Amsterdam Center for International Law
University of Amsterdam

RESEARCH PAPER SERIES

SHARES Research Paper 87 (2016)

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Katharina Kummer Peiry
Kummer EcoConsult

Cite as: SHARES Research Paper 87 (2016)
available at www.sharesproject.nl and SSRN

Forthcoming in: André Nollkaemper and Ilias Plakokefalos (eds.), *The Practice of Shared Responsibility in International Law* (Cambridge University Press, 2016)

The Research Project on Shared Responsibility in International Law (SHARES) is hosted by the Amsterdam Center for International Law (ACIL) of the University of Amsterdam.

The research leading to this paper has received funding from the European Research Council under the European Union's Seventh Framework Programme (FP7/2007-2013) / ERC grant agreement n° 249499.

The Practice of Shared Responsibility in relation to Transboundary Movement of Hazardous Waste and Chemicals

Katharina Kummer Peiry[*]

1. Factual scenarios: Contributions by multiple states to damage caused by hazardous substances

Situations where more than one state may be legally responsible for damage caused by transboundary movements of hazardous waste and chemicals occur regularly in practice. They arise where private or public actors in two or more states have carried out a transboundary movement, in contravention of international obligations incumbent on the states concerned and/or the applicable laws of these states, which the competent state authorities have failed to detect and prevent, and which has caused damage. This is to be distinguished from the situation where only one of the states involved bears responsibility, the other or others having ensured compliance with the legal rules at their end. The damage is most often sustained in the state of import. It can also be sustained in a state of transit – including coastal states through whose jurisdiction a shipment passes – in the event of an accident, or improper handling of the material at any stage of the transport. Damage sustained in the state of export prior to the transboundary movement would not entail international responsibility, but is governed by the national legislation of the state of export.

In practice, activities causing damage are nearly always carried out by private actors based in different states, operating in collusion with each other to transfer hazardous materials from one state to another. This is illustrated by one of the most notorious incidents that occurred in recent years. In 2006, the Greek-owned vessel ‘Probo Koala’, registered in Panama and chartered by a Dutch commodity shipping company, carried over 500 tons of toxic wastes (a mixture of fuel, caustic soda, and hydrogen sulfide) from the port of Amsterdam (the Netherlands) to Abidjan (Côte d’Ivoire), where the waste was offloaded and subsequently

[*] MLaw (Zurich), PhD (London); Director, Kummer EcoConsult; Visiting Fellow, University of New South Wales; Member, Board of Directors, Sustainable Electronics Recycling International. Some statements made in this article are based on the author’s experience in practice over the past 25 years that due to their nature are not necessarily documented by public sources. The research leading to this chapter has received funding from the European Research Council under the European Union’s Seventh Framework Programme (FP7/2007–2013)/ERC grant agreement n° 249499, as part of the research project on Shared Responsibility in International Law (SHARES), carried out at the Amsterdam Center for International Law (ACIL) of the University of Amsterdam. All websites were last accessed in December 2014.

dumped at about 18 waste sites in and around the city of Abidjan, causing serious health and environmental damage. The wastes had been declared as ‘slops’ (waste water from washing the ship’s tanks). The gases released from the chemicals reportedly have caused 16 deaths, and injury to over 30.000 people, including headaches, vomiting, and severe burns of skin and lungs. Around 100.000 people sought medical attention following exposure to the gases. An Ivorian government report of the same year found that the dumping was aided by Ivorian nationals, and that Ivorian port officials as well as other authorities ignored the operation due to corruption.[1] In this case, several states can be said to have been involved in the transaction, including the Netherlands from where the movement originated, Côte d’Ivoire where the waste was offloaded and the damage was caused, and Panama as the flag state of the vessel.

Transboundary movement of hazardous chemicals and wastes in contravention of applicable legislation often occurs because control measures to prevent it are insufficient or lacking. Illegal traffic in hazardous substances is ‘big business’, and the operators involved go to great lengths to avoid detection.[2] It is not infrequent for illegal transports to be organised by nationals of the state of import who reside in the state of export or who have entered it for this purpose, in collaboration with partners in their home country. As in the Probo Koala incident, nationals of the country of import operating from within that country frequently take part in illicit operations. At the same time, border control, testing and enforcement measures are extremely difficult and resource intensive. Even the most highly developed countries lack sufficient capacities (limited number of trained personnel, means of detection, testing facilities etc.) to effectively enforce the applicable national legislation, to say nothing of developing countries, which often also lack the legislation.[3] Illegal activities often involve countries with regimes of questionable integrity or weak regulatory and enforcement systems.[4] It is fair to say that all countries that are parties to the Multilateral Environmental Agreements (MEAs) discussed in section 2.2. below have difficulties with the effective enforcement of the relevant treaties, albeit to different degrees.[5] Illegal traffic and the problems countries face in attempting to prevent this are ongoing topics for discussion in the framework of the Basel Convention (see

[1] R. White, ‘Toxic Cities: Globalizing the Problem of Waste’ (2008) SJ 107; N. Dorn, S. Van Daele, and T. Vander Beken, ‘Reducing Vulnerabilities to Crime of the European Waste Management Industry: the Research and the Prospects for Policy’ (2007) 15 EJCCLCJ 23.

[2] White, ibid.; Secretariat of the Basel Convention, ‘Illegal Traffic under the Basel Convention’, December 2010, available at www.basel.int.

[3] Secretariat of the Basel Convention, ‘Vital Waste Graphics 3, 2012’, at 37 (available at www.basel.int).

[4] T. Sapens, ‘Cross-Border Police Cooperation in Tackling Environmental Crime’, in Proceedings of the 9th International Conference on Environmental Compliance and Enforcement, Whistler, British Columbia, Canada, 2011, 237.

[5] See among others M. Massari and P. Monzini, ‘Dirty Business in Italy: A Case Study of Illegal Trafficking in Hazardous Wastes’ (2004) 6(3-4) GC 285; Vital Waste Graphics 3, 2012, n. 3, 38.

section 2.2.1 below). The following objects or substances are most commonly subject to illegal transboundary transfers that are likely to cause damage:

- *Hazardous wastes of all types* that are intended for illegal disposal or uncontrolled recycling operations to extract valuable secondary raw material, usually due to cheaper (and 'dirtier') treatment options in the country of import. The volume of hazardous wastes generated globally, as well as the volume transported across national borders, is increasing, in some cases exponentially. According to one 2011 estimate, over 50 per cent of all transboundary movements of hazardous wastes worldwide take place illegally[6]Another estimate of the same year indicates that approximately 1,5 million waste-loaded containers per year are shipped illegally, and that the 'market' value of illegally shipped waste amounts to USD 10-20 billion.[7]
- *Hazardous chemical substances* that are prohibited or being phased out under the applicable MEAs but are still used illegally in some countries, and traded for this purpose. Examples of this include ozone depleting substances, and persistent organic pollutants (POPs).
- *Near end-of-life goods containing hazardous substances* that are intended for use in the country of import, which become wastes after a short time span. Examples include old computers donated to schools or other public service providers in developing countries by charities based in developed countries.
- *Obsolete ships* that are sailed to the country of import and beached for informal and illegal dismantling.

