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NORMS AND CHALLENGES IN THE GLOBAL MOVEMENT OF E-WASTE

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ABSTRACT

The transboundary movement of electronic waste (*hereinafter* referred to as 'e-waste') has emerged as a significant global environmental and regulatory challenge. This paper critically examines international legal frameworks governing e-waste movement, focusing primarily on movements from developed to developing nations. It briefly highlights India as an illustrative example of the broader impacts faced by developing countries. The study analyzes key international regulations, particularly the Basel Convention, along with relevant regional agreements such as the Bamako and Waigani Conventions. The paper highlights how industrialized nations often evade strict domestic regulations by exporting waste under the guise of recycling or repair, shifting environmental burdens disproportionately onto economically weaker nations. Additionally, it addresses limitations in existing international mechanisms in curbing illegal e-waste trafficking and the associated enforcement challenges. By discussing loopholes in current legal frameworks—such as the "repairable loopholes"—the study emphasizes the need for stronger enforcement, enhanced international cooperation, and stringent compliance mechanisms to mitigate environmental injustice.

Keywords: Land restoration; Environmental security; Ecological rehabilitation; Humanitarian demining; Sustainable development; Legal mechanisms

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1. INTRODUCTION

E-waste is rapidly becoming a global crisis due to unsustainable practices worldwide. As the fastest-growing waste stream, e-waste production reached a record 62 million tonnes (Mt) in 2022, an 82% increase from 2010, and is projected to rise another 32%, reaching 82 million tonnes by 2030.[1] Reports indicate that up to 90% of e-waste from developed countries is illegally traded and dumped in developing nations, where waste management costs are significantly lower.[2] Often disguised as "reusable" equipment or "donations", e-waste exports burden developing nations, which already struggle with domestic e-waste growth, weak enforcement, and inadequate disposal infrastructure.[3] Due to the inclusion of both precious and hazardous metals, e-waste is an extremely complicated kind of waste. Because both types of metals are hazardous and can harm the environment if not handled properly, dealing with e-waste in an environmentally friendly manner is accordingly necessary. The substantial danger that e-waste poses to both the environment and the realization of human rights has been emphasised in a number of publications. E-waste is a significant problem since it may be hazardous and dangerous, contaminating the environment, putting people at risk of illness, and infringing on their human rights. Environmentally, mismanaged e-waste disposal results in hazardous chemicals (such as mercury, lead, and cadmium) contaminating soil and water, leading to irreversible ecological degradation.[4] For instance, in Agbogbloshie, Ghana, improper e-waste recycling has led to severe pollution of water and soil, causing widespread health problems among local populations.[5]

According to the studies, these transboundary movements of e-waste can take place in different ways for different reasons - from developed to developed, developing to developing, and developing to developed nations. However, the study's current focus is restricted to movements from developed to developing nations.[6] This paper also explores the logical

1 Baldé, C.P., Forti, V., et al., "The Global E-waste Monitor 2024", (2024) International Telecommunication Union (ITU), United Nations Institute for Training and Research (UNITAR), Bonn/Geneva.

2 Nichols, W., "Up to 90% of world's electronic waste is illegally dumped, says UN", (2015) *The Guardian*.

3 Walker, A., "India becoming the 'world's dumping ground' for e-waste", *Australian National university Newsroom*, 24 August, 2016, <http://www.anu.edu.au/news/all-news/india-becoming-the- %E2%80%98world%E2%80%99s-dumping-ground%E2%80%99-for-e-waste> accessed on 2 February 2025.

4 Ranganathan, V., "The Electronic Menace: Why E-waste is a Major Concern Today", *Entrepreneur* (December, 2018), <https://www.entrepreneur.com/article/324789> accessed on 9 March 2025); Yeung, P., "The Toxic Effects of Electronic Waste in Accra, Ghana" *CityLab*, 29 May, 2019, <https://www.citylab.com/environment/2019/05/used-electronics-e-waste-landfill-ghana-toxic-technology/590341/> accessed on 8 April 2025.

5 Huang, J., Nkrumah, P.N., *et al.*, "E-waste disposal effects on the aquatic environment: Accra, Ghana", (2014) 229 Reviews of Environmental Contamination and Toxicology 19-34.

6 Not all waste moves from developed to developing regions "in a linear way," as waste trade clusters depend on commercial routes, reverse logistics, geographic proximity or trade

explanations for such cross-border movement of e-waste, which prompts waste producers in affluent nations to look for less expensive legal and illicit disposal options overseas, particularly in developing areas.[7] Despite recognition of these complexities, significant research gaps remain, particularly regarding critical evaluations of international regulatory effectiveness and enforcement weaknesses associated with the Basel Convention and related frameworks. The paper briefly provides an account of the past incidents and cases of all kinds of transboundary movements of hazardous waste, which establishes a link between the transboundary movements and the issue of environmental justice. Environmental justice is a principle that asserts that all people and communities have the right to equal environmental protection and the equitable distribution of environmental benefits and burdens. In the context of transboundary movements of e-waste, several fundamental principles of environmental justice are implicated, notably the principles of intergenerational equity, polluter pays, precautionary principle, and common but differentiated responsibilities (CBDR).

When developed countries export hazardous e-waste to developing countries with weaker environmental standards, they disproportionately shift environmental risks and burdens onto vulnerable communities that lack the infrastructure, resources, or regulatory frameworks to manage such waste sustainably.[8] This unequal burden distribution violates these core principles by perpetuating global inequalities and environmental harm in less affluent nations. The paper argues that transboundary e-waste movements allow developed countries to shift their environmental burdens to developing nations, violating the principle of environmental justice by unfairly transferring environmental costs.[9]

This paper first provides a historical overview and conceptualizes transboundary e-waste movement. It then critically examines international regulations and enforcement gaps, concluding with suggestions for stronger governance and compliance mechanisms.

2. TRACING THE ORIGINS

As industrialized nations faced growing volumes of hazardous waste and stricter environmental regulations in the 1980s, disposal costs rose sharply. This, coupled with the "Not in My Backyard" (NIMBY) attitude, led

agreements. See Pacini, H. and Yeoh, T.N., "Success of The Circular Economy Hinges on Better Governance of 'Waste Trade'", UNCTAD, 5 February, 2021, <https://unctad.org/news/success-circular-economy-hinges-better-governance-waste-trade> accessed on 21 January 2025.

7 Okaru, V.O., "The Basel Convention: Controlling the Movement of Hazardous Wastes to Developing Countries", (1993) 4 (2) *Fordham Environmental Law Report* 137-165.

8 Abalansa, S., Mahrad, B.E., Icely, J., and Newton, A., "Electronic Waste, an Environmental Problem Exported to Developing Countries: The Good, The Bad and the Ugly", (2021) 13(9) *Sustainability* 5302.

9 Dawood, S. and Azhar, A., "Trash Trade and Environmental Regulations: An Assessment", (2021)8 *Lentera Hukum* 347.

these countries to seek cheaper disposal options.[10] Consequently, a wave of "toxic traders" emerged, exporting hazardous waste to developing countries with weaker regulations and lower disposal costs. The largest waste exporters in the world are the European Union (*hereinafter* referred to as 'EU') and North America, whereas the largest waste importers are Africa and Asia.[11] A few of the noted incidents include the incidents of *Love Canal*,[12] the *Khian Sea incident* of 1986[13], the *Koko dumping* of 1988,[14] etc. This practice persisted until public pressure and media exposure in the 1980s and 1990s brought global attention to hazardous waste dumping in developing countries. These revelations led to the creation of international and European regulatory frameworks to control the transboundary movement of e-waste.

The Organisation for Economic Co-operation and Development (*hereinafter* referred to as 'OECD') was the first international organization to take up the problem of hazardous waste. Between 1974 and 1986, the OECD took key steps toward regulating hazardous waste.[15] It formed a Special Waste Management Policy Group in 1974 and adopted a Comprehensive Waste Management Policy in 1976.[16] By 1984, it introduced a notification system for transboundary hazardous waste movements, and in 1986, adopted a stricter resolution requiring the importing country's consent and proper disposal facilities for such waste.[17]

The OECD's trends were followed by the UN's regulatory efforts. UNEP created a working group in 1984, and it developed and endorsed the "Cairo Guidelines and Principles for the Environmentally Sound Management of Hazardous Wastes"[18] in 1987. The "Basel Convention" negotiations were perhaps the first significant international negotiations in which developing nations demanded far stricter environmental legislation than did affluent nations.[19] By regulating rather than outlawing trading in hazardous waste, the convention was able to reconcile these two opposing viewpoints.

These resulted in the "Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal"

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10 Kummer, K., *International Management of Hazardous Waste: The Basel Convention and Related Legal Rules* 6 (Oxford University Press, 1995). According to a study carried out in the late 1980s, the average disposal costs for one ton of hazardous wastes in Africa was between US $2.50 and US $50, with equivalent costs in industrialized nations ranging from US $100 to US $2,000.

11 Mulder, N., *et al.*, "International Trade and the Circular Economy in Latin America and the Caribbean", (2021) Inclusive and Sustainable Industrial Development Working Paper Series ECLAC-UNIDO, Vienna.

12 Kleiman, J., "Love Canal: A Brief History", <https://www.geneseo.edu/history/love_canal_history> accessed on 19 January, 2025.

13 Müller, S. M., *The Toxic Ship: The Voyage of the Khian Sea and the Global Waste Trade* (Washington: University of Washington Press, 2023).

14 <https://pdf.usaid.gov/pdf_docs/PBAAH051.pdf> accessed on 19 January, 2025.

15 OECD Council Recommendation C (76) 155.

16 OECD Council Decision and Recommendation C (83) 180 (Final).

17 OECD Council Decision and Recommendation C (86) 64 (Final).

18 UNEP Environmental Law Guidelines and Principles No. 8, 1987.

19 Brenton, T., *The Evolution of International Environmental Politics* 131 (London, Royal Institute of International Affairs, Earthscan Publication, 1994).

