



Finding equitable solutions to the land-based sources of marine plastic pollution: Sovereignty as a double-edged sword[☆]

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ABSTRACT

Marine litter is a global and transboundary pollution problem. Recent attention has focused on the impact of this issue on areas beyond national jurisdiction. In many cases, marine litter is traced to a coastal State where debris have been released into the sea. Effective and legally-binding commitments at the global level to tackle land-based sources of marine pollution are rare, in large part because of the sensitive nature of territorial sovereignty. When it comes to addressing the marine plastics crisis, sovereignty is a double-edged sword. On the one hand, the international legal regime traditionally addressing marine litter, the United Nations Convention on the Law of the Sea, does not specifically respond to, and is not able to adequately address, the issue of plastics as a land-based source of marine pollution. While it contributes to social equity by recognizing the special position of developing States in terms of capacity and need for economic development, this deference to domestic decisions is not conducive to the adoption of binding and global standards. Since a large majority of plastics in the oceans originate from land, this weakness is a major concern. On the other hand, sovereignty might contribute to a solution within the regime regulating trade in waste products: unilateral actions taken in application of sovereign powers and aimed at reducing trade in plastic waste led to major multilateral actions with the potential to reduce the issue of marine plastic pollution. In recent times, the Basel Convention on the Control of Transboundary Movements of Hazardous Waste and their Disposal has indeed become an important forum to respond to the plastic waste issue, with the potential to contribute to a solution to the marine dimension of this crisis. This regime is not perfect, especially in that its complexity and reliance on enforcement at the customs level leave ample opportunities for criminal activities to flourish. Areas for improvement include addressing the legal uncertainty regarding bilateral, regional, and multilateral agreements as well as certain key definitions; strengthening the prior informed consent procedure and the Mechanism for Promoting Implementation and Compliance; and heavily investing in capacity building and technology transfer. Nonetheless, this regime provides a widely-ratified framework to decrease trade in plastic waste considered hazardous or requiring special consideration – these two categories cover most hard-to-recycle plastics. In that sense, the Basel Convention regime has the potential to reduce mismanaged plastic waste leaking into the oceans and to contribute to social equity between States—if not domestically—by reducing the practice of wealthy countries using developing States as dumping grounds under the pretense of mutually beneficial trade in waste products.

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1. Introduction

Marine litter is a global and transboundary pollution problem. Recent attention has focused on the impact of this issue on areas beyond national jurisdiction. In many cases, marine litter is traced to a coastal State where debris have been released into the sea. The focus in this article is on plastics, because they represent 60–80% of marine litter¹ [1], they are found in large quantities in the oceans, and their long-lasting nature makes them a problem requiring attention earlier rather than later. An estimated 270,000 tons of plastic particles were in the oceans in 2014 [2]. Even if no additional plastics ever entered the oceans, such litter would negatively impact the environment for decades [1,3].

Most marine plastics leak from land sources: of the estimated 4.8–12.7 million metric tons of plastics that enter the oceans annually [4], about 80% originate from land sources [5]. Waste mismanagement appears to be a major contributor to this marine pollution [6,7], with plastics making their way from landfills to the sea by various means. Rivers are a major transport pathway, with estimates of “1.15–2.41 million ton[s] of plastic waste entering the ocean every year from rivers” [8]. Some regions’ waterways prove much more problematic than others: some studies identify “as few as ten rivers, of which eight are in Asia and two are in Africa, [that] contribute approximately 80% of the total plastic load from rivers due to waste mismanagement” [9, see also 8]. Even though points of entry into the oceans appear to be geographically concentrated, marine plastic pollution is a transboundary, if not even a global issue. Indeed, due to ocean currents and the durability of those materials, plastics at sea can spread beyond a region and into areas beyond national jurisdiction. It has consequently been argued that “plastics in the ocean would have to be tackled as a collective action regime of States working together under the umbrella of global rules and standards” [10].

Unfortunately, with plastic production expected to double within the next 20 years [11], global municipal plastic waste generation projected to triple by 2060 (v. 2015 values) [4,11], and no comprehensive and efficient solution firmly in sight [12], the marine plastics issue is very likely to worsen. At the global level, tackling this crisis is high on the stated agendas of governments, as evident for example in declarations from the G7/G20 [13,14], resolutions adopted at the United Nations Environmental Assembly (UNEA) [15–17], and the United Nations General Assembly resolution “Our Ocean, Our Future: Call for Action” adopted in 2017 [18]. Global and legally binding commitments are necessary to address this transboundary issue, but they are unfortunately much rarer than political statements.

Particularly important to note is the process, formally started in 2022 with UNEA Resolution 5/14, to develop an internationally legally binding instrument on plastic pollution, including the marine environment [17,19]. It is intended that such an instrument will address all stages of the plastics life cycle, from extraction of raw materials to final disposal [on the elements needed for a successful treaty, see 20–21]. The negotiating process is meant to consist of five sessions, finishing in 2024.

¹ The term “marine litter” will be used to refer to “any persistent, manufactured or processed solid material discarded, disposed of or abandoned in the marine and coastal environment” (<https://www.unep.org/explore-topics/oceans-seas/what-we-do/working-regional-seas/marine-litter>). Marine plastics (including microplastics) represent a large proportion of such litter and are the focus of the article: they will be referred to as “marine plastics” or “marine plastic pollution”. As to the more general term “marine pollution”, it refers to what UNCLOS defines as “pollution of the marine environment” in its article 1: “the introduction by man, directly or indirectly, of substances or energy into the marine environment, including estuaries, which results or is likely to result in such deleterious effects as harm to living resources and marine life, hazards to human health, hindrance to marine activities, including fishing and other legitimate uses of the sea, impairment of quality for use of sea water and reduction of amenities”.

