

The obligation to prevent environmental harm in relation to armed conflict

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Abstract

The scope of protection of the environment in relation to armed conflict has continued to expand since the issue was first introduced on the international agenda in the 1970s. Today, it is recognized that the environment is a prima facie civilian object and as such it is entitled to the same layers of protection during an armed conflict as any civilian person or object. Thus, there is a legal obligation to prevent environmental harm in armed conflict, before the event. Given the magnitude of environmental damage that can be anticipated in relation to armed conflict, the obligation to prevent such damage in the first place is critical. In this regard, it is important to note that the legal obligation to prevent environmental harm originates from international environmental law. Furthermore, the obligation to prevent harm is an ongoing obligation. This article illustrates that the general preventive obligations found in international environmental law can shed much-needed light on

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the general preventive obligations already established under the law of armed conflict, in furtherance of environmental protection.

Keywords: law of armed conflict, due diligence, preventive obligations, environmental harm, international armed conflict.

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Introduction

Environmental harm in relation to armed conflict, as well as during peacetime, has regularly been a concern for the international community. Well-known situations of environmental damage in relation to armed conflict include the use of Agent Orange during the Vietnam War,¹ damage to oil wells in Kuwait in 1990–91,² the release of hazardous substances after attacks on industrial sites in Kosovo in 1999,³ damage to water resources in Lebanon in 2006,⁴ and the use of biological or chemical weapons.⁵ Needless to say, environmental damage in relation to armed conflict is not a thing of the past. Following the Russian Federation’s invasion of Ukraine, environmental destruction in urban as well as rural areas has occurred.⁶ Reportedly, such destruction has been the result of direct attacks as well as in the form of collateral damage.⁷

Not only is environmental damage in relation to armed conflict a contemporary concern, but it is also arguably often foreseeable. Importantly, it is necessary to distinguish damage (the actual existence of environmental destruction) from harm (the anticipation of environmental damage; no actual damage is required), as the International Law Commission (ILC) sought to do in its Draft Principles on the Allocation of Loss in the Case of Transboundary Harm

- 1 The use of Agent Orange in Vietnam during the 1970s can be seen as one of the key moments that led to the drafting of treaty provisions to protect the environment. See Stefano Saluzzo, “CBRN Weapons and the Protection of the Environment during Armed Conflicts”, in Andrea de Guttry, Micaela Frulli, Federico Casolari and Ludovica Poli (eds), *International Law and Chemical, Biological, Radio-Nuclear (CBRN) Events: Towards an All-Hazards Approach*, Brill, Leiden, 2022, p. 380.
- 2 In the 1990s, the media brought home live images of “eerie flames and the huge black cloud of smoke towering above burning oil rigs in the Arabian desert”: Hans-Peter Gasser, “For Better Protection of the Natural Environment in Armed Conflict: A Proposal for Action”, *American Journal of International Law*, Vol. 89, No. 3, 1995, p. 637. Such images ignited renewed interest from governments, the United Nations (UN) and non-governmental organizations in how the environment could be better protected from damage during war: *ibid.*, p. 639.
- 3 United Nations Environment Programme (UNEP) and United Nations Centre for Human Settlements, *The Kosovo Conflict: Consequences for the Environment and Human Settlements*, 1999, available at: www.unep.org/resources/assessment/kosovo-conflict-consequences-environment-and-human-settlements (all internet references were accessed in June 2023).
- 4 Mark Zeitoun, Karim Eid-Sabbagh and Jeremy Lovell, “The Analytical Framework of Water and Armed Conflict: A Focus on the 2006 Summer War between Israel and Lebanon”, *Disasters*, Vol. 38, No. 1, 2014.
- 5 The use of biological or chemical weapons in warfare and the subsequent efforts to prohibit such weapons form a recurring pattern in history. Edward M. Spiers, *Agents of War: A History of Chemical and Biological Weapons*, Reaktion Books, London, 2020.
- 6 UNEP, *The Environmental Impact of the Conflict in Ukraine: A Preliminary Review*, Nairobi, 2022, available at: www.unep.org/resources/report/environmental-impact-conflict-ukraine-preliminary-review.
- 7 Organisation for Economic Cooperation and Development, *Environmental Impacts of the War in Ukraine and Prospects for a Green Reconstruction*, 1 July 2022, available at: <https://tinyurl.com/3bbyc3ne>.

Arising Out of Hazardous Activities.⁸ Although this distinction is not always clear-cut, the present article is concerned with the obligation to prevent environmental damage in relation to armed conflict – that is to say, no actual damage is required for this obligation to come into play. The question that arises is what obligations to prevent such foreseeable environmental harm are established under the law of armed conflict (LOAC). This article sets out to examine the concurrent application of preventive obligations arising from two legal regimes addressing foreseeable harm to the environment in relation to armed conflict. More specifically, it discusses whether, and if so, how preventive obligations arising under the LOAC can be clarified when viewed through the lens of international environmental law (IEL).⁹

A number of multilateral treaties provide for environmental protection under international law. These agreements are far from homogenous, with different natures of arising obligations, and diversified application ranging from bilateral to regional to global levels.¹⁰ Some treaties are applicable to armed conflict,¹¹ others are expressly not,¹² and others are silent on the matter.¹³ Additionally, other international actors such as the International Committee of the Red Cross (ICRC) have long engaged with the issue.¹⁴ The most recent contribution to environmental protection is the Draft Principles on the Protection of the Environment in Relation to Armed Conflict (PERAC).¹⁵ The aim of this

8 ILC, *Draft Principles on the Allocation of Loss in the Case of Transboundary Harm Arising Out of Hazardous Activities (with Commentaries)*, UN Doc A/CN.4/L.706/Rev.1, 2006, commentary to Principle 1, p. 120, para. 11. “Harm” is used in this article to refer to the threat to the legally protected interest, whereas “damage” refers to the actual infringement.

9 This article only considers preventive obligations. For a discussion on developing a comprehensive framework for the relationship between IEL and the LOAC, see Raphaël van Steenberghe, “The Interplay between International Humanitarian Law and International Environmental Law”, *Journal of International Criminal Justice*, Vol. 20, No. 5, 2023.

10 *Ibid.*, p. 1127.

11 For example, the UN Convention on the Law of the Sea, 1833 UNTS 3, UN Doc A/Conf.62/122OXIO, 1999; the International Convention for the Prevention of Pollution of the Sea by Oil, 327 UNTS 4, 1954; the International Convention for the Prevention of Pollution from Ships (as Amended), 1340 UNTS 184, 1973; the Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean (Revised Barcelona Convention), UN Doc UNEP(OCA)/MED IG.6/7, 1976; and the Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region, 1506 UNTS 157, 1983.

