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The role of International Environmental Law principles during the implementation of environmental remediation under Article 6(2)

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1. The positive obligations within Article 6 of the Treaty on the Prohibition of Nuclear Weapons (TPNW) are central in realising the humanitarian purposes of the treaty. Article 6(2) imposes an obligation upon States parties to take 'necessary and appropriate measures towards the environmental remediation' of areas contaminated by the testing or use of nuclear weapons.

2. While much useful discussion has considered how Article 6(2) can be further developed by drawing upon past experience and existing measures and standards employed in connection with the clearance of unexploded conventional remnants in the context of Article 5 of the Anti-Personnel Mine Ban Treaty 1997 and Article 4 of the Convention on Cluster Munitions 2008,[2] this paper considers how principles that have emerged in the context of International Environmental Law (IEL) could prove valuable to assist States parties when implementing Article 6(2).

3. Although there is no single agreement that codifies of the basic rules and principles of IEL, certain principles of IEL exist within customary international law and thus *prima facie* bind all States.[3] Unlike rules which 'define precisely what conduct is permissible', IEL principles provide normative, 'general' guidance to

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[2] See e.g. Bonnie Docherty, 'From Obligation to Action: Advancing Victim Assistance and Environment Remediation at the First Meeting of States Parties to the Treaty on the Prohibition of Nuclear Weapons' (2020) 3(2) *Journal for Peace and Nuclear Disarmament* 253; 'Implementing Environmental Remediation under the Treaty on the Prohibition of Nuclear Weapons' (*International Human Rights Clinic at Harvard Law School*, July 2021) <http://hrp.law.harvard.edu/wp-content/uploads/2021/07/TPNW-ER-factsheet_7-21.pdf>

[3] Art. 38(1), Statute of the International Court of Justice (adopted 24 October 1945, entered into force 18 April 1946) 33 UNTS 993. Notwithstanding the possibility of persistent objection, see *Fisheries Case* (United Kingdom v. Norway) [1951] ICJ Rep. 116, 131; James A Green, *The Persistent Objector Rule in International Law* (OUP 2016).

States in their decision-making processes, with the underlying objective of minimising and mitigating negative environmental impacts.[4]

4. Given that the very implementation of Article 6(2) requires affected TPNW parties to interact with, and employ measures and activities towards the environment, it seems apparent that at least some legal principles and approaches developed within IEL could provide guidance or be applicable to environmental remediation activities implemented by TPNW parties.

Harm Prevention Principle

5. The duty upon States to avoid causing transboundary environmental damage, or the no-harm/prevention of harm rule is central to the operation of IEL. The harm prevention principle was first mentioned in the environmental context in the *Trail Smelter Arbitration* in 1941,[5] and was reaffirmed in Principle 21 of the Stockholm Declaration 1972, which holds that:

> 'States have… the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction'.[6]

6. The International Court of Justice (ICJ) confirmed the customary international law nature of the harm prevention principle in the 1996 *Advisory Opinion on the Legality of the Threat or Use of Nuclear Weapons*.[7] Today, it is accepted that the harm prevention principle has a broader spatial scope, and requires States to avoid causing significant environmental harm both of a transboundary nature affecting third States and the 'global commons', but also environmental harm occurring domestically.

7. Central to the harm prevention principle are two requirements combining the probability and magnitude of harm.[8] The first, is that the risk of environmental harm from a particular activity must either be 'known' or 'foreseeable'. In this sense, the harm prevention principle and concerns avoiding environmental threats that are clearly imminent. Second, the known or foreseeable harm must be 'significant'. Although this requires a particular threshold of harm beyond a minimum level, it has been suggested that 'significant' environmental damage should be interpreted as harm that is 'detectable', though not necessarily serious or substantial.[9]

8. Moreover, the harm prevention principle imposes a standard of due diligence on States. According to the ICJ in the *Pulp Mills on the River Uruguay* case, due diligence here reflects a standard of reasonableness, and means that States are obliged to use 'all the means at [their] disposal in order to avoid transboundary harm from activities occurring in their territories or under their jurisdiction'.[10] This does not, however, mean that all significant environmental harm is to be prevented. As the International Law Commission's (ILC) 2001 *Draft Articles on the Prevention of Transboundary Harm* notes:

