A complete lack of clarity as to the extent to which a state can define hazardous waste applicable to them, and how much they can add or delete from the existing list of the Convention or to what extent the states are bound by the list of hazardous waste, is unclear.

Many different experts have opinions on the matter. Dr. Harvey Alter, appearing on behalf of the U.S. Chamber of Commerce, argued before the U.S. Senate Committee on Foreign Relations that, in any case, the practical effect seems to include in the definition all substances or objects subject to the disposal operation of Annex IV unless national law explicitly exempts them or omits a specific material or object.¹⁹⁹

On the other hand, Katrina Kumar²⁰⁰ argued that a substance or object is not waste unless the party considers it as such.²⁰¹ The rationale of the argument being that if the Convention conclusively intended for all substances in a waste stream to be waste, then it would have states so in Article 2(1). The Convention instead left it up to the discretion of the party

¹⁹⁴ TONI GEORGE PUTHUCHERRIL, FROM SHIPBREAKING TO SUSTAINABLE SHIP RECYCLING: EVALUATION OF A LEGAL REGIME 77 (David Freestone ed., 2010).

¹⁹⁵ GALLEY, *supra* note 98, at 128.

¹⁹⁶ *Id.*

¹⁹⁷ Basel Convention *supra* note 1, art. 2.1.

¹⁹⁸ *Id.* art. 1.1(b).

¹⁹⁹ Gudofsky, *supra* note 16, at 231.

²⁰⁰ See Katharina Kummer, *The International Regulation of Transboundary Traffic in Hazardous Wastes: The 1989 Basel Convention*, 41 THE INT'L & COMP. L. QUARTERLY 530, 530 (1992) (explaining Katharina Kummer is the Executive Secretary of the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal United Nations Environment Programme).

²⁰¹ *Id.* at 543.

to define what substances under disposal operations will be covered by end users.²⁰² This argument turns the convention into something akin to a guideline.

The artistry of drafting definitions of waste in the Convention has created additional trouble in practice. Instead of giving straightforward meaning to the existing Annex III characteristic of a particular material under disposal operation, the drafters chose a reverse listing tactic, denoting waste as “those belong[ing] to [the] Annex I list of disposals unless they do not possess any of the characters mentioned in Annex IV.”²⁰³ The former straightforward interpretation incorporates an idea of waste substance, whereas the Annex III characteristics may be present as a trivial part to fulfill the definition of waste. The later and contrary interpretation necessarily demands the presence of Annex III characteristic as the predominant character of such waste. This argument further nullifies the possibility of inclusion of an EOL ship as waste, as EOL ships do not exhibit such characteristics in an overtly predominant fashion when intact.²⁰⁴

X. HAZARDOUS WASTE AND DANGEROUS GOODS

Furthermore, the Annex III characteristics seem to be the decisive criteria of Basel hazardous waste. Each of these characteristics are coded with a unique number from H1 to H13²⁰⁵ against the UN class as per the UN Recommendations on the Transport of Dangerous Goods.²⁰⁶ The UN Recommendations on the Transport of Dangerous Goods are found in the UN Model Regulations²⁰⁷ adopted by the Committee of Experts on the Transport of Dangerous Goods of the United Nations Economic and Social Council.²⁰⁸ They cover the transport of dangerous goods by all methods except bulk transport of dangerous goods in ocean-going ships, inland

²⁰² Basel Convention, *supra* note 1, arts. 1.1(b), 2.1.

²⁰³ *Id.* art. 1.1(a).

²⁰⁴ *See id.* at Annex III (explaining that it is senseless to say that an EOL ship is itself an explosive, a flammable liquid, a flammable solid, or oxygen peroxide or poisonous corrosive, toxic, infectious etc.).

²⁰⁵ *Id.*

²⁰⁶ *Id.* *See also* U.N. Committee on the Transportation of Dangerous Goods, *Recommendations on the Transportation of Dangerous Goods*, U.N. Doc. ST/SG/AC.10/1Rev.5 (Vol. 1), 53 (2009).

²⁰⁷ *Recommendations on the Transportation of Dangerous Goods*, *supra* note 206, at 53.

²⁰⁸ *Id.* at iii.

navigation, or tanker vessels.²⁰⁹ They are model regulations and non-mandatory guidelines,²¹⁰ but have gained broad international acceptance and formed the basis of several international agreements and many national laws. Dangerous goods are also “hazardous materials which are mostly chemical substance[s].”²¹¹ The transport hazards are grouped into nine classes, which can be subdivided into divisions and packing groups. The dangerous goods are assigned a unique four digit UN code number,²¹² which identifies them internationally.