12 For example, the Convention on Civil Liability for Damage Resulting from Activities Dangerous to the Environment, ETS 150, 1993; and the International Convention on Civil Liability for Oil Pollution Damage, 973 UNTS 3, 1969.

13 For example, the UN Convention on Biological Diversity, 1760 UNTS 79, 1992; the Vienna Convention on Civil Liability for Nuclear Damage, 1063 UNTS 266, 1963; the Convention on International Trade in Endangered Species of Wild Fauna and Flora, 993 UNTS 243, 1963; and the UN Framework Convention on Climate Change, 1771 UNTS 107, 1992.

14 The ICRC has been more systematically committed to this work since 1991: see, for example, Jean-Marie Henckaerts, “Towards Better Protection for the Environment in Armed Conflict: Recent Developments in International Humanitarian Law”, *Review of European Community and International Environmental Law*, Vol. 9, No. 1, 2000, p. 13. The present thematic issue of the *Review* also confirms the ICRC’s contemporary interest in the topic.

15 ILC, *Draft Principles on the Protection of the Environment in Relation to Armed Conflict: Report of the International Law Commission*, UN Doc. A/77/10, 2022 (PERAC), available at: https://legal.un.org/ilc/texts/instruments/english/draft_articles/8_7_2022.pdf.

article is thus to examine how preventive obligations originating from IEL can emphasize and deepen our understanding of how the general obligation to prevent war crimes under the LOAC applies to protecting the environment in relation to armed conflict. The general obligation to prevent war crimes, as will be illustrated below, applies to all conduct that contravenes the LOAC provisions. Given that the environment is a civilian object, this obligation also applies with regard to environmental harm.

This article first briefly introduces the substantial provisions that seek to prevent environmental harm under the LOAC, consisting of Geneva Conventions I–IV¹⁶ and Additional Protocols I and II¹⁷ as well as the relevant customary rules and humanitarian principles that apply. Second, the nature of the general preventive features of the LOAC is outlined. Third, the way in which the general obligation to prevent harm arising from IEL (as reiterated in the PERAC) is examined, as well as how this obligation should be understood and read in conjunction with preventive obligations established by the LOAC. This includes a note on some of the methodological challenges associated with simultaneously applying different treaty regimes. Lastly, it is argued that due regard to the preventive obligations arising from the LOAC’s provisions is required, and that interpreting them through the lens of the preventive obligations established under IEL is feasible and can clarify the scope of the obligation to prevent environmental harm in the context of armed conflict under the LOAC; such reading reinforces environmental protection in relation to armed conflict and emphasizes the importance of taking appropriate measures well before a conflict arises. Systematically and concretely interpreting and re-emphasizing existing *preventive* obligations under the LOAC and examining how these obligations should truly be understood in the context of armed conflict constitutes the substantive contribution that this article makes to the debate on environmental protection in relation to armed conflict.

Substantive protection of the natural environment under the LOAC

The “natural environment” appears in two provisions under the LOAC: Articles 35(3) and 55 of Additional Protocol I (AP I). This means that in the LOAC, the

16 Geneva Convention (I) for the Amelioration of the Condition of the Wounded and Sick in Armed Forces in the Field of 12 August 1949, 75 UNTS 31 (entered into force 21 October 1950); Geneva Convention (II) for the Amelioration of the Condition of Wounded, Sick and Shipwrecked Members of Armed Forces at Sea of 12 August 1949, 75 UNTS 85 (entered into force 21 October 1950); Geneva Convention (III) relative to the Treatment of Prisoners of War of 12 August 1949, 75 UNTS 135 (entered into force 21 October 1950); 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 1950).

17 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); 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).

provisions protecting the natural environment expressly only apply in international armed conflict. The “natural environment” refers to a “system of inextricable interrelations between living organisms and their inanimate environment”.¹⁸ A perhaps more illuminating definition is that the “natural” environment encompasses the physical condition of land, air and water, as distinct from the “human” environment, which includes health, social and other man-made conditions.¹⁹ It has been suggested that the natural environment is protected by general LOAC rules²⁰ in as much as it “affects the civilian population”.²¹

The first mention of the natural environment in Article 35(3) is placed “neatly beside the most fundamental provisions on means and methods”²² in AP I. In this way, it evades the possible limitation of only being applicable to attacks which affect objects on land.²³ Although Article 35 was passed by consensus, a number of opinions or understandings were attached to it.²⁴ This basic rule of means and methods of warfare was held to be the codification of existing law²⁵ when included in AP I. The natural environment is thus explicitly protected in as much as the provision prohibits “methods or means of warfare which are intended, or may be expected, to cause widespread, long-term and severe damage to the natural environment”.²⁶ The authors of the Commentaries on the Additional Protocols note that although the principle remains unchanged, its application may vary; the exact scope of the principle and the practices that it leads to may vary over time as per custom and other obligations arising from international law.²⁷

Article 55 of AP I, which establishes that “care shall be taken to protect the natural environment”, comes after Article 54, which explicitly prohibits starvation.²⁸ Article 55 is wider in its protection than Article 54, since it is not limited to protecting objects indispensable to survival but actually includes the biological

18 Yves Sandoz, Christophe Swinarski and Bruno Zimmerman (eds), *Commentary on the Additional Protocols of 8 June 1977 to the Geneva Conventions of 12 August 1949*, ICRC, Geneva, 1987 (ICRC Commentary on the APs), p. 415, para. 1451.

19 William H. Rodgers, *Handbook on Environmental Law*, West Publishing, St Paul, MN, 1977, cited in Stuart Casey-Maslen and Steven Haines, *Hague Law Interpreted: The Conduct of Hostilities under the Law of Armed Conflict*, Hart Publishing, Oxford, 2018, p. 271.

20 These rules are (1) protection of enemy property from wanton destruction, (2) protection against pillage, (3) protection of civilian objects during hostilities, (4) protection of objects indispensable to the survival of the civilian population, and (5) the rules regarding lawfulness of weaponry. Jean-Marie Henckaerts and Dana Constantin, “Protection of the Natural Environment”, in Andrew Clapham and Paola Gaeta (eds), *The Oxford Handbook of International Law in Armed Conflict*, Oxford University Press, Oxford, 2014, p. 472.

21 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 Commentaries)*, Geneva, 2020, p. 17.

22 Karen Hulme, “Taking Care to Protect the Environment against Damage: A Meaningless Obligation?”, *International Review of the Red Cross*, Vol. 92, No. 879, 2010, p. 676.

23 AP I, Art. 49(3).

24 ICRC Commentary on the APs, above note 18, p. 398, para. 1403.

25 *Ibid.*, p. 390, para. 1382.

