Chapter 10:
Strict State Liability for Transboundary Harm?

The preceding chapters have shown that a state of origin will be internationally responsible for transboundary harm only when it has failed to act with due diligence in preventing that harm.[1] However, the due diligence standard is context-dependent, which means that the specific actions required of a state depend on a number of different factors under the particular circumstances of each case.[2] Moreover, the injured state bears the burden of proof, i.e. it must demonstrate that the state of origin has indeed failed to perform its obligations and that this failure was causal for the transboundary damage to occur. Finally, harm could also occur even though a state observed due diligence and complied with all other applicable obligations.[3] Consequently, there is a substantial likelihood that adverse effects caused by *living modified organisms* (LMOs) in a transboundary context remain unaddressed and that individuals suffering injury from such adverse effects remain uncompensated.[4]

But this result runs against the widespread consensus that the injurious consequences of hazardous activities should not 'lie where they fall' but should be borne by the party which has caused the damage (and benefitted from the activity).[5] Against this background, scholars have long maintained the idea of 'strict state liability', i.e. an obligation of states to compensate for transboundary harm independent of the existence of a breach of international law. It has been observed that the 'policy rationale underlying the concept of subsidiary state liability for hazardous activities

1 See chapter 9.
2 See chapter 4.
3 *Alan E. Boyle/Catherine Redgwell*, Birnie, Boyle, and Redgwell's International Law and the Environment (4th ed. 2021), 231; *René Lefeber*, The Legal Significance of the Supplementary Protocol: The Result of a Paradigm Evolution, in: Akiho Shibata (ed.), International Liability Regime for Biodiversity Damage (2014) 73, 78.
4 *Günther Handl*, International Accountability for Transboundary Environmental Harm Revisited: What Role for State Liability?, 37 (2007) Environmental Policy and Law 117, 118.
5 *René Lefeber*, Transboundary Environmental Interference and the Origin of State Liability (1996), 1–3.

[…] is intuitively convincing'.[6] Indeed, from a perspective of international public *policy*, several arguments militate in favour of strict state liability for transboundary damage caused by hazardous activities.[7]

First of all, state liability for transboundary damage may be warranted by fundamental considerations of international justice and fairness. The underlying assumption is that if international law allows a state to knowingly expose another state to a risk of significant harm, it would be inequitable to leave the loss 'lie where it falls'.[8] This is particularly true because the affected state can neither veto nor control the hazardous activity, nor does it necessarily benefit from it, however socially or economically beneficial the activity may be to the state of origin.[9] It has also been argued that it would be a case of 'unjust enrichment' if the burden were not imposed on the risk-creating actor who would usually derive an economic benefit from the activity.[10]

Secondly, the combination of state responsibility and operator liability may not provide a sufficient basis for compensation for harm caused by hazardous activities. As shown earlier, requirements for the imposition of operator liability are minimal,[11] and the requirement to ensure 'prompt and adequate compensation' stipulates hardly more than a minimum threshold.[12] At the same time, the responsibility of states is limited to breaches of due diligence, which does not guarantee that no harm will

6 *Handl* (n. 4), 120.

7 For discussions of different theoretical approaches to strict state liability, see *Julio Barboza*, The Environment, Risk and Liability in International Law (2011), 64–71; *Hanqin Xue*, Transboundary Damage in International Law (2003), 302–312.

8 *C. Wilfried Jenks*, Liability for Ultra-Hazardous Activities in International Law, 117 (1966) RdC 99, 152; *Günther Handl*, State Liability for Accidental Transnational Environmental Damage by Private Persons, 74 (1980) AJIL 525, 559; *Louise A. de La Fayette*, International Liability for Damage to the Environment, in: Malgosia A. Fitzmaurice/David Ong/Panos Merkouris (eds.), Research Handbook on International Environmental Law (2010) 320, 327.

9 *Alan E. Boyle*, Globalising Environmental Liability: The Interplay of National and International Law, 17 (2005) J. Envt'l L. 3, 7; *Handl* (n. 4), 119; *de La Fayette* (n. 8), 327; *Johan G. Lammers*, International Responsibility and Liability for Damage Caused by Environmental Interferences, 31 (2001) Environmental Policy and Law 42–50 and 94–105, 47.

10 *L.F.E. Goldie*, Concepts of Strict and Absolute Liability and the Ranking of Liability in Terms of Relative Exposure to Risk, 16 (1985) NYL 175, 212–213.

11 See chapter 6.

12 See chapter 8.

occur.[13] Consequently, harm might occur despite the source state's full compliance with its preventive obligations.[14]

Thirdly, the imposition of subsidiary state liability increases the deterrent effect of liability.[15] State responsibility for transboundary harm is premised on the understanding that the source state will incur liability if the transboundary harm results from the state's failure to act with due diligence towards preventing the harm caused.[16] However, as shown above, a breach of due diligence may be difficult to establish, as may be the existence of a causal link between such a breach and the eventual occurrence of harm.[17] Consequently, strict state liability may promote diligent action on the side of the source state:

> *'A source state's knowledge of the certainty of incurring liability simply upon the occurrence of transboundary harm may strengthen its resolve to prevent such harm to beyond the level of due diligence applicable in the circumstances.'*[18]

Fourthly, subsidiary state liability may also aid the implementation of transnational civil liability approaches, as the prospect of being held liable may encourage states to provide for more efficient and less costly processes for handling transboundary civil liability claims.[19] Thus, state liability can also facilitate effective implementation of the 'polluter-pays principle'.[20]

Despite these arguments, there is currently no international treaty expressly providing for strict state liability for transboundary harm, neither in general international law nor specifically in the context of modern biotechnology.[21] However, such liability could be part of customary international law.

It is generally accepted that for a rule of customary international law to emerge, there must be a consistent practice of states (*consuetudo*) carried by the belief that such practice is required by law (*opinio iuris sive necessi-*

13 *Boyle* (n. 9), 7; *Handl* (n. 4), 118; see chapter 4, section C.
14 *Handl* (n. 4), 118; *Boyle* (n. 9), 7; see chapter 4, section E.
15 See the Introduction.
16 *Handl* (n. 4), 118; also see *Handl* (n. 8), 559.
17 See chapter 9, section A.II.2.a).
18 *Handl* (n. 4), 118.
19 *Ibid.*, 119.
20 See chapter 2, section D.
21 An exceptional provision of strict state liability could be seen in Article 25(2) of the Cartagena Protocol, which requires the state of origin to dispose of LMOs which have been subject to an illegal transboundary movement; see *infra* section A, and chapter 3, section A.II.2.c)bb).

tatis).[22] In the present case, such practice could arise from international treaty-making (A.) and the practice of states *vis-à-vis* actual cases of transboundary damage (B.). Besides, it has been suggested that strict state liability for transboundary harm could also arise from international human rights law (C.). Moreover, state liability has also been a long-standing issue in the *International Law Commission* (D.).