While one hopes that it will be successful, the difficulties faced in the first two sessions to agree to procedural rules hint at further challenges, especially as it remains unclear whether a bottom-up (based on voluntary nationally-set commitments) or top-down approach (based on binding globally-made commitments) will be chosen [22,23]. Hence, until such treaty becomes reality, it remains important to pay attention to the legal tools that already exist to tackle plastic pollution. We are focusing here on two legal regimes: the law of the sea and the regime addressing trade in waste products.

When it comes to addressing the marine plastics crisis, sovereignty is a double-edged sword. Indeed, on the one hand, sovereignty appears to be an impediment to solving this issue, since States, concerned about being under strict international obligations for land-based activities, only agreed to law of the sea provisions that were non-binding or insufficiently prescriptive. As will be examined in Part 2, obligations exist under the law of the sea to address all sources of marine pollution, but States appear most reluctant to have the international community dictate how they act on their own landmass. On the other hand, sovereignty might contribute to a solution within the regime regulating trade in waste products: unilateral actions taken in application of sovereign powers and aimed at reducing trade in plastic waste led to major multilateral actions with the potential to reduce the issue of marine plastic pollution. The Basel Convention on the Control of Transboundary Movements of Hazardous Waste and their Disposal – the one major legal regime with obligations binding a large proportion of the international community through which States have agreed to address the plastics crisis – will be analyzed in Part 3. In addition to assessing whether the two legal regimes under examination contribute to finding a solution to the issue of marine plastics, this article discusses whether and how these regimes relate to social equity. Social equity is mainly understood in this article as fairness in the distribution of benefits and burdens [24,25] between the global North and the global South (divided here along the lines of OECD and non-OECD countries) – it nonetheless also includes, where relevant to the discussion, just treatment between States of a same economic development category and between groups within the same country.

2. Sovereignty as impediment – the law of the sea regime

Traditionally, marine plastic pollution has been approached as a law of the sea issue, due to the location of that litter at sea. The legal framework provided by the law of the sea to prevent land-based sources of marine pollution gives precedence to State sovereignty by relying on national action. While the source of this marine pollution might be under national jurisdiction, its effects are transnational, and voluntary actions is not sufficient (sub-Section 1). Regional rules have also been adopted, but not across all regions or in a consistent manner (sub-Section 2). Hence, at present, marine litter originating on land is not subject to a regulatory framework that can adequately address its scope.

2.1. Framework provisions

The 1982 United Nations Convention on the Law of the Sea (UNCLOS)² is a multilateral and quasi-global treaty aimed at regulating all issues related to the seas. In a comprehensive manner, it attempts to address all sources of marine pollution in its Part XII, which focused on the protection of the marine environment. Until UNCLOS, it was believed that land-based sources of marine pollution could generally be controlled by the State from which they originated and that, at most,

² United Nations Convention on the Law of the Sea (10 December 1982, entered into force 16 November 1994) (UNCLOS) 1833 UNTS 3. As of 31 August 2023, it has 169 parties. The most noticeable non-party is the United States of America. Most of the provisions, however, do reflect customary international law.

regional rules would be required [26]. Going beyond the state of the law at the time, UNCLOS adopted a global approach to this source of pollution. Article 207 reads:

Pollution from land-based sources

1. States shall adopt laws and regulations to prevent, reduce and control pollution of the marine environment from land-based sources, including rivers, estuaries, pipelines and outfall structures, taking into account internationally agreed rules, standards and recommended practices and procedures.
2. States shall take other measures as may be necessary to prevent, reduce and control such pollution.
3. States shall endeavour to harmonize their policies in this connection at the appropriate regional level.
4. States, acting especially through competent international organizations or diplomatic conference, shall endeavour to establish global and regional rules, standards and recommended practices and procedures to prevent, reduce and control pollution of the marine environment from land-based sources, taking into account characteristic regional features, the economic capacity of developing States and their need for economic development. Such rules, standards and recommended practices and procedures shall be re-examined from time to time as necessary.
5. Laws, regulations, measures, rules, standards and recommended practices and procedures referred to in paragraphs 1, 2 and 4 shall include those designed to minimize, to the fullest extent possible, the release of toxic, harmful or noxious substances, especially those which are persistent, into the marine environment.

This provision applies to all marine litter originating from the land, and hence to large amounts of mismanaged plastic waste, as does the general obligation to protect the marine environment³ [on this, see 27]. However, it does not provide efficient international regulation that can address the problem of marine plastic pollution. Indeed, while article 207 does create binding legal obligations through the use of the word “shall”, these obligations are otherwise phrased in weak terms. According to paragraph 1, States have to adopt laws “taking into account internationally agreed rules, standards and recommended practices and procedures.” Hence, States do not have to adopt standards that are as stringent as the ones agreed to internationally [26]; they only have to consider those and can then adopt measures of their choosing. The treaty drafting practice of referring to other rules and standards, also known as the rule of reference, is useful in that it allows the main treaty, here UNCLOS, to remain up-to-date without having to be amended. However, in the case of land-based sources of marine pollution, the rule of reference does not make other instruments binding through UNCLOS – in contrast for example to the article on pollution by dumping which provides that national laws shall be *no less effective than* international standards.⁴ The rule of reference chosen for land-based sources of marine pollution leaves the most discretion to States and is the weakest in that part of UNCLOS. This is undoubtedly due to the particular sensitivity of States when it comes to sovereign control over their land territory [27,28].

The rest of article 207 is also full of terms which recognize States’ wide range of options in how they address land-based sources of marine pollution [28]: they shall “take other measures *as may be necessary*”; they shall “endeavour” to harmonize policies; they shall “endeavour” to adopt international standards; and in doing so they can “tak[e] into account characteristic regional features, the economic capacity of developing States and their need for economic development.”