It appears that the Basel Convention has followed this UN guideline and the substances that are not designed to cover the subject of manufacture, use, or disposal, but only for carriage. The recommendation on carriage logically covers the transport risk when goods are carried as cargo, including loading and discharging storage and their associated operations. An EOL ship is not built predominantly with chemical components or other articles mentioned as dangerous goods in bulk amount. The rationale behind the carriage of dangerous goods sits inappropriately with the concept of EOL ships as these ships are not packaged as goods and not intended to be carried as cargo by sea. When an EOL ship approaches the recycling yard, it does not usually pose any danger over and above the threat posed by any other operating ship at sea.

XI. DIFFICULTY IN ALLOCATING RESPONSIBILITY

As indicated above, in addition to definitional issues, the Basel Convention is mired with the problem of the allotment of volatile obligations upon different stakeholders. Five natural legal persons have been identified in the Basel Convention for allocation of duties and responsibilities in the cross-border shipment of hazardous waste matters. They are the generator, exporter, carrier, importer, and disposer of hazardous waste.²¹³ The

²⁰⁹ *About the Recommendations, UN Recommendations on the Transport of Dangerous Goods – Model Regulations Nature, Purpose and Significance of the Recommendations*, U.N. ECON. COMM’N FOR EUR., http://www.unece.org/trans/danger/publi/unrec/rev13/13nature_e.html (last visited Mar. 8, 2020).

²¹⁰ *Id.*

²¹¹ U.N. Committee on the Transportation of Dangerous Goods, *Recommendations on the Transportation of Dangerous Goods*, *supra* note 200, at 184 (listing trinitrotoluene (“TNT”), nitroglycerin, mixtures such as dynamite and gunpowder, or manufactured articles, such as ammunition and fireworks).

²¹² *Id.*

²¹³ Basel Convention *supra* note 1, arts. 2.15–.19.

responsibilities involved in a transaction of shipment cannot practically be isolated in watertight conditions. However, it is apparent that the duty to ensure environmentally sound management of hazardous wastes lies with the state of export.²¹⁴ The obligation may not be transferred to the importing or coastal state or transit state under any circumstance.²¹⁵ It is therefore clear that the Convention has imposed upon the exporter a demanding obligation.²¹⁶ The exporter must ensure that the importer has sufficient capacity to deal with the hazardous waste in an environmentally sound manner.²¹⁷ Exporters also must obtain written PIC before shipping hazardous waste.²¹⁸ Moreover, exporters must reimport the load if the waste disposal cannot be performed in an environmentally sound manner and no other suitable facility is available in the importing state.²¹⁹ However, as mentioned earlier, the use of the word “may” in another provision instead of “shall” has created confusion about this requirement.²²⁰

On the other hand, importers have comparatively fewer obligations. They are obligated to ensure that hazardous materials cannot be imported from a non-party and must abstain from importing if they have reason to believe that the hazardous materials are unlikely to be managed in an environmentally sound manner within their territories.²²¹ If any party wishes to prohibit the importation of hazardous wastes, it must make clear and transmit information.²²² However, all parties must prohibit a shipment if it’s not permitted by the importer.²²³ It appears that if an importer consents to the transaction, for all intents and purposes, the load is likely to be cleared by all parties according to the wording of the Convention. How the conflict of interest of the importing state would be addressed here is unclear.

Again, it is also unclear from where the incentive of the coastal states to stop a shipment of hazardous waste arises. Both the exporter and the

²¹⁴ *Id.* arts. 4.2, 4.10.

²¹⁵ *Id.* art. 4.10.

²¹⁶ Gudofsky, *supra* note 16, at 254.

²¹⁷ Basel Convention, *supra* note 1, art. 4.10.

²¹⁸ *Id.* art. 6.

²¹⁹ *Id.* art. 9.2(a).

²²⁰ *Id.* art. 4.10.

²²¹ *Id.* art. 4.8.

²²² *Id.* art. 13.

²²³ *Id.* arts. 4.1, 4.2.

importer may have a conflict of interest in applying the rule in a flexible manner. Such interests can affect the domestic definitions of waste, making the other party to the transaction helpless.