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[4] Daniel Bodansky, *The Art and Craft of International Environmental Law* (HUP 2011) 201.
[5] *Trail Smelter Arbitration* (US v. Canada) UNRIAA, vol. III, 1905 (1938, 1941), 1965.
[6] Principle 21, Stockholm Declaration of the UN Conference on the Human Environment, Report of the UN Conference on the Human Environment (5–16 June 1972) UN Doc. A/CONF.48/14. See also Article 3, 'Draft Articles on the Prevention of Transboundary Harm from Hazardous Activities', *International Law Commission* (2001) UN Doc. A/56/10, 148 ('Draft Articles on Prevention of Transboundary Harm').
[7] *Legality of the Threat or Use of Nuclear Weapons*, Advisory Opinion [1996] ICJ Rep. 226, [29]. See also *Gabčíkovo-Nagymaros Project (*Hungary/Slovakia*)* (Judgement) [1997] ICJ Rep. 7, [140]; *Pulp Mills on the River Uruguay* (Argentina v. Uruguay) [2010] ICJ Rep. 14, [101] ('*Pulp Mills*').
[8] See Art. 2(a), *Draft Articles on Prevention of Transboundary Harm*.
[9] Art. 2, *Draft Articles on Prevention of Transboundary Harm*, [4].
[10] *Pulp Mills*, [101].

> 'The duty of due diligence involved, however, is not intended to guarantee that significant harm be totally prevented, if it is not possible to do so. In that eventuality, the State of origin is required … to exert its best possible efforts to minimize the risk. In this sense, it does not guarantee that the harm world not occur.'[11]

9. Applied to the context of Article 6(2), if there is a known or foreseeable risk of imminent and significant environmental harm occurring as a result of implementing a particular remediation measure – perhaps in spreading radioactive contaminants across a wider area – the rationale of the harm prevention principle can serve as an important tool to minimise further ecological damage and would obligate the state in question to refrain from engaging in such a course of action. Moreover, the due diligence would, in the context of Article 6(2), require TPNW parties to use 'all the means at their disposal' to minimise the risk of significant environmental harm. This due diligence standard is also variable, and what constitutes 'reasonable' or 'appropriate' steps to prevent environmental harm would depend both on the capabilities of each affected TPNW party acting pursuant to Article 6(2), and the particular circumstances or activity in question.

10. The harm prevention principle requires constant attention and care by TPNW parties as implementation of Article 6(2) commences. Not only will this benefit other States by reducing the likelihood of future transboundary harm, but this may also reduce human exposure to contaminants during the remediation process – thereby conforming to the underlying human-centred purposes of the TPNW.

Precaution

11. Closely related to, but conceptually distinct from, the harm prevention principle, is the precautionary approach. The overall rationale of the concept is best captured by Principle 15 of the Rio Declaration 1992:

> 'Where there are threats of serious or irreversible damage, lack of scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation.'[12]

12. Simply put, the precautionary approach applies in circumstances where the consequences of a particular threat of serious or irreversible environmental damage – a higher threshold of harm compared to the harm prevention principle – are 'scientifically uncertain but enough is known to indicate that a course of cautious and forward-thinking action is warranted'.[13] The principle urges States to adopt caution in their decision-making process, granting discretion – again under a due diligence standard based upon the capabilities of States and the prevailing circumstances[14] – to States to avoid the potentially serious or irreversible environmental risk that is threatened by the activity in question. Spatially, the precautionary approach should be employed with respect to both transboundary and domestic environmental harms.[15]

13. This idea of scientific 'uncertainty' represents a somewhat lower evidentiary standard and level of proof that distinguishes the precautionary approach from harm that known and 'foreseeable' in the context of the harm prevention principle discussed above. This means that environmental threats should no longer only be addressed or

[11] Art. 3, *Draft Articles on Prevention of Transboundary Harm*, [7].
[12] Principle 15, Rio Declaration on Environment and Development (12 August 1992) UN Doc. A/CONF.151/26.
[13] Jacqueline Peel, 'Precaution', in Lavanya Rajamani and Jacqueline Peel (eds), *The Oxford Handbook of International Environmental Law* (OUP 2nd edn, 2021) 302, 306.
[14] See Principle 15, Rio Declaration 1992; *Responsibilities and Obligations of States Sponsoring Persons and Entities With Respect to Activities in the Area* (Advisory Opinion) [2011] ITLOS Rep. 10, [131]-[132] ('*Seabed Dispute*').
[15] Sumudu Atapattu, *Emerging Principles of International Environmental Law* (Brill 2006) 204.

avoided when there is 'firm scientific evidence established a likelihood of harm'.[16] Rather, the precautionary approach is anticipatory as it 'runs in advance of such evident harms or risks' and requires States to employ pre-emptive actions to mitigate serious environmental threats in the absence of irrefutable evidence.[17]

14. Although there remains disagreement as to the precise meaning and effect of the precautionary approach, including as to its customary international law status,[18] the underlying rationale behind the precautionary approach could prove advantageous in encouraging a cautious, 'better safe, than sorry' approach to Article 6(2). For example, if the removal of a particular source of contamination runs the possible, though uncertain risk of further disseminating radioactive contamination across a significantly larger area, caution should be taken by TPNW parties to avoid such risks becoming realised through additional planning, preparations, and other associated measures. Simply put, the precautionary approach can act a risk management or avoidance strategy that can be employed in the context of remediation efforts and can help guide States parties' efforts to implement Article 6(2), with the aim of avoiding any further serious, though potentially uncertain, environmental harm from arising during the remediation process.