The preference of UNCLOS parties was clearly not for a globally binding regulatory framework in relation to land-based sources of marine pollution [29]. The result has been described as largely aspirational [30]. The recognition that developing States have different economic capacity to address land-based sources of marine pollution and might decide to prioritize economic development over environmental concerns certainly contributes to social equity between States since it is an acknowledgment of different economic needs. However, it does impair UNCLOS’ ability to provide an efficient solution to the issue of marine plastics. Indeed, it leaves such leeway to coastal States that no common standard of action can be expected of them to prevent marine pollution from land-based sources. The obligations imposed on developing States are particularly softly worded [31].

2.2. Global and regional substantive rules

Moreover, even if the “internationally agreed rules, standards and recommended practices and procedures” were to be given effect through UNCLOS, the ones adopted until now by the international community have not proven able to effectively address the issue of land-based sources of marine pollution.

At the global level, no binding rules have been agreed upon by States. The main instrument of relevance is the 1995 Global Programme of Action for Protection of the Marine Environment from Land-based Activities (GPA) [32]. This voluntary program under the aegis of the UN Environment Programme (UNEP) provides action-oriented guidelines to be adopted and implemented nationally, regionally, and globally to prevent and reduce pollution from certain categories of substances, one of them being litter, including plastics [on this, see 30]. The GPA has played – and still plays – an important role in guiding willing States develop relevant policy or legal frameworks, and in increasing and disseminating knowledge and awareness about land-based sources of marine pollution [33]. A Global Partnership on Marine Litter was established in 2012 for these purposes [34,35] and the programme of action for 2018–2022 included a commitment by States to accelerate their actions aimed at reducing marine pollution caused by (micro-) plastics [36, on this see 31].

Progress has been noted for some categories of substances covered by the GPA, such as pesticides or radioactive substances [37]. Unfortunately, the same cannot be said for marine litter. In practice, such marine pollution has increased in the last 25 years. The GPA’s State of the Marine Environment report remarked that “[t]he problem of marine litter has steadily grown worse, despite both national and international efforts to control it” [37].

A critical assessment of the GPA noted that, due to many challenges, not least “limited financing and human resources, lack of political priority and will, limited adoption and implementation of global and regional agreements relating to [land-based sources and activities], the huge scale and breadth of human uses that have to be addressed, and the limits surrounding a non-legally binding approach”, it has not managed to curb some of the most serious pollution sources that it was meant to address [30]. The fourth review of the implementation of the GPA (for the period 2012–2018) also proves the limitations of this framework compared to the serious and urgent nature of the plastics crisis. The targets for marine litter are quite modest, with aims such as “[p]lastic bag ban in at least five countries” or are related to demonstration sites only. Even then, a certain number of the regional and global targets have not been achieved [35].

At the regional level, some binding rules exist to address land-based sources of marine litter [for an overview, see e.g., 7, 12, 27]. They can usually be found in protocols adopted under Regional Seas Programmes. Earlier instruments tended to solely provide lists of prohibited or

³ UNCLOS, article 194.

⁴ UNCLOS, article 210(6). See also article 211(1) and (5) where the rules of reference are “at least have the same effect as” and “conforming to and giving effect to” international standards.

regulated substances: the relevant instrument in the South-East Pacific, for example, includes in its annexes lists of substances the pollution from which parties “shall endeavour to prevent, reduce, control and eliminate” or “shall endeavour progressively to reduce”.⁵ More recent instruments usually address not only lists of pollutants to eliminate but also activities related thereto.⁶ However, these regional instruments do not appear adequate or sufficient to address the issue. They differ in content and levels of implementation [31]. Some have not entered into force, and some regions have not even adopted any [12, for an overview, see also 38]. But mainly, this fragmented regional legal framework is at odds with the global nature of marine plastic pollution, which will spread beyond a region, impacting States or regions that might themselves implement strict(er) prevention measures, as well as the international community through the pollution of areas beyond national jurisdiction.

3. Sovereignty as solution – restrictions to trade in plastic waste

In recent years, one avenue that has been followed to address the global plastic waste crisis, which is a large contributor to marine plastic pollution, has been trade restrictions to shipments of plastic waste. While plastics is a material necessary to many beneficial aspects of modern life and ought not to be criticized indiscriminately, the facts call into question the sustainability of this material. Only 9% of the plastics ever produced have been recycled (of the remainder, 12% have been incinerated and 79% directed to landfills or released into the natural environment) [39]. Plastics, as we use them, do not fit into a circular economy. Developed countries have relied heavily on exports to deal with their plastic waste [40,41]. Some commentators consider that restrictions to trade in waste products might hinder socio-economic development in countries of the global South since waste can serve as a resource for their industries [see e.g., 42,43]. This notion seems more difficult to embrace for plastic wastes given the complexity related to recycling this material and given that much of this waste, even the one intended for “recycling”, ends up in landfills or incinerated. Hence, while it is recognized that plastic waste processing can provide business opportunities [41,44], the transfer of such difficult to recycle materials from wealthier nations to developing countries with less efficient waste management is generally a problem both in terms of environmental and health damage as well as social equity [45–47].

When it came to restricting imports of plastic waste, some States started by using their sovereign powers to regulate what waste entered into their territory by limiting the import of certain types of plastic wastes. In particular, China decided, by its National Sword Policy of 2017, to close its market to post-consumer plastics as well as other waste material with more than 0.5% contamination levels [45,48]. Since China had, up to that point, imported over half of the plastic waste intended for recycling worldwide and about 45% of all plastic waste since 1992, this unilateral decision had global consequences [45,48]. States that were used to exporting their plastics to China were left with large amounts of waste or recyclables to redirect to new destinations or to sort in their own territory. This led to a modification of trading flows, with other countries in South East Asia in particular becoming the main recipients of plastic exports, whether or not they were in a position to deal with these volumes of waste and/or recycling in an environmentally sound manner [49, see also 41,45]. Some of these new importing States followed suit and also adopted limitations or outright bans similar

to China's [47]. When redirecting to a new destination was not possible, the States of origin of the plastic waste faced issues dealing with their mounting piles of waste and recycling. They did generally not have sufficient processing abilities domestically.