(*hereinafter* referred to as 'Basel Convention') being adopted on March 21, 1989. The Convention came into force on May 5, 1992 and, as of January 13, 2013, there are 190 Parties to the Convention.[20] The Basel Convention marked the first comprehensive global effort to regulate the transboundary movement and disposal of hazardous waste. It led to several regional and multilateral agreements and emphasized international cooperation, recognizing shared environmental responsibility. It remains the most restrictive international framework on hazardous waste exports to date.

The Basel Convention aimed to prevent "toxic colonialism," the practice of using poor nations as dumping grounds for the rest of the world's hazardous waste. The Basel Convention is primarily based on the UNEP's Cairo Guidelines, with several of its provisions also influenced by the OECD Agreement on Trans-frontier Movement of Hazardous Waste and relevant EU directives.[21]

3. THEORISING 'TRANSBOUNDARY MOVEMENT OF E-WASTE'

The term "transboundary movement of e-waste" describes the cross-border transportation of hazardous or non-hazardous e-waste from one nation to another for the purpose of disposal, recycling, or recovery. This may happen between nations with shared borders or nations separated by seas. Transboundary e-waste movement may have a serious negative effect on the ecology and health of the receiving nation, especially if the e-waste is not adequately handled. This may include possible health effects on nearby populations as well as pollution of the land, water, and air. This phenomenon has been considered a form of relocation-diffusion of pollution. This kind of trade in waste is usually considered as pollution transfer and hence results in environmental injustice.[22]

While the Basel Convention addresses the transboundary movements of hazardous wastes broadly, it does not explicitly or separately regulate 'e-waste' as a distinct, independent category. Instead, it includes e-waste implicitly within its broader hazardous waste categories under Annexes I, III, VIII, and IX.[23] According to the Basel Convention, hazardous waste is categorised according to the chemicals that display a hazardous feature (such as ecotoxicity). As a result, the Convention does not categorise keyboards as non-hazardous and computers as hazardous. Instead, it divides wastes into

[20] Parties to the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, <http://www.basel.int/?tabid=4499> accessed on 19 January, 2025.

[21] EU Directive on the supervision and control within the European Community of the trans-frontier shipment of hazardous waste, 84/631/EEC, 6 December, 1984. This directive has been amended by Directive 85/469/EEC, Directive 86/279/EEC and Directive 87/112/EEC.

[22] Yang, S., "Trade for the Environment: Transboundary Hazardous Waste Movements after the Basel Convention", (2020) 37 (5) *Review of Policy Research*.

[23] In 2022, the 15th COP-15 to the Basel Convention adopted significant amendments to Annexes I, III, VIII, and IX, introducing clearer definitions and regulatory measures for the categorization, transboundary movement, and environmentally sound management of e-waste. <https://shorturl.at/gFH6E > accessed on 19 January 2025.

several categories based on their chemical composition and inherent danger.[24] Article 1 defines 'Hazardous waste' as – a) Wastes that belong to any category contained in Annex I; b) Wastes that are considered to be hazardous wastes by the domestic legislation of the Party of export, import or transit.[25] Annex I of the Basel Convention talks about the 'categories of wastes to be controlled' through which 'e-waste' can be considered as a hazardous waste.[26] The presence of the constituents mentioned below from Annex I makes e-waste a hazardous waste. Further, Annex III talks about the 'list of hazardous characteristics' which has been given by the United Nations.[27] As per Annex III, e-waste can be considered as a hazardous waste.[28] Lastly, Annex VIII[29], List A, Entry A1180[30] makes e-waste a hazardous waste with certain exceptions given in Annex IX (List B)[31]. Both Annex VIII and Annex IX list various types of e-waste as hazardous waste. Furthermore, the Basel Convention considers those wastes as hazardous which are defined as hazardous through the national definitions of the countries of import, export and transit.[32] Hence, the Basel Convention is equally applicable to the transboundary movement of e-waste. Legally, Article 2(3) of the Basel Convention defines "transboundary movement of waste" as:

> *"any movement of hazardous wastes or other wastes from an area under the national jurisdiction of one State to or through an area under the national jurisdiction of another State or to or through an area not under the national jurisdiction of any State, provided at least two States are involved in the movement".*

[24] Baldé, C.P., Deubzer, V.L.O., and Kuehr, R., "Global Transboundary E-waste Flows Monitor – 2022", (2022) United Nations Institute for Training and Research (UNITAR), Bonn, Germany.

[25] For instance, India considers E-waste as hazardous waste in E-waste (management) rules of 2016 and 2022.

[26] See 'Wastes having as constituents' in Annex I. For e-waste specific entries are applicable like – Y22, Y23, Y24, Y25, Y26, Y29 and Y31.

[27] Corresponds to the hazard classification system included in the United Nations Recommendations on the Transport of Dangerous Goods (ST/SG/AC.10/1Rev.5, United Nations, New York, 1988). Refer, Annex I, Clause (b) – Designation of a waste on Annex VIII does not preclude, in a particular case, the use of Annex III to demonstrate that a waste is not hazardous pursuant to article 1, paragraph 1 (a) of this Convention.

[28] Refer, Annex III, UN Class 9, Code H11 (Toxic) and H12 (Ecotoxic).

[29] Wastes contained in this Annex are characterized as hazardous under article 1, paragraph 1 (a) of this Convention.

[30] Waste electrical and electronic assemblies or scrap containing components such as accumulators and other batteries included on list A, mercury-switches, glass from cathode-ray tubes and other activated glass and PCB-capacitors, or contaminated with Annex I constituents (e.g., cadmium, mercury, lead, polychlorinated biphenyl) to an extent that they possess any of the characteristics contained in Annex III.

[31] Wastes contained in the Annex will not be wastes covered by article 1, paragraph 1 (a) of this Convention unless they contain Annex I material to an extent causing them to exhibit an Annex III characteristic. Refer, Entry B1110 (Electrical and electronic assemblies).

[32] The Basel Convention, art. 1(1)(b) read with art. 3.

The definition has to be read with Article 2(9)[33], article 2(10)[34], article 2(11)[35] and article 2(12)[36] to understand it in a wholesome manner. According to the Basel Convention, a waste flow must move from the state of export to the state of import to be considered transboundary. Sometimes the movement takes place through the state of transit. Therefore, the basic necessity is the involvement of two states for the movement to be transboundary.[37]

Additionally, the Basel Ban Amendment significantly reshapes the legal framework surrounding the transboundary movements of e-waste. Entered into force in December 2019, this Amendment categorically prohibits Annex VII countries (primarily developed OECD and EU states) from exporting hazardous wastes, including electronic waste, to non-Annex VII (developing) countries. This directly impacts transboundary e-waste flows by legally restricting such exports. However, enforcement remains challenging due to persistent illegal trafficking and complexities around distinguishing genuine second-hand goods or repairable items from hazardous waste. A detailed discussion of the Ban Amendment's implications follows later in this paper.

The Bamako Convention[38] and the Waigani Convention[39] provides a similar definition to the Basel Convention. On the other hand, OECD provides a definition which focuses more on the movements within the member countries.[40] However, while referring to the definition provided by the OECD, it has to be kept in mind that the scope of the decision is limited to the transboundary movements of wastes "destined for recovery

[33] The Basel Convention, art. 2(9) defines "Area under the national jurisdiction of a State" as - any land, marine area or airspace within which a State exercises administrative and regulatory responsibility in accordance with international law in regard to the protection of human health or the environment;

[34] The Basel Convention, art. 2(10) defines "State of export" as - a Party from which a transboundary movement of hazardous wastes or other wastes is planned to be initiated or is initiated;

[35] The Basel Convention, art. 2(11) defines "State of import" as - a Party to which a transboundary movement of hazardous wastes or other wastes is planned or takes place for the purpose of disposal therein or for the purpose of loading prior to disposal in an area not under the national jurisdiction of any State.

[36] The Basel Convention, art. 2(12) defines "State of transit" as - any State, other than the State of export or import, through which a movement of hazardous wastes or other wastes is planned or takes place;

[37] Ansari, A. H., Jamal, P., *et al.*, "The Basel Convention: Re-visiting Some Socio- Legal Issues Pertaining to Transboundary Movement of Hazardous and Other Wastes", (2019) 61 (3) *Journal of the Indian Law Institute* 295.

[38] Article 1(4) of Bamako Convention on the Ban of the Import into Africa and the Control of Transboundary Movement and Management of Hazardous Wastes within Africa. It is also known as "the Bamako Convention" and it came into force in 1998.

[39] Article 1 of Convention to Ban the Importation into Forum Island Countries of Hazardous and Radioactive Wastes and to Control the Transboundary Movement and Management of Hazardous Wastes within the South Pacific Region also known as "the Waigani Convention" entered into force in 2001.

[40] OECD, Decision of the Council on the Control of Transboundary Movements of Wastes Destined for Recovery Operations, OECD/LEGAL/0266, Chapter 2 (A) (5) defines transboundary movement as 'any movement of wastes from an area under the national jurisdiction of a Member country to an area under the national jurisdiction of another Member country'.

operations" only. On the other hand, the Cairo Guidelines also provide a definition. The guidelines use the term 'transport' to manifest the transboundary movements of hazardous waste.[41] The movement has to start from the point of generation and end at the point of disposal, which has to be an approved site.[42] Further, the most detailed definition has been given by the EU directive on Shipments of Waste[43] which regulates the transport of hazardous waste across EU borders. The EU directive, however, does not use the term transboundary movement of waste. It rather uses 'shipment' of waste. Article 2(34) of the EU Directive on Shipments of Waste defines 'shipment'.[44] This definition has to be read with Article 2(33)[45] and article 2(26).[46]

The transboundary movements of e-waste can be categorised into two: legal/controlled[47] and illegal/uncontrolled.[48] The definitions discussed above talk about the legal/controlled means of transboundary movements of e-waste. However, many times e-waste may be transported or dumped in other countries, usually developing countries, through illegal/uncontrolled means. One of the top three waste categories illegally trafficked between 2018 and 2020 is e-waste, which is typically undeclared or misrepresented as used-EEE, new EEE, home products, personal property, or other types of waste.[49] The illegal/uncontrolled transboundary movement of e-waste is defined in Article 2(21) and Article 9(1)[50] of the Basel Convention. Article 9(1) is to be read with Article 6 of the Basel Convention. The Bamako Convention and Waigani Convention define 'illegal traffic' in a very similar fashion to the Basel Convention.[51] Further, the EU directive on Shipments of Waste defines 'illegal shipment' in a very detailed fashion in comparison to the Basel Convention.[52]

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41 Refer provision 1(d) of the Cairo Guidelines and Principles for the Environmentally Sound Management of Hazardous waste. Provision 1(d) defines 'transport' as – the movement of hazardous wastes from the place at which they are generated until they arrive at an approved site or facility for disposal.