A. International Treaties

There are only a few instances of international treaties that unequivocally provide for strict state liability. The prime example in this regard is the *Space Liability Convention* of 1972, which provides that '[a] launching State shall be absolutely liable to pay compensation for damage caused by its space object on the surface of the earth or to aircraft in flight'.[23] Exoneration from such liability is only granted where the damage has been caused by the claimant state or its representatives through intentional or grossly negligent conduct[24] and with regard to nationals of the launching state and other persons participating in the operation of the space object.[25] Besides this strict liability, the Convention provides for fault-based liability for damage caused to space objects of other states.[26]

To date, the only claim presented under the Space Liability Convention concerned the crash of the Soviet nuclear satellite *Cosmos 954* over Canada in 1978.[27] Since the crash had caused neither physical nor property damage to Canadian citizens, the claim essentially concerned the costs incurred

22 Cf. Statute of the International Court of Justice (18 April 1946), 33 UNTS 993, Article 38(1)(b); see *Malcolm N. Shaw*, International Law (8th ed. 2017), 53–66; *James Crawford*, Brownlie's Principles of Public International Law (9th ed. 2019), 21–25.

23 Convention on International Liability for Damage Caused by Space Objects (29 March 1972; effective 01 September 1972), 961 UNTS 187 (hereinafter 'Space Liability Convention'), Article II; also see Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies (27 January 1967; effective 10 October 1967), 610 UNTS 205, Article VII, which provides that a launching state is 'internationally liable' for damage caused by its object to another state.

24 Space Liability Convention (n. 23), Article VI.

25 *Ibid.*, Article VII.

26 *Ibid.*, Article III.

27 See generally *Bryan Schwartz/Mark L. Berlin*, After the Fall: An Analysis of Canadian Legal Claims for Damage Caused by Cosmos 954, 27 (1982) McGill Law

by the Canadian authorities in locating and recovering the radioactive debris spread by the satellite and for measures to clean up the affected areas.[28] Notably, the definition of 'damage' contained in the Space Liability Convention neither expressly includes environmental damage nor costs for response measures.[29] However, it has been argued that environmental assets could be regarded as 'property' of the state[30] and that the costs for preventing further harm were logically inherent in the notion of damage.[31] In any event, Canada also argued that the crash had violated its sovereignty and that 'the standard of absolute liability for space activities […] is considered to have become a general principle of international law'.[32] Eventually, the claim was settled through a lump-sum agreement that did not indicate the legal basis on which compensation was paid.[33]

The *Gut Dam* case concerned a dam built by Canada in the *Saint Lawrence River* in 1903, which, after several modifications, caused extensive flooding and erosion in 1951 and 1952, also inflicting significant damage to the territory of the United States.[34] Canada was strictly liable for the damage under an agreement between the parties which authorized the construction of the dam.[35] Thus, the tribunal established to resolve the

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Journal 676; *Lefeber* (n. 5), 163–165; *Philippe Sands* et al., Principles of International Environmental Law (4th ed. 2018), 763.

28 Cf. Canada, Department of External Affairs, Claim Against the Union of Soviet Socialist Republics for Damage Caused by Soviet Cosmos 954 (23 January 1979), 18 ILM 889, para. 8.

29 Cf. Space Liability Convention (n. 23), Article I(a), which defines the term 'damage' as 'loss of life, personal injury or other impairment of health; or loss of or damage to property to States or of persons, natural or juridical, or property of international intergovernmental organizations'.

30 *Schwartz/Berlin* (n. 27), 714–718; *Sands* et al. (n. 27), 762.

31 *Schwartz/Berlin* (n. 27), 720; see chapter 11.

32 Claim Against the Union of Soviet Socialist Republics for Damage Caused by Soviet Cosmos 954 (n. 28), paras. 21–22.

33 Cf. Protocol Between Canada and the USSR on Settlement of Canada's Claim for Damages Caused by "Cosmos 954" (02 April 1981), 20 ILM 689.

34 Cf. Canada–United States Settlement of Gut Dam Claims, 27 September 1968, Report of the Agent of the United States before the Lake Ontaria Claims Tribunal, 8 ILM 118, 119–121; see ILC, Survey of Liability Regimes Relevant to the Topic of International Liability for Injurious Consequences Arising Out of Acts Not Prohibited by International Law (International Liability in Case of Loss from Transboundary Harm Arising Out of Hazardous Activities): Prepared by the Secretariat, UN Doc. A/CN.4/543 (2004), paras. 415–416.

35 The agreement provided that 'if the construction and operation of said dam shall cause damage or detriment to the property owners of Les Galops Island or to the property of any other citizens of the United States, the government of Canada

matter did not have to rule on the legal basis of Canada's liability but only on the scope of liability and the amount of compensation due.[36]

Other instances of international agreements expressly providing for strict state liability are rather exotic. The *Treaty concerning the La Plata River and its Maritime Limits* concluded in 1973 between Argentina and Uruguay provides that 'each Party shall be liable to the other for damage inflicted as a result of pollution caused by its own activities or by those of individuals or legal entities domiciled in its territory'.[37] A similar provision can be found in an agreement concluded in 1964 between Finland and the Soviet Union concerning *Frontier Watercourses*.[38] Another example is the *Convention on Liability for Radiological Accidents in International Carriage of Spent Nuclear Fuel*, which was concluded in 1987 by states of the Soviet Bloc and which, like the Space Liability Convention, imposes absolute liability on states.[39]

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shall pay such amount of compensation as may be agreed upon between the said government and the parties damaged, or as may be awarded the said parties in the proper court of the United States before which claims for damage may be brought', see Canada–United States Settlement of Gut Dam Claims (n. 34), 120. See *Lefeber* (n. 5), 103, noting that the strict liability standard was not meant to apply to *international*, but to *transnational* claims (on this distinction, see chapter 4, section B.III). In any event, when cases were brought before a United States court in the 1950s, a Canadian plea of sovereign immunity was upheld, and it was only thereafter that the United States brought an international claim against Canada, see *Lefeber* (n. 5), 103.