These unilateral restrictions were followed by changes to the relevant multilateral regime set up under the Basel Convention and the regional regimes that operate beside or underneath it. Most of these changes are recent, with measures related to plastics entering into force on 1 January 2021. This part examines these rules' content (sub-Section 1), potential, and limitations (sub-Sections 2 and 3) to address marine plastic pollution originating from mismanaged waste disposal sites in a manner that contributes to social equity, i.e., by halting the current trend of plastic waste being shipped to developing countries, in a manner that incurs negative environmental and health impacts in such countries.

3.1. Functioning of the Basel Convention and selected regional agreements

The Basel Convention⁷ provides a nearly global framework that regulates and/or prohibits the international trade in hazardous waste. The treaty was adopted in 1989 and entered into force on 5 May 1992. 191 States are currently parties to it. The Basel Convention and its annexes have been amended since its adoption, modifying the regime in major ways. In particular, the Conference of the Parties agreed, in 2019, to widen the scope of application of the Convention vis-à-vis plastic waste.⁸ These amendments of the annexes entered into force on 1 January 2021 and are the basis of the majority of trade restrictions in plastic waste. Another modification of note is the Ban Amendment,⁹ which was adopted in 1994 but only entered into force on 5 December 2019 when the conditions set in article 17(5) of the Convention were finally met. Accordingly, OECD States that have ratified this Amendment are bound by stricter rules in their dealings with non-OECD countries, as will be explained below.

The Basel Convention regime encourages States to reduce waste at source and dispose of their hazardous waste in an environmentally sound manner.¹⁰ In the case of a State without the infrastructure to do so and that seeks to export its waste,¹¹ the Basel Convention imposes trade restrictions of varying degrees depending on the type of waste involved.¹² Most restricted is trade in waste deemed “hazardous”. Waste that does not reach that level of danger but is nonetheless considered requiring special consideration is also covered. The scope of trade restrictions in the Basel Convention only covers waste considered hazardous or requiring special consideration. Annexes I–III, VIII and IX of the Convention determine which waste falls into which category, through complex interactions between the various annexes.

Hazardous waste comprises three categories. First, it includes all waste streams and waste including certain specific constituents listed in Annex I and possessing at least one characteristic listed in Annex III (list of hazardous characteristics). Second, it also covers all waste listed in Annex VIII (waste presumed to be hazardous) and possessing at least one characteristic listed in Annex III—for plastics, the relevant entry for such hazardous waste is entry A3210. Third, it comprises waste defined as hazardous under the domestic legislation of the State of export, transit or import.

⁷ Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal (22 March 1989, entered into force 5 May 1992) (Basel Convention) 1673 UNTS 57.

⁸ Basel Convention, Amendments to Annexes II, VIII and IX to the Basel Convention (May 2019, entered into force 1 January 2021) BC-14/12.

⁹ Basel Convention, Ban Amendment, (22 September 1995, entered into force 5 December 2019) Decision III/1.

¹⁰ Basel Convention, article 4(2)(a), (b), (d).

¹¹ Basel Convention, article 4(9).

¹² Basel Convention, article 1(1)–(2).

⁵ Protocol for the Protection of the South-East Pacific Against Pollution from Land-Based Sources (22 July 1983, entered into force 23 September 1986), articles IV–V.

⁶ See e.g., Protocol Concerning Pollution from Land-Based Sources and Activities to the Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region (6 October 1999, entered into force 13 August 2010).

Waste requiring special consideration (also known as “other” waste) comprises all waste listed in Annex II, which means (i) wastes collected from households; (ii) residues arising from the incineration of household wastes; and (iii) all plastic waste, except (a) plastics deemed hazardous; (b) explicitly listed plastic waste destined for recycling in an environmentally sound manner and almost free from contamination and other type of waste; (c) mixtures of explicitly listed plastic waste if they are destined for separate recycling in an environmentally sound manner and almost free from contamination and other types of wastes. For plastics, the relevant entry for “other” waste in Annex II is Y48.

Plastics not covered by the Basel Convention comprises two entries in Annex IX, which lists waste presumed not to be hazardous unless it contains an Annex I material to an extent causing it to exhibit an Annex III characteristic. First, excluded from the scope of the Convention are some explicitly listed types of plastic waste or mixture of plastic waste destined for separate and environmentally sound recycling and almost free from contamination and other types of wastes (entry B3011). Second, also excluded are explicitly listed types of solid plastic waste (entry B3010).

For all States parties to the Basel Convention, the rules applicable to international trade in waste under the Basel Convention depend on the type of waste, as identified above. Moreover, for those 103 States that have ratified the Ban Amendment to date, the rules also depend on the type of countries involved in a particular trading operation: trade from OECD to non-OECD countries is subject to different rules than trade between OECD countries or between non-OECD countries. In the case of hazardous or “other” waste, the minimum type of restriction is the prior informed consent (PIC) of the importing State; international trade is hence allowed under certain conditions.¹³ However, OECD countries are prohibited to participate in transboundary movement of hazardous wastes towards non-OECD countries if either the exporting or importing State has ratified the Ban Amendment¹⁴ [on this, see 50]. In the case of “other” waste, transboundary movement is subject to PIC, whatever the types of countries involved.