42 The Cairo Guidelines, provision 1(d) is to be read with provision 1(e) and (f).

43 EU Directive on Shipments of Waste, Regulation (EC) No 1013/2006 (June 14, 2006).

44 EU Directive on Shipments of Waste, 2006, Article 2(34).

45 EU Directive on Shipments of Waste, 2006, Article 2(33) defines 'transport'.

46 EU Directive on Shipments of Waste, 2006, Article 2(26) defines 'overseas countries and territories'.

47 Controlled transboundary movements are assessed by using data of such movements reported to the Basel Convention Secretariat, the office responsible for the European Union-Waste Shipment Regulation, etc.

48 Uncontrolled transboundary movements are quantified by analysing whether prices of EEE commodities recorded in the trade statistics are in ranges that are more reasonable for used-EEE or e-waste than for new EEE.

49 Brink, V.A., Angelo, E., et al., 'Strategic Risk Analysis, Project STRIKE Stronger Training and Increased Knowledge for Better Enforcement Against Waste and Mercury' (2020).

50 As per article 9(1) of the Basel Convention, any transboundary movement of hazardous wastes or other wastes is deemed illegal if done – a) without notification; b) without consent; c) consent obtained from States concerned through falsification, misrepresentation or fraud; d) not materially consistent with the documents; e) results in deliberate disposal (e.g. dumping).

51 The Bamako Convention, 1998, Article 9 and the Waigani Convention, 2001, Article 9.

52 EU directive on Shipments of Waste, art. 2(35) -'illegal shipment' means any shipment of waste effected:
a) without notification; b) without the consent; c) consent obtained through falsification, misrepresentation or fraud; d) not specified materially in the notification or movement documents; e) results in recovery or disposal in contravention of the rules; f) contrary to articles 34, 36, 39, 40,

False statements, the concealing, mixing, or double stacking of the items in a shipment, as well as the incorrect marking of individual containers, are common ways of conducting illegal activities. Such techniques aim to falsify the real contents of a cargo; therefore, detecting cases of illicit trade calls for the diligent and complete examination by national enforcement authorities.[53]

4. BASEL CONVENTION AND ITS GUIDELINES

4.1. The Basel Convention

The Basel Convention is the primary global treaty that governs the transboundary flow of hazardous wastes and other wastes, including e-wastes. Since the BAN Amendment went into effect, the Basel Convention has gained increased importance. As the primary international legal framework governing the transboundary movement and disposal of hazardous wastes, the key objective of the convention is: "to protect by strict control, human health and the environment against the adverse effects, which may result from the generation and management of hazardous wastes and other wastes."[54]

The preamble of the Basel Convention recognizes the sovereign rights of states where hazardous wastes are dumped or intended to be dumped. The spirit of the convention can easily be elicited from the preamble as protecting developing and least developed nations from the ill effects of hazardous waste(s) disposal in their territories.[55] Furthermore, the Basel Convention places obligations on countries that are party to the convention to lessen to the best of their capacity the amounts of waste that are exported to be treated and disposed of as close as possible to the places of generation and to prevent or minimize their generation at their source.[56] It also binds the parties to take appropriate measures to prevent and punish the contraventions of the convention.[57] It provides a forum for developed countries to demonstrate and train developing and least developed countries on some successful environmentally sound management (ESM) activities. However, not much has been done in that regard.

The Duty to Prohibit

The Basel Convention restricts the state of export to prohibit the export of hazardous waste if the state of import expressly exercises their right to prohibit the import of hazardous waste for disposal or if the state of import

41 and 43; or g) which has resulted from - (i) the waste being discovered not to be listed in Annexes III, IIIA or IIIB, or (ii) non-compliance with article 3(4), (iii) the shipment being effected in a way which is not specified materially in the document set out in Annex VII.

53 Baldé, C.P., *Supra* note 24.

54 Orellana, M.A. and Azoulay, D., "Shipbreaking and the Basel Convention: Analysis of the Level of Control Established under the Hong Kong Convention", (2011) 11 *The Centre for International Environmental Law*, Geneva.

55 Refer, Preamble of the Basel Convention.

56 The Basel Convention, art. 4(2) – General Obligations

57 The Basel Convention, art. 4(4)

does not consent in writing.[58] The duty imposed by the convention on the exporters and generators of waste is based on the 'polluter pays principle'. Prohibition by any state of the import of hazardous wastes through information to be communicated under Article 13.[59] The convention leaves it entirely to the discretion of each sovereign state party to decide whether or not to permit the importing of such wastes. The Basel Convention prohibits hazardous waste exports if there is reason to believe the waste won't be managed in an environmentally sound manner in the importing country, aligning with the Convention's core objective.[60] While it permits transboundary movement when such management isn't possible domestically, it lacks mechanisms to verify this claim. Additionally, trade with non-parties is not allowed, yet illegal e-waste movements persist as a significant challenge.[61]

The Duty to Notify

The Basel Convention requires the exporting state to notify concerned states of any proposed hazardous waste movement through the Prior Informed Consent (*hereinafter* referred to as 'PIC') procedure, seeking written approval from the importing state.[62] However, following the BAN Amendment, the PIC procedure no longer applies to movements for disposal operations under Annex IV A.[63] Despite its intent, the PIC procedure has loopholes, particularly in verifying the waste management capacity of the importing country, as the Convention lacks a clear mechanism for such verification and relies solely on information exchange between parties.[64] Developing countries cannot often accurately assess the risks of hazardous waste shipments, leading to overestimation of their disposal capabilities.[65] The PIC procedure is vulnerable to manipulation by officials motivated by economic pressures, such as the need for foreign currency, and lacks safeguards against misrepresentation.[66] Its major flaws include weak enforcement and ineffective self-verification, often resulting in waste not being returned to the exporting country when shipments are mishandled.[67]

The Basel Convention requires state parties to submit annual reports with data on hazardous waste movements, disposal methods, and impacts

58 The Basel Convention, art. 4(1)(a)(b)(c).
59 The Basel Convention, art. 13(2)(c) and (d).
60 The Basel Convention, art. 4(2)(e) and (g) to be read with art. 4(8).
61 The Basel Convention, art. 4 (5).
62 The Basel Convention, art 6(1) to be read with annex V A.
63 Annex IV A talks about the operations which do not lead to the possibility of resource recovery, recycling, reclamation, direct re-use or alternative uses. For instance, landfilling and incineration. Refer, The Basel Convention, art. 6(2) to be read with art. 13 (2) (c) and (d).
64 Widawsky, L., "In My Backyard: How Enabling Hazardous Waste Trade to Developing Nations can improve the Basel Convention's ability to achieve environmental justice", 38(2) *Environmental Law* 577 (2008). Also refer, The Basel Convention, art. 4(b).
65 Widawsky L., Ibid.
66 Andrews, A., 'Beyond the Ban - Can the Basel Convention adequately Safeguard the Interests of the World's Poor in the International Trade of Hazardous 'Waste?', 5(2) *Law, Environment and Development Journal* 167 (2009).
67 Widawsky, L., *Supra* note 64. Also refer, The Basel Convention, art. 8.

on health and the environment.[68] However, reporting compliance remains low, with only around 50–60% of parties submitting reports in recent years.[69] Similar trends can be seen in the national reports submitted in the year 2023 (102 countries submitted), 2020 (116 countries submitted), 2019 (116 countries submitted), 2018 (113 countries submitted), 2017 (116 countries submitted), 2016 (114 countries submitted), 2015 (108 countries submitted). This weakens the Convention's ability to assess its effectiveness, as incomplete data hampers evaluation of transboundary e-waste flows and national waste management practices.[70] Some of the countries which are inconsistent with the reporting are Bahrain, Bangladesh, Dominican Republic, Jamaica, Jordan, Kenya, Kuwait, Libya, Mali, Montenegro, Monaco, Mongolia, Morocco, Mozambique, Tajikistan, Uganda, Ukraine, and Zimbabwe etc. Most of these nations fall into one of the world's poorest categories or are developing or low-income nations. India, in particular, has no official record of reports submitted from 2001 to 2015. Also, it should be highlighted that developed nations consistently and most often submit National Reports.[71]

The Duty to Prevent Illegal Traffic

Under the Basel Convention, any transboundary movement of hazardous waste without proper notification, consent, or through fraud is deemed illegal traffic.[72] In such cases, the exporter state must take back the waste or ensure its proper disposal, though this is often not followed in practice.[73] If the importer is at fault, the importing state must ensure environmentally sound disposal.[74] Where responsibility is unclear, all involved parties are obligated to ensure safe disposal elsewhere.[75] Similar obligations exist under the Bamako Convention.[76] The Basel Convention Secretariat supports parties in identifying and addressing illegal waste trafficking by facilitating cooperation and providing reporting forms.[77] However, reporting remains low, with less than 50% of signatories submitting data. Notably, no cases of illegal e-waste trafficking have been

[68] The Basel Convention, art. 13(3).

[69] Refer, Basel Convention National Reports - Year 2023, <https://www.basel.int/Countries/NationalReporting/NationalReports/BC2023Reports/tabid/10106/Default.aspx> accessed on 21 January, 2025.

[70] National Reports from 2001 to 2023, <http://www.basel.int/Countries/NationalReporting/NationalReports/BC2021Reports/tabid/9379/Default.aspx> accessed on 21 January, 2025.

[71] To understand the ongoing trends relating to National reporting by developed, developing and poorer countries, the researcher attempted to draw a comparison between the developed economies and developing economies (as per United Nation). Refer, World Economic Situation and Prospects 2022, <https://www.un.org/development/desa/dpad/wp-content/uploads/sites/45/WESP2022_ANNEX.pdf> accessed on 21 January, 2025.