36 Canada–United States Settlement of Gut Dam Claims (n. 34), 133–140; see *Handl* (n. 8), 538–539; ILC, Survey of liability regimes (n. 34), para. 416; *Barboza* (n. 7), 53–56.

37 Treaty Between Uruguay and Argentina Concerning the Rio de la Plata and the Corresponding Maritime Boundary (19 November 1973; effective 12 February 1974), 1295 UNTS 293, Article 51; see *Lefeber* (n. 5), 169–170; *Barboza* (n. 7), 67.

38 Agreement Between the Republic of Finland and the Soviet Socialist Republics Concerning Frontier Watercourses (24 April 1964; effective 06 May 1965), 537 UNTS 252; see *Lefeber* (n. 5), 170–171.

39 See CMEA, Конвенция Об Ответственности За Ущерб, Причиненный Радиационной Аварией При Международной Перевозке Отработавшего Ядерного Топлива От Атомных Электростанций Стран – Членов СЭВ (Convention on Liability for Damage Caused by Radiological Accidents in International Carriage of Spent Nuclear Fuel from Nuclear Power Plants of CMEA Member Countries) (15 September 1987), not officially published, Article VII, which provides that where it cannot be established that a radiological accident was caused by a failure of any of the states involved in the transport to comply with the pertinent regulations, liability shall be imposed on the state where the nuclear power plant is located if the accident has occurred in its own territory or in the

A number of other instruments do not expressly provide for strict liability but contain obligations to remediate transboundary incidents that come close to strict liability. As shown earlier, the *Cartagena Protocol* provides that a state party affected by an illegal transboundary movement may request the party of origin to dispose of the LMO in question by repatriation or destruction at its own expense.[40] A similar example can be found in the *Basel Convention on Hazardous Wastes*, which establishes a strict obligation of the export state to take back hazardous wastes when their transboundary movement was illegal or in the event that a lawful transboundary movement cannot be completed in accordance with the contract governing that movement.[41] It has been observed that given these 'far-reaching, indeed paternalistic obligations on the part of the state of export […] it was widely believed that the rules of state responsibility proper would provide a sufficient legal basis upon which transboundary environmental harm could be redressed' and that, for this reason, no additional rules on subsidiary state liability were included in the *Basel Liability Protocol*.[42] But this also shows that the aforementioned obligations are tailored to specific situations and do not give rise to a general liability of states for transboundary interferences.

In the regimes for nuclear damage, states are not primarily liable but must provide funds for supplementary compensation. For instance, the *Brussels Supplementary Convention* envisages three tiers of compensation: The first tier, amounting to at least 5 million *Special Drawing Rights* (SDR), is comprised of the primary liability of the operator under the *Paris Convention* that shall be guaranteed by insurance or other financial security.[43]

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territory of a transit state, and on the state where the regeneration plant is located if an accident has occurred there. Also see *Lefeber* (n. 5), 166.

40 Cartagena Protocol on Biosafety to the Convention on Biological Diversity (29 January 2000; effective 11 September 2003), 2226 UNTS 208, Article 25(2); see chapter 3, section A.II.2.c)bb).

41 Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal (22 March 1989; effective 05 May 1992), 1673 UNTS 57, Articles 8 and 9(2).

42 *Handl* (n. 4), 120; cf. Protocol on Liability and Compensation for Damage Resulting from Transboundary Movements of Hazardous Wastes and Their Disposal (10 December 1999; not yet in force), UNEP/CHW.5/29, p. 88.

43 Convention Supplementary to the Paris Convention on Third Party Liability in the Field of Nuclear Energy (31 January 1963; effective 04 December 1974), 1041 UNTS 358, as amended by the Protocol of 16 November 1982 (effective 1 August 1991), 1650 UNTS 446 (hereinafter 'Brussels Supplementary Convention'), Article III(b)(i); see Convention on Third Party Liability in the Field of Nuclear

The second tier is a supplementary liability of the installation state, which shall provide the amount missing for a total compensation of up to 175 million SDR.[44] Finally, a third tier, ensuring a total compensation of up to 300 SDR, shall be provided out of public funds contributed by all contracting parties according to an agreed formula.[45] Notably, supplementary liability under the second and third tiers is subject to the same requirements as the liability of the operator under the first tier, which includes the requirement to establish a causal link as well as potential exonerations.[46] A similar tiered scheme involving a layer of state liability has also been established under the alternative regime of the *Vienna Convention on Civil Liability for Nuclear Damage*.[47]

Hence, (subsidiary) state liability is not without precedent in international treaties. However, a number of international agreements also expressly rule out state liability. For instance, the 2005 *Antarctic Liability Annex* provides that

> *'[a] Party shall not be liable for the failure of an operator, other than its State operators, to take response action to the extent that that Party took appropriate measures within its competence, including the adoption of laws*

Energy (29 July 1960; effective 01 April 1968), 956 UNTS 251, as amended by the Additional Protocol of 28 January 1964 and the Protocol of 16 November 1982 (effective 7 October 1988), 1519 UNTS 329, Articles III, VII and X.

44 Brussels Supplementary Convention (n. 43), Article III(b)(ii).

45 *Ibid.*, Article III(b)(iii). These amounts are to be raised to EUR 700 million, 1.2 billion, and 1.5 billion, respectively, by the Protocol to Amend the Brussels Supplementary Convention on Nuclear Third Party Liability (12 February 2004; not yet in force).