In summary, as between parties to the Convention:

<i>Trade involving a State having ratified the Ban Amendment // Trade involving a State not having ratified the Ban Amendment</i>	OECD to OECD or non-OECD to non-OECD	OECD to non-OECD
Hazardous	PIC	Ban // PIC
Special consideration	PIC	PIC
Not covered by Convention	Nothing	Nothing

Prior informed consent means that the country of import (and to the extent relevant the country/ies of transit) has provided written consent to the import of a specific shipment of waste. The administrative process [51] is complex. It starts with a notification stage within the State where the potential exports are located. The private party intending to ship waste abroad must have a contract with a private party in the intended State of import for the environmentally sound disposal of the waste. Such information is reviewed by the competent authority of the State of export, which issues, if it has no objection, a notification document. This document provides all necessary details specified in Annex V A of the Basel Convention, in particular on the waste and planned disposal operation. This data will serve to inform the potential State of import. The procedure continues with the prior informed consent phase itself, where the potential State of import receives and reviews the notification document and provides confirmation to the State of export that a contract indeed exists for environmentally sound disposal of the waste. The

State of import can refuse its consent or put conditions to the trade. If it does give its consent, a movement document is issued.

Trade of hazardous or other waste is not allowed with non-parties to the Basel Convention,¹⁵ except if a bilateral, multilateral or regional agreement exists with such non-party.¹⁶ According to article 11, these agreements must not “derogate from the environmentally sound management of hazardous wastes and other wastes as required by this Convention. [They] shall stipulate provisions which are not less environmentally sound than those provided for by this Convention in particular taking into account the interests of developing countries.”¹⁷ These agreements can also exist exclusively between parties. States parties to the Basel Convention are under an obligation to inform the Secretariat of any such agreements that already existed before they became bound by the Basel Convention, and of those that were adopted after that date.¹⁸

Conventions regulating trade in hazardous waste registered as Article 11 agreements under the Basel Convention exist in various regions. They include multilateral instruments such as the European Union Waste Shipment Regulation, the OECD Decision on the Control of Transboundary Movements of Wastes Destined for Recovery Operations, and a large number of other regional and bilateral agreements. Some of these regional or bilateral rules can further strengthen the Basel Convention, but there are also occurrences where they weaken the global regime, as will be examined below where relevant.

The EU Waste Shipment Regulation¹⁹ establishes a system to control trade in waste between EU members and with third parties. In December 2020, the EU amended this piece of legislation²⁰ in order to take into account the Basel Convention’s new restrictions towards trade in plastic waste. Under the EU Waste Shipment Regulation, there are only two types of waste: non-hazardous and hazardous.²¹ Trade in the former category, so-called ‘green’ listed waste, is subject to a general information requirement, or stricter controls if desired by the importing State.²² The latter category, also known as ‘amber’ listed waste includes both hazardous and “other” waste according to the Basel Convention. Trade in such waste to non-OECD countries is prohibited,²³ while trade to OECD countries is subject to a notification and consent procedure.²⁴

Members of the OECD have a separate sub-system for internal trade (i.e., trade from one OECD member to another) of waste products, outlined in the Decision on the Control of Transboundary Movements of Wastes Destined for Recovery Operations.²⁵ The piece of legislation provides two categories of waste: non-hazardous destined for recovery, subject to a green procedure, and hazardous and “other”, subject to an amber procedure. Wastes eligible to the green control procedure are

¹³ Basel Convention, article 4(1)(c).
¹⁴ Basel Convention, article 4A. See also Basel Action Network and IPEN, “The entry into force of the Basel Ban Amendment – A Guide to Implications and Next Steps” (January 2020), https://ipen.org/sites/default/files/document/s/ban-basel-fact-sheet-v2_1-en.pdf, 4–5.

¹⁵ Basel Convention, article 4(5).
¹⁶ Basel Convention, article 11.
¹⁷ Basel Convention, article 11(1).
¹⁸ Basel Convention, article 11(2).
¹⁹ Regulation (EC) No 1013/2006 of the European Parliament and of the Council of 14 June 2006 on shipments of waste (WSR), OJ L 190 (12 July 2006) 1–98.
²⁰ Commission Delegated Regulation (EU) 2020/2174 of 19 October 2020 amending Annexes IC, III, IIIA, IV, V, VII and VIII to Regulation (EC) No 1013/2006 of the European Parliament and of the Council on shipments of waste (Text with EEA relevance) C/2020/7091, OJ L 433 (22 December 2020) 11–19.
²¹ WSR, annexes III–V.
²² WSR, articles 3(2) and 18 (trade within the EU), 37 (trade to non-OECD countries), 38(1)–(2) (trade to OECD countries).
²³ WSR, article 36 and annex V.
²⁴ WSR, articles 3(1) and (4) (trade within the EU), 38(1), (3)–(4) (trade to OECD countries).
²⁵ OECD, Decision of the Council on the Control of Transboundary Movements of Wastes Destined for Recovery Operations (adopted 30 March 1992, last amended 1 January 2021) OECD/LEGAL/0266 (OECD Decision).

exempt from any controls beyond the usual ones applied to commercial transactions.²⁶ Waste listed as amber can be traded internationally subject to a notification procedure similar to prior informed consent, except that consent is deemed provided if no objection is raised within 30 days.²⁷ Moreover, an option exists for competent authorities to use pre-consented recovery facilities.²⁸

3.2. Scope of application

The regime created by the Basel Convention is the first global set of binding rules that have the potential to reduce marine plastic pollution. The 2019 amendment related to plastics was promoted with the argument that it would lead to “less marine plastic litter” [52]. One of this Convention’s main strengths is that, with 191 parties, it is very widely ratified. It is also indirectly applicable to non-parties through the prohibition to trade with non-parties, further expanding its scope of application. Its multilateral nature means that there are less risks of re-routing waste to vulnerable countries than there would be with unilateral bans – as witnessed in practice following China’s import ban. This regime certainly has the potential to decrease the trade in plastic waste, in particular in difficult to recycle plastics, and hence hopefully to reduce the amounts of waste dumped or otherwise mismanaged which could enter the oceans. Through its stricter rules in trade between OECD and non-OECD countries (for Parties to the Ban Amendment), it can also contribute to social equity by automatically keeping the global North’s most hazardous plastic waste away from the global South.

