**Title:**
Gender, Conflict and the Environment: Surfacing Connections in International Humanitarian Law

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**Abstract:**
Both gender and the environment have traditionally been positioned at the periphery of international humanitarian law (IHL). In recent decades, there has been important progress in moving both concerns closer to its centre. To date, however, an understanding of the intersection of gender and the environment in the legal regulation of armed conflict remains largely underdeveloped. Nevertheless, as the article documents, there are important similarities in strategies pursued to advance both gender and the environment from the periphery to the mainstream of IHL, namely: first, a focus on sources of IHL, in particular concretizing arguably limited specific treaty content with interpretive guidance and implementation frameworks; second, a conceptual critique of prevailing definitions of 'harm' in IHL; third, advancing, through close empirical documentation and household-level analysis of conflict's effects, understandings of harm that capture so-called 'second order' effects of conflict. Recognising these important affinities between both gender and environment work in IHL, the article draws on these insights to propose a typology of gendered environmental harm in conflict. The article concludes with proposals for enhancing the legal and operational capture under IHL of the gender-conflict-environment nexus.

**Keywords:**
gender, environment, harm

## Introduction

Both gender and the environment have traditionally been positioned at the periphery of international humanitarian law (IHL). The Geneva Conventions are very limited on both gender and the environment. The Additional Protocols make scant textual provision for them, limited to prohibitions on rape and non-discrimination based on sex,[1] and 'widespread, long-term and severe' damage to the natural environment.[2] Subsequent developments in the law, focused on interpretative and operational guidance, have however demonstrated important progress in IHL's treatment of both gender and the environment.

Informed by subsequent state practice, *opinio juris*, and treaty developments in other regimes of international law, Rules 43-45 of the Customary IHL's study of the International Committee of the Red Cross (ICRC) note important expansions to the protection of the environment, in

[1] Common Art. 3; 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), Art. 75(1), 76(1).
[2] AP1 above note 1, Article 55; Jean-Marie Henckaerts and Louse Doswald-Beck (eds), *Customary International Humanitarian Law*, Vol. 1: Rules, Cambridge University Press, 2005 (ICRC CIHL), Rules 50-52.

particular in its application to non-international armed conflicts.[3] The ICRC's 1994 and updated 2020 Guidelines on the Protection of the Environment in Armed Conflict synthesise and document these legal developments for a broad audience of state and non-state parties to conflict.[4] Further, the 2022 Principles on the Protection of the Environment in Relation to Armed Conflict (PERAC principles) of the International Law Commission, which has been endorsed by the UN General Assembly, considerably enlarge this protection.[5] Likewise, the ICRC's 2004 operational guidance on gender provided authoritative and influential interpretation of IHL for its gender-sensitive application, and its 2022 report on Gendered Impacts of Armed Conflict formally supplemented this with a more systematic incorporation of gender inequality considerations as a key factor for the military to consider in their protection of civilian obligations.[6] Moreover, the recently updated Commentaries on the Third Geneva Convention represent very considerable development in the gender-inclusive interpretation and application of IHL across multiple areas of IHL.[7] In this context, the UN Security Council´s Women Peace and Security (WPS) agenda, established by resolution 1325 (2000), has consistently linked gender inequality with sexual and gender-based violence in armed conflict and the need to adopt preventive approach through the full and equal participation of women.[8]

Despite the undoubted significance of these developments in the interpretation and application of IHL in recent decades, an understanding of the intersection of gender with the environment in the legal regulation of armed conflict remains roundly under-developed. Interpretive and operational guidance relating to the environment and IHL say little about gender, whilst similar instruments on gender say little about the environment. Reports from the field document the empirical relationship between the environment, gender, and security. [9] The core of this relationship is that environmental degradation results in gendered effects and harms that exacerbate in armed conflict.[10] Further, the international community is showing increasing concern for this gender-conflict-environment nexus as a security issue. The UN Security Council has identified environmental insecurity as a threat to humans,[11] while the Secretary-General reports on WPS are clarifying these harms and noting ways forward. The Secretary-General´s WPS reports acknowledge that environmental problems are a global threat that

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[3] ICRC CIHL, above note 2, Rules 43-45.

[4] ICRC, *Guidelines for Military Manuals and Instructions on the Protection of the Environment in Times of Armed Conflict,* 1994 and updated *Guidelines on the Protection of the Environment in Armed Conflict,* 2020 ("ICRC 2020 Guidelines")

[5] UNGA Res. A/C.6/77/L.22, 11 November 2022.