46 Brussels Supplementary Convention (n. 43), Article II(a)(i); see *Lefeber* (n. 5), 306.

47 See Vienna Convention on Civil Liability for Nuclear Damage (25 May 1963; effective 12 September 1997), 1063 UNTS 358, as amended by the Protocol of 12 September 1997 (effective 4 October 2003), IAEA Doc. INFCIRC/566; Convention on Supplementary Compensation for Nuclear Damage (12 September 1997; effective 15 April 2015), 36 ILM 1473, Article III(1). The OECD's *Paris Convention* and the IAEA's *Vienna Convention* are two alternative regimes on third party liability for nuclear damage. A link between both regimes, which mutually extends the benefits to the parties of either regime, was established by the Joint Protocol Relating to the Application of the Vienna Convention and the Paris Convention (21 September 1988; effective 27 April 1992), 1672 UNTS 301. See generally *Raphael J. Heffron* et al., The Global Nuclear Liability Regime Post Fukushima Daiichi, 90 (2016) Progress in Nuclear Energy 1.

and regulations, administrative actions and enforcement measures, to ensure compliance with this Annex'.[48]

This provision rules out any *liability* of the state except for cases of state *responsibility*, namely when the state has failed to take appropriate measures to ensure that the operator complies with the Annex.[49]

A similar provision can be found in the seabed mining regime of the *Convention on the Law of the Sea*, which provides that a state shall not be liable for damage if it has taken all necessary and appropriate measures to secure the effective compliance of its operators with the seabed mining regime.[50] The *International Tribunal for the Law of the Sea* (ITLOS) confirmed that 'the liability regime established by article 139 […] leaves no room for residual liability' of the state.[51]

Another example for an express disavowal of state liability can be found in the *Convention on Long-Range Transboundary Air Pollution* of 1979, which clarifies in a footnote that the Convention 'does not contain a rule on State liability as to damage'.[52] Moreover, when adopting the 2015 *Paris Climate Agreement*, the parties agreed that Article 8 of the Agreement, which addresses loss and damage,[53] 'does not involve or provide a basis for any liability or compensation'.[54]

48 Annex VI to the Protocol on Environmental Protection to the Antarctic Treaty: Liability Arising from Environmental Emergencies (14 June 2005; not yet in force), ATCM Measure 1 (2005), Article 10.

49 *Alexandre Kiss/Dinah Shelton*, Guide to International Environmental Law (2007), 26.

50 United Nations Convention on the Law of the Sea (10 December 1982; effective 16 November 1994), 1833 UNTS 3, Article 139(2); see *Silja Vöneky/Anja Höfelmeier*, Article 139 UNCLOS, in: Alexander Proelss (ed.), United Nations Convention on the Law of the Sea: A Commentary (2017) 968, MN. 17–18; also see Annex III to UNCLOS, Article 4(4).

51 ITLOS, Responsibilities and Obligations of States Sponsoring Persons and Entities with Respect to Activities in the Area, Advisory Opinion of 01 November 2011, Case No. 17, ITLOS Rep. 10, para. 204.

52 Convention on Long-Range Transboundary Air Pollution (13 November 1979; effective 16 March 1983), 1302 UNTS 217, footnote 1 to Article 8(f).

53 Cf. Paris Agreement (12 December 2015; effective 04 November 2016), 55 ILM 743, Article 8.

54 UNFCCC COP, Decision 1/CP.21. Adoption of the Paris Agreement (12 December 2015), UN Doc. FCCC/CP/2015/L.9/Rev.1, para. 52.

B. State Practice

It could be argued that, besides international treaties, the practice of states in dealing with actual cases of transboundary damage indicates a general acceptance of (subsidiary) state liability. In fact, there are numerous cases in which states have provided compensation for transboundary damage that originated from activities under their jurisdiction.[55] This arguably includes the ubiquitous *Trail Smelter* case. As noted earlier, the arbitral tribunal in that case ruled that states may not use or permit the use of their territory in a manner that causes serious transboundary injury.[56] Subsequently, the tribunal prescribed a regime for the future operation of the smelter, which it expected to prevent any future transboundary harm.[57] However, the tribunal also held that

> *'if any damage […] shall occur in the future, whether through failure on the part of the Smelter to comply with the regulations herein prescribed or notwithstanding the maintenance of the régime, an indemnity shall be paid for such damage'.*[58]

Because the tribunal stressed the irrelevance of due diligence for the future obligation to compensate, some authors have interpreted this statement as establishing a form of *sine delicto* liability.[59] Others have argued that liability would be triggered by a violation of an absolute international obligation and, hence, was *ex delicto*.[60] Either way, Canada was held unconditionally liable for any future transboundary harm caused by the smelter. The legal grounds for such liability could be seen in the bilateral treaty that referred the case to the tribunal and by which Canada, in the tribunal's view, had voluntarily 'assumed an international responsibility' for the operation

55 For a comprehensive survey, see e.g. ILC, Survey of liability regimes (n. 34), paras. 387–433; *Barboza* (n. 7), 53–62.

56 Cf. Trail Smelter Case (United States v. Canada), Decision of 11 March 1941, III RIAA 1938, 1965; see chapter 4, section A.

57 *Ibid.*, 1981.

58 *Ibid.*, 1980.

59 See e.g. *Johan G. Lammers*, Pollution of International Watercourses (1984), 524–525; *Günther Handl*, Liability as an Obligation Established by a Primary Rule of International Law, 16 (1985) NYL 49, 61–62; *Barboza* (n. 7), 49.

60 Cf. *Lefeber* (n. 5), 174–175; *Michel Montjoie*, The Concept of Liability in the Absence of an Internationally Wrongful Act, in: James Crawford/Alain Pellet/Simon Olleson (eds.), The Law of International Responsibility (2010), 507.

of the smelter.[61] However, as the transboundary harm was not caused accidentally but rather resulted from the smelter's regular operation, the latter could hardly be seen as a 'hazardous' activity.[62] Consequently, the obligation to prevent such harm was no longer a 'due diligence' obligation of conduct but came close to a genuine obligation of result.[63] Against this background, it can be explained why the tribunal held that compensation would be due 'only when and if the two Governments shall make arrangements for the disposition of claims for indemnity'.[64] If no such arrangements were made despite the smelter continuing to cause transboundary harm, closing the smelter would have been inevitable.

Subsequently, the principles established in the *Trail Smelter* case were also invoked by Canada in cases in which it was not responsible for, but affected by, transboundary harm.[65] Following the oil spill caused by a Liberian tanker when unloading at *Cherry Point* in the United States in 1972,[66] Canada claimed 'full and prompt compensation for all damages suffered in Canada, as well as full clean-up costs, to be paid by those responsible'.[67] Expressly referring to *Trail Smelter*, Canada invoked the 'principle […] that one country may not permit the use of its territory in such a manner as to cause injury to the territory of another and shall be responsible to pay compensation for any injury so suffered'.[68] As the private company responsible for the spill agreed to pay the costs of the clean-up operations, it remains unclear whether there had been an official response by the United States.[69]

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61 Cf. Trail Smelter Case (United States v. Canada), Decision of 16 April 1938, III RIAA 1911, 1912; see *Lefeber* (n. 5), 174.