The two latter phenomena are relatively recent, and it is often difficult to attribute legal responsibility for damage caused, as the goods upon export are not considered hazardous wastes, and their export is thus not illegal under the applicable legal rules.

Finally, damage can occur if the export has been authorised and initiated in accordance with the applicable legal rules, but the treatment or disposal in the state of import cannot be completed as planned, for example due to force majeure. In this case it can also be difficult to

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[6] Estimate by European Union Network for the Implementation and Enforcement of Environmental Law (IMPEL), quoted in 'Umwelt' 3/2011, at 44 (Swiss Federal Agency of Environment, available at www.bafu.admin.ch/magazin2011-3).

[7] H. Ruessink and G. Wolters Jr., 'Combating Illegal Waste Shipments through International Seaports – A Call for Concerted Private and Public Approaches', in Proceedings of the 9th International Conference on Environmental Compliance and Enforcement, Whistler, British Columbia, Canada, 2011, 230, at 231.

attribute responsibility, in particular if the states and individuals involved have complied with their legal obligations.

Numerous studies have been conducted on the quantities and types of hazardous wastes moved across international borders.[8] From the 1990s onwards, the phenomenon of hazardous waste shipments from developed to developing countries has been extensively documented; many of the relevant studies examine the economic reasons for this phenomenon and measures to prevent it.[9]

2. Primary international legal rules

2.1 Customary rules on transboundary pollution

Assuming that transboundary movement of hazardous substances constitutes an aspect of pollution, the relevant traditional rules of customary international law apply, namely: the due diligence obligation of a state to ensure that activities within its territory or under its jurisdiction do not cause serious harm to other states; the right of a state to control activities within its area of jurisdiction (including prohibition, restriction or control of importation of hazardous substances); and the duty of providing information and cooperation with states affected by an activity. A number of principles of international environmental law that have emerged in recent decades also apply, namely the preventive approach, the precautionary principle, and the polluter pays principle.[10] In principle, the obligations under customary law may be applicable to situations where multiple states contribute to harm resulting from transboundary movement of hazardous wastes and chemicals, as they may apply to the state of export, to the state of import, and to one or more states of transit. However, it must be recognised that the traditional customary law rules have limited significance for the modern

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[8] For a recent detailed analyis of available data, see D. Kellenberg and A. Levinson, 'Waste of Effort? International Environmental Agreements' (2014) 1 JAERE 135.

[9] For an overview and summary of early studies see K. Kummer, *International Management of Hazardous Wastes: The Basel Convention and Related Legal Rules* (Oxford University Press, 1995/1999), 6; J. Krueger, *International Trade and the Basel Convention* (London: Earthscan, 1999). Examples of more recent studies include J. Baggs, 'International Trade in Hazardous Waste' (2009) 17 RIE 1; J. Lepawsky and C. McNabb, 'Mapping International Flows of Electronic Waste' (2010) 54 CG 177; T. Shinkuma and N.T.M. Huong, 'The Flow of E-Waste Material in the Asian Region and a Reconsideration of International Trade' (2009) 29 EIAR 25; Secretariat of the Basel Convention, 'Waste without Frontiers: Global trends in generation and transboundary movements of hazardous wastes and other wastes', Analysis of the Data from National Reporting to the Secretariat of the Basel Convention for the Years 2004-2006 (Geneva, 2010); Vital Waste Graphics 3, 2012, n. 3.

[10] For a detailed analysis of customary law as applied to international transfer of hazardous substances, see Kummer, ibid., 16 et seq.

phenomenon of transboundary movements of hazardous chemicals and wastes, as they are not sufficiently precise and do not set clear technical standards of acceptable versus unacceptable behaviour.[11]

2.2 Multilateral Environmental Agreements applicable to transboundary movements of hazardous chemicals and wastes

Five global MEAs on the management of hazardous chemicals and wastes have been adopted over the last decades. Two of these, the Montreal Protocol on Substances that Delete the Ozone Layer (Montreal Protocol)[12] and the Stockholm Convention on Persistent Organic Pollutants (Stockholm Convention),[13] do not address transboundary movements of the substances within their scope.[14] This section discusses the three MEAs that feature relevant provisions: the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal (Basel Convention),[15] the Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade (Rotterdam Convention),[16] and the Minamata Convention on Mercury (Minamata Convention).[17]

2.2.1 The 1989 Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal

In accordance with its overall objective to protect human health and the environment against the adverse effects of hazardous wastes, the Basel Convention features a number of general provisions requiring parties to observe the fundamental principles of environmentally sound

[11] Ibid., Kummer, at 25.
[12] Montreal Protocol on Substances that Deplete the Ozone Layer, Montreal, 16 September 1987, in force 1 January 1989, 1522 UNTS 3 (Montreal Protocol).
[13] Stockholm Convention on Persistent Organic Pollutants, Stockholm, 22 May 2001, in force 17 May 2004, 2256 UNTS 119 (Stockholm Convention).
[14] The Montreal Protocol does impose restrictions on trade in ozone-depleting substances between parties and non-parties, but these have lost their practical significance since the Protocol has achieved universal ratification; see http://ozone.org.
[15] Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, 22 March 1989, in force 5 May 1992, 1673 UNTS 57 (Basel Convention).
[16] Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade, Rotterdam, 10 September 1998, in force 24 February 2004, 2244 UNTS 337 (Rotterdam Convention).
[17] Minamata Convention on Mercury, Kumamoto, 10 October 2013, not in force (Minamata Convention). As of September 2014, 122 states had signed the Minamata Convention, and 6 states had ratified it (see www.mercuryconvention.org).

waste management and proximity of disposal (Article 4(2)). The Basel Convention also stipulates that hazardous wastes may not be exported to Antarctica, to a state not party to the Convention, or to a party having unilaterally banned the import of hazardous wastes (Article 4(1) and (2)). Parties may enter into bilateral or multilateral agreements or arrangements on transboundary movements of hazardous wastes with other parties or with non-parties,[18] provided that these are 'no less environmentally sound' than the Basel Convention (Article 11). Following the adoption of the Basel Convention, a number of such agreements have been concluded in different parts of the world.[19] These feature provisions similar to those of the Basel Convention, and in addition prohibit certain transboundary movements into, within, and out of the relevant regions. A 1995 amendment to the Basel Convention, not yet in force,[20] prohibits all exports of hazardous wastes covered by the Convention from member states of the Organisation for Economic Co-operation and Development (OECD), the European Union, and Liechtenstein, to non-members of these organisations. These states are listed in a new Annex VII, and are therefore commonly referred to as 'Annex VII states'.