[72] The Basel Convention, art. 9.

[73] The Basel Convention, art. 9(2).

[74] The Basel Convention, art. 9(3).

[75] The Basel Convention, art. 9(4).

[76] The Bamako Convention, art. 9.

[77] The form is available at the official website of Basel Convention, <http://www.basel.int/Portals/4/Basel%20Convention/docs/legalmatters/illegtraffic/illegtrafform.pdf> accessed on 21 January, 2025.

reported in the past three decades.[78] While the Convention encourages efforts to prevent such trafficking and promote best practices,[79] the Secretariat has made limited progress in advancing these initiatives.[80]

The Right to enter into agreements

The Basel Convention allows parties to enter into bilateral, multilateral, or regional agreements on hazardous waste movements, including with non-parties, as long as they uphold environmentally sound management standards.[81] This serves as an exception to the general rules but becomes redundant under the BAN Amendment. Despite the requirement to inform the Secretariat about such agreements, many countries fail to report them in their national submissions.[82]

The Duty to International Cooperation

International cooperation is essential to address global environmental challenges, as environmental harm often transcends borders and offers solutions with low costs and political risks. The Basel Convention reflects this need by obligating parties to promote environmentally sound waste management.[83] However, despite its three-decade existence and multiple revisions, the Convention remains weak in curbing illegal hazardous waste movements, including e-waste. Its limitations are evident in the emergence of regional conventions like the Bamako and Waigani Conventions, created to address the Basel Convention's shortcomings. The Basel Convention faces several challenges, including limited progress by its Secretariat in advancing technical cooperation and promoting best practices for hazardous waste management. It lacks post-shipment inspection mechanisms and clear thresholds for hazardous content, weakening enforcement. These issues are compounded by unequal power dynamics between developed and developing countries and the reliance on state compliance, which many developing nations struggle to uphold. The Convention's effectiveness is further diminished by the U.S. not ratifying it, though related treaties like the

78 Cases of Illegal Traffic, Basel Convention, <http://www.basel.int/Implementation/LegalMatters/IllegalTraffic/CasesofIllegalTraffic/tabid/3424/Default.aspx> accessed on 23 January, 2025.

79 The Basel Convention, art. 16 (1) (g) and (k) – Functions of the Secretariat. Refer, Decision BC – 11/10 of COP on National legislation, notifications, enforcement of the Convention and efforts to combat illegal traffic. <http://www.basel.int/Implementation/LegalMatters/IllegalTraffic/Bestpractices/tabid/4282/Default.aspx> accessed on 21 January, 2025.

80 For instance, the official website of Basel Convention displays almost no 'best practice' established by any state party to combat the illegal traffic in hazardous waste including e-waste. <http://www.basel.int/Implementation/LegalMatters/IllegalTraffic/Bestpractices/tabid/4282/Default.aspx> accessed on 21 January, 2025.

81 The Basel Convention, art. 11.

82 Bilateral, Multilateral or Regional Agreements or Arrangements, <http://www.basel.int/Countries/AgreementsorArrangements/tabid/8690/Default.aspx> accessed on 21 January, 2025.

83 The Basel Convention, art. 10.

Stockholm and Rotterdam Conventions provide supplementary support against illegal hazardous waste trade.

4.2. Basel Technical Guidelines

The Basel Convention's *Technical Guidelines* on the transboundary movement of e-waste and used electrical and electronic equipment (UEEE) were initiated in 2008 and adopted on an interim basis at COP-14 in 2019.[84] A key debate remains unresolved regarding whether non-functional equipment sent for repair or refurbishment constitutes waste. The guidelines aim to clarify the distinction between hazardous and non-hazardous waste, particularly under entries A1180 and B1110.[85] While the Convention regulates hazardous waste strictly, non-hazardous waste is not subject to the same controls and can still harm human health and the environment if not managed properly, burdening the receiving countries.[86]

The current *Technical Guidelines* aim to clarify when transboundary movements of e-waste and used electrical and electronic equipment (UEEE) fall under the Basel Convention, particularly in distinguishing between hazardous waste, other waste, and non-waste. They assist enforcement agencies in determining applicability but do not cover broader aspects like collection, disposal, or extended producer responsibility (EPR).[87] A key challenge is distinguishing waste from non-waste during inspections, especially due to false declarations. The guidelines emphasize that used equipment is considered waste if classified as such under national law and that both exporting and importing countries must follow Basel provisions, including the PIC procedure, if UEEE is deemed hazardous.[88] The Technical Guidelines put forth situations wherein the UEEE should be considered waste.[89] Further, the situations where UEEE should not be considered waste are also mentioned.[90]

The *Technical Guidelines* help clarify what qualifies as waste in transboundary movements of used electrical and electronic equipment (UEEE), and differentiate between hazardous and non-hazardous waste. They recommend presuming e-waste as hazardous unless proven otherwise.[91] A recent development includes the Harmonised System Committee's adoption of new HS codes (under 8549) for identifying e-waste.

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84 Ad-interim adoption means that technical guidelines are adopted on a temporary basis, subject to further review and possible revision in the future, to address an urgent need for action while further work is carried out to refine and improve the guidelines.

85 The Basel Convention, Annex VIII, List A, Entry A1180 and Annex IX, List B, Entry B1110 - Electrical and electronic assemblies.

86 Baldé, C.P., *Supra* note 24.

87 Technical Guidelines, Introduction, para 7.

88 Technical Guidelines, Para 28 and 29.

89 Technical Guidelines, Para 31

90 Technical Guidelines, Para 32

91 For instances, Lead-containing glass from cathode ray tubes, Nickel-cadmium batteries and batteries containing mercury, Selenium drums, Printed circuit boards, Fluorescent tubes, Plastic components containing BFRs, Other components contaminated with mercury, Components containing asbestos, etc.

However, these guidelines are not legally binding, and it is up to state parties to incorporate them into their national laws and policies.

4.3. The Basel BAN Amendment

The original Basel Convention regulated, rather than banned, hazardous waste movement through the Prior Informed Consent (PIC) procedure, which disappointed many developing countries. In response, the BAN Amendment was adopted in 1994–95 to prohibit hazardous waste exports from developed to developing countries.[92] Despite efforts by some developed nations to delay or weaken its implementation, the Amendment was confirmed to enter into force once ratified by three-fourths of the parties present in 1995. Although a decision was made to ban such waste trade for disposal and phase it out for reuse by 2007, its legal enforceability remained disputed since it wasn't incorporated into the Convention's main text. At COP-3 in 1995, the Parties adopted the BAN Amendment, proposed by the EU, to prohibit hazardous waste exports—including e-waste—from Annex VII countries (OECD, EU, and Liechtenstein) to non-Annex VII countries.[93] Due to delayed ratification, the amendment only entered into force on December 5, 2019, after Croatia's ratification.[94] It added a new preambular paragraph, Article 4A, and Annex VII to the Convention.[95] The BAN covers all Annex I wastes with Annex III hazardous characteristics, and all Annex VIII wastes unless proven non-hazardous—thereby explicitly including e-waste as hazardous waste.[96] The Basel BAN cover all wastes listed in Annex I that possess an Annex III hazardous characteristic. It also includes all wastes listed on Annex VIII (presumed hazardous waste streams) unless it can be shown that they do not possess an Annex III hazardous characteristic. This implies that the Basel BAN covers e-wastes as a hazardous waste.

The BAN Amendment has several legal implications:

a) Annex VII countries that ratified it cannot export hazardous waste to non-Annex VII countries.
b) Non-Annex VII countries that ratified it cannot import hazardous waste from Annex VII countries.
c) No hazardous waste trade is allowed between Annex VII and non-Annex VII countries if either has ratified the Amendment and the other has not.

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92 Decision II/12, in Report of the Second Meeting of the Conference of the Parties to the Basel Convention on the Control of the Transboundary Movements of Hazardous Wastes and their Disposal, UN Doc. UNEP/CHW.2/30 (1994).

93 Decision III/1, in Report of the Third Meeting of the Conference of the Parties to the Basel Convention on the Control of the Transboundary Movements of Hazardous Wastes and their Disposal, UN Doc. UNEP/CHW.3/35 (1995).

94 BAN, IPEN and Toxics Link, "The Basel Ban Amendment and Implications for India: A Guide to Implications and Next Steps" (August, 2020), <https://ipen.org/sites/default/files/documents/ban-basel-fact-sheet-v2_3-india-en.pdf> accessed on 21 January, 2025.

95 The Conference of the Parties adopted Decision III/1 at its third meeting to amend the Convention.

96 The Basel Convention, art. 4A (1) to be read with Annex VII and Annex IV A.

d) As the BAN Amendment is now part of the Convention, any violation is considered illegal traffic and a criminal offense, prosecutable by the ratifying country.

The provisionally adopted e-Waste Guideline weakens the BAN Amendment by allowing non-functional electronics to be classified as non-waste if exported for repair, enabling continued e-waste flows from developed to developing countries. This risks undermining the BAN Amendment's original intent.[97] Additionally, the BAN Amendment's effectiveness is limited by the fact that key e-waste-importing countries, like India, have not ratified it, allowing legal loopholes. Even with full ratification, enforcement challenges, such as monitoring and detection, pose ongoing obstacles to stopping illegal e-waste trade.