26 AP I, Art. 35(3).

27 ICRC Commentary on the APs, above note 18, p. 391, para. 1385.

28 *Ibid.*, p. 662, para. 2124.

environment in which a population is living in its broadest sense.²⁹ The exclusion of the word “civilian” in defining the population was deliberate in order to underline that environmental harm can remain for a long time, without any discrimination regarding what population is affected.³⁰ Further to the positioning of the provision in the treaty and perhaps more importantly, Article 55 sits within Part IV, Section I, Chapter III, entitled “Civilian Objects”. The *prima facie* civilian status makes the environment more tangible and acknowledges its existence.³¹ Under the LOAC, the environment thus benefits from the protective design of the treaties through the principles of distinction, proportionality and precaution. In other words, as with any civilian object that may be assessed to determine its feasibility as a military objective, the cumulative rules of proportionality and precaution apply to the environment.³² Regarding the latter obligation, scholars have pointed out that the “lack of scientific certainty about the environmental consequences of certain military operations does not absolve parties to a conflict from taking proper precautionary measures to prevent undue damage to the environment”.³³ This means that a breach of this obligation could amount to a war crime under LOAC treaty law – a war crime for which there is a general obligation of prevention. Separately, the law has an absolute threshold above which any foreseeable damage is prohibited, and therefore, any attack that may give rise to widespread, long-lasting and severe damage constitutes a war crime.³⁴

The notion of “widespread” seems to be the one that is least problematic to understand, as it is held to be an area of several hundred square kilometres.³⁵ “Long-term” is seen to constitute more than medium duration, which might imply decades, even amounting to a generation or more,³⁶ thus remaining an environmental problem to be dealt with by those who were children at the time of the conflict

29 *Ibid.*, p. 662, para. 2126.

30 *Ibid.*, p. 663, para. 2134.

31 Two main arguments against considering the environment a civil object have been brought forward. First, not all that is included in the notion of the environment is physical or can be touched, e.g. the atmosphere or outer space. Second, while AP I has set out a very high threshold, bringing the environment into the general protection framework by defining it as a civilian object would circumvent this high threshold. See Cordula Droege and Marie-Louise Tougas, “The Protection of the Natural Environment in Armed Conflict – Existing Rules and Need for Further Legal Protection”, *Nordic Journal of International Law*, Vol. 82, No. 1, 2013, p. 26. With regard to the first argument, the issue of the physical shape or appearance of e.g. the atmosphere must be kept separate from, and not be confused with, its status under law. As for the second argument, the LOAC explicitly recognizes grave breaches in Articles 49, 50, 129 and 146 of the four Geneva Conventions respectively and Article 86 of AP I; in addition, *all acts* contrary to the Geneva Conventions must be suppressed. The LOAC recognizes three types of breaches: grave breaches, war crimes and legal breaches, with different levels of detail. See, further, below note 69 and accompanying text.

32 See Stefan Oeter, “Methods and Means of Combat”, in Dieter Fleck (ed.), *The Handbook of International Humanitarian Law*, 3rd ed., Oxford University Press, Oxford, 2013, pp. 214–215.

33 J.-M. Henckaerts and D. Constantin, above note 20, p. 481.

34 Yoram Dinstein, *The Conduct of Hostilities under the Law of International Armed Conflict*, Cambridge University Press, Cambridge, 2022, p. 277.

35 ICRC Commentary on the APs, above note 18, p. 417 fn. 117.

36 But compare this with IEL notions of lengthened scope for preventive obligations in peacetime, which hold that the “near future” is seen to cover the whole of the twenty-first century. Leslie-Anne Duvic-Paoli, *The Prevention Principle in International Environmental Law*, Cambridge University Press, Cambridge, 2018, p. 190.

(or even unborn future generations), and who clearly did not cause the harm.³⁷ “Long-term” according to the Commentary to AP I refers to “serious disruption of the natural equilibrium permitting life and the development of man and all living organisms”.³⁸ In this sense, the drafters’ intention seems to have been that “battlefield damage incidental to conventional warfare would not normally be proscribed by [Article 35]”.³⁹ Disentangling “long-lasting” from “severe” is something of an ordeal: the latter is understood as a major interference with human life or natural resources which considerably exceeds the battlefield damage to be regularly expected in armed conflict.⁴⁰

The contention with these substantive provisions relates to the high as well as unclear threshold created. The requirement of “widespread, long-term *and* severe” damage is construed as a cumulative and threefold threshold of harm in Article 35(3) and Article 55(1) alike.⁴¹ Despite this high threshold, there is environmental harm that may be anticipated to breach it.⁴² It comes as a mild consolation that environmental harm passing the high and imprecise threshold “sets an absolute limit to the damage that is tolerated for the natural environment”.⁴³ Scholars have asked whether this high threshold of widespread, long-term and severe damage is still valid, or if it has fallen into desuetude.⁴⁴ Although the threshold may be at the level of, or come close to, ecocide,⁴⁵ it must be accepted to be conclusively established in the *travaux préparatoires* of AP I.⁴⁶ On the other hand, the preventive obligation remains intact, even if what should be prevented after the event must be assessed to have passed a high threshold.

37 The International Court of Justice (ICJ) held in the *Nuclear Weapons* case that the natural environment should be protected to such an extent that future generations can enjoy the same systemic interconnectedness with the environment without suffering harm therefrom. ICJ, *Legality of the Threat or Use of Nuclear Weapons*, Advisory Opinion, 8 July 1996, *ICJ Reports 1996*, p. 226, para. 29.

38 ICRC Commentary on the APs, above note 18, p. 420, para. 1462.

39 *Ibid.*, p. 417, para. 1454.

40 A considerably shorter time span is found in the Convention on the Prohibition of Military or Any Other Hostile Use of Environmental Modification Techniques, 1108 UNTS 151, 1977 (entered into force 5 October 1978), where it is said to be a “period of months or approximately a season”. ICRC Commentary on the APs, above note 18, p. 416, para. 1452.

41 Karen Hulme, “Introduction”, in Karen Hulme (ed.), *Law of the Environment and Armed Conflict*, Edward Elgar, Northampton, MA, 2017, p. xx.

42 Hulme has pointed out that, for example, environmentally persistent chemicals may cause ecosystem-level damage that lasts for decades and could even alter natural conditions. Karen Hulme, “Using International Environmental Law to Enhance Biodiversity and Nature Conservation During Armed Conflict”, *Journal of International Criminal Justice*, Vol. 20, No. 4, 2022, p. 12.

43 C. Droegge and M.-L. Tougas, above note 31, p. 27.

44 Michael Bothe, Carl Bruch, Jordan Diamond and David Jensen, “International Law Protecting the Environment during Armed Conflict: Gaps and Opportunities”, *International Review of the Red Cross*, Vol. 92, No. 879, 2010, p. 576.