[6] Charlotte Lindsey-Curtet, Florence Tercier Holst-Roness and Letitia Anderson, *Addressing the Needs of Women Affected by Armed Conflict*, ICRC, Geneva March 2004.

[7] See generally, Catherine O'Rourke, "Geneva Convention III Commentary: What Significance for Women´s Rights", *Just Security,* 21 October 2020, available at: https://www.justsecurity.org/72958/geneva-convention-iii-commentary-what-significance-for-womens-rights/ ; Heleen Hiemstra and Vanessa Murphy, "GCIII Commentary: I´m a woman and a POW in a pandemic. What does the Third Geneva Convention mean for me?" *Humanitarian Law & Policy*, 8 December 2020, available at: https://blogs.icrc.org/law-and-policy/2020/12/08/gciii-commentary-woman-pow-third-geneva-convention/

[8] UNSC Res. 1325 (2000), 31 October 2000.

[9] DCAF, *Women Speak, The Lived Nexus between Climate, Gender and Security*, Geneva, 2022; Jessica M. Smith, Lauren Olosky and Jennifer G. Fernández, *The Climate-Gender-Conflict Nexus*, GIWPS, 2021; UNEP, UN Women, UNDP, UNDPPA, *Gender, Climate & Security: Sustaining inclusive peace on the frontlines of climate change*, June 2020.

[10] Ibid.

[11] Security Council Report, "Climate Change: Arria-formula Meeting", 14 December 2017, available at https://www.securitycouncilreport.org/whatsinblue/2017/12/climate-change-arria-formula-meeting.php ; United Nations, "Climate Change 'Biggest Threat Modern Humans Have Ever Faced'", SC/14445, 23 February 2021, available at https://press.un.org/en/2021/sc14445.doc.htm

exacerbates complex emergencies and disproportionately affects women and girls.[12] Further, in 2022, UN General Assembly Resolution 76/300 recognised the right to a clean, healthy and sustainable environment as a human right which is necessary to fulfil other existing rights, noting specifically the detrimental implications for the rights of women and girls.[13] Importantly, this view from the UN Security Council and General Assembly match the scientific approach of the International Panel of Climate Change (IPCC). IPCC reports expressly link climate change to increasing gender inequality and acknowledge that higher global warming levels "by increasing vulnerability will increasingly affect violent intrastate conflict".[14]

In a global context of increasing urgency to efforts to redress environmental degradation, decline in biodiversity and climate change,[15] and in which the central importance of gender equality to sustainable human development is widely-recognised, this unexplored intersection in IHL is both noteworthy and problematic. This article therefore aims to begin to remedy under-attention to this gender-conflict-environment nexus and to present an agenda for more comprehensive understanding of the relationship. Despite the under-developed understanding of the gender-conflict-environment nexus in IHL, this article identifies very significant overlap in strategies used to move both gender and the environment from the periphery towards the centre. The article begins by documenting the first of these strategies, namely a focus on sources of IHL and targeting developments not within the static domain of IHL treaty law, but rather a focus on bespoke interpretative and operational guidance. The article then turns to a shared critique from both gender and environment scholarship in IHL, namely the regime's overly narrow conception of 'harm',[16] which has functioned to marginalise and diminish the significance of both gendered and environmental harm. Third, the article turns to a further shared strategy of environment and gender work in IHL in order to revise and broaden conceptions of harm. This shared strategy is to focus on close empirical documentation and household-level analysis of conflict's effects. These understandings of harm capture longer-term, indirect, and so-called 'second order' effects of conflict. The article draws together insights from this empirical work to outline a tentative typology of gendered environmental harm in conflict. Finally, the article turns to proposing some legal and operational changes to IHL to enhance recognition and capture of the gender-conflict-environment nexus.

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[12] UNSC Res. 2242(2015), 13 October 2015 notes the 'impacts of climate change' within the changing global context; UNSC Res. 2467(2019), 23 April 2019, recognises the link between sexual violence in conflict and post-conflict and 'the illicit trade in natural resources including 'conflict minerals''.See generally, *Report of the U.N. Secretary-General, Women and peace and security*, S/2019/800, 9 October 2019, para 118, and S/2022/740, 5 October 2022, paras. 64-69.

[13] UNGA Res. A/76/L.75, 26 July 2022.

[14] IPCC, Climate Change 2022 Report on Impacts, Adaptation and Vulnerability, Summary for Policymakers, pp. 15,28-29.