Transboundary movements that are not prohibited under the general obligations of Article 4 may take place only if carried out in accordance with the Basel Convention's regulatory system, which can be regarded as the cornerstone of the Convention. Based on the concept of prior informed consent (pic), this system requires that the competent authority of the state of export notifies the competent authorities of the prospective states of import and transit of any

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[18] The United States today is the only non-party with any significance in the context of transboundary movements of hazardous wastes; see www.basel.int/Countries/StatusofRatifications/PartiesSignatories/tabid/1290/Default.aspx.

[19] Multilateral agreements and arrangements concluded under Article 11 include the Bamako Convention on the Ban of the Import into Africa and the Control of Transboundary Movements and Management of Hazardous Wastes within Africa, Bamako, 30 January 1991, in force 22 April 1998; the Waigani 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, Waigani, 16 September 1995, in force 21 October 2001; the Regulation (EC) No. 1013/2006 of the European Parliament and of the Council of 14 June 2006 on Shipments of Waste, (2006) OJ L 190/1; and the OECD Decision of the Council C(2001)107/FINAL Concerning the Control of Transboundary Movements of Wastes Destined for Recovery Operations, as amended by C(2004)20. A full list of relevant agreements and arrangements is available at www.basel.int/Countries/Agreements/MultilateralAgreements/tabid/1518/Default.aspx; for a discussion of the relationship with the Basel Convention, see Kummer, *International Management of Hazardous Wastes*, n. 9, Chapters 3 and 4.

[20] Article 4A and Annex VII, Amendment to the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, Geneva, 22 September 1995, not in force (Ban Amendment). The number of ratifications required for entry into force of the Amendment has been debated by the conference of the parties for many years, as the wording in Article 17(5), the applicable provision of the Convention, is unclear. In 2011, the conference of the parties, as part of a compromise package proposed under the Indonesian-Swiss Country-Led Initiative, adopted Decision BC-10/3, setting the number of ratifications required at three-fourths of the parties that were parties at the time of the adoption of the amendment. As of September 2014, 80 states had ratified the Amendment (see www.basel.int).

intended movement, and provides them with detailed information. The movement may only proceed if and when all states concerned have given their written consent (Articles 6 and 7).

Any movement carried out in contravention of the relevant provisions is deemed illegal, and the Convention expressly states that illegal traffic is criminal (Article 2(21); Article 4(3); Article 9(1)). Parties are required to take the necessary measures to prevent and punish illegal traffic (Article 4(4); Article 9(5)). Under Article 8, if a transboundary movement is legal, but it proves impossible to treat or dispose the wastes as foreseen, the states concerned must cooperate to find a solution for the environmentally sound disposal of the wastes.

The Basel Convention provides for cooperation between parties, ranging from exchange of information on issues relevant to the implementation of the Convention to technical assistance, particularly to developing countries (Articles 10 and 13). The Secretariat is required to facilitate and support this cooperation (Article 16).

The Basel Convention sets out clear primary obligations and rights for the states of export, import and transit. It is thus in principle well designed for addressing situations where multiple states are involved in an operation that may result in harm in a third state. The relevant rights and obligations, most particularly those of transit states, were hotly debated during the negotiation of the Convention, as was the potential conflict between the rights of transit states and the navigational rights and freedoms under international law.[21] After the adoption of the Convention in 1989, however, these issues never appeared on the agenda of the conference of the parties and its subsidiary bodies. The focus of the debates and decisions was on assisting parties, particularly developing countries and countries with economies in transition, in exercising their rights and complying with their obligations, most particularly in preventing illegal traffic. Accordingly, the Secretariat, under the mandate of the conference of the parties, has developed a variety of capacity building programmes and guidance materials in these areas.[22] The debate on a total ban of transboundary movements from developed to developing

[21] For a detailed account see Kummer, *International Management of Hazardous Wastes*, n. 9, 42.

[22] K. Kummer Peiry, 'International Chemicals and Waste Management', in M. Fitzmaurice, D.M. Ong, and P. Mercuris (eds.), *Research Handbook on International Environmental Law* (Cheltenham: Edwar Elgar, 2010), 637. All relevant decisions as well as an overview of the corresponding actions taken by the Secretariat in the area of capacity building are available at www.basel.int.

countries, seen by some as the best approach to preventing illegal traffic, has dominated the debate both in the negotiation of the Convention and in the over 20 years since its adoption.[23]

2.2.2 The 1998 Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade

The objective of the Rotterdam Convention is to protect the environment against the ill-effects of hazardous chemicals by facilitating information exchange and providing a decision making process on the import and export of such chemicals (Article 1). Accordingly, the Convention establishes a global information system under which all parties are required to notify the Secretariat of any chemicals and pesticides included in the so-called PIC List that they have banned or severely restricted for importation (Article 10, Annex III). An elaborate procedure is in place to determine the inclusion in, or removal from, the PIC List of a specific chemical or pesticide (Articles 5 to 9). This system is the cornerstone of the Convention. Unlike the Basel Convention, the Rotterdam Convention does not prescribe prohibition or restriction of transboundary movement in specific cases; the relevant decision rests with the individual party. The Convention Secretariat communicates the decisions to all parties on a six-monthly basis. Any transaction with a party having taken a decision on a substance appearing on the PIC List may only be carried out if it is in accordance with that decision (Article 10). If an industrial chemical does not figure on the PIC List but is banned or severely restricted in the prospective exporting party, that party must notify the prospective importing party of its intention prior to the first shipment, and on a yearly basis thereafter (Articles 12 and 13). Although not expressly stated, this enables the prospective importing state to prohibit the transaction. The issue of transboundary movement between parties and non-parties is not addressed, nor is the issue of transit through third parties. The Rotterdam Convention mandates exchange of information and cooperation between parties (Articles 14 to 16).[24]

The Rotterdam Convention's provisions, although much less detailed than those of the Basel Convention, also provide substantive obligations to its parties in the context of transboundary movements of potentially hazardous substances, which could in principle address situations

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[23] For a detailed account of the early debates see Kummer, *International Management of Hazardous Wastes*, n. 9, 42 and xxvi. The records of the debates of the conference of the parties and the relevant decisions are available at www.basel.int.