45 In 2021 a panel of twelve independent legal experts proposed the following definition of the term ecocide, where the requisites are not cumulative: “For the purpose of this Statute, ‘ecocide’ means unlawful or wanton acts committed with knowledge that there is a substantial likelihood of severe and either widespread or long-term damage to the environment being caused by those acts.” Stop Ecocide Foundation, *Independent Expert Panel for the Legal Definition of Ecocide: Commentary and Core Text*, June 2021, available at: <https://tinyurl.com/3x39nc3h>. It is hoped that ecocide will be recognized as the fifth international crime and will be added to Article 5(1) of the Rome Statute of the International Criminal Court.

46 K. Hulme, above note 42, p. 11.

Therefore, if no preventive actions are taken beforehand, such conduct may constitute a breach of this obligation.

Article 55 protects the civilian population and prohibits “methods or means of warfare which are intended or may be expected to cause”⁴⁷ environmental damage that negatively impacts on the population. Article 35(3), on the other hand, prohibits unnecessary injury.⁴⁸ Thus Article 35(3) is concerned with methods of warfare but is wider in scope than Article 55, and from the outset it seeks to prohibit unnecessary injury to the natural environment.⁴⁹ Dinstein argues that the best interpretation is to interlink Article 35(3) with Article 55(1), asserting that “injury to human beings (Article 55(1)) should be looked upon only as the foremost category included within the compass of a wider injunction against causing environmental damage (Article 35(3))”.⁵⁰

Carrying out an attack with the intention to cause environmental damage is included in the Rome Statute of the International Criminal Court as a war crime, but differently from what is set out in AP I. The Rome Statute speaks of intentional attacks that cause severe damage to the non-human environment which would be clearly excessive in relation to the military advantage anticipated.⁵¹ AP I uses the notion of “expected” with the feature of anticipation (i.e., foreseeable outcome), which must be seen to differ from the intentional act (i.e., desired outcome). It would nevertheless cover recklessness, and possibly amount to risk-based liability on behalf of the individual.⁵² Lastly, it is noteworthy that if the natural environment is harmed through the extensive and wanton destruction of property when Geneva Convention IV applies, this would indeed amount to a grave breach of Article 147.⁵³

The substantive provisions that protect the natural environment under the LOAC require that due care is taken to protect the environment. In addition to the treaty obligation of care, Rule 44 of the ICRC Customary Law Study⁵⁴ holds that “[m]ethods and means of warfare must be employed with due regard to the protection and preservation of the natural environment”.⁵⁵ This customary rule

47 AP I, Art. 55(3).

48 ICRC Commentary on the APs, above note 18, p. 414, para. 1449.

49 The general perception in the 1970s, when these treaties were drafted, is described as anthropocentric, which is to say that the environment should be protected not for its own intrinsic value, but for human beings in symbiosis with the environment. IEL, on the other hand, stands out as the legal regime that contains ecocentric elements, where the environment is protected for its own sake. Anne Dienelt, *Armed Conflicts and the Environment: Complementing the Laws of Armed Conflict with Human Rights Law and International Environmental Law*, Springer, Cham, 2022, pp. 202, 204.

50 Y. Dinstein, above note 34, p. 273.

51 Rome Statute of the International Criminal Court, 2187 UNTS 90, 1998, Art. 8(2)(b)(iv).

52 Lucia Zedner and Andrew Ashworth, “Just Prevention: Preventive Rationales and the Limits of the Criminal Law”, in R. A. Duff and Stuart P. Green (eds), *Philosophical Foundations of Criminal Law*, Oxford University Press, Oxford, 2011, p. 285.

53 Y. Dinstein, above note 34, p. 283. This protection implicitly extends to the environment, e.g. pertaining to oil wells. H.-P. Gasser, above note 2, p. 638

54 Jean-Marie Henckaerts and Louise Doswald-Beck (eds), *Customary International Humanitarian Law*, Vol. 1: *Rules*, Cambridge University Press, Cambridge, 2005 (ICRC Customary Law Study), p. 143, available at: <https://ihl-databases.icrc.org/en/customary-ihl>.

55 *Ibid.*

also requires that during military operations, all feasible precautions must be taken to avoid, and in any event minimize, incidental damage to the environment.⁵⁶ Should scientific certainty as to the effects on the environment of certain military operations be lacking, a party to the conflict still remains obliged to take such precautions.⁵⁷

The customary rule of due regard must be taken into account in all phases of all military operations. Furthermore, it is distinct from, and must be treated separately from, the obligation to prevent harm.

From the foregoing discussion, it can be concluded that the LOAC in treaty law as well as customary law has provisions that oblige States to protect the environment in armed conflict. Nevertheless, several issues remain problematic or unclear. These include the lack of clarity in the definition of the natural environment, the very high threshold established by the treaty law, and the practical implications of considering the environment a civilian object. On the other hand, a direct legal implication from considering the environment a civilian object is that it falls under the general obligation to prevent harm in the form of war crimes under the LOAC. The discussion therefore now turns to the general obligation to prevent war crimes, and what the interplay with IEL can bring to the analysis.

Nature and features of the preventive obligations under the LOAC

The LOAC serves the purpose of (1) setting the rules for the conduct of warfare and (2) ensuring legal protection for those who are not actively taking part in the conflict.⁵⁸ There are several distinct legal provisions that require States to take measures *beforehand* – that is, *preventive* measures, where the aim is to prevent future violations (including grave breaches) of the LOAC, should armed conflict erupt. In this article, it is argued that a refined understanding of the general obligation to prevent harm in the form of war crimes under the LOAC, taken in combination with State obligations arising from IEL, extends much-needed protection to the environment, whilst also increasing the protection of *all* persons who find themselves in an armed conflict. There are several options at hand when seeking to reconcile different legal regimes with each other.⁵⁹ Often referred

56 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. 276. For a counterargument pertaining to the customary status of due regard, see Y. Dinstein, above note 34, p. 267.

57 J.-M. Henckaerts and D. Constantin, above note 20, p. 481. Dieter Fleck has argued that the principle of due regard captured in Rule 44 is descriptive rather than prescriptive, as it is put in the context of precautionary conduct of military operations. Dieter Fleck, “The Protection of the Environment in Armed Conflict: Legal Obligations in the Absence of Specific Rules”, *Nordic Journal of International Law*, Vol. 82, No. 1, 2013, p. 12.

