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Navigating legal frontiers: Climate change, environmental protection and armed conflict

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Abstract

The relationship between armed conflict, the environment and climate change is intricate and challenging to define. While international humanitarian law (IHL) includes some environmental protections, it did not anticipate the connection to climate change. Climate change can act as a risk multiplier, intensifying negative socio-economic impacts, and conflict-related environmental damage may contribute to climate change. Bridging these fields is crucial, and to this end, this article seeks to interpret IHL considering evolving understandings of armed conflict effects and progress under international environmental law (IEL). The article illustrates how existing norms can address climate change impacts in warfare, and explores how relevant IEL provisions, such as the Paris Agreement and the harm prevention principle, could be applied during armed conflicts to achieve similar goals.

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Keywords: climate change, armed conflict, natural environment, international humanitarian law, international environmental law, Paris Agreement, harm prevention principle.

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Introduction

This article attempts to provide an overview of the respective provisions emanating from the fields of international humanitarian law (IHL) and international environmental law (IEL) that may address conflict-related climate change impacts. It follows a coherency-based approach to articulate the relationship between IHL and IEL.¹ This approach is premised on two pillars: firstly, it builds on the requirement of “further ‘environmentalizing’ the regulation of armed conflict through a full incorporation of IEL into IHL or its full application in armed conflict”, and secondly, it sets a limit to the above-mentioned first prong by demanding “that the resulting legal solutions do not conflate with effectiveness-based considerations specific to situations of armed conflict”.²

Specifically, I first illustrate the multifaceted interlinkages between climate change and armed conflict, concluding that climate change can act as a contributing cause or threat multiplier, as the mainstream terminology goes, in relation to armed conflict, though also highlighting that other socio-economic factors appear to serve as drivers of armed conflict. Conversely, conflict-related environmental damage, such as damage to oil installations, can contribute to climate change.

Against this background, I proceed with the identification of entry points for IEL rules and principles to inform the interpretation of applicable IHL provisions (the “interpretation process”), while also briefly considering certain provisions relating to environment modification techniques and specifically protected objects. Then, I move on to examine how relevant IEL provisions, in particular the Paris Agreement and the harm prevention principle, could apply in armed conflict to regulate conflict-related climate change effects (the “application process”).³ The last section offers some concluding remarks.

The link between climate change and armed conflict

The last decade has witnessed a surge of legal initiatives addressing the topic of environmental protection in armed conflict which, in terms of importance, can

1 In this respect, this article draws on Raphaël van Steenberghe, “The Impacts of Human Rights Law on the Regulation of Armed Conflict: A Coherency-Based Approach to Dealing with Both the ‘Interpretation’ and ‘Application’ Processes”, *International Review of the Red Cross*, Vol. 104, No. 919, 2022. See also Raphaël van Steenberghe, “International Environmental Law as a Means for Enhancing the Protection of the Environment in Warfare: A Critical Assessment of Scholarly Theoretical Frameworks”, *International Review of the Red Cross*, Vol. 105, No. 924, 2023.

2 Raphaël van Steenberghe, “The Interplay between International Humanitarian Law and International Environmental Law: Towards a Comprehensive Framework for a Better Protection of the Environment in Armed Conflict”, *Journal of International Criminal Justice*, Vol. 20, No. 5, 2022, p. 1152.

3 *Ibid.*

only be compared to the 1970s. It is no exaggeration to say that this will be the defining period for the years to come, much as the State-driven law-making on the protection of the environment in relation to armed conflict that emerged in the 1970s defined the ensuing decades. To be more specific, the International Law Commission's (ILC) Principles on Protection of the Environment in Relation to Armed Conflicts (PERAC Principles)⁴ will form the reference point, together with the International Committee of the Red Cross's (ICRC) updated version of its 1994 *Guidelines for Military Manuals and Instructions on the Protection of the Environment in Times of Armed Conflict* (ICRC Guidelines), released in September 2020.⁵ This mosaic of legal initiatives further includes the *Geneva List of Principles on the Protection of Water Infrastructure* that were issued in 2019,⁶ and the victim assistance principles for those affected by toxic remnants of war.⁷

In addition, the United Nations (UN) Environment Assembly, tasked with addressing environmental issues worldwide, has adopted three resolutions touching upon conflict-related environmental aspects, in 2016, 2017 and 2024.⁸ In the same vein, the UN Security Council has hosted debates on climate and water security,⁹ and environmental damage.¹⁰ The interlinkages between the environment, peace and security can be further evinced in peacekeeping,¹¹ peacebuilding,¹²

4 ILC, *Draft Principles on Protection of the Environment in Relation to Armed Conflicts: Texts and Titles of the Draft Preamble and the Draft Principles adopted by the Drafting Committee on Second Reading*, UN Doc. A/CN.4/L.968, 20 May 2022 (PERAC Principles). The PERAC Principles were taken note of by the UN General Assembly in *Protection of the Environment in Relation to Armed Conflict*, UN Doc. A/77/104, 7 December 2022.

5 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*, Geneva, 25 September 2020 (ICRC Guidelines).

6 University of Geneva and Geneva Water Hub, *Geneva List of Principles on the Protection of Water Infrastructure*, Geneva, August 2019, available at: www.genevawaterhub.org/sites/default/files/atoms/files/gva_list_of_principles_protection_water_infra_www.pdf (all internet references were accessed in April 2024).

7 Harvard Law School International Human Rights Clinic and Conflict and Environment Observatory, *Confronting Conflict Pollution: Principles for Assisting Victims of Toxic Remnants of War*, 2020, available at: <http://hrp.law.harvard.edu/wp-content/uploads/2020/09/Confronting-Conflict-Pollution.pdf>.

8 UNEA Res. 2/15, "Protection of the Environment in Areas Affected by Armed Conflict", 4 August 2016; UNEA Res. 3/1, "Pollution Mitigation and Control in Areas Affected by Armed Conflict or Terrorism", 6 December 2017; UNEA Res. 6/12, "Environmental Assistance and Recovery in Areas Affected by Armed Conflict", 1 March 2024.

9 See "Water, Peace and Security Arria-Formula Meeting", *Security Council Report*, 25 October 2018, available at: www.whatsinblue.org/2018/10/water-peace-and-security-arria-formula-meeting.php.

10 UN Security Council, "Arria-Formula Meeting on the 'Protection of the Environment during Armed Conflict'", 7 November 2018; UN Security Council, "Arria-Formula Meeting on the Protection of the Environment in Armed Conflict", 9 December 2019, available at: www.paxforpeace.nl/stay-informed/news/pax-briefs-the-un-security-council-on-conflict-and-environment. For a critical account of attempts to "securitize" climate change using the language of international law, see Eliana Cusato, "Of Violence and (In)Visibility: The Securitisation of Climate Change in International Law", *London Review of International Law*, Vol. 10, No. 2, 2022.

11 Lucile Maertens and Malkit Shoshan, *Greening Peacekeeping: The Environmental Impact of UN Peace Operations*, Providing for Peacekeeping No. 17, International Peace Institute, 2018, available at: www.ipinst.org/wp-content/uploads/2018/04/1804_Greening-Peacekeeping.pdf.

12 See, for example, Environmental Law Institute et al., *Natural Resource Programming in Post-Conflict Situations*, Policy Brief No. 8, 2014, available at: www.environmentalpeacebuilding.org/assets/Documents/LibraryItem_000_Doc_426.pdf.

humanitarian assistance¹³ and mine action,¹⁴ where efforts to mainstream environmental considerations are increasingly being prioritized.

The above frameworks may also prove relevant, at least within their own scope of reference, for the consideration and proper regulation of conflict-related climate change impacts. Specifically, legal initiatives aiming to enhance the protection of the environment can contribute to minimizing the compounding impacts of climate change in situations of armed conflict and vice versa. By means of illustration, protecting forests and biodiversity hotspots may help to mitigate impacts on zones that are essential for climate mitigation, and protecting water resources during armed conflict could minimize the compounding impacts of water pollution on the population where there are climate-induced droughts.¹⁵

The link between armed conflict and climate change can be approached from various angles. To start with, it has been documented that conflict-affected countries are often also impacted by climate change. For example, it is reported that “12 of the 20 countries which, according to the ND-GAIN [Note Dame Global Adaptation Initiative] Country Index, are the most vulnerable to climate change are also sites of armed conflict”.¹⁶ To further illustrate this point, the UN Office for the Coordination of Humanitarian Affairs (OCHA) has recently documented that “[t]he largest global food crisis in modern history is unfolding, driven by conflict, climate shocks and the looming threat of global recession”.¹⁷

Furthermore, as the recent report of the Intergovernmental Panel on Climate Change (IPCC) acknowledged,¹⁸ climate change has been found to “increase ... the risk of intrastate armed conflict onset and incidence, for instance by raising food prices, intensifying competition for water and land, dampening economic growth, and weakening civil institutions”.¹⁹ Nonetheless, it appears that climate change does not significantly impact upon inter-State conflicts and “is generally more likely to affect low-intensity violence (rather than, for instance, full blown civil wars)”.²⁰

Notwithstanding the above, climate change is prevailingly depicted “as a contributing cause or ‘threat multiplier’ to insecurity and armed conflict”.²¹ The

13 See for example, Environment and Humanitarian Action Connect, available at: <https://ehaconnect.org>.

14 See for example, Conflict and Environment Observatory, “Environment in Humanitarian Disarmament”, available at: www.ceobs.org/projects/project-one.

15 I would like to thank one of the peer reviewers for highlighting these points.

16 ICRC Guidelines, above note 5, p. 4. The Notre Dame Global Adaptation Initiative Country Index “summarizes a country’s vulnerability to climate change and other global challenges in combination with its readiness to improve resilience”. See: <https://gain.nd.edu/our-work/country-index>.

