

From Tactical Law of Armed Conflict to Macro-Perspective of Climate Law

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The law of armed conflict (LOAC) regulates the conduct of hostilities in real time during concrete tactical operations.¹ Its normative architecture is thus conventionally understood as predominantly micro-operational, structuring discrete battlefield decisions on the basis of information reasonably available at the time. By contrast, international climate law is inherently macro-structural. Instruments such as the United Nations Framework Convention on Climate Change, the Kyoto Protocol, and the Paris Agreement articulate obligations that are systemic, forward-looking, and cumulative,² requiring States to assess environmental harm across extended temporal horizons and broad spatial scales, including its transboundary dimensions. At first sight, this divergence appears to generate a structural disjunction. On closer inspection, however, the ostensibly micro-operational logic of the LOAC is capable, albeit imperfectly, of accommodating broader environmental considerations, while international climate law can, in turn, inform and recalibrate the interpretation and application of its principles in this direction. To substantiate this claim, I will confine this brief reflection to three main observations.

First, although LOAC operates through case-specific assessments, its foundational principles already require consideration of effects extending beyond immediate and localised damage. The principles of distinction, proportionality, and precaution, together with the prohibition of widespread, long-term, and severe environmental harm, presuppose a forward-looking evaluation of the foreseeable consequences of military action.³ The principal

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¹ Yves Sandoz, Christophe Swinarski and Bruno Zimmermann (eds), *Commentary on the Additional Protocols of 8 June 1977 to the Geneva Conventions of 12 August 1949* (ICRC/Martinus Nijhoff Publishers 1987), 683 (para. 2207).

² ICJ, *Obligations of States in Respect of Climate Change, Advisory Opinion of 23 July 2025*, *ICJ Reports 2025*, 86 (para. 276).

³ See ICRC, *Guidelines on the Protection of the Natural Environment in Armed Conflict: Rules and Recommendations Relating to the Protection of the Natural Environment under International Humanitarian Law, with Commentary* (ICRC 2020), paras 19, 57, 66, 117, 118, available at: <https://www.icrc.org/sites/default/files/document_new/file_list/guidelines_on_the_protection_of_the_natural_environment_in_armed_conflict_advance-copy.pdf>, last access 30 June 2026.

difficulty lies not in the absence of such a perspective, but in translating the diffuse and cumulative character of climate harm into the doctrinal language of foreseeability. That said, while climate change is typically the product of aggregated conduct, certain forms of military activity generate environmental effects that are sufficiently well established to fall, in themselves, within the ambit of foreseeable harm. Two examples illustrate this point. First, the destruction of carbon sinks – such as forests or peatlands – predictably releases significant quantities of stored carbon dioxide while simultaneously diminishing future sequestration capacity. Second, attacks against fossil fuel infrastructure are known to produce substantial greenhouse gas emissions through fires, explosions, or leaks. Even where the precise magnitude of such effects cannot be quantified *ex ante*, their likelihood is often sufficient to trigger consideration under the principles of proportionality and precaution. In this respect, LOAC already contains uncontested doctrinal entry points for the incorporation of climate-relevant risks.⁴

Second, the recognition of foreseeable environmental effects at the level of individual operations exposes a deeper structural limitation of LOAC: its traditional focus on discrete acts risks obscuring the cumulative impact of sustained military campaigns. This limitation is accentuated in contemporary forms of warfare, characterised by the repetition and coordination of strikes at scale.⁵ Operations that comply with the principles of distinction, proportionality, and precaution when assessed in isolation may nonetheless generate harmful consequences that appear excessive when considered in the aggregate. This concern has prompted the development of the notion of ‘cumulative harm’, according to which a series of individually lawful acts may, in combination, produce disproportionate outcomes.⁶ Although this concept has yet to achieve firm doctrinal consolidation,⁷ it finds support in existing precautionary obligations under LOAC. These include, in particular, the duty of constant care reflected in Article 57 of Additional Protocol I, the

⁴ See generally Stavros-Evdokimos Pantazopoulos, ‘Navigating Legal Frontiers: Climate Change, Environmental Protection and Armed Conflict’, *Int’l Rev. of the Red Cross* 106 (2024), 166–392; Mario Pasquale Amoroso, ‘Fighting in a Warming World: The Emergence of Climatic Considerations in the Conduct of Hostilities Under International Humanitarian Law’, *RECIEL* (2026), 1–12.

⁵ See Jessica Dorsey, ‘Precautions-by-Design: Safeguarding the Notion of Feasibility in Increasingly Autonomous Warfare’ (2 April 2026), 2–7, available at: <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=6509503>, last access 30 June 2026.

⁶ Noam Lubell and Amichai Cohen, ‘Strategic Proportionality: Limitations on the Use of Force in Modern Armed Conflicts’, *International Law Studies* 96 (2020), 161–193 (176–177).