Environmental Impact Assessments

15. The harm prevention principle and precautionary approach give rise to certain procedural obligations in conforming with these concepts. Perhaps most notable is the obligation to undertake environmental impact assessments (EIA). EIAs constitute a process that seeks to analyse the environmental impacts of a particular planned activity before it takes place in order to allow decision makers to reach informed views as to whether to allow the activity to take place.[19] Today EIAs are regularly carried out by the vast majority of States,[20] and the ICJ in the *Pulp Mills* Case considered the carrying out of an EIA to be a freestanding obligation required under customary international law.[21]

16. Principle 17 of the Rio Declaration holds that EIAs shall be 'undertaken for proposed activities that are likely to have a significant adverse impact on the environment and are subject to a decision of a competent international authority'. This offers guidance in a number of ways. First, it sets a threshold as to when an EIA is required – when significant (i.e. detectable, but not necessarily serious) environmental harm is 'likely'.[22] Second, the general nature of this principle confirms that EIAs must be context specific in their application, as evidenced by international agreements requiring assessment of environmentally impacting activities such as the United Nations Convention on the Law of the Sea 1982,[23] and the UN Framework Convention on Climate Change 1992.[24]

[16] Peel (2021) 302.
[17] Meinhard Schröder, 'Precautionary Approach/Principle' (2014) *Max Planck Encyclopaedia of International Law*, [4].
[18] *Seabed Dispute*, [135].
[19] Philippe Sands and Jacqueline Peel, *Principles of International Environmental Law* (CUP 3rd edn, 2012) 601.
[20] Tseming Yang, 'The Emergence of the Environmental Impact Assessment Duty as a Global Legal Norm and General Principle of Law' (2019) 70(2) *Hastings Law Journal* 525.
[21] *Pulp Mills*, [204]-[205]; *Certain Activities*, [104].
[22] See Art. 7, *Draft Articles on Prevention of Transboundary Harm*; Alan Boyle, 'Developments in the International Law of Environmental Impact Assessment and their Relation to the Espoo Convention' (2011) 20(3) *Review of European Community & International Environmental Law* 227, 228.
[23] Arts. 2 and 204, United Nations Convention on the Law of the Sea (1982) 1833 UNTS 3 (UNCLOS).
[24] Art. 4, United Nations Framework Convention on Climate Change (1992) 1771 UNTS 107.

17. The requirement to conduct an EIA could prove useful for TPNW parties as a form of guidance on the types of checks and assessments to be undertaken by an affected States parties prior to the commencement of remediation measures. Although States are afforded discretion as to the nature and content of each EIA undertaken domestically based on the circumstances and available capabilities,[25] the EIA must be conducted with due diligence, care, and in good faith. EIAs would operate as a precautionary step of due diligence that affected States parties could adopted when implementing Article 6(2) in order to minimise potential transboundary, or even significant, environmental harms by highlighting potential sources of risks at an early stage. Equally, the ICJ has emphasised that 'continuous monitoring' during a particular remediation project or activity is warranted to assess 'its effects on the environment'.[26] This is a logical requirement that would prove advantageous in relation to Article 6(2), reflecting good governance during remediation efforts.

Duty to Cooperate and Public Participation

18. Should an EIA suggest that there is a risk of transboundary harm, the ICJ has confirmed that States are under an obligation to 'notify, and consult with, the potentially affected State in good faith'.[27] This provides potentially impacted States that would be affected by any significant environment damage arising as a consequence of intended remediation efforts under Article 6(2) to consult with the acting State party 'in order to agree on the measures to prevent significant transboundary harm, or at any event to minimize the risk thereof'.[28]

19. But such notification and consultation requirements also align with the procedural duty to cooperate in good faith to prevent or minimise the risk of environmental harm in IEL,[29] enshrined within Principle 24 of the Stockholm Declaration, Principles 7 and 27 of the Rio Declaration, Article 4 of the ILC's Draft Articles on Prevention of Transboundary Harm, and found in general international law.[30] Indeed, the International Tribunal of the Law of the Sea confirmed in the *MOX Plant Arbitration* that the duty to cooperate is a 'fundamental principle in the prevention of pollution of the marine environment … and general international law'.[31]

20. Article 7 of the TPNW envisages a cooperative approach to implementation of the treaty's provision, while Article 7(3) specifically states that 'Each State Party in a position to do so shall provide technical, material and financial assistance to States Parties affected by nuclear weapons use or testing, to further the implementation of this Treaty.'