58 Jann K. Kleffner, “Scope of Application of International Humanitarian Law”, in D. Fleck (ed.), above note 32, p. 43.

59 D’Aspremont notes that mechanisms to solve norm conflicts can be based on (1) status of the norm (such as *jus cogens*), (2) specificity (*lex specialis*) or (3) temporality (*lex posterior*). Jean D’Aspremont, “The Systemic Integration of International Law by Domestic Courts: Domestic Judges as Architects of the

to when considering international human rights law and the LOAC at the same time is the notion of *lex specialis derogat legi generali*, which translates into English as “special law repeals general laws”.⁶⁰ Another way to reconcile separate legal regimes is by seeking mutual supportiveness or complementarity.⁶¹ This is a useful option when seeking to reconcile different bodies of law that have evolved around completely different problem areas, such as IEL and the LOAC.⁶² It is this approach of complementarity that is used in the following discussion.

When examining the basis of the obligation to prevent all war crimes in international armed conflict, a number of distinctions are necessary at the outset. The first distinction that must be made is between the general preventive obligations under the LOAC of the parties to the conflict, and the more immediate preventive obligation of the commander, due to the commander being (1) closer to information about the specific conditions at any given point in time, and (2) in possession of a certain amount of control over the situation and thereby having the power to decide on any intervention. However, the general obligation to prevent harm under the LOAC would notably differ in some critical aspects. For example, it is not limited to belligerents as it arises long before an armed conflict even exists. Given that the obligation of prevention also entails an obligation of result, it cannot categorically be qualified only by “whenever feasible” – the intervention called for must be more decisive than that.

Article 1 common to the four Geneva Conventions⁶³ first of all provides that States must abstain from committing war crimes. Additionally, there are indications that States are required to do more than limit themselves to not committing war crimes. By virtue of common Article 1, the Contracting Parties “undertake to respect and ensure respect for the present Convention”.⁶⁴ It seems that Contracting Parties have the twofold obligation of (1) not committing war crimes and (2) ensuring respect for the provisions of the treaties; thus, some form of additional positive action is implied.⁶⁵ As common Article 1 applies to all the provisions in the Conventions, it must also apply to common Article 3. This opens up the possibility that it applies in non-international armed conflict as well – and not only that, it applies to *all* circumstances. Given that the environment is *prima facie*

Consistency of the International Legal Order”, in André Nollkaemper and Ole Kristian Fauchald (eds), *The Practice of International and National Courts and the (De-)Fragmentation of International Law*, Hart, London, 2012, p. 147.

60 “Lex Specialis Derogat Legi Generali”, in Aaron X. Fellmeth and Maurice Horwitz (eds), *Guide to Latin in International Law*, 2nd ed., Oxford University Press, Oxford, 2021.

61 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. 269.

62 *Ibid.*

63 For a detailed analysis and drafting history of common Article 1, see Frits Kalshoven, “The Undertaking to Respect and Ensure Respect in All Circumstances: From Tiny Seed to Ripening Fruit”, in Frits Kalshoven (ed.), *Reflections on the Law of War: Collected Essays*, Martinus Nijhoff, Leiden, 2007.

64 Furthermore, the obligation to disseminate the LOAC, for the purpose of spreading knowledge and prevent future breaches, is included in Articles 47, 48, 127 and 144 of the four Geneva Conventions respectively, as well as in Article 83 of AP I and Article 19 of Additional Protocol II.

65 In this regard, compare the discussion on the obligation to respect, protect and fulfil under human rights law. See Nienke van der Have, *The Prevention of Gross Human Rights Violations under International Human Rights Law*, T. M. C. Asser Press, The Hague, 2018, p. 13.

considered to be a civilian object, an indiscriminate attack on which is prohibited, such an attack may constitute a war crime. It must now be examined to what extent there may be a general obligation to prevent *all* war crimes.

A first indication that there may be a *general* obligation to prevent war crimes under the LOAC has its origin in the *raison d'être* of the Geneva Conventions. The purpose of these Conventions is to attenuate to the maximum extent possible the suffering of all victims of war.⁶⁶ In as early as 1870, Gustave Moynier, then president of the ICRC, identified and articulated the need to set out how States should implement the treaties.⁶⁷ He proposed “the establishment of an international jurisdiction for the *prevention* and repression of breaches of the Geneva Convention”.⁶⁸ This idea was first captured in treaty law in the 1949 Geneva Conventions, which oblige States to “take measures necessary for the suppression of *all acts* contrary to the provisions of the [Conventions]”.⁶⁹ The first issue to note here is that this obligation is limited to the High Contracting Parties – it does not include parties to the conflict. Second, it must be noted that the law sets out a *general* objective which the States should meet.⁷⁰ Third, the notion of “suppression” needs to be considered. It should be noted that the provision requires the suppression of *all acts* contrary to the Geneva Conventions; the obligation is not limited to grave breaches or even war crimes, but addresses *all* contrary acts. Furthermore, the taking of all measures necessary for the suppression of war crimes must be distinguished from the punishing of such crimes.⁷¹ These are separate obligations, and therefore separate responses are necessary. Concerning a State’s obligation to *prevent all acts* contrary to the treaties, it is unlikely that “measures necessary for suppression” requires a State to criminalize all breaches. Administrative procedures, control mechanisms and reporting structures may well have the same result – in other words, the State has a broad range of options for complying with the provision, which is general in nature. Some of these, it is argued here, could and should extend legal protection to the environment under the LOAC. In this regard, IEL can shed more light on possible measures.

If, as established in the previous section, there is a general obligation to prevent war crimes, it is reasonable to conclude that such an obligation applies irrespective of whether the violation amounts to a grave breach⁷² of the Geneva

66 Mary Ellen O’Connell, “Historical Development and Legal Basis”, in D. Fleck (ed.), above note 32, pp. 34–35.

67 Jean Pictet (ed.), *Commentary on the Geneva Conventions of 12 August 1949*, Vol. 1: *Geneva Convention for the Amelioration of the Condition of the Wounded and Sick in Armed Forces in the Field*, ICRC, Geneva, 1952, p. 353.

68 *Ibid.*, p. 354 (emphasis added).

69 Articles 49, 50, 129 and 146 of the four Geneva Conventions respectively, and Article 86 of AP I (emphasis added).

70 In contrast, when *grave breaches* have been committed, States are obliged “to search for persons alleged to have committed, or to have ordered to be committed, such grave breaches”: *ibid.*

71 Prosecuting those who have committed war crimes presumably has a deterrent effect on future perpetrators, as discussed in L. Zedner and A. Ashworth, above note 52. Consequently, the implications of an obligation to enact necessary measures are not limited to ending impunity but also include preventing future war crimes through deterrence.