[24] For a detailed discussion of the negotiating process and the provisions of the Rotterdam Convention, see K. Kummer, 'Prior Informed Consent on Chemicals in International Trade: The 1998 Rotterdam Convention' (1999) 8 RECIEL 323.

where multiple states are involved in operations that may lead to harm. However, as in the case of the Basel Convention, the relevant obligations have never been addressed by the Convention's governing bodies. The focus is on capacity building, with the Secretariat being mandated to develop and implement a programme of technical assistance to facilitate the implementation of the Convention's provisions.[25]

2.2.3 The 2013 Minamata Convention on Mercury

The Minamata Convention, named after the Japanese city where serious health damage was caused by mercury pollution in the mid-20th century, is the first environmental treaty adopted in a decade. Its objective is the protection of human health and the environment from anthropogenic mercury emissions (Article 1). Addressing one single substance, it is thus far the only chemicals treaty to take a life-cycle approach, regulating almost every aspect of the management of mercury. The Minamata Convention provides for phase-out of primary mercury mining; safe management and disposal of mercury stocks; restrictions on manufacturing of mercury-added products; phase-out of mercury in artisanal and small-scale gold mining; reduction of mercury emissions into the atmosphere, and of release on land and into water; environmentally sound interim storage; management and disposal of mercury wastes; management of contaminated sites; and protection of vulnerable populations from the exposure to mercury. Article 3(6)-(8) set out restrictions to export and import of mercury: a party may only allow export to another party for clearly defined purposes and subject to prior written consent; export to a non-party in addition requires certification by the non-party of a level of control equivalent to that required under the Convention. A party may allow import from a non-party only subject to certification that the mercury is not from a source prohibited under the Convention (such as new mercury mining or decommissioned chlor-alkali factories). A financial mechanism is established under Article 13, and Article 14 sets out obligations of capacity building, technical assistance and technology transfer to enable developing countries to meet their obligations under the Convention.[26]

[25] All relevant decisions as well as an overview of the corresponding actions taken by the Secretariat in the area of capacity building are available at www.pic.int.

[26] For a detailed discussion of the negotiation process of the Minamata Convention and a comprehensive overview of its provisions, see H.H. Eriksen and F.X. Perrez, 'The Minamata Convention: A Comprehensive Approach to a Global Problem' (2014) 23 RECIEL 195.

As in the case of the Basel and Rotterdam Conventions, the provisions on export and import of mercury impose obligations on the states concerned that could in principle address situations where more than one state is involved in a transaction that results in damage caused by mercury. However, an overview of the negotiation history shows that, as in the case of the Basel Convention some 25 years previously, much of the debate centered on banning certain aspects of (mercury) production and trade, and on possible exemptions to such bans. Other highly contentious issues included the concept of attributing a higher level of obligations to developed countries on the basis of their historical responsibility for the problem, and on financial resources and mechanisms to support the implementation of the Convention by developing countries. The mutual rights and obligations of states in the context of import and export received very little attention.[27]

2.2.4 An assessment of primary obligations under treaty law

The three MEAs addressing transboundary movements of hazardous substances set out primary obligations mainly for the prospective state of export. All three conventions require a state to allow export only subject to prior notification of the state of import. In addition, the Basel Convention makes a movement contingent on the prior consent of the states of import and transit, and under defined circumstances prohibits export altogether. The corresponding right not to receive shipments in contravention of the applicable provisions is attributed to the prospective state of import, and – in the case of the Basel Convention – to the prospective state of transit. The Basel Convention requires all states to take measures to prevent and punish illegal traffic in hazardous wastes. In this sense, the applicable treaty provisions can in theory be considered a regulatory approach that prevents the question of shared responsibility from arising.

In practice, however, the obligations of states and responsibility, shared or otherwise, for consequences of breach are a non-issue, both in the debates of the MEAs' governing bodies as well as in the practice of states. As illustrated below, there is strong opposition to any reference to state responsibility in the work of the governing bodies, to the extent that the subject can be said to have become a taboo. This reflects the overall approach taken in international environmental law of viewing any shortcomings in implementation as a result of capacity

[27] See the detailed account of the negotiations by Eriksen and Perrez, ibid.

problems rather than in terms of breach of obligations by states. In line with this approach, there is a strong focus on capacity building as well as financial and technical assistance to enable states to meet their obligations. As far as the author is aware, the issue of more than one state having obligations concerning the management of a hazardous substance, or more than one state having responsibility for the breach of such obligations, has never arisen thus far.

3. Secondary international legal rules[28]

3.1 Customary international law on state responsibility

The rules of state responsibility, shared or otherwise, for environmental damage in accordance with customary international law are applicable in the case of damage caused by transboundary movements of hazardous substances. As is the case with the primary rules of customary international law, they are however not sufficiently specific to effectively address this particular situation.

3.2 Multilateral Environmental Agreements applicable to transboundary movements of hazardous chemicals and wastes

Of the three global environmental regimes discussed in section 2.2., only that of the Basel Convention addresses consequences of the breach of the primary obligations to prevent damage from transboundary movements of hazardous substances. On the one hand, Article 9 of the Basel Convention sets out obligations for states in the event that illegal traffic has occurred (section 3.2.1). On the other hand, the Basel Protocol on liability establishes unified international rules on civil liability (section 3.2.2).

[28] For a full discussion see e.g. P. Birnie and A. Boyle, *International Law and the Environment*, 2nd edn (Oxford University Press, 2002), 178; A. Boyle, 'Globalising Environmental Liability' (2005) 17 JEL 3; A. Daniel, 'Civil Liability Regimes as a Complement to Multilateral Environmental Agreements: Sound International Policy or False Comfort?' (2003) 12 RECIEL 225, at 238; Kummer, *International Management of Hazardous Wastes*, n. 9, 214.

3.2.1 Consequences of illegal traffic in hazardous wastes (Article 9 Basel Convention)

Where a transboundary movement is illegal in accordance with the provisions of the Basel Convention (Article 9(1)), the state of export must ensure environmentally sound disposal of the wastes if the illegality is due to the conduct of the exporter or generator (Article 9(2)). The state of import shall do so where the illegality is due to the conduct of the importer or disposer (Article 9(3)). If it is impossible to determine whose conduct caused the illegality, the states concerned must cooperate to ensure the environmentally sound disposal of the wastes (Article 9(4)).The provision does not expressly address the situation where two or more states contributed to the illegality, but it can be assumed that this situation is covered by Article 9(4). In response to situations where harm may be caused, including due to illegal movement, the states concerned are thus required to 'cooperate' in 'ensuring environmentally sound disposal'. The relevant provisions do not specify what this entails, and are thus open to interpretation.