17 OCHA, *Global Humanitarian Overview 2023*, 1 December 2022, p. 4, available at: <https://reliefweb.int/report/world/global-humanitarian-overview-2023-enaesfr>.

18 IPCC Working Group II, *Sixth Assessment Report: Climate Change 2022: Impacts, Adaptation and Vulnerability*, 2022.

19 Tobias Ide, “What Do We Know about Climate Change, Peace and Conflict?”, Toda Peace Institute, 8 March 2022, available at: <https://toda.org/global-outlook/2022/what-do-we-know-about-climate-change-peace-and-conflict.html>.

20 *Ibid.*

21 Tuiloma Neroni Slade, “International Humanitarian Law and Climate Change”, in Suzannah Linton, Tim McCormack and Sandesh Sivakumaran (eds), *Asia-Pacific Perspectives on International Humanitarian Law*, Cambridge University Press, Cambridge, 2019, p. 643.

latter qualification, namely that of “threat multiplier”, appears to also be the preferred one in UN parlance. In the same vein, the effects of climate change may adversely “affect the resilience of the environment to cope with eco-system level changes that may occur in armed conflict (e.g. through the destruction of forests, or the use of weapons with a heavily polluting effect)”.²²

Viewing things the other way round, conflict-related environmental damage and degradation may contribute to climate change.²³ As the UN Secretary-General has reported, “damage to infrastructure, such as oil installations and chemical facilities, as well as the deliberate burning of oil wells, as occurred in Iraq in 2016, can force large volumes of greenhouse gases and other airborne pollution into the atmosphere”.²⁴ Likewise, military emissions, though important, are usually shrouded in secrecy, thus compounding the military’s negative impacts on the climate. It is quite telling that the ICRC speaks of the “double vulnerability” of climate and conflict, meaning that climate change increases the vulnerability of people already in vulnerable situations and therefore the chances of resorting to armed conflict, while at the same time the negative environmental effects caused by or related to armed conflict adversely affect the resilience of the ecosystem to deal with those effects.

All in all, climate change contributes to the risk of resorting to armed conflict, especially non-international.²⁵ Nevertheless, it has been demonstrated that

the role of climate is judged to be small compared to other drivers of conflict, and the mechanisms by which climate affects conflict are uncertain. As risks grow under future climate change, many more potential climate–conflict linkages become relevant and extend beyond historical experiences.²⁶

In other words, those “other drivers” are considered to be much more influential in relation to the outbreak of armed conflict, though it should be borne in mind that “[i]ntensifying/exacerbating climate change is estimated to increase future risks of conflict”.²⁷

Indirect protection

This section explores the potential of IEL rules to inform the interpretation of applicable IHL rules in order to address conflict-linked climate change impacts.

22 Christine Bakker, “The Relationship between Climate Change and Armed Conflict in International Law: Does the Paris Climate Agreement Add Anything New?”, *Peace Processes Online Review*, Vol. 2, No. 1, 2016, p. 7.

23 For a comprehensive account of the link between armed conflict and its effects on environmental degradation, as well as on how conflict influences vulnerability to climate change impacts, see ICRC, *When Rain Turns to Dust: Understanding and Responding to the Combined Impact of Armed Conflicts and the Climate and Environment Crisis on People’s Lives*, Geneva, 2020.

24 *Protection of Civilians in Armed Conflict: Report of the Secretary-General*, UN Doc. S/2020/366, 6 May 2020, p. 11, para. 44.

25 See T. Ide, above note 19.

26 Katharine J. Mach et al., “Climate as a Risk Factor for Armed Conflict”, *Nature*, Vol. 571, No. 7764, 2019, p. 196.

27 *Ibid.*, p. 193.

In this regard, IEL frameworks could be seen as fulfilling both an interpretative and development function, in the sense that they contribute to the interpretation and development of IHL.²⁸ Pursuant to this “interpretation process”,²⁹ one can identify entry points supporting the interpretation of IHL terms in light of the evolving knowledge of the impact of armed conflict on the environment and of the important progress made under IEL frameworks. This is a very delicate endeavour, and it should be highlighted that on most occasions States have not yet expressed themselves to this end. In this section, I first examine the general rules on the conduct of hostilities; I then move to address the environment-specific provisions under IHL, and lastly, I examine the IHL rules addressing specifically protected objects.

General provisions

This subsection explores the extent to which the cardinal IHL rules on the conduct of hostilities could be construed in order to capture conflict-related climate change impacts. The inquiry starts with the principle of distinction; I then delve into the interaction between the IHL principles of proportionality and precaution and the IEL harm prevention and precautionary principles so as to determine how climate impacts associated with armed conflict could be taken into account.

The principle of distinction

It is by now well established that the natural environment and its constituent parts enjoy the protection furnished to civilian objects by the general rules on the conduct of hostilities under IHL.³⁰ Accordingly, components of the environment that play important roles in climate mitigation and adaptation, such as forests or natural carbon sinks, benefit from such general protection under IHL, including protection flowing from the principle of distinction, as enshrined in Article 52 of Additional Protocol I (AP I).³¹ The same applies *prima facie* to facilities that contribute to the power grid, such as oil installations and energy generation facilities, including renewable energy. On the other hand, it should be borne in mind that the use of such facilities for military purposes may turn them into military objectives, subject to direct attacks by the adversary. Any argument pursuant to which “dual-use” objects, such as oil installations, necessitate a higher

28 This idea builds on Stefanik’s claim that general principles of IEL could perform an interpretive and development function, among others, vis-à-vis international law. See Kirsten Stefanik, “The Environment and Armed Conflict: Employing General Principles to Protect the Environment”, in Carsten Stahn, Jens Iverson and Jennifer S. Easterday (eds), *Environmental Protection and Transitions from Conflict to Peace: Clarifying Norms, Principles, and Practices*, Oxford University Press, Oxford, 2017.

29 See R. van Steenberghe, above note 2, esp. pp. 1128–1134.

30 PERAC Principles, above note 4, Principles 13, 14; ICRC Guidelines, above note 5, p. 48; Jean-Marie Henckaerts and Louise Doswald-Beck, *Customary International Humanitarian Law*, Vol. 1: *Rules*, Cambridge University Press, Cambridge, 2005 (ICRC Customary Law Study), Rule 43, available at: <https://ihl-databases.icrc.org/en/customary-ihl/rules>.

31 Protocol Additional (I) to the Geneva Conventions of 12 August 1949, and relating to the Protection of Victims of International Armed Conflicts, 1125 UNTS 3, 8 June 1977 (entered into force 7 December 1978) (AP I), Art. 52.

threshold of a “definite military advantage” under Article 52(2) of AP I lacks support both from the text of the treaty provision and the relevant State practice.³² At this point it should be recalled that damage to the natural environment, even if lawful in certain instances,³³ may under no circumstances exceed the threshold of the proscribed damage to the natural environment in warfare, which has been established as widespread, long-term and severe, an absolute threshold.³⁴

The principle of proportionality

This subsection analyzes the rules relevant to environmental protection in cases where the natural environment or its elements suffer damage despite not being directly attacked. The two assumptions of this scenario are that the environment (or parts thereof) qualifies as a civilian object and that it is not directly attacked. On these premises, the environment is protected by means of the principle of proportionality, as reaffirmed in Principle 14 of the PERAC Principles, and as codified in Article 51 of AP I, Rule 43(C) of the ICRC Customary Law Study and Rule 7 of the 2020 ICRC Guidelines. The principle of proportionality functions to support the principle of distinction and is situated at the intersection of the principle of distinction and the notion of “military advantage”.

The cardinal principle of proportionality is reflected in Article 51(5)(b) of AP I, which provides for the following:

Among others, the following types of attacks are to be considered as indiscriminate: ... an attack which may be expected to cause incidental loss of civilian life, injury to civilians, damage to civilian objects, or a combination thereof, which would be excessive in relation to the concrete and direct military advantage anticipated.³⁵

According to this codification of the proportionality principle, expected, incidental or collateral damage to civilians and civilian objects, including the natural environment and parts thereof, is tolerated insofar as it is not excessive to the concrete and direct military advantage anticipated. Consequently, a balancing exercise is required into which the level and nature of any environmental damage likely to arise from the attack is incorporated.³⁶ According to the authoritative dictum of the International Court of Justice (ICJ),

32 Karen Hulme, “Climate Change and International Humanitarian Law”, in Rosemary Rayfuse and Shirley V. Scott (eds), *International Law in the Era of Climate Change*, Edward Elgar, Cheltenham, 2012, p. 202.

33 ILC, *Report of the International Law Commission: Seventy-Third Session*, UN Doc. A/77/10, Supp. 10, 2022, Chap. V, “Protection of the Environment in Relation to Armed Conflicts”, p. 145, Principle 14 commentary, para. 3.

34 Karen Hulme, *War Torn Environment: Interpreting the Legal Threshold*, Martinus Nijhoff, Leiden and Boston, MA, 2004, p. 77. This aspect is addressed in more detail in the following section on environment-specific provisions.

35 AP I, Art. 51(5)(b).

36 Michael N. Schmitt, “War and the Environment: Fault Lines in the Prescriptive Landscape”, in Jay E. Austin and Carl E. Bruch (eds), *The Environmental Consequences of War: Legal, Economic, and Scientific Perspectives*, Cambridge University Press, Cambridge, 2000, p. 98.