72 Articles 50, 51, 130 and 147 of the four Geneva Conventions respectively, and Article 85 of AP I.

Conventions or is any other war crime such as launching a disproportionate attack. In other words, if certain acts contrary to the Geneva Conventions and their Additional Protocols give rise to environmental harm that may disproportionately inflict suffering on people, the State would have to act against such harm, not because of an obligation in relation to the environment as such, but because of the State's obligation to prevent the resultant war crime, of *any acts*. Furthermore, due to the general nature of this obligation, it must arguably be wider in scope than having a singular focus on war crimes causing human suffering only. This is so because from a preventive aspect, it is the foreseeable risk that prompts the obligation. In other words, attacks on power plants or nuclear plants that will almost inevitably damage the environment, or attacks directed at the environment, including forests and waters or the destruction of soil at the level of war crimes, might also constitute a breach of the ongoing State obligation to prevent war crimes. In practical terms this might mean that the State has an obligation to have in place a mechanism or measures that allow it to realize when the environment risks being disproportionately damaged, which can be activated when it is reasonably foreseeable that war crimes destroying the environment will occur.

The strongest evidence of an obligation to prevent war crimes before they have been committed is to be found in the last part of AP I, under the heading "Execution of the Convention and of This Protocol". This part of the treaty contains two sections, Section I being primarily concerned with "preparatory and preventive measures",⁷³ many of which have to be implemented *prior* to the outbreak of armed conflict. Typically, this includes providing national legal frameworks, training and rules regarding where combat materiel should be placed. Here, applying IEL as a magnifying glass is helpful to gain a deeper understanding of what such obligations may entail with regard to protecting the environment. This obligation may encompass "training obligations for the armed forces to respect nature, including the values inherent in nature conservation, and in the basic concepts of endangered and vulnerable species and habitats".⁷⁴ Additionally, military manuals may have to be updated in order to better take environmental implications into consideration.⁷⁵ Prevention⁷⁶ and precaution⁷⁷ may in effect mean that there is an obligation to require belligerents, whenever

73 ICRC Commentary on the APs, above note 18, p. 925, para. 3280.

74 K. Hulme, above note 42, p. 12. Environmental post-war assessments can give useful insights and inform future training of armed forces: see Anne Dienelt, "'After the War Is Before the War': The Environment, Preventive Measures under International Humanitarian Law, and Their Post-Conflict Impact", 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, p. 421.

75 *Ibid.*, p. 432.

76 Prevention refers to activities taken well before the armed conflict arises – that is, it relates to peacetime activities such as training the armed forces and the marking of specific sites/zones that should be protected in the event of armed conflict.

77 The principle of precaution comes into play nearer to the event and requires that those who plan an attack must do everything feasible to verify that the target is a military objective. Furthermore, means and methods of warfare must be selected and employed with due regard to the protection and preservation of the environment. C. Droegge and M.-L. Tougas, above note 31, p. 34.

feasible, to conduct various activities, including (but not limited to) ensuring that appropriate environmental data is reported, as well as determining protected zones that need to be put in place beforehand.⁷⁸ Additionally, if the military objective could contain toxic substances, belligerents may be required to gather information about toxicity and how leakage can be avoided.⁷⁹ They may also be required to actively pursue information on the need to conserve species of wild flora and fauna and their habitats.⁸⁰

It can be added that such training should convey a two-pronged obligation, or an obligation with two distinct aspects. First, there is the normative obligation to abstain from wilfully creating environmental damage. Second, there is an obligation to prevent, and therefore also an obligation to provide *training in how to prevent*, the occurrence of environmental harm during armed conflict, which also needs to be taken into account.⁸¹

Section II of AP I deals with the prevention of breaches closer to the event; in other words, when an armed conflict is ongoing. Prevention during the course of events pertains to the conduct of and decisions made by key actors, given the factual circumstances at the given time and place.⁸² At this point, the emphasis will be on human action. This means that the duties arising out of the principle of precaution in attack outlined in AP I Article 57 and the precaution against the effects of attack in AP I Article 58 are obligations of conduct.⁸³

Article 87 of AP I outlines State obligations concerning the duties of the commander, an idea already captured in the Geneva Conventions⁸⁴ and their predecessors. The provisions of the LOAC determine when, in the course of events, command responsibility may arise – namely, when a subordinate “was committing or was going to commit”⁸⁵ a prohibited act. The words “was going to commit” expressly show that the obligation arises prior to the event, subject to the commander’s actual or presumed knowledge about the event and the possibility of intervention. Given that these liabilities are set out in the LOAC (a body of law that is civil in nature), they must be understood as a concretization of the State’s obligation to prevent war crimes. In other words, if an act is wrong when committed by an individual State agent as part of his or her duties,

78 This is already a legal obligation under Article 8 of the UN Convention on Biological Diversity, above note 13. See also PERAC, above note 15, Principle 4; K. Hulme, above note 42, p. 18.

79 See e.g. UN Convention on Biological Diversity, above note 13, Art. 17.

80 For a regional treaty obligation to this effect see e.g. Bern Convention on the Conservation of European Wildlife and Natural Habitats, UKTS 56, 1979 (entered into force 1 June 1982), Art. 3.

81 This distinction aligns with the distinction between education and training highlighted by Prescott. According to Prescott, the military sees education as being “primarily geared towards imparting information to students and fostering the development of general intellectual skills”, and training as being “focused on specific skill development in the context of specific mission situations”. Jody M. Prescott, *Armed Conflict, Women and Climate Change*, Routledge, New York, 2019, p. 206.

82 The decisions made by the actors will also be influenced by their skills and the training they have received. Therefore, parties are obliged to have legal advisers available “at all times” as well as “in time of armed conflict”: AP I, Art. 82. The question arises as to what extent such legal advisers ought to have at least some basic understanding of IEL to convincingly provide protection for the environment.

83 M. Bothe, above note 56, p. 276.

84 Geneva Convention I, Art. 45; Geneva Convention II, Art. 46.

85 AP I, Art. 86.

to the extent that individual criminal responsibility can be incurred, then it must be a civil wrong on the part of the State in question. This is the basis for the argument that there is indeed a general obligation to prevent war crimes under the LOAC.

Meting out punishments after a breach of the LOAC does not address the commander's responsibility to *prevent* the breach.⁸⁶ This is further underlined by Jarvis when she calls this obligation “command responsibility in real time”.⁸⁷ This is to say that when a war crime causing environmental harm is almost certainly going to occur, there is an obligation on particular actors with a nexus to the scene to suppress the commission of such acts.

Flowing from this general obligation to prevent all war crimes, it is here argued that because of the now recognized general duty of due regard for the natural environment, the obligation to prevent comes into play prior to an act conclusively having caused “widespread, long-term and severe damage”.⁸⁸ Given the magnitude of anticipated damage to the environment, the obligation to prevent will be activated immediately when such harm can be foreseen. On this note, it is now time to better understand the notion of due diligence, and to examine how it relates to the preventive obligations. In the following section, this discussion begins from the perspective of the PERAC principles.