62 Cf. *ibid.*, 174; but see *Barboza* (n. 7), 49, who argues that tribunal regarded the future operation of the smelter as a hazardous activity, since it expected its regime to prevent future damage except for accidents.

63 See chapter 4, section C.

64 Cf. Trail Smelter Case, Decision of 1941 (n. 56), 1980.

65 *Lefeber* (n. 5), 177. In its claim for compensation in the *Cosmos 954* incident, Canada did not expressly rely on the Trial Smelter case, but invoked a general principle of international law that 'a violation of sovereignty gives rise to an obligation to pay compensation' (see *supra* text at n. 32).

66 See ILC, Survey of liability regimes (n. 34), para. 427.

67 Canada, Statement on Cherry Point Oil Spill by Mitchell Sharp, Secretary of State for External Affairs (08 June 1972), 11 (1973) Canadian YBIL 333.

68 *Ibid.*, 334; see *Handl* (n. 8), 545.

69 ILC, Survey of liability regimes (n. 34), para. 428.

While most cases involving maritime oil pollution have been settled through civil liability remedies,[70] states have assumed direct liability for damage caused by ships flying their flag in a few cases. In 1971, the Liberian-registered tanker *Juliana* ran aground off the coast of Japan, and the resulting oil spill caused considerable injury to local fisheries.[71] The Liberian government offered JPY 200 million to the affected fishermen, which they reportedly accepted.[72] Apparently, there were no allegations of any specific wrongdoing on the part of Liberia. Therefore, this is one of the few cases in which a state has assumed strict liability for extraterritorial damage caused by a private activity.[73] In another incident caused by the Japanese tanker *Showa Maru* in 1975 in the *Strait of Malacca*, the Japanese government was reportedly willing to compensate for the resulting pollution damage.[74] It has been suggested that this was motivated by Japan's interest in maintaining the right of navigation through the said strait, although there were no reports that compensation was actually paid in this case.[75]

Another case in which the injured state successfully invoked the direct liability of the state of origin was the case concerning the *Mura River*, which forms the border between the former Yugoslavia and Austria.[76] In 1956, the river was substantially polluted by sediments and mud released by several Austrian hydroelectric plants, which had drained their reservoirs to forestall a major flooding.[77] After the case had been submitted to the permanent *Mura Riva Commission*, both states agreed on a settlement in 1959, under which Austria paid monetary compensation and delivered a certain amount of paper to Yugoslavia.[78]

The question of state liability was also raised in the context of nuclear weapons tests carried out by the United States between 1946 and 1958 in the *Marshall Islands*.[79] At that time, such tests were not considered to

70 See generally *Xue* (n. 7), 52–60; *Sands* et al. (n. 27), 779–789.
71 See *Handl* (n. 8), 546–547; *Lefeber* (n. 5), 176; ILC, Survey of liability regimes (n. 34), para. 426.
72 *Handl* (n. 8), 547; ILC, Survey of liability regimes (n. 34), para. 426.
73 *Handl* (n. 8), 547; *Lefeber* (n. 5), 176.
74 *Handl* (n. 8), 547 at n. 102.
75 Cf. *Lefeber* (n. 5), 176–177.
76 Cf. *Handl* (n. 8), 545–546; *Lefeber* (n. 5), 111–112; ILC, Survey of liability regimes (n. 34), para. 425.
77 *Handl* (n. 8), 546.
78 *Ibid.*
79 See *Marjorie M. Whiteman* (ed.), Digest of International Law, Vol. 4 (1965), 533–603.

be unlawful *per se*, at least not by the nuclear powers.[80] However, a thermonuclear test conducted in March 1954 caused considerable damage far exceeding the evacuated 'danger zone', as the magnitude of the detonation had been underestimated and there had been an unexpected wind shift.[81] Consequently, the radioactive fallout generated by the detonation caused injury to the crews of several Japanese fishing vessels on the high seas, including the *Fukuryu Maru*, who suffered from exposure to radiation.[82] Moreover, the Japanese fishing industry sustained considerable losses due to the radioactive contamination of fish stocks in the following months.[83] In January 1955, the United States agreed to pay USD 2 million to Japan in compensation for the injuries or damages sustained as a result of these tests.[84] However, the payment was expressly declared to be 'ex gratia' and 'without reference to the question of legal liability'.[85]

Besides the Japanese fishermen, injury was also caused to the inhabitants of the Marshall Islands, which then belonged to the *Trust Territory of the Pacific Islands* administered by the United States on behalf of the United Nations.[86] By a law signed in 1964, the United States assumed 'compassionate responsibility' to compensate the inhabitants of the *Rongelap Atoll* for radiation exposures sustained due to the nuclear test of March 1954, and authorized USD 950,000 to be paid in equal amounts to the affected inhabitants.[87] In the *Compact of Free Association* concluded in 1983, the United States accepted its responsibility to compensate the citizens of the Marshall Islands for 'loss or damage to property and person' resulting from the nuclear tests, and a dedicated tribunal was established to process claims.[88] The tribunal reportedly issued awards of more than

80 Cf. *ibid.*, 568; *Emanuel Margolis*, The Hydrogen Bomb Experiments and International Law, 64 (1955) Yale L.J. 629; *Lefeber* (n. 5), 166–167.
81 *Margolis* (n. 80), 637; Whiteman (ed.) (n. 79), 563–570.
82 *Margolis* (n. 80), 638; *Lefeber* (n. 5), 167.
83 *Margolis* (n. 80), 638.
84 Cf. Exchange of Notes Constituting an Agreement Between the United States and Japan Relating to the Settlement of Japanese Claims for Personal and Property Damages Resulting from Nuclear Tests in the Marshall Islands in 1954 (04 January 1955), 237 UNTS 197.
85 Cf. *ibid.*
86 ILC, Survey of liability regimes (n. 34), para. 406; *Amy Hindman/René Lefeber*, 4. International/Civil Liability and Compensation, 19 (2008) YB Int'l Env. L. 214, 168; *Barboza* (n. 7), 55–56.
87 Whiteman (ed.) (n. 79), 567; ILC, Survey of liability regimes (n. 34), para. 406.
88 Compact of Free Association (14 January 1986), US Public Law No. 99–239, 99 Stat. 1770, as amended by Public Law 108–188 of 17 December 2003, 117