However, the regime has some major shortcomings. First, it has been argued that the decision to exclude some plastics from the scope of the Convention’s restrictions weakens the potential of this regime to adequately address the issue at hand [53]. Indeed, some plastics that are in fact unrecyclable and cause human health problems or environmental damage during thermal degradation are wrongly exempted from controls. Fluorinated polymers, condensation products and thermosets are not on the Y48 listing in Annex II, because they supposedly can be “recycled in an environmentally sound manner and almost free from contamination and other types of wastes” in the importing State. This is contradicted by their known toxicity and the fact that they include persistent organic pollutants [53].

Moreover, the Basel Convention, albeit widely ratified, is not universal. One of the remaining outsiders is the United States, the largest producer of plastic waste by weight and capita [54]. While the prohibition of trade with non-parties somewhat limits this weakness, the possibility to enter into bilateral agreements with non-parties and hence to trade hazardous and other waste with them is nonetheless a big loophole. States must provide information on the Article 11 agreements that they have entered into [55], but there is no formal review to verify that the waste is managed in an environmentally sound manner.

Canada for example entered into an agreement with the United States in October 2020 in relation to trade in “non-hazardous waste and scrap”.²⁹ While the parties to this agreement, which is considered by Canada to be an Article 11 agreement, deem it compatible with the Basel Convention since “[t]he principles of the Arrangement are based on the environmentally sound management of non-hazardous waste and scrap traded between Canada and the United States” [56], outside commentators do not share this opinion [57]. This is particularly problematic, as

this agreement was negotiated (in secrecy) in response to the Plastics Amendment, in order to ensure that trade in plastic waste between the United States and Canada would not be impacted.

Of concern is, first, the fact that this bilateral agreement is non-binding and hence is only the expression of general good intentions [58]. Second, its aim is to enable business as usual to continue, hence not providing equivalent levels of controls to the requirements of the Basel Convention [59]. Third, the official position regarding re-exports of Canadian waste from the United States to a third country which is party to the Basel Convention has been put in question. Canada declared that such re-exports are excluded from the agreement [56], as they should be for that country to respect its international obligations under the multilateral treaty. However, this exclusion is not provided for in the agreement [58]. In practice, once a shipment is in the United States, that country might be free to continue trading it, without Canada’s knowledge [60,61], especially in light of the apparent absence of a legal basis in US law to enforce such re-export ban [62].

Another limitation to the regime’s effectiveness in addressing marine plastic pollution is that the Basel Convention only focuses on international trade. Since it is not intended to deal with internal waste trade and/or management, it will have little to no impact on the potential issues that arise within one country. For example, dumping of waste in the poorer areas of a country, against all social equity principles, cannot be addressed by this treaty. In that sense, the Basel Convention cannot solve the marine plastics problem single-handedly, nor is it able to fully address the issue of social inequity.

The EU Waste Shipment Regulation worsens this limitation. In a manner which, arguably, contravenes the EU member States’ obligations under the Basel Convention, this piece of legislation provides for less stringent rules for trade within the European Union than what is required beyond the block’s borders. In particular, it allows free trade between member States not only for uncontaminated plastics destined to recycling or reclamation (as is permitted under the Basel Convention) but also for such clean waste destined for “recovery” operations³⁰ [on this, see 57,63]. Recovery (as in ‘recovery of energy’) is a wider concept than recycling/reclamation, and it includes burning of plastics for fuel, a much-criticized manner of dealing with waste which poses danger to both human health and the environment [64–66]. While the European Union justifies these exemptions by stating that its internal trade is subject to an Article 11 agreement³¹ [on this, see 57], this argument is not legally tenable. An Article 11 agreement is only valid if it applies measures that ensure an equivalent environmentally sound management and control of the wastes covered by the Basel Convention. Since EU member States remain sovereign States and are not sub-entities of a single country, trade between them must respect the standards of the multilateral treaty.

In practice, the derogations adopted by the EU for trade between its Member States will further deepen the issue of social equity identified here above: it is likely that, within the European framework, some plastic waste will be traded internationally within the regional block and used for incineration. In most cases, plastic waste will end up in the poorer members of the Union. It has been noted that “[i]n Bulgaria, the poorest EU country, imported plastic waste is often dumped in illegal landfills or sent for burning in coal power plants which are not equipped for such activity” [67].

3.3. Implementation and enforcement

As with any rules, multilateral trade restrictions in waste products will only contribute to a solution to the issue of marine plastic pollution if they are properly and consistently implemented by all relevant actors

²⁶ OECD Decision, parts B(2)(a) and C.

²⁷ OECD Decision, parts B(2)(b) and D(2) Case 1 (f).

²⁸ OECD Decision, parts B(2)(a) and D(2) Case 2.

²⁹ Arrangement Between the Government of The United States of America and the Government of Canada Concerning the Environmentally Sound Management of Non-Hazardous Waste and Scrap Subject to Transboundary Movement (signed 22 and 26 October 2020), <https://www.canada.ca/en/environment-climate-change/services/managing-reducing-waste/international-commitments/canada-us-arrangement/arrangement-non-hazardous-waste-and-scrap.html>.

³⁰ Compare Basel Convention Annex IX B3011 and Annex IV R3 to the WSR, articles 2(6) and 3(2), read together with Annex III Part I(g).

³¹ WSR amendment, preamble 6.

and if violations are identified and addressed. Underlying problems of capacity are unfortunately present at many stages and for many parties to the Basel Convention, as are those of insufficient support and technology transfer towards developing States [42]. As these last issues are not specific to this particular regime, they will not be discussed in detail.