One can argue that the obligations enshrined in Article 9 in substance are comparable to principles of state responsibility, in that they address the consequences of a breach of primary obligations under the Basel Convention. The term 'cooperate' can be interpreted to indicate an obligation to each of the states involved to take specific actions towards a certain objective, namely addressing the consequences of the illegal movement by ensuring environmentally sound disposal of the wastes. In this sense, one can assume a shared responsibility. If we consider each state's contribution to be essential to achieving the objective, we may assume joint responsibility. If, on the other hand, we assume that two or more states have an identical obligation to achieve the objective, they may be considered severally responsible. Due to its very open-ended wording and failure to spell out the primary and secondary obligations in detail, Article 9 may be seen as a partial alternative to the law of responsibility, but cannot be considered as a *lex specialis* to the customary law obligations pertaining to state responsibility. The obligation to ensure environmentally sound management of the waste is not contingent on damage having been sustained, and the provision is silent on forms of reparation other than ensuring the environmentally sound disposal of the wastes. On these questions, it is therefore necessary to resort to the customary law duties of cessation of the illegal activity, *restitutio in integrum*, and payment of compensation.[29]

The inclusion and wording of Article 9 was one of the very contentious issues in the negotiation of the Basel Convention. While some states strongly opposed the attribution of

[29] For a detailed discussion and analysis of the provisions of Article 9, see Kummer, ibid., 219.

responsibility for illegal traffic to the state, others insisted on its inclusion. Developing countries in particular advocated exclusive responsibility of the exporting state in all cases, a proposal vigorously contested by industrialised nations. The provision as adopted constituted a compromise, which to some extent accounts for the generality of its wording.[30]

Following the adoption of the Convention, the rights and obligations of states as well as their responsibility for breach of these ceased to be discussed, the focus instead shifting to providing states with the capacities and funding to prevent illegal traffic, as discussed in section 2.2.1. The consideration of illegal traffic as a result of the inability of states to prevent it rather than of a breach of an obligation, reflecting a perception of states as victims rather than perpetrators, accounts for the fact that there appears to be no known state practice based on Article 9. As discussed below, the reparation of damage is commonly addressed through informal diplomatic means or in the national courts of the states involved.

3.2.2 The Basel Protocol on civil liability

In 1999, after some nine years of slow and difficult negations, the conference of the parties to the Basel Convention adopted the Basel Protocol on liability and compensation for damage caused by transboundary movements of hazardous wastes.[31] It covers traditional damage[32] as well as environmental damage[33] occurring during a transboundary movement of hazardous waste, i.e. between the point of departure and the point of arrival (Articles 2 and 3). It imposes strict liability on the operator who is deemed responsible for the damage (Article 4), and imposes fault-based liability on any other persons who caused or contributed to the damage by illegal, negligent or reckless acts (Article 5). The person in operational control of the material at the time of the incident, who may or may not be the responsible operator, is required to take mitigating measures (Article 6). The Protocol further establishes the right of recourse of the liable person (Article 8); financial limits of liability (Article 12); and an obligation to potentially liable persons to establish insurance, bond or other guarantee (Article 14). Article 16 states that 'the Protocol shall not affect the rights and obligations of the Contracting Parties

[30] Ibid., 70.

[31] Basel Protocol on Liability and Compensation for Damage Resulting from Transboundary Movements of Hazardous Wastes and their Disposal, Basel, 10 December 1999, not in force (Basel Protocol). As of September 2014, 11 states had ratified the Protocol (see www.basel.int).

[32] Loss of life, personal injury, loss of or damage to property, and loss of income directly deriving from an economic interest in the environment.

[33] Costs of reinstating the environment and of preventive measures; excluding damage that cannot be assessed in monetary terms.

under the rules of general international law with respect to State responsibility'. This noncommittal wording was chosen due to the strong resistance of many states to recognising state responsibility for damage caused by transboundary movements of hazardous wastes.[34]

The Basel Protocol has not entered into force and can at this time be considered a dead letter, as indeed are most similar efforts of codification of civil liability for international environmental damage in the 1980s and 1990s. A number of studies conducted in the 1990s identified the following reasons for failure to enter into force of the Basel Protocol and similar instruments. First, the heavy financial burden resulting from high financial limits of liability and high thresholds for compulsory insurance; second, the difficulty or impossibility of obtaining insurance coverage under the provisions of the treaties; third, the discrepancy between provisions of the civil liability treaties and national civil liability legislation; and fourth, the failure of the treaties to attract a minimum number of ratifications, i.e. reluctance of states to accept the obligations of the treaties unless a minimum number of other states do likewise, for fear of suffering trade disadvantages. Indeed, obstacles to successful negotiation – and ultimately, successful implementation – of unified civil liability provisions at the international level include the complexity and multitude of actors and substances involved; the difficulty of establishing financial limits and thresholds for insurance that are appropriate for the economic situations in different parts of the world; lack of input to the negotiations from the insurance sector, which often was only superficially consulted; and the fundamental differences between civil law and common law systems, which is a serious impediment to a unified international regime.[35] In the absence of such a regime, cases of civil liability for damage caused by transboundary movements of hazardous wastes are usually settled in the national courts of the states involved, in accordance with the provisions of private international law, or through informal diplomatic means, as discussed below.

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[34] Daniel, 'Civil Liability Regimes as a Complement to Multilateral Environmental Agreements', n. 28, at 225; K. Kummer Peiry, 'International Civil Liability for Environmental Damage: Lessons Learned', Expert Paper, CropLife International, 2006.

[35] For an overview and analysis, see Daniel, 'Civil Liability Regimes as a Complement to Multilateral Environmental Agreements', n. 28; Kummer, ibid.

4. Processes

4.1 International adjudication and dispute settlement[36]

Where state responsibility has been determined by the International Court of Justice (ICJ or Court) in a specific case, the Court may rule that the perpetrating state must cease activities that cause damage to the victim state, and pay compensation for damage sustained. The ICJ is seized only if both parties to the conflict agree. For example, where a state considers that it has suffered damage due to breach of an obligation set out in the Basel, Rotterdam or Minamata Convention by one or more parties to the treaty in question, that state can bring a case before the ICJ, with the agreement of the state or states alleged to have caused the damage. Under Article 9 of the Basel Convention, the ICJ can be seized if one or more states fail to cooperate in ensuring environmentally sound disposal of illegally exported hazardous wastes, subject to agreement by all states involved.

In addition, the Basel, Rotterdam and Minamata Conventions, along with every other MEA, provide for a dispute settlement procedure.[37] The relevant provisions are very similar in substance. They require the parties to a dispute to seek agreement through negotiation or other informal means. Failing this, the dispute may be submitted to arbitration or to the ICJ, provided all parties to the dispute have accepted these options through a declaration upon acceding to the convention.

The strong reluctance of states to address or even recognise state responsibility, shared or otherwise, in the context of transboundary movements of hazardous substances, has been discussed in section 2. As noted, this is a phenomenon common to all areas of international environmental law. As a direct consequence, the procedures described have hardly any practical significance. Another factor is the reactive approach of international adjudication, which kicks in only after a breach of international law has already occurred. In addition, the relevant proceedings are lengthy, complex, and expensive, and their confrontational nature bears a risk of affecting diplomatic relations between the states involved.

Generally, the number of environmental cases brought before the ICJ over the past decades can be counted on one hand. A testimony to the negligible role of judicial procedures in ensuring

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[36] K. Kummer Peiry, 'Turning Wastes into Valuable Resources: Promoting Compliance with Obligations?' (2011) 41 EPL 177.