Finally, the exporting state has many difficulties in enforcing the obligations when the hazardous waste is a mobile device like an EOL ship. There is a pervasive problem in deciding who the exporting state for an EOL ship is. The port of first discharge may an exporting state, but the Convention does not contemplate the flag state or its role. When the ship is already at sea, the flag state could be attributed responsibility. In all cases, there is the further problem in taking the ship back to its port of origin for decontamination, a requirement of the Convention.²²⁴ The ship may be out of jurisdiction of exporting states by the time the trans-frontier violation is revealed. The flag state's intervention would not help as it may not have the capacity to either decontaminate the ship or take it directly to its territorial jurisdiction after it is rejected by an importing state for being an illegal traffic. In fact, flag states involved in taking ships to graveyards are mostly fragile and cash-strapped states. Imposing jurisdiction upon ship owners is also challenging, as a ship can carry a flag of a state of which the owner may not have any genuine connection.²²⁵ Again, the original owner may remain anonymous under multiple layers of ownership.²²⁶ Hence, invoking jurisdiction over the actual owner of the ship would be a notoriously daunting task. By all practical means, these stringent duties of the Basel Convention upon the flag state are inconsistent with the international doctrine of Flag of Convenience. Many countries offer EOL ships a short-term package that offers short-lived registration with automatic deregistration within three months.²²⁷ If any issues arise about turning the ship back, the vessel may be rendered flagless. Any change of flag

²²⁴ *Id.* art. 9.2(a).

²²⁵ See *Briefing Paper of the NGO Shipbreaking Platform on What a Difference a Flag Makes*, at 7–8 (Apr. 2015).

²²⁶ See Priyanka Ann Saini, *Flags of Convenience – Advantages, Disadvantages & Impact on Seafarers*, SEA NEWS (Oct. 27, 2017), <https://seanews.co.uk/features/flags-of-convenience-advantages-disadvantages-impact-on-seafarers/> (explaining that under the Flag State Rule, companies may legally opt for Flags of Convenience (FOC) for many reasons including keeping the beneficial ownership of the ship anonymous).

²²⁷ *Briefing Paper of the NGO Shipbreaking Platform on What a Difference a Flag Makes*, *supra* note 225, at 16.

subsequently will not solve the problem either because the incoming flag state cannot be considered the exporting state under any circumstance.

XII. CONCLUSION

Despite the being touted as a stricter regime on the transboundary movement of hazardous waste, the Basel Convention fails to fulfill its intended commitment to regulating shipments of hazardous waste from developed to developing countries when applied to EOL ships. Environmental activists relying on the Basel Convention in their domestic courts have had little success using this legal instrument to prevent entry of EOL ships into recycling states. In Bangladesh and its neighboring countries, the Convention is the only weapon to fight scrupulous recycling yard owners importing EOL ships for breaking. Similarly, the Convention is also used in developed countries, more particularly in Europe,²²⁸ to arrest EOL ships before they are exported. Outside of a temporary restraining order against an EOL ship's entry, there appears to be little hope to curbing the recycling industry's use of this legal tactic. However, India and Bangladesh have had indirect success in formulating domestic ship recycling regulations based on an application of the Basel Convention. Petitions before their courts seeking to direct the strict application of the Convention's provisions have resulted in few substantive outcomes. Several contempt proceedings have been filed before India and Bangladesh's Supreme Courts against their respective government's failure to comply with the court's directions.²²⁹ These contempt proceedings have been unsuccessful in all respects except creating a backlog of cases before the Supreme Court.²³⁰

It is apparent that, despite the very impressive appeal of this instrument to the green activists and "off the beach" campaigners, its practical implications upon EOL ships have been almost nil. Therefore, the

²²⁸ Regulation 1257/2013 of the European Parliament and of the Council of the European Union of 20 November 2013 on Ship Recycling and Amending Regulation (EC) No. 1013/2006 and Directive 2009/16/EC (explaining the regulation is designed to a great extent to give effect to the provisions of the Basel Convention in European Union).

²²⁹ Interview with Advocate Rizwana Hasan, Chief Executive Officer, Bangladesh Environmental Lawyers Association, in Dhaka, Bangladesh (Aug. 5, 2016).

²³⁰ *Id.* See generally *BELA v. Bangladesh*, Writ Petition (Civil) No. 7260.

status of the Basel Convention's application to EOL ships can safely be described, metaphorically, as "a tiger without teeth."