USD 2 billion, but most of them could not be disbursed because the USD 150 million fund created by the United States had been largely exhausted around 2006.[89]

Another instance of compensation for nuclear tests can be found in an agreement concluded in 1993 between the United Kingdom and Australia, whereby the latter accepted an *ex gratia* payment of GBP 20 million in 'full and final settlement of all claims whatsoever' in relation to the British nuclear tests carried out between 1952 and 1963 at different sites in Australia, including for the decontamination and clearance of the test sites.[90]

The preceding survey has shown that there are many instances where states have compensated for transboundary harm caused by activities carried out under their jurisdiction or control, although such compensation was often made *ex gratia* and without acknowledging legal liability. However, there have also been cases in which the relevant states have strictly denied any liability, such as the 1979 blowout of the *IXTOC I* oil well drilled by the Mexican state-owned petroleum company *Pemex*.[91] Although the resulting oil spill also reached the coast of the United States, the Mexican government refused to accept any international responsibility or liability, leaving the matter to be resolved in civil liability claims.[92]

Moreover, as noted earlier, no compensation was ever made for transboundary damage arising out of the peaceful use of nuclear energy. After the *Chernobyl* disaster in 1986, which had caused widespread harm to agricultural produce and livestock in Europe, no state formally claimed compensation from the former USSR, nor did the Soviet government offer

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Stat. 2720 (effective 30 June 2004), Section 177; see ILC, Survey of liability regimes (n. 34), paras. 407–410; *Davor Pevec*, The Marshall Islands Nuclear Claims Tribunal: The Claims of the Enewetak People, 35 (2006) Denver J. Int'l. L. & Pol'y 221.

89 See Marshall Islands Nuclear Claims Tribunal (11 June 2007), available at: https://web.archive.org/web/20110716110909/http://www.nuclearclaimstribunal.com/ (last accessed 28 May 2022); *Renee Lewis*, Bikinians Evacuated 'For Good of Mankind' Endure Lengthy Nuclear Fallout, Al Jazeera America, 28 July 2015, available at: http://america.aljazeera.com/articles/2015/7/28/bikini-nuclear-test-survivors-demand-compensation.html (last accessed 28 May 2022).

90 Exchange of Notes Constituting an Agreement Between Australia and the United Kingdom Concerning Maralinga and Other Sites in Australia (10 December 1993), 1770 UNS 450; see *Boyle/Redgwell* (n. 3), 435 n. 210.

91 ILC, Survey of liability regimes (n. 34), para. 417; *Barboza* (n. 7), 61.

92 *Barboza* (n. 7), 61–62.

any voluntary compensation.[93] No international claims were made either following the accident at *Fukushima* in 2011.[94]

C. Human Rights Law

A recognition of strict state liability for transboundary harm could be seen in the advisory opinion on *Human Rights and the Environment* delivered by the *Inter-American Court of Human Rights* in 2018.[95] As shown earlier, the Court assumed that persons residing outside the territory of a state are nevertheless considered to be under the 'jurisdiction' of that state for the purposes of the *American Convention on Human Rights*[96] when they suffer injury in consequence of transboundary harm originating from hazardous activities carried out in the territory of that state.[97] But even more, the Court assumed that states could be held 'responsible for significant damage caused to persons located outside their territory as a result of activities originating in their territory or under their authority or effective control'.[98] In the view of the Court, this does not depend on the lawfulness of the conduct causing the damage because

> *'[…] States are obliged to repair promptly, adequately and effectively, transboundary damage resulting from activities undertaken in their territory or under their jurisdiction.'*[99]

A literal reading of this statement suggests that the Court recognized the existence of strict liability of the state of origin for any transboundary damage. However, the Court gave no explanation as to the legal basis for such liability. It cited the ILC's *Articles on Prevention* and the ITLOS' advisory opinion on *Responsibilities and Obligations of States Sponsoring*

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93 Cf. ILC, Survey of liability regimes (n. 34), paras. 412–414.
94 See chapter 9, section A.II.2.b)bb).
95 IACtHR, The Environment and Human Rights (State Obligations in Relation to the Environment in the Context of the Protection and Guarantee of the Rights to Life and to Personal Integrity – Interpretation and Scope of Articles 4(1) and 5(1) of the American Convention on Human Rights), Advisory Opinion OC-23/18 of 15 November 2017, IACtHR Ser. A, No. 23, paras. 101–102.
96 Cf. American Convention on Human Rights (22 November 1969; effective 18 July 1978), 1144 UNTS 123, Article 1(1).
97 IACtHR, Advisory Opinion on Human Rights and the Environment (n. 95); see chapter 9, section A.II.5.
98 *Ibid.*, para. 103.
99 *Ibid.*

Activities in the Area. But strikingly, neither of these documents provides for strict state liability. Instead, the ITLOS advisory opinion even expressly ruled out strict state liability by pointing out that 'liability for damage of the sponsoring State arises *only* from its failure to meet its obligation of due diligence'.[100] The ILC's Prevention Articles are similarly clear that the obligation to prevent transboundary harm is one of due diligence, and that the occurrence of harm does not necessarily entail the state of origin's international liability for such harm.[101]

Besides, the *Inter-American Court* did not explain how it envisaged such an obligation to repair transboundary damage to be implemented. Referring, *inter alia*, to the ILC's *Principles on Allocation of Loss*, it held that the responsible state must 'mitigate significant environmental damage if it occurs', by which it referred to clean-up and containment measures as well as notification of and cooperation with the affected states.[102] The Court also held that the state of origin was obliged to provide non-discriminatory access to judicial and administrative procedures for persons affected by transboundary harm that originated in their territory.[103] However, these obligations do not amount to strict liability for any injury suffered from the occurrence of transboundary harm. After all, the Court's position concerning state liability for transboundary harm remains dubious, and it is doubtful that it reflects the *lex lata* in the context of international environmental and human rights law.

D. International Law Commission

As noted earlier, strict state liability for transboundary damage has also been contemplated by the International Law Commission (ILC). The ILC dealt with the topic of *International Liability for Injurious Consequences arising out of Acts not Prohibited by International Law* from 1978 to 2006 in

100 ITLOS, Responsibilities and Obligations of States (n. 51), para. 189 (emphasis added).

101 Cf. ILC, Draft Articles on Prevention of Transboundary Harm from Hazardous Activities, with Commentaries (2001), YBILC 2001, vol. II(2), p. 148 (hereinafter 'ILC, Articles on Prevention'), Article 3, commentary para. 7; see chapter 4.