[37] Article 20 Basel Convention, n. 15; Article 20 Rotterdam Convention, n. 16; Article 25 Minamata Convention, n. 17.

compliance with environmental obligations is the fact that the Chamber for Environmental Matters of the ICJ, established in 1993, was not seized once during the 13 years of its existence, and was effectively dissolved in 2006.[38] None of the dispute settlement procedures set out in the existing MEAs has ever been used. There has never been a case brought before the ICJ where more than one state was deemed responsible for damage caused by hazardous chemicals and wastes.

4.2 Non-compliance mechanisms

Partly in response to the shortcomings of traditional approaches to responsibility for environmental damage, non-compliance mechanisms have evolved since the early 1990s. This type of mechanism features a committee composed of experts nominated by parties to the relevant MEA, with due regard to regional balance, to which any party to the treaty can submit problems with its own compliance, or with that of one or more other parties. The Convention Secretariat can also make submissions to the Committee. The Implementation and Compliance Committee of the Basel Convention was established in 2002 in accordance with Article 15(5)(e).[39] Under the Rotterdam Convention, negotiations on the establishment of a non-compliance mechanism under Article 17 have been ongoing for years, thus far unsuccessfully.[40] The Minamata Convention establishes an Implementation and Compliance Committee under Article 15.[41]

In line with the prevailing approach in international environmental law to consider non-compliance with primary obligation as the result of insufficient capacity and resources rather than as a breach of an obligation, discussed above, these mechanisms are essentially facilitative in nature. Their mandate is to consider the compliance problems brought before them, and to

[38] See official website of the International Court of Justice at www.icj-cij.org/court/index.php?p1=1&p2=4.
[39] Conference Decisions BC-VI/12 (2002) as amended by Decisions BC-10/11 (2011) and BC-11/18 (2013), setting out the Terms of Reference for the Committee. All documents are available at www.basel.int/TheConvention/ImplementationComplianceCommittee/Mandate/tabid/2296/Default.aspx.
[40] See www.pic.int/TheConvention/Compliance/tabid/3606/language/en-US/Default.aspx, for all relevant documents.
[41] For a detailed discussion of the relevant negotiations and the provision adopted, see J. Templeton and P. Kohler, ‘Implementation and Compliance under the Minamata Convention on Mercury’ (2014) 23 RECIEL 211.

recommend either to the parties concerned or to the conference of the parties to the MEA a course of action to resolve the problem. These recommendations are non-binding.[42]

Non-compliance procedures have the potential of addressing situations where more than one state, through failure to comply with the obligations under the MEA in question, are responsible for damage sustained in a third state. For example, if hazardous wastes have been imported into party A to the Basel Convention, and party A finds that the wastes originated from different sources within parties B, C and D, party A might first request parties B, C and D to take back the wastes. If these requests yield no result, party A may then submit to the Basel Convention's Committee on Implementation and Compliance a request to determine that parties B, C and D have acted in contravention of the applicable provisions of the Convention, and to recommend appropriate remedies. The Committee may recommend practical steps to be taken by one or more of the parties involved.[43]

A non-compliance mechanism could thus address a case of responsibility of more than one state for environmental damage caused by hazardous wastes or chemicals, and make recommendations on how the states concerned could resolve the issue. Given the informality and 'soft' nature of the mechanisms, this would not raise issues different from cases where compliance problems of only one state are under scrutiny. In the above example, the Committee might conclude that party B has complied with the Basel Convention's procedure of Prior Informed Consent for the transboundary waste transfer in question, but that parties C and D have failed to do so. It might recommend that parties C and D arrange for re-importation into party C as the best equipped to dispose of the waste, sharing the costs. Another possible outcome could be for the Committee to determine that neither party A nor parties B, C and D have complied with the pic procedure, and recommend that they arrange transfer for disposal to C, sharing the costs.

In the context of the non-compliance mechanism of the Basel Convention, a scenario such as the one described has never been submitted for consideration to the Implementation and Compliance Committee. The nine submissions made to date address exclusively problems of compliance with parties' national reporting obligations, i.e. failure to submit national reports in the requested form and within the requested time limits. In one case, the submission was made

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[42] On the modalities and functioning of non-compliance mechanisms, see K.N. Scott, 'Non-Compliance Procedures and Dispute Resolution Mechanisms under International Environmental Agreements', in D. French, N. White, and M. Saul (eds.), *International Law and Dispute Settlement: New Problems and Techniques* (Oxford: Hart, 2010), 225; Templeton and Kohler, ibid., (also offering insights into recent scholarship on this issue).
[43] Terms of Reference of the Basel Convention Implementation and Compliance Committee, n. 39.

by a party with respect to its own problems with national reporting; the other eight submissions were made by the Secretariat.[44]

Non-compliance mechanisms represent a step forward compared to international adjudication and dispute settlement procedures, being more proactive and informal, and less complex and costly. Nevertheless, they too have shortcomings. With the exception of those that are coupled with a fund to support parties in improving compliance (as in the case of the non-compliance mechanisms of the Montreal Protocol and the Kyoto Protocol[45] as well as the Minamata Convention),[46] there appears to be little incentive for using them. Despite their less formal nature, there is often reluctance to address a problem with other parties through a non-compliance mechanism, for fear of diplomatic repercussions. Where funding is available to support non-compliant parties, there might even be a perverse incentive to remain in non-compliance, because the source of funding will dry up when compliance has been achieved.

The Implementation and Compliance Committee of the Basel Convention, at its fifth meeting in 2007, undertook an informal analysis of the reasons why it had at that time never received any submissions. The main reasons identified were concerns of parties that recourse to the Committee could be perceived as a strong diplomatic act, and as such be politically sensitive; the perception that the preparation of a submission to the Committee was a work intensive process with little practical contribution to resolving the problem; and the lack of a fund to assist non-compliant parties in achieving compliance.[47]

Against the background of the lengthy and difficult negotiations on the establishment of non-compliance mechanisms under other MEAs, including in particular the Rotterdam and Stockholm Conventions, the agreement on an implementation and compliance committee under the Minamata Convention at the time of its adoption came as a considerable surprise. A recent analysis finds that two key factors made this agreement possible: first, the financial provisions that will ensure that funding is available to assist parties in achieving compliance,

[44] Committee for Administering the Mechanism for Promoting Implementation and Compliance of the Basel Convention, Note by the Secretariat to the conference of the parties at its 11th meeting, Document UNEP/CHW.11/10 (5 January 2013) (available at www.basel.int).
[45] Kyoto Protocol to the United Nations Framework Convention on Climate Change, Kyoto, 11 December 1997, in force 16 February 2005, 2303 UNTS 148 (Kyoto Protocol).
[46] See Templeton and Kohler, 'Implementation and Compliance under the Minamata Convention on Mercury', n. 41.
[47] Report of the seventh session of the Basel Convention Implementation and Compliance Committee, September 2007, Document UNEP/CHW/CC. 7/10 (2007), paras. 10-13; Report of the Implementation and Compliance Committee to conference of the parties to the Basel Convention at its 9th meeting in June 2008, Doc. UNEP/CHW.9/3 (2008), para. 26 (both available at www.basel.int).

and second, the strongly facilitative nature of the mechanism, which 'contains virtually all "carrot" and no "sticks"'.[48] This is illustrative of the prevailing focus in international environmental law on capacity building rather than on rights and obligations, and of the reluctance of states to accept any form of international adjudication, however mild.