For proper implementation of the Basel Convention rules, a State party or a private actor must first be able to identify, reliably, whether the plastic waste it desires to trade is covered by the international regime, and if so, in which category it falls. Absence of clarity might create loopholes that enable hazardous waste to be traded without proper control. Unfortunately, the Basel Convention regime is extremely complex when it comes to determining which waste falls into which category, as evidenced by the interaction between the Annexes presented above. Moreover, the Basel Convention regime lacks important definitions, such as for the term “almost free from contamination and other types of wastes” [on this, see 65]. Since that standard determines which plastic waste falls outside of the scope of the regime (and consequently which plastics are covered), it would be positive for States to use the same definition. All that is said is that “international and national specifications may offer a point of reference”.³² Even EU member States do not seem to have adopted common thresholds [68]. Inconsistent definitions might put at risk the effectiveness of the multilateral rules, especially since different standards between importing and exporting States will impair effective control of waste trafficking [44,69].

Another concept that is at the center of the Basel Convention and yet remains dangerously vague is that of “environmentally sound management of hazardous wastes and other wastes”. Not only is it the standard at which States are encouraged to dispose of their own hazardous waste,³³ but it is also the manner in which hazardous and other waste must be disposed in the destination country of any trade and hence a crucial standard for the prior informed consent procedure. A shared understanding of what this entails appears central to a functioning regime, but the Basel Convention only contains a vague definition.³⁴ When it comes to plastics, State parties have adopted some dedicated technical (non-binding) guidelines on the question [70]. Nonetheless, the current guidelines date back to 2002 and are obsolete. Recent efforts have been made to draft updated technical guidelines on the environmentally sound management of plastic wastes [71], but the resulting draft has not been met with unequivocal enthusiasm. In particular, waste treatments such as pyrolysis or gasification are included within the concept of “recycling in an environmentally-sound manner” while being extremely controversial [53,72].

An additional issue of concern is discrepancies between the lists of hazardous waste adopted under the Basel Convention and those adopted by States or groups of States when seemingly implementing the multilateral regime. The OECD Decision is a prime example of this problem. Usually, the OECD amber and green lists reflect the Basel Annexes through automatic incorporation. Nonetheless, an OECD member can object to these automatic amendments,³⁵ which the USA did in 2019 regarding plastic waste. OECD members could only agree on incorporating the amendments to the hazardous waste list, but not to “other wastes” [73,74]. The OECD Decision provides that, in such a case where consensus cannot be reached, “[e]ach Member country retains its right to control such waste(s) in conformity with its domestic legislation and international law”.³⁶

If one accepts that the system created by the OECD Decision is a valid Article 11 agreement [on this, see 75], its provisions would apply for the substances listed therein. This would seem to signify that, for all OECD

members, the OECD amber procedure applies to hazardous plastics. For the plastics that are considered “other wastes” under the Basel Convention, the rules of the global multilateral system are in force for all OECD members that are also bound by the Basel Convention (i.e., all except the USA), including the prohibition to trade with a non-party. In reality, it appears that some OECD countries have decided to unilaterally apply the OECD amber procedure to those plastics, a set of requirements which somewhat differs from the Basel Convention (e.g., Japan, the United Kingdom), or even the green procedure, in total disregard of international obligations (e.g., Costa Rica) [76]. Since there is no Article 11 agreement applicable vis-à-vis those substances, even the use of the amber procedure is a legally questionable decision. Legal uncertainty often serves to lower standards and to create loopholes for illegal trade.

Second, the procedures in place must be applied similarly between countries. A large proportion of plastics fall under the PIC procedure, the implementation of which can prove challenging [42,77]. In addition to the issue presented above of defining what constitutes environmentally sound management, the exporting State cannot verify that the importing State truly has adequate waste management since the procedure is limited to an exchange of information. The exporting State must consequently rely on the representations made by the importing State [78]. While this seems standard in inter-State relations, in practice this can lead – and has led – to major issues in implementing the trade restrictions of the Basel Convention. Indeed, the potential lack of technical and administrative capacity to assess whether a facility can, in fact, handle specific waste in an environmentally sound manner, the reality that some developing States might need the foreign currency that comes with waste imports, and/or the actions of corrupted officials have contributed to environmental disasters due to waste import and mismanagement [78].

These complexities of the PIC procedure are avoided for trade in hazardous waste between most OECD and non-OECD countries since the Ban Amendment stops all such trade [79]. The PIC procedure can also be avoided if exporting or importing States decide to apply higher restrictions to “other” wastes. The EU Waste Shipment Regulation, for example, bans exports to non-OECD countries of both hazardous and “other” waste.³⁷ Either plastics are destined for recycling and almost free from contaminant and hence can be traded under the green procedure, or they do not fulfill these conditions and they cannot be traded to non-OECD countries. This widens the scope of the Basel Convention Ban Amendment to more waste types and simplifies procedures by removing PIC from these trade relations. Overall, if plastic waste that cannot be easily recycled (and hence considered as actual resources) does not go from wealthier to poorer countries, the benefits for social equity might be strong. Indeed, countries in the South will stop being the dumping grounds of developed States and they might be able to use their waste management and recycling facilities for their own wastes.

Third, for the regime to be in a position to effectively address plastic waste mismanagement, and hence the potential leakage into the oceans, a high level of compliance with the rules is needed. That requires States to be able to detect shipments that are suspected of not following the applicable procedures, for example when the declared content does not correspond to the reality [80]. In addition to a well-functioning customs system, a legal regime with deterrent sanctions is necessary to punish infractions. Indeed, a country must be able to address illegal waste imports or treatment for the regime to work.