⁷ See Emanuela-Chiara Gillard, *Proportionality in the Conduct of Hostilities. The Incidental Harm Side of the Assessment* (2018), Chatham House, 2–52 (10), available at: <<https://www.chathamhouse.org/sites/default/files/publications/research/2018-12-10-proportionality-conduct-hostilities-incident-harm-gillard-final.pdf>>, last access 30 June 2026.

prohibition of methods and means of warfare expected to cause widespread, long-term, and severe environmental damage, and the customary obligation to avoid or, at a minimum, mitigate incidental harm.⁸ Read together, these norms point toward a more integrated and forward-looking conception of environmental risks⁹ that transcends the evaluation of isolated attacks, and instead, governs the conduct of military operations as a whole.¹⁰ From this perspective, precaution operates not merely alongside proportionality but also, in certain respects, upstream of it,¹¹ addressing categories of harm that an atomised analysis may fail to capture adequately.

Third, the foregoing structural limitations of the LOAC are particularly acute in the context of climate change, which is inherently cumulative, systemic, and transboundary. A strictly atomised application of the LOAC risks, more than in any other environmental domain, underestimating the contribution of military activities to broader patterns of climate degradation and alteration. This tension underscores the need to develop an interpretative approach that complements the predominantly micro-operational logic of the LOAC with a more aggregated conception of the duty of care, as advanced in my second observation, particularly at higher levels of command where operational patterns are conceived, coordinated, and sustained. That said, such a duty cannot be articulated in uniform terms. Rather, it must be calibrated to the capacities of the actors concerned. Armed forces possessing advanced technological and institutional capabilities – enabling, for instance, the integration of environmental data into targeting processes and the identification of ecologically sensitive areas – should be held to a correspondingly heightened standard of care with respect to the anticipation, prevention, and minimisation of environmental harm.¹²

It is precisely at this juncture that international climate law acquires interpretative salience. By requiring States to assess environmental harm in sys-

⁸ Jean-Marie Henckaerts and Louise Doswald-Beck (eds), *Customary International Humanitarian Law, Vol. 1: Rules* (Cambridge University Press 2005), Rule 44.

⁹ Jessica Dorsey, 'The Erosion of Human(e) Judgement in Targeting? Quantification Logics, AI-Enabled Decision Support Systems and Proportionality Assessments in IHL', *Int'l Rev. of the Red Cross* 106 (2025), 1041-1071 (1046), and the references cited in footnote 22.

¹⁰ See Dorsey (n. 5), 7.

¹¹ For a position emphasising the primacy of precautionary measures, with proportionality as a subsidiary rule when collateral damage cannot be fully avoided, see Dorsey (n. 9), 1048-1053. See also Jeroen van den Boogaard, *Proportionality in International Humanitarian Law: Refocusing the Balance in Practice* (Cambridge University Press 2023), 122; Geoffrey S. Corn, 'War, Law, and the Oft Overlooked Value of Process as a Precautionary Measure', *Pepperdine L. Rev.* 42 (2015), 419-464 (435-436).

¹² See Dorsey (n. 5), 5, 10-11. See generally Gabriella Blum, 'On Differential Law of War', *Harv. Int'l L. J.* 52 (2011), 164-217; Jean-François, Quéguiner, 'Precautions Under the Law Governing the Conduct of Hostilities', *Int'l Rev. of the Red Cross* 88 (2006), 793-821 (802).

temic, long-term, and transboundary terms – most notably through the preparation and progressive strengthening of nationally determined contributions under Article 4 of the Paris Agreement, as well as through adaptation planning (Art. 7) and enhanced transparency and reporting obligations (Art. 13) – the climate regime provides a normative framework expressly attuned to cumulative effects. These obligations do not lose their relevance in situations of armed conflict. On the contrary, they lend further weight to the need to adopt broader temporal and spatial perspectives on military operations, particularly when assessing their climate-related consequences. Moreover, the principle of differentiated responsibilities and respective capabilities, as developed under climate law frameworks,¹³ buttresses the case for a variable standard of environmental due diligence under LOAC, aligned with the capacities of the actors involved. Accordingly, international climate law can usefully inform the interpretation and application of LOAC principles, particularly precaution, by requiring that decision-makers take into account not only the immediate effects of individual operations, but also the foreseeable consequences arising from their repetition and interaction over time. While the operationalisation of such assessments during hostilities may present practical challenges,¹⁴ their integration at the *ex ante* stage – through military planning processes, operational doctrines, and risk assessment frameworks – appears both feasible and normatively compelling.

¹³ See Valerie Fajardo, 'Reassessing Common But Differentiated Responsibilities and Respective Capabilities. Climate Finance and the Paris Agreement at COP29', *Völkerrechtsblog*, 12 November 2024, doi: 10.17176/20241112-235915-0.

¹⁴ For a discussion of the operational difficulties of an overly broad application of the principle of proportionality, see Amichai Cohen and Yuval Shany, 'Contextualizing Proportionality Analysis? A Response to Schmitt and Merriam and Israel's Targeting Practices', *Just Security*, 7 May 2015, available at: <<https://www.justsecurity.org/22786/contextualizing-proportionality-analysis-response-schmitt-merriam/>>, last access 30 June 2026. See also Oded Hen, 'What Aggregate Civilian-Combatant Ratios Tell Us, and What They Don't: A Case Study from the Gaza Conflict', *Lieber Institute: Articles of War*, 20 March 2026, available at: <<https://lieber.westpoint.edu/what-aggregate-civilian-combatant-ratios-tell-us-what-they-dont-case-study-gaza-conflict/>>, last access 30 June 2026.