States must take environmental considerations into account when assessing what is necessary and proportionate in the pursuit of legitimate military objectives. Respect for the environment is one of the elements that go to assessing whether an action is in conformity with the principles of necessity and proportionality.³⁷

Several States and international organizations have already included environmental considerations as a relevant element of the targeting process in their military manuals.³⁸ On a different note, the commentaries to the PERAC Principles seem to favour an ecosystem approach, in line with modern ecological understandings, by declaring that “environmental considerations cannot remain static over time, they should develop as human understanding of the environment develops”.³⁹

The principle of proportionality as applied to the environment is reflected in Rule 43(C) of the ICRC Customary Law Study and Rule 7 of the ICRC Guidelines, pursuant to which “[l]aunching an attack against a military objective which may be expected to cause incidental damage to the environment which would be excessive in relation to the concrete and direct military advantage anticipated is prohibited”.⁴⁰ This concretized application of the proportionality principle to the natural environment determines that damage to elements of the natural environment should be taken into consideration for estimations of collateral damage, even if the attack does not result in harm caused to civilians or civilian objects.⁴¹

Against this background, the interpretation of damage to the natural environment should take into account developing knowledge on how damage to the specific element(s) of the natural environment in question may exacerbate some of the consequences of climate change. In this respect, impacts that are *foreseeable* at the circumstances ruling at the time should only be factored into the proportionality calculus. As the ICRC Guidelines insightfully note,

as information regarding the long-term risks attendant to disruption of ecosystems increases, so too does the foreseeability of indirect effects, and assessments of excessiveness of incidental damage to the natural environment must take such information into account.⁴²

37 ICJ, *Legality of the Threat or Use of Nuclear Weapons*, Advisory Opinion, ICJ Reports 1996 (Nuclear Weapons Advisory Opinion), p. 242, para. 30.

38 See, for example, Australia, *The Manual of the Law of Armed Conflict*, 2006, para. 5.50; Germany, *Law of Armed Conflict Manual*, 1 May 2013, paras 434–436; United Kingdom, *The Joint Service Manual of the Law of Armed Conflict*, 2004, para. 12.24. Environmental damage has been qualified as collateral damage for the purposes of the proportionality principle under IHL. See, for example, European Union Military Committee, *Avoiding and Minimizing Collateral Damage in EU-Led Military Operations Concept*, EEAS (2015) 772 REV 8, 3 February 2016, para. 15: “Collateral Damage—The unintentional or incidental loss of life or injury to civilian persons or damage to civilian objects and/or environment arising from engagement of a legitimate military target” (citation omitted).

39 ILC, above note 33, p. 145, Principle 14 commentary, para. 7.

40 ICRC Customary Law Study, above note 30, p. 143, Rule 43(C); ICRC Guidelines, above note 5, Rule 7.

41 See Emanuela-Chiara Gillard, *Proportionality in the Conduct of Hostilities: The Incidental Harm Side of Proportionality Assessments*, Chatham House, London, 2018, p. 41.

42 ICRC Guidelines, above note 5, p. 56, para. 118 (citation omitted).

Accordingly, the above-mentioned environmental considerations to be factored into the proportionality calculus could be informed by reference to the IEL harm prevention principle as reflected in Principle 21 of the 1972 Stockholm Declaration⁴³ and in the preamble of the 1992 UN Framework Convention on Climate Change,⁴⁴ among others. The customary status of the harm prevention rule has been reaffirmed by the ICJ, highlighting that “the principle of prevention, as a customary rule, has its origins in the due diligence that is required of a State in its territory”.⁴⁵ In Brunnée’s words, “[i]t is difficult to overstate the importance of the harm prevention rule’s status as a rule of general international law, such that *all* states are required to avert significant transboundary environmental harm, wherever it may occur”.⁴⁶ Picking up the last element concerning the spatial scope of the harm prevention rule, it is noteworthy that its contemporary perception has moved beyond any spatial considerations about the locus of the harm’s occurrence,⁴⁷ as long as the activity under consideration falls within the jurisdiction or the control of the State concerned. Therefore, such a construction carries the potential to encompass belligerent acts occurring on an enemy belligerent’s territory, provided that a risk of significant environmental harm is identified.

With regard to the interaction between the IHL proportionality principle and the IEL precautionary principle, it appears that matters are more complicated. To start with, the precautionary principle was first enshrined in Principle 15 of the 1992 Declaration on Environment and Development (Rio Declaration).⁴⁸ Its fundamental rationale lies in the acknowledgement that it is

43 Stockholm Declaration of the United Nations Conference on the Human Environment, *Report of the United Nations Conference on the Human Environment*, UN Doc. A/CONF.48/14/Rev.1, 1972, Principle 21: “States have the sovereign right to exploit their own resources pursuant to their own environmental policies, and 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.”

44 UN Framework Convention on Climate Change, 1771 UNTS 107, 9 May 1992 (entered into force 21 March 1994) (UNFCCC): “States have, in accordance with the Charter of the United Nations and the principles of international law, the sovereign right to exploit their own resources pursuant to their own environmental and developmental policies, and 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.”

45 ICJ, *Pulp Mills on the River Uruguay (Argentina v. Uruguay)*, Judgment, *ICJ Reports* 2010, p. 55, para. 101. See also ICJ, *Certain Activities Carried Out by Nicaragua in the Border Area (Costa Rica v. Nicaragua)* and *Construction of a Road in Costa Rica Along the San Juan River (Nicaragua v. Costa Rica)*, Merits, *ICJ Reports* 2015, p. 706, para. 104.

46 Jutta Brunnée, “Harm Prevention”, in Lavanya Rajamani and Jacqueline Peel (eds), *The Oxford Handbook of International Environmental Law*, Oxford University Press, Oxford, 2021, p. 272 (emphasis in original).

47 Yiokasti Mouratidi, “You Say Precautions, I Say Prevention: Towards the Systemic Integration of International Humanitarian Law and International Environmental Law”, *Yearbook of International Humanitarian Law*, Vol. 25, 2024, p. 18, citing Leslie-Anne Duvic-Paoli and Jorge E. Viñuales, “Prevention of Environmental Harm”, in Jorge E. Viñuales (ed.), *The UN Friendly Relations Declaration at 50: An Assessment of the Fundamental Principles of International Law*, Cambridge University Press, Cambridge, 2020, pp. 301–302.

48 According to which, “[i]n order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation.” Rio Declaration on Environment and Development, *International Legal Materials*, Vol. 31, 1992 (Rio Declaration).

not always possible to predict the occurrence of environmental damage, but scientific uncertainty shall not be used as an excuse for inaction. Whereas prevention addresses the avoidance of foreseeable risks, the precautionary principle deals with uncertain risks. As has been succinctly observed, “while the two principles deal with anticipation, they do not have the same relationship to foreseeability and predictability”.⁴⁹

Against this background, it should be highlighted that only foreseeable effects, including those relating to climate change, are to be taken into consideration in the context of the IHL principle of proportionality. To exemplify this, when a carbon sink, like a mature forest absorbing carbon dioxide through photosynthesis, becomes a military objective, the proportionality assessment should incorporate climate change-related factors only to the extent of foreseeable effects. In contrast, considerations related to uncertain risks, namely situations in which the hazard and harm are known but it is impossible to assign probabilities to their occurrence, should be deemed irrelevant in such instances.⁵⁰

In essence, while this construction of the relationship between the principle of proportionality under IHL and the principles of harm prevention⁵¹ and, especially, precaution under IEL is too narrow to yield sufficiently protective outcomes, it should be borne in mind that the scientific understanding of climate-related effects is continuously evolving. On this account, it is argued that as climate impacts associated with conflict become increasingly foreseeable, military commanders must respectively adapt by starting to integrate them into their targeting decisions.

Precautions under IHL

The duty to take precautionary measures concerning the environment under IHL is accurately described in Rule 8 of the 2020 ICRC Guidelines, pursuant to which,

[i]n the conduct of military operations, constant care must be taken to spare the civilian population, civilians and civilian objects, including the natural environment. All feasible precautions must be taken to avoid, and in any event to minimize, incidental loss of civilian life, injury to civilians and damage to civilian objects, including the natural environment.⁵²

49 Leslie-Anne Duvic-Paoli, *The Prevention Principle in International Environmental Law*, Cambridge Studies on Environment, Energy and Natural Resources Governance, Cambridge University Press, Cambridge, 2018, p. 265.

50 See K. Stefanik, above note 28, p. 110, citing Joakim Zander, *The Application of the Precautionary Principle in Practice: Comparative Dimensions*, Cambridge University Press, Cambridge, 2010, p. 14.

51 Nuclear Weapons Advisory Opinion, above note 34, pp. 241–242, para. 29 (“The existence of the general obligation of States to ensure that activities within their jurisdiction and control respect the environment of other States or of areas beyond national control is now part of the corpus of international law relating to the environment”); Patricia Birnie, Alan Boyle and Catherine Redgwell, *International Law and the Environment*, 3rd ed., Oxford University Press, Oxford, 2009, p. 143.

52 ICRC Guidelines, above note 5, Rule 8. The PERAC Principles reaffirm that “the principles and rules on ... precautions shall be applied to the environment, with a view to its protection” PERAC Principles, above note 4, Principle 14.