5. NAVIGATING REASONS FOR TRANSBOUNDARY MOVEMENTS

Literature shows that while the reasons for transboundary movement of hazardous waste have evolved over the decades, earlier factors remain relevant. Similar motivations apply to e-waste. Key reasons include many countries lacking the technological, financial, or infrastructural capacity to manage e-waste, and the limited global availability of specialized facilities, such as smelters for printed circuit boards (PCBs).[98] Only six well-known smelters located in the aforementioned regions are capable of processing PCBs on a global scale.[99] Further, the transboundary nature of EEE manufacturing contributes to this movement. Additional reasons for transboundary e-waste movement include proximity to treatment facilities in neighbouring countries, demand for waste as raw material in recipient nations, and the presence of valuable secondary materials in e-waste.[100] Countries like China, until 2018, imported large volumes to support manufacturing.[101] Economic factors also drive exports, as managing e-waste is often costlier in developed countries due to strict regulations and limited disposal sites.[102] In contrast, developing nations have weaker environmental laws and limited technical capacity,

97 BAN, *Supra* note 94.
98 The Basel Convention, art. 4(9)(a).
99 Baldé, C.P., *Supra* note 24 at 10.
100 The Basel Convention, art. 4(9)(b).
101 China needs a steady supply of valuable metals and minerals from e-waste to support its manufacturing industry. The extraction process of raw materials from e-waste provides a reliable source of income for some of China's poorest families, which fuels economic growth. Refer, Davenport, T., "The Digital Dump: Navigating China's Informal Market of Electronic Waste", *Equilibrium*, 29 March, 2020, <https://equilibriumecon.wisc.edu/2020/03/29/the-digital-dump-navigating-chinas-informal-market-of-electronic-waste/> accessed on 7 January, 2025.
102 It is approximately $360 a pound to process a ton of electronic waste. <https://shorturl.at/StbVl> accessed on 9 January, 2025.

making them more vulnerable.[103] The absence of global tracking standards further facilitates such waste shipments.[104]

Developed countries often export e-waste to avoid the high carbon footprint of landfilling or incineration, shifting the environmental burden to developing nations. This practice violates principles of fairness and justice.[105] Poverty in Third World countries makes them more vulnerable to accepting hazardous waste for financial gain, despite the long-term environmental and health costs.[106] While industrialized nations pay for this waste disposal, the negative externalities often outweigh the economic benefits, leaving developing countries to bear the consequences.[107] Ultimately, accepting such waste remains a sovereign decision, albeit one with serious implications.[108] CETIM highlights that a lack of understanding about Africa and its people among Western businesses contributes to the transboundary dumping of hazardous waste.[109] African leaders have condemned this practice as "garbage imperialism".[110] The U.S. export of hazardous waste to developing nations mirrors domestic patterns of environmental racism, where communities of colour are disproportionately burdened.[111] Such practices reflect broader systemic racism and underscore the need for greater global equity and environmental justice.

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[103] Johnson, S., "The Basel Convention: The Shape of Things to Come for United States Wastes Exports?" (1991) 21 (2) Environmental Law 299.

[104] Cubel, P., "Transboundary Movements of Hazardous Waste in International Law: The Special Case of the Mediterranean Area", (1997) 12(4) *The International Journal of Marine and Coastal Law* 447-448.

[105] Agyeman, J., Bullard, R. D., and Evans, B., "Exploring the Nexus: Bringing Together Sustainability, Environmental Justice and Equity", (2002) 6 (1) *Space and Policy* 85.

[106] It will probably continue to be a major force in Asia, where the Asian countries have not expressed as strong a dedication to the environment. They have not banded together and drafted a convention to ban the import of hazardous wastes like the nations of the OAU. We can conclude that Asian countries seem to be more willing than the OAU nations to trade off some environmental safety for an infusion of capital.

[107] Vilcheck, M.M., "The Controls on the Transfrontier Movement of Hazardous Waste from Developed to Developing Nations: The Goal of a Level Playing Field", (1991) 11 (3) *Northwestern Journal of International Law and Business* 643, 645.

[108] Bothe, M., "International Regulation of Transboundary Movement of Hazardous Waste", (1990) 33 *German Yearbook of International Law* 422-431.

[109] A Third World research group called CETIM (Centre Europe-Tiers Monde) reports that there is a "low level of appreciation for Africa and African people among Western business people." Refer, Mpanya, M., "The Dumping of Toxic Waste in African Countries: A Case of Poverty and Racism", in Bryant B. and Mohai P. (eds.), *Race and the Incidence of Environmental Hazards* 204 (Avalon Publishing, 1992).

[110] In 1988, the Organization of African Unity signed a resolution declaring toxic waste dumping a "crime against Africa and the African people."

[111] For example, the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and the Resource Conservation and Recovery Act (RCRA) encourage companies to dispose of hazardous waste abroad. The EPA is under no obligation to check that the receiving country can manage the waste in an environmental safe manner, even if it knows the disposal facilities are unsafe. Refer, Alston, D. and Brown, N., "Global Threats to People of Colour", in Bullard R.D. (ed.), *Confronting Environmental Racism: Voices from the Grassroots* (South End Press, 1993).

6. EXAMINING ROUTES OF TRANSBOUNDARY MOVEMENTS

E-waste is a global, interregional, and domestic problem. It often happens that e-waste, once stripped of its most valuable components, is illegally dumped with no regard for the present toxic substances in poor countries. Alternately, it may be illegally exported/imported to countries despite international regulations on hazardous waste banning this practice.[112] There is a scarcity of information on the transboundary movements of e-waste. Therefore, predicting the transboundary flow of e-waste properly is presently challenging for a number of reasons related to the inadequate and inconsistent worldwide data.[113] Despite the existence of a plethora of data sources, cohesive sets of information on used electronics and their transportation are absent due to the inherent difficulties in getting such data. Some of the identified challenges are limited data collecting techniques, insufficient and incomplete national reporting,[114] ambiguous definitions, discrepancies in reporting, undifferentiated trade codes, a lack of uniform criteria for categorising and labelling old electronics and their components, inadequate regulatory monitoring, and limited agreement on the definitions of end uses are just a few of the issues (*i.e.,* reuse vs. recycling).[115] Differentiating between e-waste and used-EEE is often one of the biggest obstacles when checking a container transporting e-waste, which is frequently intermingled with used-EEE and other items. This is because exporters may offer misleading declarations or exhibit fake working tests.

Some of the challenges that have been identified by the Global Transboundary E-waste Flows Monitor 2022 is –

a) Absence of global registry - The Basel Convention does not fully report electronic waste and does not mandate reporting of used-EEE transboundary movements, which are often illegal.
b) Global mapping initiatives identify trade routes but lack data on amounts. Recent BAN mapping identified unlawful e-waste shipments, but due to the small sample size, sufficient statistics cannot be produced.[116]
c) Studies with narrow or inconsistent geographic scopes – Some studies focused only on the importer's or exporter's viewpoints

[112] Marino, G., "WEEE: illegal trade of electronic waste must be stopped to achieve EU goals", *Renewable Matter*, 12 September, 2021.
[113] Baldé, C.P., *Supra* note 24.
[114] In 2019, less than 50 percent of the State Parties to the Basel Convention did submit relevant information on hazardous e-waste through the national reports.
[115] Duan, H., Miller, R. T., *et al.,* "Quantitative Characterization of Domestic and Transboundary Flows of Used Electronics" (28 November, 2021), <https://shorturl.at/LKm55> accessed on 19 January, 2025).
[116] Basel Action Network, "Scam Recycling: e-Dumping on Asia by US Recyclers" (2016), <http://wiki.ban.org/images/1/12/ScamRecyclingReport-web.pdf> accessed on 15 January, 2025; Basel Action Network, "Disconnect: Goodwill and Dell, Exporting the Public's E-Waste to Developing Countries" (2016), <https://shorturl.at/qT3Tj> accessed on 15 January, 2025.

for a single nation,[117] or they may have examined a small number of products.[118]

d) E-waste shipments often mix with other unrecorded waste streams, such as metal scraps, leading to illegal and deliberate mingled shipments.
e) The analysis suggests that the trade of used equipment in cross-border movements is invisible due to the high costs of new equipment, indicating that the true totals may be significantly understated due to the price-based strategy used.

As a result, only preliminary worldwide estimations can be generated at this time. The flows and paths of e-waste's transboundary movement have, nevertheless, been attempted to be identified by several research investigations. Some of those studies have been discussed below. Transnational movements are dynamic and adapt to changes in society, the economy, and regulations. For instance, a swift relocation of processing operations has been ascertained from China to Southeast Asian nations as a result of China's import restriction on waste in 2018.[119] As per the Global Transboundary E-waste Flows Monitor (*hereinafter* referred to as 'GTF') 2022, 5.1 Mt (just below 10 percent of the total amount of global e-waste, i.e., 53.6 Mt) crossed country borders in 2019. Out of the 5.1 Mt, 1.8 Mt is shipped in a controlled manner as transboundary movement. As high-income nations across the world have sufficient e-waste management facilities, they import the majority of this regulated e-waste for treatment. Additionally, 3.3 Mt of the transboundary movement is exported as used-EEE or e-waste in an uncontrolled manner.[120] Uncontrolled movement across borders starts from wealthy nations to countries with middle and low incomes, further trickling down across the region to the poorest within the region.

This movement occurs on the continental level, but also intra-regionally. The majority of the destination nations are either low-income or middle-income areas with poor e-waste management infrastructure, further resulting in inefficient management. Low recycling rates and a significant number of unauthorised workers in the domestic sector are features common to recipient nations in Africa, Southeast Asia, Central America, and South America. It can also be seen that the quantity of uncontrolled movements is higher than the controlled movements. Refer to the 'Figure I' below wherein 'GTF Monitor' highlights the controlled and uncontrolled movements of e-

[117] Baldé C.P., *et al.*, 'The Dutch WEEE Flows: What happened between 2010 and 2018, 2020', United Nations University (UNU) /United Nations Institute for Training and Research (UNITAR) - co- hosting the SCYCLE Programme, Bonn, Germany (2020).

[118] Baldé, C.P., Wang, F., and Kuehr, R., 'Transboundary movements of used and waste electronic and electrical equipment', 92016) United Nations University, Vice Rectorate in Europe – Sustainable Cycles Programme (SCYCLE), Bonn, Germany.

[119] Parker, L., "China's ban on trash imports shifts waste crisis to Southeast Asia", *National Geographic*, 16 November, 2018; Nguyen, S., "Southeast Asia braces for trash dump as China enacts waste import ban", *IPEN*, 12 December, 2020.

[120] Baldé C.P., *Supta* note 24.

waste. In the 'Figure I', it is clear that India has been identified by the GTF Monitor as one of the destinations for uncontrolled e-waste imports.