Understanding due diligence and the obligation to prevent harm

After more than ten years of deliberations, the ILC adopted the final version of the PERAC⁸⁹ in late 2022. On 7 December 2022, the United Nations (UN) General Assembly took note of the PERAC without a vote.⁹⁰ The twenty-seven principles that have crystallized address the prevention of environmental harm in relation to armed conflict from the perspective of general international law.⁹¹ Thus, the temporal scope of the PERAC is explicitly set to be “before, during or after an armed conflict, including in situations of occupation”.⁹² In terms of preventive obligations, these are largely captured in Part 2, which also contains the principles of general application.⁹³ The underlying assumption for the principles

86 ICTY, *Prosecutor v. Blaškić*, Case No. IT-95-14-T, Judgment, 3 March 2000, 2004, para. 789.

87 Michelle J. Jarvis, “Prosecuting Conflict-Related Sexual Violence Crimes: How Far Have We Progressed and Where Do We Go from Here? Some Thoughts Based on ICTY Experience”, in Dale Stephens and Paul Babie (eds), *Imagining Law, Essays in Conversations with Judith Gardam*, University of Adelaide Press, Adelaide, 2016, p. 127.

88 J.-M. Henckaerts and D. Constantin, above note 20, p. 481.

89 PERAC, above note 15.

90 UNGA Res. A/RES/77/104, 19 December 2022.

91 Britta Sjöstedt and Anne Dienelt, “Enhancing the Protection of the Environment in Relation to Armed Conflicts – the Draft Principles of the International Law Commission and Beyond”, *Goettingen Journal of International Law*, Vol. 10, No. 1, 2020.

92 PERAC, above note 15, Principle 1.

93 The heading for this part was originally proposed to be “Preventive Measures”. ILC, *Third Report of the Special Rapporteur, Ms Jacobsen, on the Protection of the Environment in Relation to Armed Conflicts*, UN Doc. A/CN.4/700, 2016, Annex I.

in this part is that they take effect before armed conflict arises, although “not all draft principles would be applicable during all phases”.⁹⁴ Principle 2 states that measures must be taken to prevent, mitigate and remediate harm to the environment in relation to armed conflict.⁹⁵

The notion of prevention requires a few general remarks. First, prevention must be seen as a general positive obligation to *anticipate* risks in order to protect the environment.⁹⁶ Second, in terms of transboundary harm from lawful activities, the anticipation of environmental risk arises from the foreseeability of (1) a high probability of significant transboundary harm or (2) a low probability of disastrous transboundary harm.⁹⁷ Third, it is noteworthy that considerations of preventing environmental damage have contributed to the development of the general due diligence principles under international law.⁹⁸ Fourth, emanating from IEL, preventive obligations have arguably by now developed into general principles of international law.⁹⁹ Fifth, there is a link between prevention and due diligence, but the concepts are distinct and must therefore be treated separately.

Due diligence, increasingly referred to in areas of international law, can be understood to mean a State obligation (1) to apply the best efforts available to take effective measures, and (2) also to actively search for such measures. The International Law Association’s (ILA) Study Group on Due Diligence in International Law regards due diligence as a standard of conduct (rather than of result).¹⁰⁰ Furthermore, to establish if the due diligence obligation is met, it is only assessed whether the State has taken sufficient action against the risk that a certain activity causes – the actual damage is not part of the assessment.¹⁰¹ Thus, as pointed out by Bothe when he outlines the “duty of due diligence under IEL and presumably peace time”, the obligation to ensure due diligence entails (at

94 ILC, *Draft Principles on Protection of the Environment in Relation to Armed Conflicts, with Commentaries* UN Doc. A/77/10, 2022 (PERAC Commentary), p. 98, available at: https://legal.un.org/docs/?path=../ilc/texts/instruments/english/commentaries/8_7_2022.pdf&lang=EF.

95 PERAC, above note 15, Principle 2.

96 L.-A. Duvic-Paoli, above note 36, p. 9.

97 ILC, *Draft Articles on Prevention of Transboundary Harm from Hazardous Activities, with Commentaries*, UN Doc A/56/10, 2001, commentary to Art. 2, p. 152, para. 3. In this regard, compare the high threshold for prohibiting environmental damage under the LOAC, discussed above, note 35 and the accompanying text.

98 These can be seen either as customary obligations of due diligence or as a general principle of international law. Leslie-Anne Duvic-Paoli and Mario Gervasi, “Harm to the Global Commons on Trial: The Role of the Prevention Principle in International Climate Adjudication” *Review of European, Comparative and International Environmental Law*, 2022, p. 2.

99 L.-A. Duvic-Paoli, above note 36, p. 81. In relation to international environmental law, the preventive obligation originates from the no-harm principle, as once crafted in the *Trail Smelter Arbitration (United States v. Canada)*, 3 UN Rep. Int’l Arb. Awards 1905 (1941). See also Philippe Sands, Jacqueline Peel, Adriana Fabra and Ruth Mackenzie, *Principles of International Environmental Law*, 4th ed., Cambridge University Press, Cambridge, 2018, pp. 198, 211–213.

100 Tim Stephens and Duncan French, *ILA Study Group on Due Diligence in International Law: Second Report*, 1 July 2016; Lisa Grans, “The Concept of Due Diligence and the Positive Obligation to Prevent Honour-Related Violence: Beyond Deterrence”, *International Journal of Human Rights*, Vol. 22, No. 5, 2018, p. 735.

101 L.-A. Duvic-Paoli, above note 36, p. 183.

least) three threshold questions: (1) the level of damage that may be expected, (2) the likelihood that it will occur, and (3) the level of diligence that may be due.¹⁰² A protective threshold operates in two contexts: it can help to determine the wrongfulness of actual damage *ex post*, but of more importance for this discussion is that it simultaneously serves as a threshold – at a lower level – *ex ante* when assessing the risk that gives rise to the preventive obligation.¹⁰³ In other words, “[t]he threshold will be lower when assessing whether the conditions triggering prevention were met given that the objective is not to determine wrongfulness but rather to *anticipate damage*”.¹⁰⁴