This rule draws on Article 57 of AP I,⁵³ whose customary status has also been affirmed by the Eritrea-Ethiopia Claims Commission (EECC).⁵⁴ Accordingly, the military leader of the belligerent State shall refrain from deciding to launch an attack that may be expected to have disproportionate collateral effects, and where such an attack has been decided upon, it should be either cancelled or suspended. Moreover, military commanders shall also do everything feasible to verify that the objectives to be attacked are military ones,⁵⁵ and must take all feasible⁵⁶ precautions in the choice of means and methods of attack with a view to avoiding, and in any event minimizing, incidental damage to civilian persons and/or objects.⁵⁷

For our purposes, the first related question concerns the definition of the term “feasible precautions”. Guidance could be sought in this regard from Article 3(4) of the Protocol on Prohibitions or Restrictions on the Use of Mines, Booby-Traps and Other Devices, pursuant to which “[f]easible precautions are those precautions which are practicable or practically possible taking into account all circumstances ruling at the time, including humanitarian and military considerations”.⁵⁸ The obligation to take all “feasible” precautions has been interpreted by many States as being limited to those precautions which are practicable or practically possible, taking into account all circumstances ruling at the time, including humanitarian and military considerations, as evidenced by a number of formal declarations at the time of ratification of or accession to AP I.⁵⁹ Environmental considerations, as long as the environment (or parts thereof)

53 AP I, Art. 57.

54 EECC, *Western Front, Aerial Bombardment and Related Claims: Eritrea's Claims 1, 3, 5, 9–13, 14, 21, 25 & 26*, Partial Award, 45 ILM 396, 19 December 2005, p. 425.

55 AP I, Art. 57(2)(a)(i).

56 Feasibility is widely translated into the standard of practicality, the latter calling for “war-fighter” inquiry. Michael N. Schmitt, “The Law of Targeting”, in Elizabeth Wilmshurst and Susan Breau (eds), *Perspectives on the ICRC Study on Customary International Humanitarian Law*, Cambridge University Press, Cambridge, 2007, p. 163.

57 AP I, Art. 57(2)(a)(ii).

58 Protocol (II) on Prohibitions or Restrictions on the Use of Mines, Booby-Traps and Other Devices, 1342 UNTS 168, 10 October 1980 (entered into force 2 December 1983, amended 3 May 1996), Art. 3(4). See also Protocol (III) on Prohibitions or Restrictions on the Use of Incendiary Weapons, 1342 UNTS 171, 10 October 1980 (entered into force 2 December 1983), Art. 1(5) (“‘Feasible precautions’ are those precautions which are practicable or practically possible taking into account all circumstances ruling at the time, including humanitarian and military considerations”).

59 Upon ratification of AP I, Italy declared: “The Italian Government understands, in relation to Articles 41, 56, 57, 58, 78 and 86 that the word ‘feasible’ is to be understood as practicable or practically possible taking into account all circumstances ruling at the time, including humanitarian and military considerations.” Italy, “Declarations Made at the Time of Ratification”, 27 February 1986. Upon ratification of AP I, Belgium declared: “[I]n view of the *travaux préparatoires*, the expression ‘feasible precautions’ in Article 41 must be interpreted in the same way as the ‘feasible precautions’ mentioned in Articles 57 and 58, that is, those that can be taken in the circumstances prevailing at the moment, which include military considerations as much as humanitarian ones.” Belgium, “Interpretative Declarations Made at the Time of Ratification”, 20 May 1986. Upon ratification of AP I, the Netherlands declared: “The word ‘feasible’ is to be understood as practicable or practically possible taking into account all circumstances ruling at the time, including humanitarian and military considerations.” Netherlands, “Declarations Made at the Time of the Ratification (for the Kingdom’s Territory within Europe and the Netherlands Antilles and Aruba)”, 10 July 1987. Upon ratification of AP I, Spain interpreted the term “feasible” as meaning that “the matter in question is feasible or

qualifies as a civilian object, are also included in this assessment, the interpretation being “a matter of common sense and good faith”.⁶⁰ Given that the application of the precautionary principle/approach under IEL is triggered when there is lack of scientific uncertainty regarding the occurrence of serious environmental effects, there is no space, at least with respect to the current interpretation of the provision under consideration, for the IEL precautionary principle to apply.⁶¹ Contrariwise, the duty to take precautionary measures under IHL, with its focus on feasibility and foreseeability, could be informed by the principle of prevention under IEL, since the latter “plays a role in responding to risks of harm that are certain”,⁶² rather than by the IEL precautionary principle, which concerns uncertain risks. Consequently, the IEL principle of prevention can guide precautionary measures in the decision-making phase up to the launch of an attack. On a related note, the obligation to cooperate can contribute to the necessity of notifying the opposing party before initiating an attack, allowing it to take precautions against potential adverse effects.⁶³

possible in practice, taking into account all the circumstances prevailing at the time, including humanitarian and military aspects”. Spain, “Interpretative Declarations Made at the Time of Ratification”, 21 April 1989. Upon accession to AP I, Algeria stated that the expressions “feasible precautions” (Art. 41(3)), “everything feasible” (Art. 57(2)) and “to the maximum extent feasible” (Art. 58) are to be interpreted as referring to precautions and measures which are feasible in view of the circumstances and the information and means available at the time. Algeria, “Interpretative Declarations Made at the Time of Accession”, 16 August 1989. Upon ratification of AP I, Canada stated: “The word ‘feasible’ means that which is practicable or practically possible, taking into account all circumstances ruling at the time, including humanitarian and military considerations.” Canada, “Reservations Made at the Time of Ratification”, 20 November 1990. Upon ratification of AP I, Germany stated that it understood the word “feasible” to mean “that which is practicable or practically possible, taking into account all circumstances ruling at the time, including humanitarian and military considerations”. Germany, “Declarations made at the time of ratification”, 14 February 1991, para. 2. Upon ratification of AP I, the United Kingdom stated that it understood the term “feasible” as used in the Protocol to mean “that which is practicable or practically possible, taking into account all circumstances ruling at the time, including humanitarian and military considerations”. United Kingdom, “Reservations”, 28 January 1998, reservation (b). The United Kingdom further stated that the obligation mentioned in Article 57(2)(b) of AP I only applied to “those who have the authority and practical possibility to cancel or suspend the attack”. *Ibid.*, reservation (c). Upon ratification of AP I, Ireland declared: “It is the understanding of Ireland that in relation to Article 41, 56, 57, 58, 78 and 86 the word ‘feasible’ means that which is practicable or practically possible, taking into account all circumstances at the time, including humanitarian and military considerations.” Ireland, “Declarations Made at the Time of Ratification”, 19 May 1999. Upon ratification of AP I, France stated that it considered that the term “feasible” as used in the Protocol meant “that which can be realized or which is possible in practice, taking into account all circumstances ruling at the time, including humanitarian and military considerations”. France, “Declarations”, 11 April 2001. The above cited declarations are available at: <https://treaties.un.org/pages/showdetails.aspx?objid=08000002800f3586>.

60 Claude Pilloud and Jean Pictet, in Yves Sandoz, Christophe Swinarski and Bruno Zimmerman, *Commentary on the Additional Protocols*, ICRC, Geneva, 1987, p. 682, para. 2198.

61 K. Stefanik, above note 28, p. 115: “The nature of the obligations said to flow from precaution in IHL would seem to suggest it has more of a preventive than precautionary nature, as precaution is understood in the IEL context, since the IHL precaution provisions appear to target commonsense risks to civilians which do not attract a high degree of uncertainty.” Cf. Onita Das, *Environmental Protection, Security and Armed Conflict: A Sustainable Development Perspective*, Edward Elgar, Cheltenham, 2013, p. 122: “[The precautionary] principle should equally be taken into consideration when selecting military targets or objectives during conflict.”

62 Y. Mouratidi, above note 47, p. 19, citing L.-A. Duvic-Paoli and J. E. Viñuales, above note 47.

63 Y. Mouratidi, above note 47, p. 28.

As far as the taking of precautions against the effects of attacks is concerned, belligerent parties are obliged by virtue of Article 58 of AP I,⁶⁴ to the maximum extent feasible, (i) to attempt to remove civilians and civilian objects under their control from the vicinity of military objectives, (ii) to refrain from locating military objectives within or near densely populated areas, and (iii) to otherwise protect civilians and civilian objects against the dangers resulting from military operations.⁶⁵ As held by the EECC, this provision reflects customary international law.⁶⁶ In this respect, it has been convincingly claimed that “[t]he duty of a potential target State to take precautions (Art. 58 AP I) amounts to the application of the principle of prevention in time of peace”,⁶⁷ which is pertinent for our purposes.

With regard to the issue of scientific uncertainty, the determinative factor is the information actually available at the time of the decision, for what matters is the ruling circumstances at the time of the decision. In other words, “the post-event analyst must put himself in the shoes of the planner, decision maker or actor”.⁶⁸ This means that what is unforeseeable due to malfunctions or scientific uncertainty falls beyond the scope of obligations pertaining to precautions in attack. Therefore, the duty to take precautionary measures under IHL should be informed by the principle of prevention under IEL with respect to potential climate change impacts (for example, when engaging military objectives located in a forest), given that the principle of prevention focuses on harm based on knowledge or the ability to know. In such a case and taking into account the ongoing climate crisis, causing damage to the natural environment during an attack could reasonably be assumed to have more significant consequences in light of climate change. For example, causing damage to a forest, a key element in climate mitigation and possibly climate adaptation, could be deemed disproportionate. Minimizing such damage aligns with the principle of precaution and acknowledges the growing significance of environmental considerations amid climate change.⁶⁹

On the other hand, as precautionary measures under IHL are to be taken according to the ruling circumstances at the time of the decision, and thus pertain to damage to the environment with *foreseeable* climate-related impacts, they cannot be informed by the precautionary principle under IEL, which is closely associated with the notion of scientific uncertainty that operates beyond the domain of foreseeability. To conclude, as it currently stands, the law with

64 Art. 58, AP I: “The Parties to the conflict shall, to the maximum extent feasible: (a) without prejudice to Article 49 of the Fourth Convention, endeavour to remove the civilian population, individual civilians and civilian objects under their control from the vicinity of military objectives; (b) avoid locating military objectives within or near densely populated areas; (c) take the other necessary precautions to protect the civilian population, individual civilians and civilian objects under their control against the dangers resulting from military operations.”