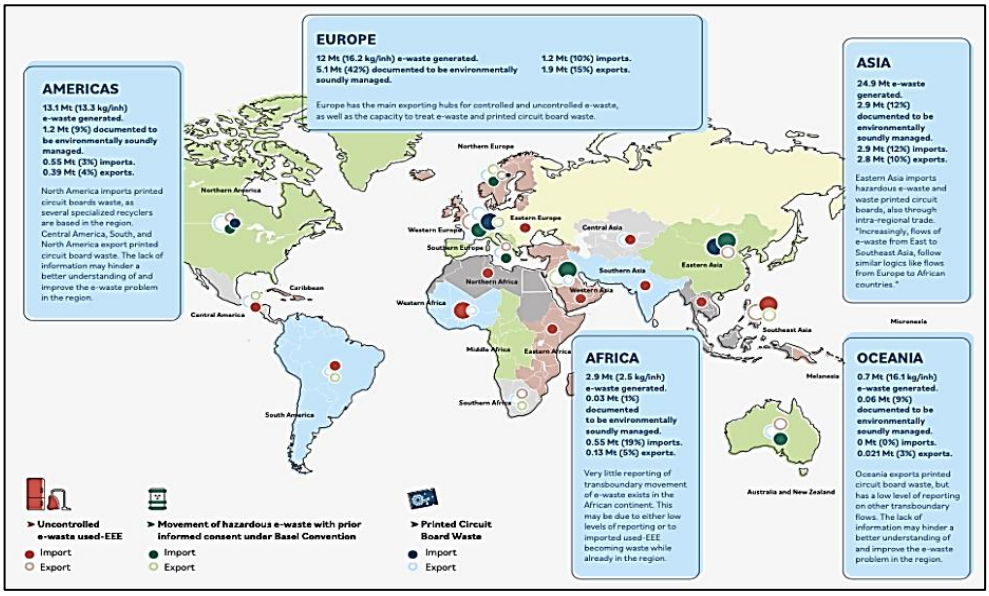

Figure I: GTF Monitor represents the controlled and uncontrolled movements of e-waste[121]

Only 2 to 17 kt of e-waste are anticipated to be seized as illegal e-waste exports from the EU in 2019.[122] When compared to the megatons of unregulated exports, this represents just the tip of the iceberg, demonstrating that inspection capabilities are severely limited. Furthermore, even developed nations have limited surveillance capacities. Furthermore, according to another international study, between 75 and 80 percent of the total quantity of generated e-waste is transported illegally from developed to developing Asian and African nations for "informal recycling" and "disposal".[123] Due to gaps in present e-waste rules, it is possible to export e-waste for "donation" and "recycling" reasons.[124] In such flows, the eventual destination of roughly 70 percent of e-waste is either undocumented or unknown.[125] As per the EU law, exports for waste disposal are forbidden by default, whether within or outside the EU; however, the wording appears to blur the line between shipments for reuse and recycling and shipments for

[121] Ibid.

[122] Data related to seizures were only made available by a limited number of enforcement agencies in the European Union, through the project Shipment of Waste Enforcement Actions Project (SWEAP).

[123] Diaz-Barriga, F., "Evidence-based intervention programs to reduce children's exposure to chemicals in e-waste sites", in *Discussion Paper for WHO Working Meeting on E-waste and Children's Health* 90 (2013).

[124] Perkins, D. N., *et al*., 'E-Waste: A Global Hazard', (2014) 80 (4) Annals of Global Health 286-295.

[125] Ongondo, F.O., Williams, I.D, and Cherrett, T.J., "How are WEEE doing?: A global review of the management of electrical and electronic wastes", (2011) 31 Waste Management 714-730.

lesser kinds of recovery, such as burning.[126] This makes it just as simple to send materials to another EU or OECD nation for burning as it is to send them back for reuse or recycling, which goes against the waste hierarchy of the EU.[127] The same has been shown in the 'Figure II' below, which highlights the movements of the e-waste from known sources to known and suspected destinations where e-waste is sent. It should be noted here that most destinations are from the developing world, and India is one of them.

Figure II: Represents the known and suspected destinations of E-waste[128]

In 2013, it was reported that "USA alone exported approximately 8.5 percent of the used EEE" in 2010. Latin America and the Caribbean received the most exports, followed by North America and Asia as the next two most popular destinations.[129] Similar findings were given by another research for the year 2011, which showed that 7 percent of UEEE was exported from the United States.[130] Similar to this, a 2013 EU report confirmed that approximately 15 percent of UEEE is exported from the EU, primarily for reuse.[131] It's important to note that part of this UEEE turns into WEEE either

[126] The factsheet mentions "establishing stricter conditions for shipments for landfilling or incineration, so that they are only authorised in limited and well-justified cases", but such a distinction is not clear in the text. <https://ec.europa.eu/commission/presscorner/api/files/attachment/870408/Factsheet%20on%20Waste%20shipments.pdf> accessed on 19 January, 2025.

[127] European Environmental Bureau, 'EU Waste Shipment Regulation falls short of fixing Europe's waste export crisis' (28 November, 2021) <https://www.ban.org/news/2021/11/17/eu-waste-shipment-regulation-falls-short-of-fixing-europes-waste-export-crisis> accessed on 19 January, 2025.

[128] Lundgren, K., "The global impact of e-waste: addressing the challenge", International Labor Office (ILO), 21 October, 2012.

[129] Duan, H., *Supra* note 115.

[130] Used Electronic Products: An Examination of U.S. Exports (2021), <https://www.usitc.gov/publications/332/pub4379.pdf> accessed on 19 January 2025.

[131] European Commission – DG Environment, 'Equivalent conditions for waste electrical and electronic equipment (WEEE) recycling operations taking place outside the European Union', 28 November,

in the course of travel (for instance, if the product isn't adequately covered during transport) or soon after it reaches the destination nation. According to another research published in 2016, 10 percent of e-waste from the EU is illegally exported from the EU, while another 10 percent is exported legitimately as used EEE.[132] According to a more recent research from 2020, 8 percent of the entire amount of e-waste produced in the Netherlands (EU) is exported for reuse.[133] In 2020, EU exports of waste to non-EU countries reached 32.7 million tonnes, an increase of three-quarters (+75 percent) since 2004.[134] All these reports indicate that transboundary movements have been in existence for a long time.

The European Environment Agency (EEA) estimated in 2012 that up to "1.3 million tons of discarded EEE are exported from the EU annually, mostly to Africa (Ghana and Nigeria) and Asia (China, India, and Pakistan)".[135] The same has been represented through a 'Figure III' below, extracted from the report of the International Labour Organisation (ILO).

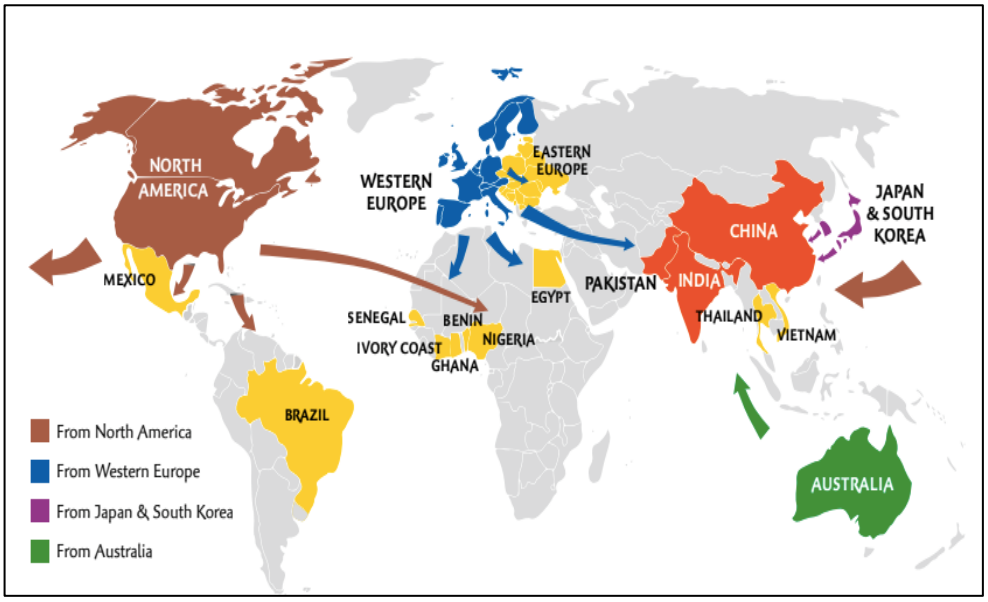

Figure III: Representing the flows from the EU towards Asia and Africa[136]

2021. <https://ec.europa.eu/environment/pdf/waste/weee/Final%20report_E%20C%20S.pdf> accessed on January 19, 2025.

132 Geeraerts, K., Mutafoglu, K. and Illés, A., "Illegal Shipments of E–Waste from the EU to China: Fighting Environmental Crime in Europe and Beyond", A study compiled as part of the EFFACE project (London: IEEP, 2016).

133 Forti, V., Baldé, C.P., Kuehr, R. and Bel, G., "The Global E-waste Monitor 2020: Quantities, flows and the circular economy potential", (2020) United Nations University (UNU)/United Nations Institute for Training and Research (UNITAR), International Telecommunication Union (ITU) and International Solid Waste Association (ISWA), Bonn/Geneva/Rotterdam.

134 Arbinolo, R., "European Environmental Bureau, EU Waste Shipment Regulation falls short of fixing Europe's waste export crisis", European Environmental Bureau, 17 November, 2021.

135 Lundgren, K., "The global impact of e-waste: addressing the challenge", *International Labor Office*, 20 December, 2012.