Further to the standard of due diligence, the obligation to prevent damage is an obligation of result, allowing it to encapsulate due diligence – that is, combining obligations of conduct with obligations of result. It is the element of due diligence that equips the obligation to prevent environmental harm with continuity. As noted by Duvic-Paoli, “[r]are is the [environmental] damage that has a clear start and end point: environmental harm is often a continuous act, and the complexity of environmental damage calls for a continuous effort of harm prevention, reduction and elimination”.¹⁰⁵ This aspect of continuity separates the preventive obligation into three phases with different characteristics: these are imminence, emergency and response. These phases are not chronological in a strict sense; rather, they help to develop an understanding of an ongoing obligation in relation to events that can be expected to be unfolding. Imminence commences when the likelihood of a harm occurring can be assessed. Imminence therefore puts the attention on the likelihood of the risk occurring, rather than on its proximity in time as such.¹⁰⁶ Preventive obligations in the emergency phase concern the avoidance of damage that is almost certain to occur in the near future. Although damage may happen suddenly, this does not automatically make it entirely unexpected;¹⁰⁷ thus, a certain amount of preparedness, executed beforehand, is required. Lastly, the response phase captures the fact that although the harm has already started to convert into actual environmental damage, there is still scope to prevent even more excessive destruction. Not only is there scope, but there is also a legal obligation, because the obligation to prevent harm remains of an ongoing character.¹⁰⁸ This ongoing character of the obligation to prevent harm emanates from the rules of State responsibility; as long as the environmental damage is there, the preventive obligation remains in force.¹⁰⁹ “The principle of prevention dictates that risks are assessed and monitored at regular intervals to judge whether the criteria of foreseeability and magnitude that

102 M. Bothe, above note 56, p. 272.

103 L.-A. Duvic-Paoli, above note 36, p. 184.

104 *Ibid.*, p. 185 (emphasis added).

105 *Ibid.*, p. 197.

106 *Ibid.*, p. 190.

107 *Ibid.*, p. 191.

108 *Ibid.*, p. 192.

109 ILC, *Draft Articles on Responsibility of States for Internationally Wrongful Acts*, UN Doc A/56/10, 2001, Art. 14(3).

trigger prevention are met.”¹¹⁰ It is worth noting that the threshold level for when anticipated harm triggers the preventive obligation would be shifted in favour of the environment if the effects of harm on present as well as future generations were taken into account.¹¹¹ It must be considered beyond doubt that States have yet to explore and advance this three-phased nature of preventive measures with respect to environmental harm in relation to armed conflict to the maximum extent possible.

Conclusions

In relation to armed conflict, the environment is doubtless *prima facie* a civilian object. Therefore, the tests that must be carried out to ascertain that an attack is lawful are the same as when any civilian object is assessed to establish whether it is indeed a military objective. To effectively protect the environment, preventive obligations that must be implemented well before the outbreak of an armed conflict are essential. This refers to measures that should be taken to ensure that war crimes do not occur in the first place. The obligation to prevent harm is a distinct, separate obligation in addition to the obligation to prosecute war crimes after they have occurred. Therefore, these two obligations each require their own separate response.

The emphasis in this article has been on the obligation to prevent harm. Under the LOAC, this obligation is distinctive and differs from the obligation of care. The preventive obligation has the combined force of an obligation of conduct and an obligation of result that is civil in nature, which means that it encapsulates due diligence aspects. This higher level of an obligation of result is called for because of the extreme seriousness of the harm that is sought to be prevented. It goes beyond a duty of care, since the character of the obligation to prevent harm exceeds the obligation of conduct by adding the obligation of result.

The above discussion has established that there is indeed a general State obligation to prevent all war crimes, and this article argues further that this also requires the application of the LOAC to foreseeable environmental harm, to ensure that war crimes are duly prevented, including war crimes that disproportionately impact the environment. In addition to this first level of preventive obligations, the LOAC also establishes obligations to prevent the occurrence of war crimes closer to the event – that is, when armed conflict has erupted. At this stage, command responsibility may arise if a commander or superior has failed to prevent a war crime about which he or she had actual or presumed knowledge. The duty to suppress such acts means first that systems of disciplinary measures need to be in place, and second that they must be made use of, not least when the war crime disproportionately affects the environment. This would include war crimes such as the indiscriminate destruction of livelihoods or

110 L.-A. Duvic-Paoli, above note 36, p. 197.

111 *Ibid.*, p. 188.

water and soil. There is clearly an obligation on States to prevent the occurrence of such war crimes in the first place; therefore, States have the obligation to take certain measures in advance. This would mean that mechanisms which enable an assessment of foreseeable environmental risk should be established beforehand, in order for a State to fully comply with its preventive obligations under the LOAC. Such mechanisms would be in the area of institution-building and management¹¹² and would entail monitoring of indicators pertaining to the status of, for instance, air, water, soil, agricultural products and human health.¹¹³

The obligation to prevent environmental harm must be seen as an obligation in three phases: imminence, emergency and response. The preventive obligation arises immediately when a risk of damage can be anticipated; the emergency phase is when the likelihood of harm arising is foreseeable and is almost certain; and lastly, prevention under the response phase concerns activities to suppress further harm when the anticipated damage has begun to materialize.

It is clear from the discussion above that the general obligation to prevent war crimes (beforehand, and closer to the event) provides protection under the LOAC that extends to the environment. Furthermore, the obligation to prevent harm closer to the event is better understood as a three-phased obligation, guided by the relevant general principles of international law. Given that the principles in the PERAC apply before, during and after armed conflict, they re-emphasize that environmental harm in relation to armed conflict must be approached holistically. This in turn brings to the forefront the obligation to continue the analysis of what preventive actions are required throughout the unfolding of events, underlining the ongoing character of the obligation to prevent environmental harm. The ongoing nature of harm itself may be difficult to discern in fast-moving events that cause damage – but when the harm which should be prevented materializes over time, possibly even “widespread, long-term and severe” in scale and scope, then the obligation remains in force for this whole period. PERAC Principle 2 emphasizes prevention and mitigation,¹¹⁴ this can be seen to be in line with the understanding of command responsibility, where the responsibility is not limited to activities well before the conflict has erupted, but also gives rise to the responsibility to minimize damage, as mitigation is expressly required. This is the part of the obligation that applies should environmental damage already have begun to materialize.

The obligation to prevent environmental harm in relation to armed conflict has not yet been implemented to its fullest. Bearing in mind that the obligation to

112 This would include developing guidelines and procedures for administrative routines.

113 Authorities should engage with the private sector, civil society and, if relevant, UN missions in their institution-building, which may take place at the global as well as the regional level.

114 While the ILC has pointed out that the PERAC contains provisions of different normative value (PERAC Commentary, above note 94, p. 95), most PERAC principles that apply during armed conflict are “customary rules of international law which have been clarified in a contemporary context of environmental protection” (Marja Lehto, “Armed Conflicts and the Environment: The International Law Commission’s New Draft Principles”, *Review of European Community and International Environmental Law*, Vol. 29, No. 1, 2020, p. 74). The same cannot automatically be concluded for the remaining provisions, which remain based on existing treaties or other authoritative sources (*ibid.*).

prevent *all* war crimes requires States to take measures beforehand, applying the lens of IEL reveals that there is a due diligence onus on States to examine and revise State practices concerning their military manuals and rules of engagement regarding environmental harm. It has been argued that undertaking such activities is an essential part of fulfilling the general obligation to take appropriate measures in advance to prevent all war crimes, including those that are anticipated to constitute environmental harm.