65 Yoram Dinstein, *The Conduct of Hostilities under the Law of International Armed Conflict*, 3rd ed., Cambridge University Press, Cambridge, 2016, p. 173.

66 EECC, above note 54.

67 Michael Bothe, “Precaution in International Environmental Law and Precautions in the Law of Armed Conflict”, *Goettingen Journal of International Law*, Vol. 10, No. 1, 2020, p. 278.

68 Y. Dinstein, above note 65, p. 166.

69 I would like to thank one of the reviewers for bringing this point to my attention.

regard to precautions in attack can only be informed by climate change considerations to the extent that climate change impacts relating to environmental damage caused by the attacks under consideration are foreseeable.

Environment-specific provisions

This subsection sheds light on the putative interpretation of environment-specific provisions under IHL so that conflict-related climate change impacts are taken into account. The first part of the subsection departs from the obligation to take care to protect the environment against proscribed environmental damage, as reflected in the first sentence of Article 55(1) of AP I, and the related obligation of “due regard”, as enshrined in Rule 44 of the ICRC Customary Law Study and Rule 1 of the 2020 ICRC Guidelines. The analysis pertaining to the obligation to take care to protect the environment applies equally to Articles 35(3) and 55(1) of AP I, as the reference point is identical – namely, the threshold of the proscribed environmental damage. Subsequently, this subsection examines the provisions of the Convention on the Prohibition of Military or Any Other Hostile Use of Environmental Modification Techniques (ENMOD Convention).⁷⁰

The obligation to take care to protect the environment against the proscribed environmental damage, and the related “due regard” obligation

Article 55(1) of AP I provides the following:

Care shall be taken in warfare to protect the natural environment against widespread, long-term and severe damage. This protection includes a prohibition of the use of methods or means of warfare which are intended or may be expected to cause such damage to the natural environment and thereby to prejudice the health or survival of the population.

Before delving into the specifics of the legal analysis, it is important to illustrate how climate change could be relevant in the application of the above-mentioned environment-specific provisions. In assessing “widespread, long-term and severe damage” under AP I, the relevance of climate change becomes evident due to its capacity to amplify the scale and duration of destructive consequences. In the context of climate change impacts, damage caused to critical environmental elements, such as large-scale deforestation, contamination of water sources or destruction of ecosystems, can contribute to severe and lasting consequences. These actions not only harm the immediate surroundings but can also exacerbate climate change and its disrupting impacts, by harming ecosystems, releasing stored carbon and contributing to overall environmental degradation.

70 Convention on the Prohibition of Military or Any Other Hostile Use of Environmental Modification Techniques, 1108 UNTS 152, 10 December 1976 (entered into force 5 October 1978) (ENMOD Convention).

Going back to the text of Article 55(1) of AP I, the first conclusion to be drawn is that this provision prohibits the use of those means and methods that are intended or expected to cause the proscribed environmental damage. The logical connotation that flows from this observation is that the occurrence of actual damage is not required for the application of either Article 55(1) or Article 35(3) of AP I, the latter of which provides, in a similar fashion, that “[i]t is prohibited to employ methods or means of warfare which are intended, or may be expected, to cause widespread, long-term and severe damage to the natural environment”.

Comparing the two provisions, Article 35(3) has a broader scope of application in that the damage “need only be caused to the environment”, and thus sets a lower threshold.⁷¹ Conversely, Article 55(1) is of wider application in that it may apply in all circumstances – the means and methods comprising only one example – and not only with regard to the environmentally damaging use of means and methods of warfare, which is the case for Article 35(3).⁷² In relation to the obligation to take “care”, the lack of any obligation to ensure protection of the natural environment suggests this should be considered an obligation of conduct rather than of result.⁷³ Therefore, the said obligation should be construed as one of taking reasonable steps, in attack and defence, to protect the environment, often referred to as an obligation of due diligence.⁷⁴ Koppe notes with respect to the standard of “reasonable care” that

[i]t is not unthinkable that this degree of care requires more than just refraining from the use of means and methods of warfare that are intended or expected to cause damage to the environment, and it may even include *preventive action*.⁷⁵

It is a truism that the triple, cumulative threshold of the proscribed environmental damage has been set too high, thus rendering the two environment-specific provisions of AP I impracticable to a great extent. Having said that, the obligation to take care can be construed as exemplifying the obligation to take precautionary measures under IHL. Quite importantly for our purposes, the ICRC has proposed that

those employing methods or means of warfare may choose to demonstrate due regard for the protection and preservation of the natural environment by additional actions undertaken as a matter of policy rather than law. Such

71 K. Hulme, above note 34, pp. 78–79.

72 *Ibid.*

73 Karen Hulme, “Natural Environment”, in E. Wilmshurst and S. Breau (eds), above note 56, p. 679.

74 *Ibid.*, p. 680. Hulme provides certain examples of implementing the obligation under consideration: “(a) undertaking a rigorous environmental assessment involving a thorough investigation of intelligence data and evaluation of the potential environmental harm of a particular attack scenario; (b) the alteration of an attack scenario to avoid potential environmental harm; and (c) calling off a planned attack due to the potential environmental harm.” *Ibid.*, p. 681.

75 Erik V. Koppe, *The Use of Nuclear Weapons and the Protection of the Environment During International Armed Conflict*, Hart, Oxford and Portland, OR, 2008, p. 149 (emphasis added).

actions could include, for example, introducing measures *to reduce the carbon footprint of warfare*.⁷⁶

In this respect, recent initiatives to track militaries' emissions have been recently advanced,⁷⁷ in line with the objectives of the Paris Agreement.⁷⁸

In any event, the epithet "severe", which qualifies the proscribed environmental damage and relates to the intensity of that damage, could be read as potentially encompassing the "indirect effects of the destruction of a forest", including "the loss of forest wildlife and biodiversity, soil erosion, flooding, poorer air and water quality and climate modification".⁷⁹ Furthermore, it has been argued that the customary equivalent of the obligation to take care to protect the natural environment, namely the obligation to employ methods and means of warfare with due regard to the protection and preservation of the natural environment, should be interpreted in light of the precautionary principle under peacetime IEL,⁸⁰ providing considerable room for factoring into any such assessment the scientific uncertainty that is intertwined with the expectation of conflict-related climate impacts. If a military operation involves activities like large-scale deforestation or the use of environmentally harmful weaponry, the scientific uncertainty with regard to the long-term consequences on the ecosystem and climate could be considerable. The precautionary approach would then involve taking measures to minimize harm to the forest, recognizing the importance of biodiversity in climate regulation and acknowledging the uncertainties associated with potential climate-related impacts stemming from such operations.

Having said that, smaller-scale attacks on oil facilities, as occasionally occur in the ongoing war in Ukraine,⁸¹ may fail to trigger the application of the above-mentioned norms, in light of the high, cumulative threshold of the proscribed environmental damage, which would be difficult to reach. Arguably, however, as we have already mentioned above, advances in predictive science in relation to climate change will influence the triggering of these obligations. As Hulme rightly questions, "would the same judgement be made today, or in fifty or one hundred years' time, when the projected impacts of climate change will have become more real?"⁸²

76 ICRC Guidelines, above note 5, p. 30, para. 45 (emphasis added), citing the relevant practice of NATO regarding undesirable air emissions.

77 See the Military Emissions Gap website, available at: <https://militaryemissions.org/>; Lennard de Klerk *et al.*, *Climate Damage Caused by Russia's War in Ukraine*, Initiative on GHG Accounting of War, 1 December 2023; Sarah McFarlane and Valerie Volcovici, "Exclusive: Accounting for War – Ukraine's Climate Fallout", *Reuters*, 6 June 2023.

78 Paris Agreement, 3156 UNTS 88, 12 December 2015 (entered into force 4 November 2016).

79 ICRC Guidelines, above note 5, p. 40 fn. 192, citing K. Hulme, above note 34, p. 44.

80 See M. Bothe, above note 67, p. 279.

81 "Ukrainian Oil Refining and Fuel Storage Infrastructure Hit by Russian Attacks", S&P Global, 3 April 2022, available at: www.spglobal.com/commodityinsights/en/market-insights/latest-news/oil/040322-ukrainian-oil-refining-and-fuel-storage-infrastructure-hit-by-russian-attacks.

82 K. Hulme, above note 32, p. 203.

Environmental modification techniques

Environment-specific provisions that are relevant for our purposes can be found in the ENMOD Convention, which was adopted in a process parallel to the conclusion of the 1977 Additional Protocols. The text of its first article reads as follows:

Each State Party to this Convention undertakes not to engage in military or any other hostile use of environmental modification techniques having widespread, longlasting or severe effects as the means of destruction, damage or injury to any other State Party.⁸³

Inspired by an eco-centric approach, the ENMOD Convention was adopted as a response to US military operations during the Vietnam War, in light of the severity and level of harm caused by the chosen means and methods that distinguish them from ordinary environmental damage during armed conflicts. Covering only certain major uses of the environment as a weapon,⁸⁴ such as the alteration of weather or climate through the “cloud seeding” process that involves introducing chemical compounds to induce rainfall,⁸⁵ the ENMOD Convention is unsuitable for accommodating ordinary instances of environmental damage in times of war.⁸⁶ Pursuant to the ENMOD Convention, it is immaterial whether the proscribed environmental damage occurs due to “the technique which modifies the environment or the environmental modification itself”.⁸⁷ Quite importantly, the ENMOD Convention forbids the military or hostile use of environmental modification techniques as a weapon in both peacetime and wartime.