5. Shared responsibility for transboundary movements of hazardous substances: need for alternatives?

5.1 An assessment of international legal rules and processes as applied to shared responsibility for damage caused by transboundary movements of hazardous substances

In light of the above overview, it is fair to say that in practice, states do not find the existing rules and processes available in international law helpful for resolving concrete problems of responsibility for damage caused by transboundary movements of hazardous substances, shared or otherwise. State responsibility has never appeared on the agenda of the governing bodies of any of the existing chemicals and waste treaties, as noted above. The negotiation of the 2013 Minamata Convention, the first international environmental treaty adopted in ten years, provides a vivid illustration in this respect also: the question of state responsibility did not arise once.[49]

There is no provision for compulsory use of any of the existing mechanisms, and there is insufficient incentive for their use on a voluntary basis. Indeed, it is fair to say that the international legal rules on state responsibility for damage caused by transboundary movements of hazardous substances exist on paper only, as do the relevant international rules on civil liability. In the area of environmental protection generally, the same is true for international adjudication by the ICJ and for the dispute settlement provisions of MEAs. Non-compliance mechanisms do have some practical significance, albeit very limited.

Based on the above analysis, the main reason for the failure of states to resort to the existing mechanisms where damage caused by transboundary movements of hazardous substances is at stake is the rejection of the concept of state responsibility by states in the context of international environmental law and diplomacy. Additional factors include insufficient adaptation of the mechanisms to the realities of transboundary movements of hazardous

[48] Templeton and Kohler, 'Implementation and Compliance under the Minamata Convention on Mercury', n. 41.
[49] See ibid.; and Eriksen and Perrez, 'The Minamata Convention', n. 26.

substances in a modern world, or lack of practicability; lack of a concrete outcome; fear of a negative impact on diplomatic relations with other states resulting from the use of the mechanisms; the length and expense of formal proceedings; and the retroactive and confrontational nature of the mechanisms.

In practice, the actors involved in incidents of transboundary movements of hazardous substances often resort to seeking remedy in the courts of the countries concerned under the applicable national laws, through informal negotiations, or both. The 2006 Probo Koala incident, described in section 1, is a case in point. The incident was subject to criminal and civil court cases in different countries. Eventually, in an informal settlement with the Ivorian government, the shipping company is reported to have paid USD 198 million for the clean-up of the contaminated sites, in exchange for the government not pursuing legal action. In a settlement with the Dutch authorities, the company agreed to pay a total of USD 46 million in compensation to the victims.[50] Although the transaction was within the scope of the Basel Convention, and all states involved are parties, none of the processes described above was used.

The concept of Extended Producer Responsibility (EPR), which has emerged as part of the policy discussion since the 1990s, is based on allocating to the producer responsibility for the management of products throughout their life-cycle, including end-of-life management. In practice, this often means a shift of the costs and the operational responsibility for environmentally sound management from public authorities to the private producer. The objective is to provide incentives for environmentally sound management, and internalise external costs.[51] EPR is being proposed also for transboundary waste management, notably in the context of electric and electronic waste.[52] This development is in line with the tendency of moving away from the responsibility of states, shared or otherwise.

States confronted with an illegal hazardous wastes transfer involving their jurisdictions have been known to ask the Secretariat of the Basel Convention to assist them in finding a mutually acceptable solution, in preference even to engaging the Convention's Implementation and

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[50] See n. 1.

[51] R. Lifset, A. Atasu, and N. Tojo, 'Extended Producer Responsibility: National, International, and Practical Perspectives' (2013) 17 JIE 162; T. Lindhqvist, *Extended Producer Responsibility in Cleaner Production: Policy Principle to Promote Environmental Improvements of Product Systems* (PhD Dissertation, Lund University, May 2000); R.J. Lifset, 'Take It Back: Extended Producer Responsibility as a Form of Incentive-Based Environmental Policy' (1993) 21 JRMT 163.

[52] See for example United Nations Environment Programme, International Environmental Technology Centre, 'The Future WEEE Need: A Call for Action', Outcome of the Multi-Stakeholder Policy Dialogue on Addressing E-Waste Challenges and Opportunities through Public-Private Sector Cooperation, Osaka (Japan), July 2012.

Compliance Committee. In the author's experience, the cases in question mostly concerned illegal transboundary movements of hazardous wastes from one state party to another, which both states had failed to detect and prevent. The interest of both states was to remedy the situation in the most effective way possible, while assuring their own press and public that this had been done. In these cases, goodwill was present on both sides. In some cases, the states concerned resolved the problem through diplomatic means without outside intervention.

If we consider the circumstances in which illegal transboundary movements of hazardous substances take place today, as described in section 1, the disinclination to use the rules and procedures of international law pertaining to state responsibility, shared or otherwise, appears understandable. In the context of international transfer of hazardous substances, the concept of states as perpetrators or victims of actions causing damage, though firmly established in international law, may no longer suffice in a globalised world with almost unlimited mobility, and organised international criminal operations (including illegal trade in hazardous substances). In practice, states frequently have limited control over activities taking place within their boundaries; multinational actors, including organised criminal groups operating at the international level, are in reality often beyond the reach of state authority. Can the situations where damage within the 'victim' state is caused by a criminal group of nationals of that state, operating from within the territory of the 'perpetrating' state, or where nationals or authorities of the 'victim' state facilitate the transaction from within that state, really be compared to the 'classical' situation of the *Trail Smelter* arbitration[53] underlying the concept of state responsibility for environmental damage? The fact that states approach an MEA Secretariat for informal assistance rather than using the formal or semi-formal mechanisms available, or that states engage with private actors through informal negotiations, may be seen as attempts to seek approaches that are better adapted to the reality of the relevant situations than the mechanisms of public international law. It is an indication that there is a preference for simpler, more informal means that are non-confrontational, discreet, and do not negatively affect diplomatic relations between states.

From a traditional legal perspective, one might argue that formal international mechanisms are necessary to ensure transparency, publicity, precedents, and a deterrent effect. However, in the absence of an international legal obligation for states to use the existing formal mechanisms, and given their unwillingness to do so voluntarily, this would be difficult to achieve without introducing fundamental reforms.

[53] *Trail Smelter Arbitration (United States of America/Canada)* (1938 and 1941), Award, (1949) 3 RIAA 1905.