Against these needs for efficient enforcement, the reality is bleak. Illegal traffic and waste crime more generally are widespread [69,80]. Illegal trade in waste can take many forms, such as the absence of notification, false declarations of content, or the use of transit countries to hide the origin of a shipment [41]. Once within a State, waste might also be illegally treated, in recycling facilities that do not meet

³² Basel Convention, annex IX, footnote 38.

³³ Basel Convention, article 4(2)(a), (b), (d).

³⁴ Basel Convention, article 2(8).

³⁵ OECD Decision, part B(3)(a).

³⁶ OECD Decision, part B(3)(e).

³⁷ WSR, article 36 and annex V, more specifically, for plastics Part 1 List A (A3210) and Part 3 (Y48).

environment standards, dumped into landfills, or destroyed through waste fires [41]. As outlined by Interpol, illegal activities can take place at every stage of the waste processing chain [41]. EU research estimated that, in 2011, about 20% of all waste shipments in the EU was illegally trafficked. And this issue is particularly acute in the case of plastics: a global initiative under the aegis of the World Customs Organization found that plastic waste constituted nearly a quarter of the illegal shipments of waste seized [40,80].

Such illegal activities are due to the traditional push-pull factors. On the one hand, the risk of being caught is low in light of the great volumes and complexity of trade in waste and the limited resources allocated at borders [40,44]. Even if a shipment is intercepted, the sanctions do not generally appear dissuasive [40,44]. On the other hand, the potential for profit is large [44]. With many countries facing surpluses of waste which their own recycling and waste management infrastructure cannot cope with, and with quantities of plastic waste not having abated in the lead up to 1 January 2021, the market for criminal activities has only widened.

Since more efficient enforcement in one country only appears to lead to modifications of shipment routes to other countries and hence greater burdens of plastic waste on countries with less stringent regulations and/or less capacity [44], the need for improvement is global. Capacity issues are obviously central to the problem of illegal activities in waste trade and treatment. Many initiatives within the Basel Convention framework aim at alleviating these problems. For example, the Environmental Network for Optimizing Regulatory Compliance on Illegal Traffic (ENFORCE) is a facilitative mechanism to support parties' compliance through improved implementation and enforcement of domestic laws. More generally, the parties collaborate through exchange of information, adoption of guidelines on how to combat illegal traffic, and rely on the Secretariat to support them for example through technical assistance activities [44,81–83]. Outside of the Basel Convention regime, one should note the work of Interpol, in particular with the DEMETER operations, which are global customs enforcement efforts to fight illegal waste and environmental crimes [44].

One final tool which could contribute to the consistent implementation of the Basel Convention and encourage enforcement actions when needed is international supervision of States parties' actions. This usually takes place through a compliance committee. The Basel Convention Conference of the Parties established such body, the Mechanism for Promoting Implementation and Compliance [84], but it unfortunately is not functioning properly. Many States do not send their reports, maybe because they lack capacity to do so, and maybe also because that they are in fact under no obligation to do so [42]. In any case, a situation of non-compliance might, at most, lead to facilitative measures to support parties that have issues in meeting their obligations [69,85]. While a facilitative approach has clear value, it would also benefit from being joined with punitive measures when facing intentional non-compliance [78].

4. Conclusion

As presented in this article, the international legal regime traditionally addressing marine litter, the law of the sea, is not able to effectively address the issue of plastics as a land-based source of marine pollution. The approach chosen by UNCLOS drafters is too soft and non-prescriptive. While UNCLOS might contribute to social equity by recognizing the special position of developing States in terms of capacity and need for economic development, this deference to domestic decisions prevents the development of binding, standardized, and efficient measures. Since a large majority of plastics in the oceans originate from land, this weakness is a major concern. As to later law of the sea instruments, they are non-binding and/or only regional, and hence unable to fill in the gaps of a truly global issue requiring binding commitments. In recent times, the Basel Convention has become an important forum to tackle the plastic waste issue, with the potential to contribute to a

solution to the marine side of this crisis. This regime is not perfect, especially in that its complexity and reliance on enforcement at the customs level leave ample opportunities for criminal activities to flourish. Areas of improvement for this regime include addressing the legal uncertainty regarding Article 11 agreements and certain key definitions, strengthening the PIC procedure and the compliance committee [78], and heavily investing in capacity building and technology transfer. Nonetheless, it provides a widely-ratified framework to decrease trade in plastic waste that is considered hazardous or requiring special consideration, two categories which cover many hard-to-recycle plastics.

In that sense, the Basel Convention regime has a strong potential to reduce mismanaged plastic waste leaking into the oceans and to contribute to social equity between States—if not domestically—by reducing the practice of wealthy countries using developing States as dumping grounds under the pretense of mutually beneficial trade in waste products. Unlike unilateral measures such as China's National Sword Policy, multilateral trade restrictions should not simply lead to a redirection of waste flows towards other States, who are potentially even less equipped to deal with them in an environmentally sound manner. Consequently, consumer States that export plastic waste might have to rethink their waste management infrastructure [69] and improve their recycling facilities [67]. If plastics recycling continues to face the major challenges it has so far, and if that leads to stock-piling of waste domestically in wealthier States, domestic pressure for more fundamental changes might grow.

Hence, beyond the direct impacts on the quantity of mismanaged plastic waste, the Basel Convention might nudge the international community towards addressing the elephant in the room: the necessity to re-think the whole life-cycle of plastics, from design to disposal [86]. Indeed, in light of plastics poor recyclability, it is crucial to both minimize plastics production as well as to modify designs in order to make this material a part of the circular economy. As a first step, the Plastic Waste Partnership established under the Basel Convention supports States in decreasing their generation of hazardous waste, an often-forgotten obligation under that international regime [69,87,88]. More generally, one can hope that, faced with growing mounts of plastic waste in its own backyard, the global North will be a positive force in the current negotiations towards the development of a fair and ambitious multilateral treaty for the whole life-cycle of plastics.

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