The relevant customary norm is traced in the second part of Rule 45 of the ICRC Customary Law Study, pursuant to which the “[d]estruction of the natural environment may not be used as a weapon”.⁸⁸ On closer inspection, the Study seems to treat the destruction of the environment as a tactic or policy, while the ENMOD Convention proscribes the use of the environment as a *means* of destruction.⁸⁹ With regard to the status of the ENMOD Convention’s provisions, the authors of the ICRC Customary Law Study admit that their customary nature is “unclear”.⁹⁰ Furthermore, it is no coincidence that the commentary to the Study mentions that the rule under consideration is “arguably” of customary

83 ENMOD Convention, above note 70, Art. I.

84 Onita Das, “The Impact of Armed Conflict on Sustainable Development: A Holistic Approach”, in Noëlle Quéniwet and Shilan Shah-Davis (eds), *International Law and Armed Conflict: Challenges in the 21st Century*, T. M. C. Asser Press, The Hague, 2010, p. 135.

85 ICRC Guidelines, above note 5, p. 44, para. 85.

86 Adam Roberts, “The Law of War and Environmental Damage”, in Jay E. Austin and Carl E. Bruch (eds), *The Environmental Consequences of War: Legal, Economic, and Scientific Perspectives*, Cambridge University Press, Cambridge, 2000, p. 59.

87 Luan Low and David Hodgkinson, “Compensation for Wartime Environmental Damage: Challenges to International Law after the Gulf War”, *Virginia Journal of International Law*, Vol. 35, No. 2, 1994, p. 432 (citation omitted).

88 ICRC Customary Law Study, above note 30, Rule 45, p. 151.

89 K. Hulme, above note 73, p. 235.

90 ICRC Customary Law Study, above note 30, p. 155.

status in non-international armed conflicts,⁹¹ and given the lack of State practice in this regard, this statement stands in accordance with current international law. Along the same lines, the wording of Rule 3(B) of the 2020 ICRC Guidelines makes clear that this forms a treaty-based prohibition.⁹² Finally, even though the ILC was hesitant to adopt a draft principle addressing environmental modification techniques in the course of its engagement with the topic, it did so during its 2019 session. PERAC Principle 17, as renumbered following the finalization of the PERAC Principles, provides that “[i]n accordance with their international obligations, States shall not engage in military or any other hostile use of environmental modification techniques having widespread, longlasting or severe effects as the means of destruction, damage or injury to any other State”.⁹³

Two points are easily discernible from the wording of the above-quoted principle: first, the ILC did not move beyond existing international law, as the introductory phrase suggests, and second, the lower threshold of the prohibited damage was understandably drawn from the text of the ENMOD Convention.

The Understanding relating to Article II of the ENMOD Convention, which exemplifies the proscribed environmental modification techniques in a non-exhaustive manner, provides that

the following examples are illustrative of phenomena that could be caused by the use of environmental modification techniques as defined in article II of the Convention: earthquakes; tsunamis; an upset in the ecological balance of a region; changes in weather patterns (clouds, precipitation, cyclones of various types and tornadic storms); *changes in climate patterns*; changes in ocean currents; *changes in the state of the ozone layer*; and *changes in the state of the ionosphere*.⁹⁴

These illustrative examples showcase the importance of Article II of the ENMOD Convention in that the modification of the environment during warfare with associated climate change impacts can equally be envisioned as falling within the prohibitive scope of the said provision. On a similar note, it has been claimed that “solar radiation management and other forms of geoengineering changing the climate or weather are prohibited as long as a peaceful purpose is not given”.⁹⁵ Although such uses of the environment constitute mere examples, the Understanding relating to Article II implies that they would presumptively

91 *Ibid.*, p. 151.

92 ICRC Guidelines, above note 5, Rule 3(B): “*For States party to the Convention on the Prohibition of Military or Any Other Hostile Use of Environmental Modification Techniques (ENMOD Convention)*, the military or any other hostile use of environmental modification techniques having widespread, long-lasting or severe effects as the means of destruction, damage or injury to any other State Party is prohibited” (emphasis added).

93 PERAC Principles, above note 4, Principle 17.

94 “Understanding relating to Article II”, in *Report of the Conference of the Committee on Disarmament*, Vol. 1, UN Doc. A/31/27, 1976 (emphases added).

95 Silja Vöneky, “The ENMOD Convention”, in Eric P. J. Myjer and Thilo Marauhn (eds), *Research Handbook on International Arms Control Law*, Edward Elgar, Cheltenham, 2022, p. 369.

amount to a violation of the Convention.⁹⁶ True, the ENMOD Convention has been decried as obsolete and hence unimportant. However, the preceding analysis aspires to have proven that it could increasingly occupy a more prominent position in the legal regulation of conflict-related climate impacts, since environmental modification techniques entailing considerable such impacts could be prohibited under the ENMOD Convention, provided that the required legal conditions are met.

Provisions on specifically protected objects

This subsection turns to IHL rules specifically protecting such objects that are indispensable to the survival of the civilian population and works and installations containing dangerous forces. The objective of the following analysis is to illustrate how the respective provisions could be interpreted in a manner that enables the consideration of conflict-related climate change impacts.

Objects indispensable to the survival of the civilian population

Article 54(2) of AP I is quite relevant for our purposes here. It provides that

[i]t is prohibited to attack, destroy, remove or render useless objects indispensable to the survival of the civilian population, such as foodstuffs, agricultural areas for the production of foodstuffs, crops, livestock, drinking water installations and supplies and irrigation works, for the specific purpose of denying them for their sustenance value to the civilian population or to the adverse Party, whatever the motive, whether in order to starve out civilians, to cause them to move away, or for any other motive.

This prohibition reflects customary international law,⁹⁷ and its equivalent norm in the context of non-international armed conflicts is found in Article 14 of Additional Protocol II (AP II).⁹⁸ The resources encapsulated in the protective scope of this prohibition are quite important in the fight against climate change, and hence this provision should not be taken lightly by the parties to an armed conflict. Nevertheless, it remains doubtful whether “other important water resources such as rivers, lakes or groundwater are included”.⁹⁹ Finally, this prohibition could come into play should the environment be used as a weapon by means of changing the climate conditions.¹⁰⁰

96 Michael N. Schmitt, “Green War: An Assessment of the Environmental Law of International Armed Conflict”, *Yale Journal of International Law*, Vol. 22, 1997, p. 84.

97 See ICRC Guidelines, above note 5, Rule 10, p. 65.

98 Protocol Additional (II) to the Geneva Conventions of 12 August 1949, and relating to the Protection of Victims of Non-International Armed Conflicts, 1125 UNTS 609, 8 June 1977 (entered into force 7 December 1978) (AP II), Art. 14.

99 K. Hulme, above note 32, pp. 211–212 (see sources cited therein). On the protection of freshwater resources in relation to an armed conflict, see Mara Tignino and Tadesse Kebebew, “The Legal Protection of Freshwater Resources and Related Installations during Warfare”, *Journal of International Criminal Justice*, Vol. 20, No. 5, 2022.

100 M. N. Schmitt, above note 96, pp. 77–78, esp. fn. 370.

Works and installations containing dangerous forces

Another IHL provision that could prove to be useful for the purposes of climate protection is the prohibition on targeting works or installations containing dangerous forces, such as dams, dykes and nuclear power stations, given their significance for “protection against the effects of climate change (dykes protecting against rising sea-levels and floods), and for adaptation measures (dams providing for clean electricity generation, clean drinking water, and water for irrigation)”.¹⁰¹ In the event of attacks against nuclear power stations, “the release of radiation would result in contamination of surrounding land and water supplies with radioactive particles and the dispersal of dirt and soot affecting the atmosphere and climate.”¹⁰²

The said prohibition is found in Article 56 of AP I in the context of international armed conflicts and Article 15 of AP II in the context of non-international armed conflicts. These provisions proscribe attacks against dams and dykes, even if they qualify as military objectives, on the condition that such attacks “may cause the release of dangerous forces and consequent severe losses among the civilian population”. However, the scope of the term “consequent” is shrouded with controversy. As has been correctly questioned, “how far into the future will any effects of the floods still be considered as ‘consequent’ on that initial attack?”¹⁰³

Direct application of IEL

This section aims to identify certain relevant provisions originating in IEL, and especially international climate law, which could directly apply in times of armed conflict (the “application process”) and thus address climate change impacts in warfare. Assuming that multilateral environmental agreements (MEAs) continue to apply in times of armed conflict, the first subsection will then focus on the prescriptive potential of their provisions, with special emphasis placed on the 2015 Paris Agreement,¹⁰⁴ to contribute to the fight against climate change. Regarding customary IEL, I will follow the same methodology regarding its continued applicability in times of armed conflict, centring my analysis on the customary IEL harm prevention principle. Given that the continued applicability of MEAs and of customary IEL fills gaps in addressing conflict-linked climate change impacts which the normative framework of IHL falls short of remedying, the norms under consideration act supportively and complementarily to IHL.

101 C. Bakker, above note 22, p. 9, citing K. Hulme, above note 32, p. 198.

102 Abby Zeith and Eirini Giorgou, “Dangerous Forces: The Protection of Nuclear Power Plants in Armed Conflict”, *Humanitarian Law and Policy Blog*, 18 October 2022, available at: <https://blogs.icrc.org/law-and-policy/2022/10/18/protection-nuclear-power-plants-armed-conflict/>, citing ICRC Guidelines, above note 5, p. 70, para. 165.