5.2 Alternative approaches as a way forward?

There seem thus to be two options: to revise the existing procedures of international law and make their use compulsory, or to explore alternative approaches that are proactive and solution oriented, and will be used by states on a voluntary basis, in cases of both single and shared responsibility for illegal trade in hazardous substances.

5.2.1 Introducing compulsory mechanisms of dispute settlement

In considering this option, it might be useful to look to those areas of international law where compulsory dispute settlement mechanisms exist, for example in the framework of the World Trade Organization (WTO), or under the United Nations (UN) Convention on the Law of the Sea.[54] However, international environmental law is a much younger field of international law, and has evolved to use voluntary agreement rather than compulsory mechanisms, as the above discussion illustrates.[55] In the framework of most MEAs, even non-compliance mechanisms tend to take years to negotiate, because many states are not prepared to give the mechanisms power to impose even the most limited sanctions, focusing instead on their facilitative nature. Against the background of this political culture that favours 'soft' approaches, it is difficult to see how political agreement on compulsory dispute settlement such as that of the WTO could ever be reached, even if this were legally feasible.

5.2.2 Alternative dispute settlement methods[56]

Given that there are normally multiple actors in different states involved in illegal transboundary movements of hazardous chemicals or wastes, and that states often have a common interest in resolving the problem rather than a desire to establish responsibility, prospective alternative approaches should facilitate cooperation rather than confrontation.

[54] United Nations Convention on the Law of the Sea, Montego Bay, 10 December 1982, in force 16 November 1994, 1833 UNTS 3.
[55] An example is the fact that voting procedures have been adopted under all MEAs, but these are never used by the vast majority of convention bodies; instead, all decisions are taken by negotiating until consensus has been reached.
[56] For a detailed discussion, see K. Kummer Peiry, 'International procedures governing transboundary litigation on alleged LMO damages: An overview of existing approaches', Kummer EcoConsult, 20 February 2006.

Methods of dispute resolution that allow settlement of a dispute without resort to national or international courts already exist, and their advantages are increasingly being recognised. In addition to generally being cheaper and more flexible than formal litigation procedures, they allow the parties to a dispute to remain in control of the process as well as the outcome. Another important difference is that alternative dispute resolution methods do not provide for a strict divide between states and private actors; hence they can also be used in a dispute between states and private entities. The parties to a conflict are free to determine who is involved, what expertise is relevant, and the basis on which a solution is sought. There are numerous specialised institutions in different parts of the world that provide international conflict management and dispute resolution services.[57] Some of these also provide support services to parties to a dispute. The MEA dispute settlement procedures (see section 4.2) provide the option of using particular forms of alternative dispute resolution, although this has never been used to date. Following is an overview of the three available alternative dispute settlement mechanisms.

Arbitration: the parties to a dispute jointly decide to appoint an arbitral tribunal, with an equal number of members chosen by each party and a neutral president elected by the tribunal. After hearing the case, the tribunal renders a decision that is binding on the parties and without appeal. A particular advantage of this approach is the possibility to choose specialised arbitrators who are more knowledgeable of the technical aspects of the issue under dispute than generalist judges. Rules on arbitration have been elaborated by a number of international bodies, including the UN Commission on International Trade Law (UNCITRAL) and the Permanent Court of Arbitration (PCA). Awards by arbitral tribunals can be enforced in all states that are parties to the 1958 UN Convention on the Recognition and Enforcement of Foreign Arbitral Awards, i.e. most countries of the world.[58] In this regard, however, the question remains why arbitration was never chosen under the dispute settlement procedures of the MEAs.

Conciliation: this procedure too involves the appointment of a neutral person or body by a joint decision of the parties to the dispute. The conciliation body, after hearing the case, does not

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[57] These include the International Court of Arbitration of the International Chamber of Commerce; the International Center for Dispute Resolution of the American Arbitration Association; the Arbitration Institute of the Stockholm Chamber of Commerce; and the Inter-American Commercial Arbitration Commission. Some institutions focus on consensus building, facilitation and mediation rather than arbitration, for example the Meridien Institute and the Consensus Building Institute.

[58] Convention on the Recognition and Enforcement of Foreign Arbitral Awards, New York, 10 June 1958, in force 7 June 1959, 330 UNTS 3; L. Bergkamp, 'Liability and Redress: Existing Legal Solutions for Traditional Damage', Expert Paper, CropLife International, 2006.

render a decision binding on the parties to the dispute, but offers possible solutions to the conflict. The parties can choose whether or not to accept these recommendations. Awards of a conciliation body do not represent an adjudication of the legal issues. Also, the conciliation awards do not need to be within the confines of the legal rules governing the issue that would be applied in formal litigation, but can be (and often are) based on what is acceptable to the parties to the dispute.

Mediation: in this process, a professional mediator assists the parties to a conflict in identifying a way forward that is acceptable to all. The mediator does not address the substance of the dispute, but uses specific tools and methods that enable the parties themselves to devise the solution. This must not necessarily be within the confines of the legal rules that would be applied in formal litigation. Participation in the mediation process is voluntary, and each party can decide to end the process at any time, resorting to formal litigation. The outcome is a binding agreement concluded by the parties.

It can of course be argued that at this point in time, alternative dispute settlement mechanisms are no more part of the political culture of international environmental law in general, and the MEA addressing transboundary movements of hazardous substances in particular, than are the formal litigation procedures available in international law. This argument is indeed valid. However, given that there appears to be an emerging preference for informal approaches to finding mutually acceptable solutions over the traditional retroactive mechanisms attributing responsibilities, this approach is worth considering and pursuing.

6. Conclusion

Based on the above analysis, one may conclude that the notion of shared responsibility has but marginal relevance in the case of transboundary movements of hazardous wastes or chemicals, although relevant incidents regularly occur in practice. As one author comments, secondary rules of general international law clearly reflect states' unwillingness to assume liability for wrongful acts of individuals (including corporations) committed within their territory or

elsewhere under their jurisdiction.[59] Even less do the rules effectively address responsibility shared by more than one state.

Alternative dispute settlement mechanisms, focusing on finding solutions acceptable to all actors involved, and allowing involvement of multiple and diverse actors, might be a useful way forward, especially in situations where more than one state, or even states as well as private actors, are part of the problem and need to be part of the solution. It might also be better adapted than the traditional mechanisms to international traffic in hazardous substances in a globalised world with a high level of mobility, in which the dividing lines between states and private actors, as well as the distinction between perpetrators and victims, are no longer as clear as they once were.

[59] A. Pigrau Solé, 'La responsabilidad internacional de los estados por daños al medio ambiente', in F. Sindico, R.M. Fernández Egea, and S. Borràs Pentinat (eds.), *Derecho internacional del medio ambiente: Una visión desde Iberoamérica* (London: Cameron May-CMP Publishing, 2011), 106.