102 IACtHR, Advisory Opinion on Human Rights and the Environment (n. 95), paras. 172–173.

103 *Ibid.*, paras. 238–240.

what has aptly been described as an 'odyssey'.[104] Great controversies arose from the fact that the scope of the topic was not clearly defined. Until the mid-1990s, there were fundamentally diverging views among the ILC's members on whether the topic should be restricted to 'ultra-hazardous activities' (i.e. activities involving a low probability of causing disastrous harm[105]) or whether, at the other end of the spectrum, the topic should extend to activities that foreseeably (or regularly) caused transboundary harm (which entailed the question whether such activities were at all permitted under international law).[106] Another major source of controversy was the role of state liability in cases where the state had complied with its preventive obligations.

In 1996, the Commission appointed a working group to consolidate the work done up to then and suggest a way forward.[107] The working group adopted a set of *Draft Articles*,[108] which arguably provided for strict state liability for significant transboundary harm caused by hazardous activities:[109] Article 5 stipulated in general terms that 'liability arises from significant transboundary harm […] and shall give rise to compensation or other relief'. Subsequently, the Draft Articles provided for two alternative procedures through which the injured parties could seek remedies.[110] In the first alternative, victims would pursue civil claims in the courts of the state of origin, which would be required to provide these foreign victims with non-discriminatory access to its domestic judicial system.[111] This obligation later became the procedural component of the *obligation to*

104 *Boyle/Redgwell* (n. 3), 230.
105 See chapter 4, section B.V.
106 *Alan E. Boyle*, Liability for Injurious Consequences of Acts Not Prohibited by International Law, in: James Crawford/Alain Pellet/Simon Olleson (eds.), The Law of International Responsibility (2010) 95, 96; see *Barboza* (n. 7), 73–129.
107 See *ibid.*, 109–110.
108 ILC, Draft Articles on International Liability for the Injurious Consequences of Acts Not Prohibited by International Law, as Adopted by the Working Group of the Commission (1996), YBILC 1996, Vol. II(2), p. 101 (hereinafter 'ILC, 1996 Draft Articles on Liability').
109 Cf. *Louise* de *La Fayette*, The ILC and International Liability: A Commentary, 6 (1997) RECIEL 322, 329–330; *Boyle* (n. 9), 4–5; *Boyle* (n. 106), 98.
110 ILC, 1996 Draft Articles on Liability (n. 108), General commentary on Chapter III, para. 1.
111 *Ibid.*, Article 20.

ensure prompt and adequate compensation postulated in the ILC's *Principles on Allocation of Loss*.[112]

According to the second alternative proposed by the 1996 Draft Articles, the nature and extent of compensation were to be determined through direct negotiations between the state of origin and the affected state.[113] In these negotiations, parties were to take into account various 'factors' stipulated by the Draft Articles, including the extent to which the state of origin had complied with its preventive obligations and the extent to which it had benefitted from the harmful activity.[114] Moreover, the compensation should be determined 'in accordance with the principle that the victim of harm should not be left to bear the entire loss'.[115] Consequently, the objective of compensation as envisaged by the Draft Articles was to ensure an equitable balance of interests rather than full compensation or *restitutio ad integrum*.[116] The commentary clearly indicated that '[t]here may be situations in which the victim of significant transboundary harm may have to bear some loss'.[117]

Notably, the 1996 Draft Articles did not expressly stipulate whether liability for transboundary harm should be imposed on the operator of the hazardous activity or the state under whose jurisdiction the activity is carried out.[118] The working group's commentary to Article 5 noted that 'the principle of liability is without prejudice to the question of […] the entity that is liable and must make reparation'.[119] But the settlement approach mentioned before clearly implies that the state of origin should be responsible for ensuring payment of the compensation mutually agreed upon with the affected state. In fact, the working group envisaged operator liability and state liability as mutually exclusive concepts, since it assumed that negotiations should not be sought while civil procedures were pend-

112 ILC, Draft Principles on the Allocation of Loss in the Case of Transboundary Harm Arising Out of Hazardous Activities, with Commentaries (2006), YBILC 2006, vol. II(2), p. 56 (hereinafter 'ILC, Allocation of Loss Principles'), Principle 6(2); see chapter 8, section D.

113 ILC, 1996 Draft Articles on Liability (n. 108), Article 21.

114 Cf. *ibid.*, Article 22.

115 *Ibid.*, Article 21.

116 *Boyle* (n. 9), 5.

117 ILC, 1996 Draft Articles on Liability (n. 108), Commentary to Article 21, para. 4.

118 See *Barboza* (n. 7), 112–114; *Barbara Saxler* et al., International Liability for Transboundary Damage Arising from Stratospheric Aerosol Injections, 7 (2015) Law, Innovation and Technology 112, 129.

119 ILC, 1996 Draft Articles on Liability (n. 108), Commentary to Article 5, para. 6.

ing and, *vice versa*, that lodging complaints in the state of origin should be postponed when the states concerned decided to settle the matter through negotiations.[120] Notably, some members of the working group expressed concerns that a settlement negotiated between the states concerned may be disadvantageous to injured private parties, who could perhaps obtain more favourable remedies through civil liability claims in the courts of the state of origin.[121]

In any event, the concept of strict state liability proved not to be in line with the *opinio iuris* of states.[122] As noted earlier, the ILC decided in 1997 to subdivide the liability topic and to first move forward with the issue of prevention. This resulted in the adoption of the *Articles on Prevention* in 2001,[123] which unequivocally stipulate a (primary) obligation to prevent significant transboundary harm, the breach of which entails state responsibility for wrongful conduct.[124] After the ILC had returned to the issue of liability, the Commission's *Special Rapporteur* on the topic noted:

> *'State liability and strict liability are not widely supported at the international level, nor is liability for any type of activity located within the territory of a state in the performance of which no state officials or agents are involved. (…) The case law on the subject is scant and the basis on which some claims of compensation between states were eventually settled is open to different interpretations. The role of customary international law in this respect is equally modest.'*[125]

Consequently, the ILC shifted its focus away from state liability to the broader issue of 'allocation of loss', which, as shown earlier, emphasized the (primary) obligation to ensure that foreign victims can obtain prompt and adequate compensation through civil law remedies in the state of ori-