21. But whereas Article 7(3) envisages the possibility of other TPNW parties providing assistance to affected States, the general duty to cooperate both within the

[25] *Pulp Mills*, [204]-[205]; *Certain Activities*, [104].
[26] *Pulp Mills*, [205].
[27] *Certain Activities*, [107]. See also Principle 19, Rio Declaration 1992; Arts. 4, 8, and 9, *Draft Articles on Prevention of Transboundary Harm*.
[28] Art. 9, *Draft Articles on Prevention of Transboundary Harm*, [1]; Neil Craik, 'The Duty to Cooperate in the Customary Law of Environmental Impact Assessment' (2019) 69(1) *International and Comparative Law Quarterly* 239, who discusses the importance of the technical consultation process and the need to cooperate to mitigate identified harms.
[29] *Pulp Mills*, [77]. See also Art. 197, UNCLOS, emphasising the importance of cooperation in the preservation and protection of the marine environment.
[30] See Art. 1(3), Charter of the United Nations (1945) 1 UNTS XVI; Declaration on Principles of International Law concerning Friendly Relations and Cooperation among States in accordance with the Charter of the United Nations, UNGA Res. 2625 (XXV), UN Doc. A/RES/2625/XXV (24 October 1970); *North Sea Continental Shelf Cases* (Federal Republic of Germany v. Denmark; Federal Republic of Germany v. Netherlands) [1969] ICJ Rep. 39, [85]; *South China Sea Arbitration* (Merits) (2016) PCA, Case No. 2013-19, [946].
[31] *MOX Plant Case* (Ireland v. United Kingdom) Provisional Measures (2001) ITLOS Rep. 95, [82]; *Pulp Mills*, [77].

TPNW and IEL should also encourage affected States parties to remain cooperative, transparent and open throughout the remediation process too. This mutually cooperative approach to implementing Article 6(2) could draw from the normative development of the duty to cooperate in IEL and should promote research gathering, information sharing, consultation, and mediation efforts – activities envisaged during the EIA process noted above – as part of wider remediation efforts by both affected States and third States parties in order to prevent, or at least minimise environmental harm from any proposed remediation activities.

22. Finally, TPNW parties should provide an appropriate opportunity and means for public participation in environmental remediation decision making at the domestic level.[32] This right of public participation is a growing trend in IEL, reflected notably in the Aarhus Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters 1998,[33] and Principle 10 of the Rio Declaration.

23. Public participation provides information to the public regarding the possible environmental risks of a proposed activity, and offers a mechanism for members of the public to give their views on the activity.[34] Ensuring the participation of impacted individuals, local communities, and indigenous groups, along with non-governmental organisations and civil society organisations serves to increase the legitimacy, effectiveness and accountability of government decision-making when developing strategies for remediation efforts pursuant to Article 6(2).[35] The value of inclusive public participation has already been recognised in the context of Article 6(2) by the International Human Rights Clinic at Harvard Law School,[36] and reflects the inclusive nature of the 'humanitarian disarmament' movement which encourages and permits insights from a diverse range of actors, including civil society, impacted individuals, non-governmental and international organisations, amongst other interested parties.

24. Ultimately, implementation of any remediation efforts pursuant to Article 6(2) would require full transparency and inclusivity at all stages, something that IEL encourages through the duty to cooperate and public participation. The application of these concepts to the TPNW context would reflect 'good governance' on the part of affected States parties when operationalising Article 6(2) in due course.

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[32] Art. 13, *Draft Principles on Prevention of Transboundary Harm*.
[33] Art. 1, Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters (1998) 2161 UNTS 447. See usefully, Atapattu (2006) 356-72.
[34] Art. 13, *Draft Principles on Prevention of Transboundary Harm*, [1].
[35] Jonas Ebbesson, 'Public Participation', in Lavanya Rajamani and Jacqueline Peel (eds), *The Oxford Handbook of International Environmental Law* (OUP 2nd edn, 2021) 351, 352-53.
[36] See e.g. 'Implementing Environmental Remediation under the Treaty on the Prohibition of Nuclear Weapons', 2.