136 Ibid.

The Basel Action Network (BAN), based in the US, installed GPS trackers on hundreds of electronic devices that were sent to recycling facilities in ten European countries and numerous US states between 2014 and 2017. Many of the devices were then traced to African and Asian countries. For instance, in 2016, BAN reported that 93 percent of the US e-waste exports moved to developing countries, and the majority of them were illegal.[137] Similarly, in 2019, BAN reported that 339,446 tonnes of hazardous e-waste per annum were flowing to developing countries from various EU countries.[138] The UK, Germany, Italy, Ireland, Poland, and Spain all allowed such e-waste exports to developing countries, which were found illegal. The UK was the most egregious apparent violator amongst all.[139] Hazardous wastes from the EU are probably being illegally exported to Nigeria, Ghana, Tanzania, Ukraine, Pakistan, Thailand, and Hong Kong, which are developing nations.[140] BAN reports that "Africa was by far the region of the world most targeted by EU e-waste exporters, and the second region is Asia".[141] Refer to the 'Figure IV' below, which again shows that India is one of those targeted destinations.

Figure IV: Represents E-waste Flows towards Africa and Asia in 2018[142]

In 2018, BAN reported that "Canada exported hazardous e-waste to developing countries (in this case, China and Pakistan)". Previous BAN investigations have revealed that a persistent flow of unlawful exports

[137] Hopson, E. and Puckett, J., "Scam Recycling: e-Dumping on Asia by US Recyclers", Basel Action Network, 15 September 2016.
[138] Puckett, J., Brandt, C. and Palmer, H., "Holes in the Circular Economy WEEE Leakage from Europe", (2018) Basel Action Network.
[139] Laville, S., "UK worst offender in Europe for electronic waste exports – report", *The Guardian*, 7 February 2019.
[140] Tidey, A., "EU e-waste 'illegally' exported to developing countries: Report", *Euro News*, 7 February 2019.
[141] Puckett, J., *Supra* note 138.
[142] "E-waste chokes Southeast Asia", *The Asean Post*, 29 June 2018.

continues to flow from Canada to Asian ports, especially *via* the port of Vancouver.[143] All of these analyses found that Canada was exporting e-waste in contravention of the Basel Convention.[144] Similar episodes have been reported by the World Economic Forum (WEF) in 2019. The report by WEF highlighted that "1.3 MT of discarded electronic products are exported from the EU in an undocumented way every year.[145] The 'Figure V' below by WEF describes the general routes of transnational e-waste transfers from developed to underdeveloped countries. It is to be noted again that India has been highlighted as a destination.

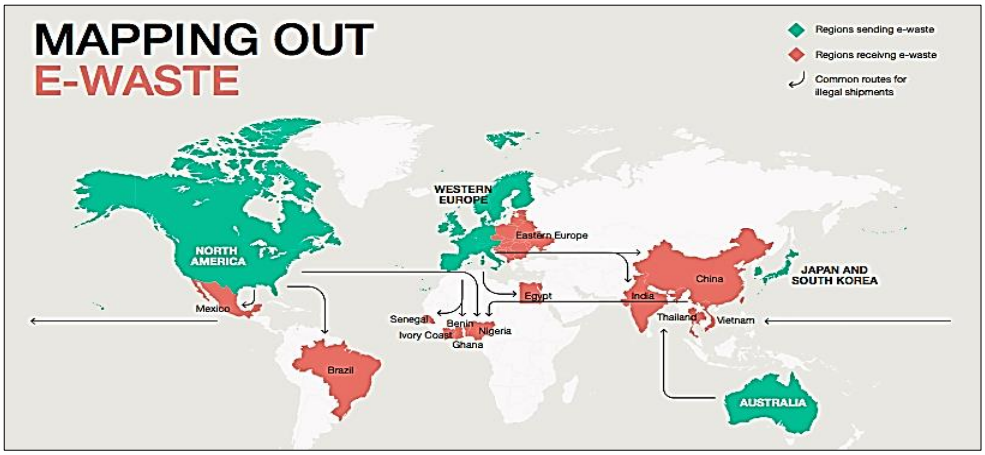

Figure V: Representing regions sending and receiving e-waste and common routes for illegal shipments of e-waste[146]

It has been established in abundance that most e-waste in Africa and Asia comes from Australia, China, the EU, Japan, North America, South Korea, the US and Canada.[147] According to the aforementioned figures, 7 to 20 percent of the e-waste produced is transported over international borders as used EEE or e-waste.[148] The Basel Convention secretariat has not reported even a single case of illegal traffic of e-waste in the past three decades.[149] There could be two reasons for this inability; first, it is difficult to identify the case of illegal traffic as it is usually done under the pretext

[143] Puckett, J., Brandt, C. and Palmer, H., "Export of e-Waste from Canada A Story as Told by GPS Trackers", Basel Action Network, 10 October, 2018.

[144] Basel Action Network, "Exporting Harm: The High-Tech Trashing of Asia", 22 October, 2002, <http://wiki.ban.org/images/e/e1/Exporting_Harm_canada.PDF> accessed on 19 January, 2025.

[145] World Economic Forum (WEF) and PACE, "A New Circular Vision for Electronics Time for a Global Reboot", (2019) <https://www3.weforum.org/docs/WEF_A_New_Circular_Vision_for_Electronics.pdf> accessed on 19 January, 2025.

[146] Ibid.

[147] Anami, L., "EAC bans dumping of electronic waste, calls for recycling", *The East African*, 29 November, 2021.

[148] Forti, V., *Supra* note 133.

[149] Cases of Illegal Traffic, Basel Convention, <http://www.basel.int/Implementation/LegalMatters/IllegalTraffic/CasesofIllegalTraffic/tabid/3424/Default.aspx> accessed on 23 January, 2025.

of donation, and sometimes the UEEE are mixed with the WEEE. The customs and port authorities are often incapable of detecting such cases because they are not trained enough. Secondly, the national reporting remains weak and almost non-existent. The Global E-waste Monitor (GEM) reported in 2020 that, "national reporting currently stands at less than 50 percent of signatories".

These statistics depict the reported movements of hazardous e-waste, and rather than the actual quantity of illicit transfers, the number of intercepted illegal transports is reported. The amount of illicit e-waste trade on a worldwide and European level, as well as in the nations featured in this study, is thus a "best guesstimate," rather than an indisputable statistic. The reason for this is that re-exports and ultimate destinations are not always reflected in trade data since the trade data destination might be an initial halting place for the items before being re-exported to a final destination. As a result, the following statistics are intended to serve as examples rather than exact figures. Nonetheless, the data from these reports can be used to understand the few ongoing issues. These reports indicate that illegal e-waste transboundary movements are still happening and remain a major problem for most nations of the world due to their limited capacities to investigate the same. Secondly, it can also be concluded that most of these movements take place from developed to developing economies, and most of these flows are in contravention of the Basel convention.

A deeper understanding of the situation in specific areas and nations would be possible with improved data quality. In light of this, nations must be urged even more to submit national reports to the Basel Convention. To further develop a technique for calculating the total illegal trafficking of e-waste, the availability and analysis of data from inspection agencies at the worldwide level about seizures of unlawful shipments of used-EEE and e-waste should also be increased.[150]

7. CONCLUSION

The findings suggest that the Basel Convention is essential in creating the three markets we see today, but to better protect developing countries from the danger of hazardous wastes, the Convention needs to re-evaluate its advocacy of trade-restricting measures and the binary categorization of countries based on OECD and EU memberships. The governance of hazardous wastes warrants a more nuanced categorization of countries, greater incentives for capable handlers to treat hazardous wastes, and capacity building for vulnerable countries to regulate hazardous wastes in general.

Further reinforcing the need for periodic reporting and review mechanisms is that international treaties to protect against exposure to hazardous substances and wastes lack effective reporting, compliance and review mechanisms. Many countries continue to fail to meet their reporting

[150] Baldé, C.P., *Supra* note 24.

commitments. It was noted recently that up to 60 per cent of States do not meet reporting requirements under the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal Further, the Basel Convention requirements are considered weak.

Two wise policy choices may be taken unilaterally to ensure better and more efficient enforcement, which is the main obstacle for all laws and regulations now in existence. To start, greater resources should be made available to customs and port personnel so they can fight the unlawful e-waste trade. It comes as no surprise that e-waste is not on the priority list, given the other issues that are often judged more important for authorities to concentrate on, such as the weapons trade, drug shipments, and human trafficking, despite recent advancements towards a circular economy. Second, the punishments for attempting to export e-waste unlawfully should be strengthened to serve as a genuine deterrence or at the very least a significant inconvenience to those attempting to disobey the law.

The 'Repairables Loophole' included in the Basel Convention allows parties to export hazardous electronic equipment to less developed countries by claiming that said waste is not 'e-waste' but raw material that can be repaired. The intent to repair absolves countries from taking responsibility for their e-waste. As all e-waste is naturally hazardous, specifying that 'hazardous' waste cannot be exported anymore does little to prevent manufacturers from circumventing the problem by labelling their broken electronic scrap as repairable 'non-waste'.