120 *Ibid.*, Commentary to Article 21, para. 2.
121 *Ibid.*, Commentary to Article 21, para. 8.
122 Cf. *Pemmaraju S. Rao*, First Report on the Legal Regime for Allocation of Loss in Case of Transboundary Harm Arising Out of Hazardous Activities, UN Doc. A/CN.4/531 (2003), paras. 19–25, criticizing state liability as a 'case of misplaced emphasis'. Also see *Barboza* (n. 7), 125–129.
123 ILC, Articles on Prevention (n. 101).
124 *Barboza* (n. 7), 119; see chapter 4.
125 *Rao* (n. 122), para. 3.

gin.[126] Having assessed the comments of states on the issue,[127] the Special Rapporteur later even concluded that state liability 'does not appear to have support even as a measure of progressive development of law'.[128] The final *Principles on Allocation of Loss* adopted in 2006 no longer contain an express reference to state liability, although they maintain the idea that the state of origin should make additional financial resources available where civil law remedies are insufficient to provide adequate compensation.[129]

E. Conclusions

It is widely acknowledged in legal scholarship that, *de lege ferenda*, there should be a form of subsidiary state liability for significant transboundary harm caused by hazardous activities, at least in cases where no sufficient compensation can be obtained through available civil law remedies.[130] Moreover, the preceding survey of international practice has shown that although states are reluctant to accept such liability in international treaties, there are only a few cases in which transboundary harm was left entirely unanswered by the state of origin.[131] In many cases, payments were made explicitly on an *ex gratia* basis, and states insisted on not accepting a *legal* responsibility or liability for the damage.[132] Hence, although there

126 *Boyle* (n. 9), 5–6; *Caroline E. Foster*, The ILC Draft Principles on the Allocation of Loss in the Case of Transboundary Harm Arising Out of Hazardous Activities, 14 (2005) RECIEL 265, 271; *Handl* (n. 4), 116; *Barboza* (n. 7), 125–128.

127 *Pemmaraju S. Rao*, Second Report on the Legal Regime for the Allocation of Loss in Case of Transboundary Harm Arising Out of Hazardous Activities, UN Doc. A/CN.4/540 (2004), paras. 25–29.

128 *Pemmaraju S. Rao*, Third Report on the Legal Regime for the Allocation of Loss in Case of Transboundary Harm Arising Out of Hazardous Activities, UN Doc. A/CN.4/566 (2006), para. 31.

129 ILC, Allocation of Loss Principles (n. 112), Principle 4(5); see *Foster* (n. 126), 267–277; see chapter 8, section B.III.

130 See, e.g., *La Fayette* (n. 109); *Lammers* (n. 9), 47; *Handl* (n. 4), 122–123; *Boyle* (n. 9); also see Institut de Droit International, Responsibility and Liability Under International Law for Environmental Damage: Resolution Adopted on September 4, 1997, 37 ILM 1474, Article 4(1), which reads: 'The rules of international law may also provide for the engagement of strict responsibility of the State on the basis of harm or injury alone. This type of responsibility is most appropriate in case of ultra-hazardous activities, and activities entailing risk or having other similar characteristics.'

131 *Barboza* (n. 7), 157.

132 ILC, Survey of liability regimes (n. 34), para. 399; *Barboza* (n. 7), 157.

is arguably a widespread practice of states, this practice seems not to be carried by a corresponding *opinio iuris* that such practice is required by law.[133]

However, it has also been argued that 'no argument that the sum paid in settlement was given *ex gratia* can wholly overcome the implication […] that the settlement reflected an *opinio juris* shared by both the claimant and the respondent state that the settlement was legally compelled'.[134] Another scholar observed that 'it would be disingenuous not to acknowledge that legal significance inevitably attaches to "*ex gratia*" payments of compensation, notwithstanding the label', and that observable state conduct was a 'key element in the chain of evidence pointing to states' recognition of an underlying legal obligation'.[135]

But still, the insistence of states that their payments were not to be understood as recognizing a legal obligation cannot be disregarded. Although the existence of *opinio iuris* is often inferred from the existence of a general practice,[136] both elements should not be conflated, and the 'presumption of acceptance' is at least 'rebuttable'.[137] Given the persistent refusal of states to acknowledge legal liability beyond responsibility for wrongful conduct in international treaty-making,[138] the pertinent state practice currently does not provide sufficient ground to assume the existence of a customary rule providing for strict state liability.[139]

In the present context, this finding means that a state is not generally liable for transboundary harm caused by biotechnology products apart from in cases of a breach of international law. Thus, if a state has taken all

133 Cf. *Lefeber* (n. 5), 177.

134 *Alfred P. Rubin*, Pollution by Analogy: The Trail Smelter Arbitration, 50 (1971) Oregon Law Review 259, 279; *Barboza* (n. 7), 63–64.

135 *Handl* (n. 4), note 80.

136 *Shaw* (n. 22), 64–66.

137 *Crawford* (n. 22), 26; see ICJ, North Sea Continental Shelf (Federal Republic of Germany v. Denmark; Federal Republic of Germany v. Netherlands), Judgment of 20 February 1969, ICJ Rep. 3, para. 76; ICJ, Military and Paramilitary Activities in and against Nicaragua (Nicaragua v. United States of America), Merits Judgment of 27 June 1986, ICJ Rep. 14, paras. 206–207.

138 See *supra* section A.

139 Cf. *Lefeber* (n. 5), 187; *Jutta Brunnée*, Of Sense and Sensibility: Reflections on International Liability Regimes as Tools for Environmental Protection, 53 (2004) ICLQ 351, 355–356; *Handl* (n. 4), 120; *Saxler* et al. (n. 118), 507; *Montjoie* (n. 60), 507; ITLOS, Responsibilities and Obligations of States (n. 51), para. 209; *Ulrich Beyerlin/Thilo Marauhn*, International Environmental Law (2011), 367; *Boyle/Redgwell* (n. 3), 228.

measures deemed 'appropriate' to prevent adverse transboundary effects, it is under no obligation to compensate for damage that occurs nevertheless. This again demonstrates the need to strengthen the preventive obligations and, since a moratorium seems difficult to achieve, to agree to clear conditions for unilateral releases, particularly of organisms containing self-spreading biotechnology.