103 K. Hulme, above note 32, p. 200.

104 Paris Agreement, above note 78.

Before turning to the first subsection, it is appropriate to briefly examine a preliminary issue, namely the continued applicability of MEAs in times of armed conflict. The remainder of this section operates on the assumption that MEAs continue to apply in times of armed conflict, as detailed elsewhere in the special issue.¹⁰⁵ It suffices to note at this juncture that the MEAs under consideration, namely the UN Framework Convention on Climate Change (UNFCCC) and the Paris Agreement, do not refer explicitly to their applicability in times of armed conflict. Nevertheless, in light of the ILC's authoritative Draft Articles on the Effects of Armed Conflicts on Treaties,¹⁰⁶ "treaties relating to the international protection of the environment" are included in the indicative list of treaties that presumptively continue to operate in armed conflict.¹⁰⁷ Accordingly, the UNFCCC and the Paris Agreement are presumed to continue to apply in times of armed conflict. In the same vein and given that there is no indication that the operation of relevant customary international law should be treated differently, the second subsection is premised on the assumption that customary IEL rules and principles, and especially the harm prevention principle, continue to apply in times of armed conflict.

Multilateral environmental agreements

This subsection is mostly preoccupied with the 2015 Paris Agreement as the predominant international instrument regulating activities relating to climate change, counting 194 States Parties. To start with, as mentioned above, the text of the Paris Agreement contains no explicit reference to its continued applicability in times of armed conflict, nor does it establish in categorical terms a linkage between climate change effects and armed conflict.

Against this backdrop, the pertinent provisions of the Paris Agreement are those addressing vulnerability on the understanding that "belligerent parties or an occupying power should comply with them in order to reduce climate-related risks during hostilities and to prevent that climate change effects contribute to or exacerbate an armed conflict."¹⁰⁸ Consequently, the obligation to "take action to conserve and enhance, as appropriate, sinks and reservoirs of greenhouse gases ..., including forests",¹⁰⁹ acquires particular significance in the context of an armed conflict. Along the same lines and provided that the Paris Agreement continues to apply in times of armed conflict, belligerent parties or an Occupying Power "are encouraged to take action to implement and support ... policy approaches and positive incentives for activities relating to reducing emissions

105 See Romina Edith Pezzot, "IHL in the Era of Climate Change: The Application of the UN Climate Change Regime to Belligerent Occupations", *International Review of the Red Cross*, Vol. 105, No. 923, 2023.

106 ILC, *Draft Articles on the Effects of Armed Conflicts on Treaties, with Commentaries*, in *Yearbook of the International Law Commission*, Vol. 2, Part II, 2011.

107 *Ibid.*, Draft Art. 7 in conjunction with Annex, subpara. (g).

108 C. Bakker, above note 22, pp. 22–23.

109 Paris Agreement, above note 78, Art. 5(1).

from deforestation and forest degradation”,¹¹⁰ to the extent that such action remains compatible with the exigencies of the armed conflict or with the legal framework of occupation. The preceding obligation may prove to be relevant when hostilities take place in forest areas or when an Occupying Power intends to regulate forest-related activities on the occupied territory. Furthermore, the duty to strengthen resilience and reduce vulnerability to climate change, as provided for under Article 7(1) of the Paris Agreement,¹¹¹ may also circumscribe the activities of belligerent parties and Occupying Powers, since they will have to implement specific adaptation measures and strategies within the scope of this provision.

The preceding analysis inevitably raises the question of the extraterritorial application of MEAs, and especially of the Paris Agreement, in times of armed conflict or in situations of occupation. On a similar note, this problematique has been raised in the context of the recent debate on the protection of the environment in relation to armed conflict at the ILC.¹¹² In this respect, it has been powerfully claimed “that there is little that would generally prevent MEAs from applying in the occupation context”.¹¹³

Finally, another agreement that could be considered relevant for the purpose of climate change mitigation, especially in the context of occupation, would be the 2016 Kigali Amendment to the 1987 Montreal Protocol on Substances that Deplete the Ozone Layer.¹¹⁴ The Kigali Amendment entails reducing emissions of hydrofluorocarbons (HFCs), “which are both an ozone depleting substance and a powerful greenhouse gas”.¹¹⁵ Specifically, the Amendment requires a gradual phase-down of HFCs, which could trigger the obligation of an Occupying Power to undertake relevant action, provided, of course, that it has subscribed to the Amendment. Such an obligation could be construed to fall within the general duties of an Occupying Power in line with the conservationist principle as reflected in Article 43 of the Hague Regulations¹¹⁶ and, more importantly, consistent with the Occupying Power’s “duty to take

110 *Ibid.*, Art. 5(2).

111 *Ibid.*, Art. 7(1): “Parties hereby establish the global goal on adaptation of enhancing adaptive capacity, strengthening resilience and reducing vulnerability to climate change, with a view to contributing to sustainable development and ensuring an adequate adaptation response in the context of the temperature goal referred to in Article 2.”

112 See ILC, *Provisional Summary of the 3572nd Meeting*, UN Doc. A/CN.4/SR.3572, 29 April 2022, p. 10.

113 Markus Vordermayer, “The Extraterritorial Application of Multilateral Environmental Agreements”, *Harvard International Law Journal*, Vol. 59, No. 1, 2018, pp. 114–115 (citation omitted). See also the comprehensive account provided by R. E. Pezzot, above note 105.

114 Kigali Amendment to the Montreal Protocol on Substances that Deplete the Ozone Layer, C.N.872.2016.TREATIES-XXVII.2.f, 15 October 2016 (entered into force 1 January 2019).

115 Philippe Sands *et al.*, *Principles of International Environmental Law*, 4th ed., Cambridge University Press, Cambridge, 2018, p. 278.

116 Hague Convention (IV) Respecting the Laws and Customs of War on Land and Its Annex, Regulations Concerning the Laws and Customs of War on Land, The Hague, 18 October 1907 (Hague Regulations), Art. 43: “The authority of the legitimate power having in fact passed into the hands of the occupant, the latter shall take all the measures in his power to restore, and ensure, as far as possible, public order and safety, while respecting, unless absolutely prevented, the laws in force in the country.”

necessary measures to meet the evolving needs of the local population”,¹¹⁷ including mitigation measures.

The harm prevention principle

The following analysis builds from the premise that there is no rule militating against the co-applicability of customary international environmental norms when the law of armed conflict applies, including the law of occupation. Against this background, the customary principle of prevention under IEL can contribute significantly to climate change mitigation in situations of occupation. More specifically, this subsection sheds light on the concretized application of the harm prevention principle. Given the customary law nature of the obligation to prevent harm to the environment of other States,¹¹⁸ it is argued that this obligation remains applicable in the context of protecting the environment in situations of occupation.¹¹⁹ In general terms, the harm prevention principle is inferred from the principle of good neighbourliness and provides for the responsibility to use one’s territory so as not to cause harm to the territory of another (*sic utere tuo ut alienum non laedas*).¹²⁰ Even though the principle did not originally emanate from an armed conflict context, it is still pertinent to our purposes, given that at its inception, it concerned transboundary air pollution. Its authoritative expression is enshrined in Principle 2 of the 1992 Rio Declaration, according to which

States have, in accordance with the Charter of the United Nations and the principles of international law, the sovereign right to exploit their own resources pursuant to their own environmental and developmental policies, *and 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*.¹²¹

The IEL harm prevention principle has been addressed and elaborated by the ICJ. In the *Pulp Mills* case, the Court outlined the contours of the obligation to prevent with respect to proposed activities that may have a significant adverse impact in a transboundary context.¹²² This obligation is one of conduct, of taking appropriate measures, and covers activities that take place in any area under the jurisdiction

117 Eva Baudichau, “Another Brick in the Wall: Climate Change (In)Adaptation under the Law of Belligerent Occupation”, *International Review of the Red Cross*, Vol. 105, No. 924, 2023, p. 1351. Baudichau makes this claim with regard to the adoption of adaptation measures and strategies, but the same logic could equally dictate the adoption of respective mitigation measures.

118 See Nuclear Weapons Advisory Opinion, above note 37, pp. 241–242, para. 29.

119 For a comprehensive account, see R. E. Pezzot, above note 105.

120 This principle was first proclaimed by an arbitration tribunal in the context of a US claim that Canada was liable for the damages caused by transboundary air emissions originating from a smelter. Arbitral Tribunal, *Trail Smelter Case (United States v. Canada)*, Award, III RIAA, 16 April 1938 and 11 March 1941, p. 1965.

121 Rio Declaration, above note 48, Principle 2 (emphasis added).

122 ICJ, *Pulp Mills*, above note 45, p. 56, para. 101. This understanding has recently been confirmed by the same Court in ICJ, *Certain Activities*, above note 45, pp. 706–707, para. 104.

of the State concerned. The latter point is quite important for our purposes, since in situations of occupation the occupied territory has, by definition, been placed under the effective control of the Occupying Power. Therefore, the Occupying Power exercises jurisdiction over it within the limits imposed by the normative and legal framework of occupation, as provided for especially through the tension between Article 43 of the Hague Regulations and Article 64 of Geneva Convention IV,¹²³ as well as through other relevant provisions such as those detailing the authority of an Occupying Power over enemy property.¹²⁴

As the ICJ expounded almost half a century ago, “[p]hysical control of a territory, and not sovereignty or legitimacy of title, is the basis of State liability for acts affecting other States”.¹²⁵ On a similar note, the recently issued Advisory Opinion on the Environment and Human Rights by the Inter-American Court of Human Rights (IACtHR)¹²⁶ constitutes a potentially enriching development regarding the protection of the environment in times of occupation, as observed by the ILC member Marcelo Vázquez-Bermúdez.¹²⁷ In this instance, the IACtHR held that States party to the American Convention on Human Rights¹²⁸ may potentially exercise extraterritorial jurisdiction in the context of large-scale transboundary projects and hence be held responsible for violations of the human rights of affected people, while at the same time directly associating the rights to life and personal integrity with IEL principles in the context of a due diligence obligation.¹²⁹

For our purposes, relevant factors could be identified in “the degree of control of the ... Occupying Power, the importance of the interest to be protected in the specific situation, the degree of the predictability of the violation, and the degree of risk involved”.¹³⁰ In any event, the Latin maxim *Impossibile nulla est*

123 See Hague Regulations, above note 116, Art. 43; Geneva Convention (IV) relative to the Protection of Civilian Persons in Time of War of 12 August 1949, 75 UNTS 287 (entered into force 21 October 1959) (GC IV), Art. 64.