REFERENCES

Abalansa, S., Mahrad, B.E., Icely, J., and Newton, A., "Electronic Waste, an Environmental Problem Exported to Developing Countries: The Good, The Bad and the Ugly", (2021) 13(9) Sustainability 5302

Agyeman, J., Bullard, R. D., and Evans, B., "Exploring the Nexus: Bringing Together Sustainability, Environmental Justice and Equity", (2002) 6 (1) Space and Policy 85

Alston, D. and Brown, N., "Global Threats to People of Colour", in Bullard R.D. (ed.), *Confronting Environmental Racism: Voices from the Grassroots* (South End Press, 1993)

Anami, L., "EAC bans dumping of electronic waste, calls for recycling", *The East African*, 29 November, 2021

Andrews, A., 'Beyond the Ban - Can the Basel Convention adequately Safeguard the Interests of the World's Poor in the International Trade of Hazardous 'Waste?', 5(2) Law, Environment and Development Journal 167 (2009)

Ansari, A. H., Jamal, P., *et al.*, "The Basel Convention: Re-visiting Some Socio-Legal Issues Pertaining to Transboundary Movement of Hazardous and Other Wastes", (2019) 61 (3) Journal of the Indian Law Institute 295

Arbinolo, R., "European Environmental Bureau, EU Waste Shipment Regulation falls short of fixing Europe's waste export crisis", European Environmental Bureau, 17 November, 2021

Baldé C.P., *et al.,* 'The Dutch WEEE Flows: What happened between 2010 and 2018, 2020', United Nations University (UNU) /United Nations Institute for Training and Research (UNITAR) - co- hosting the SCYCLE Programme, Bonn, Germany (2020)

Baldé, C.P., Deubzer, V.L.O., and Kuehr, R., "Global Transboundary E-waste Flows Monitor – 2022", (2022) United Nations Institute for Training and Research (UNITAR), Bonn, Germany

Baldé, C.P., Forti, V., et al., "The Global E-waste Monitor 2024", (2024) International Telecommunication Union (ITU), United Nations Institute for Training and Research (UNITAR), Bonn/Geneva

Baldé, C.P., Wang, F., and Kuehr, R., 'Transboundary movements of used and waste electronic and electrical equipment', 92016) United Nations University, Vice Rectorate in Europe – Sustainable Cycles Programme (SCYCLE), Bonn, Germany

BAN, IPEN and Toxics Link, "The Basel Ban Amendment and Implications for India: A Guide to Implications and Next Steps" (August, 2020), <https://ipen.org/sites/default/files/documents/ban-basel-fact-sheet-v2_3-india-en.pdf> accessed on 21 January, 2025

Basel Action Network, "Disconnect: Goodwill and Dell, Exporting the Public's E-Waste to Developing Countries" (2016), <https://shorturl.at/qT3Tj> accessed on 15 January, 2025

Basel Action Network, "Exporting Harm: The High-Tech Trashing of Asia", 22 October, 2002, <http://wiki.ban.org/images/e/e1/Exporting_Harm_canada.PDF> accessed on 19 January, 2025

Basel Action Network, "Scam Recycling: e-Dumping on Asia by US Recyclers" (2016), <http://wiki.ban.org/images/1/12/ScamRecyclingReport-web.pdf> accessed on 15 January, 2025

Bothe, M., "International Regulation of Transboundary Movement of Hazardous Waste", (1990) 33 German Yearbook of International Law 422-431

Brenton, T., *The Evolution of International Environmental Politics* 131 (London, Royal Institute of International Affairs, Earthscan Publication, 1994)

Brink, V.A., Angelo, E., et al., 'Strategic Risk Analysis, Project STRIKE Stronger Training and Increased Knowledge for Better Enforcement Against Waste and Mercury' (2020)

Cubel, P., "Transboundary Movements of Hazardous Waste in International Law: The Special Case of the Mediterranean Area", (1997) 12(4) The International Journal of Marine and Coastal Law 447-448

Davenport, T., "The Digital Dump: Navigating China's Informal Market of Electronic Waste", *Equilibrium,* 29 March, 2020, <https://equilibriumecon.wisc.edu/2020/03/29/the-digital-dump-

navigating-chinas-informal-market-of-electronic-waste/> accessed on 7 January, 2025

Dawood, S. and Azhar, A., "Trash Trade and Environmental Regulations: An Assessment", (2021) 8 Lentera Hukum 347

Diaz-Barriga, F., "Evidence-based intervention programs to reduce children's exposure to chemicals in e-waste sites", in *Discussion Paper for WHO Working Meeting on E-waste and Children's Health* 90 (2013)

Duan, H., Miller, R. T., *et al.,* "Quantitative Characterization of Domestic and Transboundary Flows of Used Electronics" (28 November, 2021), <https://shorturl.at/LKm55> accessed on 19 January, 2025)

European Commission – DG Environment, 'Equivalent conditions for waste electrical and electronic equipment (WEEE) recycling operations taking place outside the European Union', 28 November, 2021. <https://ec.europa.eu/environment/pdf/waste/weee/Final%20report_E%20C%20S.pdf> accessed on January 19, 2025

European Environmental Bureau, 'EU Waste Shipment Regulation falls short of fixing Europe's waste export crisis' (28 November, 2021) <https://www.ban.org/news/2021/11/17/eu-waste-shipment-regulation-falls-short-of-fixing-europes-waste-export-crisis> accessed on 19 January, 2025

Forti, V., Baldé, C.P., Kuehr, R. and Bel, G., "The Global E-waste Monitor 2020: Quantities, flows and the circular economy potential", (2020) United Nations University (UNU)/United Nations Institute for Training and Research (UNITAR), International Telecommunication Union (ITU) and International Solid Waste Association (ISWA), Bonn/Geneva/Rotterdam

Geeraerts, K., Mutafoglu, K. and Illés, A., "Illegal Shipments of E–Waste from the EU to China: Fighting Environmental Crime in Europe and Beyond", A study compiled as part of the EFFACE project (London: IEEP, 2016)

Hopson, E. and Puckett, J., "Scam Recycling: e-Dumping on Asia by US Recyclers", Basel Action Network, 15 September 2016

Huang, J., Nkrumah, P.N., *et al.*, "E-waste disposal effects on the aquatic environment: Accra, Ghana", (2014) 229 Reviews of Environmental Contamination and Toxicology 19-34

Johnson, S., "The Basel Convention: The Shape of Things to Come for United States Wastes Exports?" (1991) 21 (2) Environmental Law 299

Kleiman, J., "Love Canal: A Brief History", <https://www.geneseo.edu/history/love_canal_history> accessed on 19 January, 2025

Kummer, K., *International Management of Hazardous Waste: The Basel Convention and Related Legal Rules* 6 (Oxford University Press, 1995).

Laville, S., "UK worst offender in Europe for electronic waste exports – report", *The Guardian,* 7 February 2019

Lundgren, K., "The global impact of e-waste: addressing the challenge", International Labor Office (ILO), 21 October, 2012

Marino, G., "WEEE: illegal trade of electronic waste must be stopped to achieve EU goals", *Renewable Matter*, 12 September, 2021

Mpanya, M., "The Dumping of Toxic Waste in African Countries: A Case of Poverty and Racism", in Bryant B. and Mohai P. (eds.), *Race and the Incidence of Environmental Hazards* 204 (Avalon Publishing, 1992)

Mulder, N., *et al.*, "International Trade and the Circular Economy in Latin America and the Caribbean", (2021) Inclusive and Sustainable Industrial Development Working Paper Series ECLAC-UNIDO, Vienna

Müller, S. M., *The Toxic Ship: The Voyage of the Khian Sea and the Global Waste Trade* (Washington: University of Washington Press, 2023)

Nguyen, S., "Southeast Asia braces for trash dump as China enacts waste import ban", *IPEN*, 12 December, 2020

Nichols, W., "Up to 90% of world's electronic waste is illegally dumped, says UN", (2015) *The Guardian*

OECD, Decision of the Council on the Control of Transboundary Movements of Wastes Destined for Recovery Operations, OECD/LEGAL/0266

Okaru, V.O., "The Basel Convention: Controlling the Movement of Hazardous Wastes to Developing Countries", (1993) 4 (2) Fordham Environmental Law Report 137-165

Ongondo, F.O., Williams, I.D, and Cherrett, T.J., "How are WEEE doing?: A global review of the management of electrical and electronic wastes", (2011) 31 Waste Management 714-730

Orellana, M.A. and Azoulay, D., "Shipbreaking and the Basel Convention: Analysis of the Level of Control Established under the Hong Kong Convention", (2011) 11 *The Centre for International Environmental Law*, Geneva

Pacini, H. and Yeoh, T.N., "Success of The Circular Economy Hinges on Better Governance of 'Waste Trade'", UNCTAD, 5 February, 2021, <https://unctad.org/news/success-circular-economy-hinges-better-governance-waste-trade> accessed on 21 January 2025

Parker, L., "China's ban on trash imports shifts waste crisis to Southeast Asia", *National Geographic*, 16 November, 2018

Perkins, D. N., *et al.*, 'E-Waste: A Global Hazard', (2014) 80 (4) Annals of Global Health 286-295

Puckett, J., Brandt, C. and Palmer, H., "Export of e-Waste from Canada A Story as Told by GPS Trackers", Basel Action Network, 10 October, 2018

Puckett, J., Brandt, C. and Palmer, H., "Holes in the Circular Economy WEEE Leakage from Europe", (2018) Basel Action Network

Ranganathan, V., "The Electronic Menace: Why E-waste is a Major Concern Today", *Entrepreneur* (December, 2018), <https://www.entrepreneur.com/article/324789> accessed on 9 March 2025)

Tidey, A., "EU e-waste 'illegally' exported to developing countries: Report", *Euro News*, 7 February 2019

Vilcheck, M.M., "The Controls on the Transfrontier Movement of Hazardous Waste from Developed to Developing Nations: The Goal of a Level Playing Field", (1991) 11 (3) Northwestern Journal of International Law and Business 643, 645

Walker, A., "India becoming the 'world's dumping ground' for e-waste", *Australian National university Newsroom*, 24 August, 2016, <http://www.anu.edu.au/news/all-news/india-becoming-the- %E2%80%98world%E2%80%99s-dumping-ground%E2%80%99-for-e-waste> accessed on 2 February 2025

Widawsky, L., "In My Backyard: How Enabling Hazardous Waste Trade to Developing Nations can improve the Basel Convention's ability to achieve environmental justice", 38(2) Environmental Law 577 (2008). Also refer, The Basel Convention, art. 4(b)

World Economic Forum (WEF) and PACE, "A New Circular Vision for Electronics Time for a Global Reboot", (2019) <https://www3.weforum.org/docs/WEF_A_New_Circular_Vision_for_Electronics.pdf> accessed on 19 January, 2025

Yang, S., "Trade for the Environment: Transboundary Hazardous Waste Movements after the Basel Convention", (2020) 37 (5) Review of Policy Research

Yeung, P., "The Toxic Effects of Electronic Waste in Accra, Ghana" *CityLab*, 29 May, 2019, <https://www.citylab.com/environment/2019/05/used-electronics-e-waste-landfill-ghana-toxic-technology/590341/> accessed on 8 April 2025

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The author(s) solemnly declare(s) that this research has not involved any human subject (body or organs) for experimentation. It was not a clinical research. The contexts of human population/participation were only indirectly covered through literature review. Therefore, an Ethical Clearance (from a Committee or Authority) or ethical obligation of Helsinki Declaration does not apply in cases of this study or written work.

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