124 See, *inter alia*, GC IV, Art. 53, which provides that “[a]ny destruction by the Occupying Power of real or personal property belonging individually or collectively to private persons, or to the State, or to other public authorities, or to social or cooperative organizations, is prohibited, except where such destruction is rendered absolutely necessary by military operations”.

125 ICJ, *Legal Consequences for States of the Continued Presence of South Africa in Namibia (South West Africa) Notwithstanding Security Council Resolution 276 (1970)*, Advisory Opinion, 21 June 1971, ICJ Reports 1971, p. 54, para. 118.

126 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)*, Advisory Opinion OC-23/17, 15 November 2017, available at: https://corteidh.or.cr/docs/opiniones/seriea_23_ing.pdf. For a detailed examination of the Advisory Opinion, see Christopher Campbell-Duruffé and Sumudu Anopama Atapattu, “The Inter-American Court’s Environment and Human Rights Advisory Opinion: Implications for International Climate Law”, *Climate Law*, Vol. 8, Nos 3–4, 2018.

127 See ILC, *Provisional Summary of the 3430th Meeting*, UN Doc. A/CN.4/SR.3430, 16 July 2018, p. 7.

128 Marco Longobardo, “State Responsibility for International Humanitarian Law Violations by Private Actors in Occupied Territories and the Exploitation of Natural Resources”, *Netherlands International Law Review*, Vol. 63, No. 3, 2016, p. 268 (and sources cited therein).

129 Angeliki Papanioui, “Advisory Opinion on the Environment and Human Rights”, *American Journal of International Law*, Vol. 112, No. 3, 2018. See IACtHR, above note 126, esp. paras 97–101, 124.

130 Marco Longobardo, “State Responsibility for International Humanitarian Law Violations by Private Actors in Occupied Territories and the Exploitation of Natural Resources”, *Netherlands International Law Review*, Vol. 63, No. 3, 2016, p. 268 (and sources cited therein).

obligatio still holds true, and therefore the due diligence obligation is refined to merely enjoin measures that are “reasonably appropriate”.¹³¹ In addition, importing this standard of “reasonableness” ensures that the application of the due diligence obligation in relation to environmental protection by an Occupying Power will not undermine the latter’s security interests.

In an attempt to concretize the customary IEL prevention principle, the ILC adopted PERAC Principle 21 on “Prevention of transboundary harm”, pursuant to which

[a]n Occupying Power shall take appropriate measures to ensure that activities in the occupied territory do not cause significant harm to the environment of other States or areas beyond national jurisdiction, or any area of the occupied State beyond the occupied territory.¹³²

A point that merits closer scrutiny concerns the phraseology employed by the ILC: “or any area of the occupied State beyond the occupied territory”. This wording implies that non-occupied territories of the State, certain parts of which are under occupation, fall within the scope of Principle 21.¹³³ Accordingly, the Occupying Power bears the obligation to exercise due diligence so that activities in the occupied territory do not cause significant harm to the environment of non-occupied territories. In this regard, it could be counter-argued that a similar outcome can be obtained by invoking the law of neutrality, pursuant to which the territory of neutral States is inviolable and protected from collateral damage. More importantly, the protection afforded by the rules of neutrality is absolute, whereas, as noted above, due diligence constitutes an obligation of conduct, merely requiring the concerned State’s best efforts considering its capacity.¹³⁴

The preceding analysis prompts the question of the added value of resorting to the due diligence component of the harm prevention principle under IEL, which has been detailed by the ICJ as follows:

A State is thus obliged to use all the means at its disposal in order to avoid activities which take place in its territory, or in any area under its jurisdiction, causing significant damage to the environment of another State.¹³⁵

In addition to reasons of legal precision, imposing a due diligence obligation on occupying powers has great potential in two significant ways. First, a due

131 International Tribunal for the Law of the Sea, *Responsibilities and Obligations of States Sponsoring Persons and Entities with Respect to Activities in the Area* (No. 17), Advisory Opinion, 1 February 2011, *ITLOS Reports 2011*, p. 44, para. 120.

132 PERAC Principles, above note 4, Principle 21.

133 ILC, “Statement of the Chairperson of the Drafting Committee, Mr Ki Gab Park”, 27 May 2022, p. 25, available at: https://legal.un.org/docs/?path=../ilc/documentation/english/statements/2022_dc_chairman_statement_peac.pdf&lang=E.

134 ILC, *First Report on the Protection of the Environment in Relation to Armed Conflicts* by Marja Lehto, *Special Rapporteur*, UN Doc. A/CN.4/720, 30 April 2018, p. 43, para. 88.

135 ICJ, *Pulp Mills*, above note 45, pp. 55–56, para. 101. As the ICJ further clarifies, this due diligence obligation traces its origin in the famous dictum of the ICJ, *Corfu Channel (United Kingdom v. Albania)*, Merits, Judgment, *ICJ Reports 1949*, p. 22 (“every State’s obligation not to allow knowingly its territory to be used for acts contrary to the rights of other States”).

diligence obligation mandating an Occupying Power to take reasonably appropriate measures so that significant harm is not caused to the environment of areas beyond the occupied territory encompasses the acts of non-State actors. This would not necessarily be the case if the law of neutrality approach were to be pursued, as the responsibility of the Occupying Power may not automatically arise from acts of private actors within the occupied territory that result in transboundary damage to neutral States. Additionally, in implementing the due diligence obligation under PERAC Principle 21, as formulated and interpreted in this subsection, an Occupying Power shall ensure that activities on the occupied territory do not cause significant harm to the environment of non-occupied territories of the State whose territories are occupied. All things being equal, the law of neutrality, on the other hand, is primarily concerned with the territory of third States rather than with the territory of belligerent States or the non-occupied territories of occupied States.

Specifically for our purposes, the Occupying Power shall ensure that activities in the occupied territory potentially entailing climate change impacts do not cause significant harm. Consequently, the Occupying Power bears the responsibility concerning greenhouse gas emissions within the territory it effectively controls. In this respect, it has been convincingly claimed that the Occupying Power should implement specific measures to mitigate greenhouse gas emissions and safeguard the civilian population from climate change impacts, as well as incorporating the greenhouse gases generated within the occupied territory into its nationally determined contributions.¹³⁶

Conclusion

Even though climate change may not be qualified as a direct contributing cause of armed conflict, it could act as a risk multiplier by aggravating the negative effects of other factors, such as “social exclusion, a history of conflict and grievances, economic risks, environmental degradation [including air pollution], and tensions over the management of resources”, and thus eventually lead to the outbreak of an armed conflict.¹³⁷ The recognition of environmental degradation and climate change, *inter alia*, as “some of the most pressing and serious threats to the ability of present and future generations to enjoy the right to life” has recently been pronounced by the UN Human Rights Committee.¹³⁸ It is against this background that the present contribution has attempted to clarify the applicable legal framework that holds the potential to address armed conflict-linked impacts relating to climate change.

Through the “interpretation” process, I have attempted to demonstrate the various IHL provisions whose interpretation could be informed by applicable IEL

136 R. E. Pezzot, above note 105, p. 1083 (citation omitted).

137 ICRC, above note 23, p. 21 (citation omitted).

138 Human Rights Committee, General comment No. 36, “Article 6: Right to life”, UN Doc. CCPR/C/GC/36, 3 September 2019, para. 62.

rules and principles in order to address impacts that contribute to climate change. In this respect, it appears that the increasingly improved human understanding of ecological processes, and especially of climate change impacts, as well as the progress made under IEL, may influence the interpretation of specific IHL provisions, such as the principles of proportionality and precaution. Even though the precautionary principle under IEL may not always be well equipped to play a significant role in the course of the “interpretation” process, the IEL principle of harm prevention could serve as a catalyst for the reinterpretation of applicable IHL rules regarding conflict-related impacts feeding into climate change. On a similar note, this article has also explored the potential of other IHL provisions either relating to environmental modification techniques or on specifically protected objects to accommodate impacts pertaining to climate change.

Turning to the “application” process, this article started from the premise that relevant MEAs, and especially the Paris Agreement, are presumed to continue to operate in armed conflict. Subsequently, the article identified certain provisions of the Paris Agreement that could directly apply during armed conflict, thus contributing to climate change mitigation and adaptation measures and strategies, which acquire considerable importance in situations of occupation. On a related note, the IEL harm prevention principle, which is widely recognized as forming part and parcel of customary international law, is quite relevant for our purposes, as it brings with it the promise of elevating the existing level of protection, especially in situations of occupation.

In sum, the applicable legal framework seems *prima facie* not to be well suited to regulating conflict-linked impacts relating to climate change. On closer inspection, though, and adopting a coherency-based approach, this article has asserted that relevant IEL rules could enhance the protection of the climate in armed conflict either through informing the interpretation of applicable IHL rules or by means of their direct application, especially when viewed together with other related IHL provisions.