[15] The Paris Agreement, FCCC/CP/2015/10/Add.1, adopted on 12 December 2015 (entered into force 4 November 2026); IPCC, Report, AR6 SYR, 2023.

[16] The article focuses on the narrow conception of gender and environmental harm in armed conflict. While recognising their importance, the article does not focus on two important strands of this strategy: 1) the interplay between IHL and international human rights law and between IHL and international environmental law, and 2) a deeper application of non-discrimination obligations for 'gendering' the seemingly neutral provisions of IHL. See, for instance, Fionnuala D. Ní Aoláin, "The Gender of Occupation", *Yale Journal of International Law*, Vol.45 N° 2, 2020; Catherine O'Rourke, *Women's Rights in Armed Conflict under International Law*, Cambridge University Press, Cambridge, 2020; CEDAW, General recommendation N°30 on women in conflict prevention, conflict and post-conflict situations, CEDAW/C/GC/30, 1 November 2013; PERAC Principles, above note 5.

## Coming in from the periphery (1): clarifying sources of international humanitarian law

*Sources of international humanitarian law and gender*

IHL's sources have proven exclusionary to feminist and gender insights on two related fronts: first, the largely stagnant treaty development since 1977 has offered limited opportunity for feminist advocacy to influence the canon's foundational texts.[17] The treaties are themselves very limited on gender and were adopted before women's rights and gender equality received a robust treaty basis through the adoption of the UN Convention on the Elimination of All Forms of Discrimination Against Women. (CEDAW). Also, IHL core treaties precede the UN Security Council WPS agenda specifically linking gender and conflict. Second, the reliance on customary international law to progressively develop the canon further privileges state practice in international law-making, irrespective of the broad exclusion of women from leadership and decision-making in most States.[18] In the absence of specific treaty developments, IHL's advances on gender have instead relied on dual strategies of, first, a focus on evolving operational guidance for addressing gender and, second, a reliance on interactions with treaty-based gender developments in cognate regimes of international law in order to advance more progressive interpretation of gender elements of IHL.

Ultimately, it is the most modest recuperative efforts, led by the ICRC, that have had the most practical significance. In the absence of potential new lawmaking, institutional efforts to improve the regime's gender sensitivity from States, civil society and international tribunals have driven the ICRC´s focus on improved interpretation and operational implementation of existing law. These recuperative efforts have adopted a progressive interpretation of existing treaty-based and customary IHL obligations, to include more direct articulation of women's experience of conflict. Parallel to the *ad hoc* tribunals in the 1990s framing sexual violence as international crimes, including war crimes,[19] the ICRC's recognition of rape as a grave breach of the Geneva Conventions, as a matter of customary IHL,[20] is significant. Further, a focus on improved operationalisation of existing legal commitments has been the site of productive engagement.[21] Most notably, the 2001 study on *Women Facing War* made an assessment of the needs of women as civilians in armed conflict and as detainees and internees.[22] The study further outlined how the ICRC viewed such needs to already be addressed by IHL and the organisation's operational response to those needs of women. This work by the ICRC was possible in a context increasingly cognizant of the reality of women and girls in conflict,

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[17] This typology and account is taken from Catherine O'Rourke, *Women's Rights in Armed Conflict under International Law*, in particular from the IHL sections of Chapter 2. See also Jeni Klugman, Robert U. Nagel, Mara Redlich Revkin, Orly Maya Stern, *Can the Women, Peace and Security Agenda and International Humanitarian Law Join Forces? Emerging findings and promising directions*, Georgetown Institute for Women, Peace and Security, 2021.

[18] Hilary Charlesworth, , Christine Chinkin and ShelleyWright,"Feminist Approaches to International Law", *American Journal of International Law*, Vol.85 No°4, 1991, 613-645.

[19] See for example, the Rome Statute of the ICC, ICTR case *Prosecutor v Akayesu*, ICTY, case *Prosecutor v Kvočka et al.,* ICTR case *Prosecutor v Musema,* ICTR case *Prosecutor v Gacumbitsi,* ICTR case *Prosecutor v Muhimana.*

[20] To clarify the status of rape under IHL, the ICRC issued an Aide-Mémoire in 1992 stating that the grave breach regime in Article 147 of Geneva Convention IV (GCIV) "obviously not only covers rape but also any other attack on a woman's dignity", ICRC, *Aide-Memoire*, 3 December 1992, para. 2.

[21] ICRC, Addressing the Needs of Women, above note 6.

[22] Charlotte Lindsey, *Women Facing War: ICRC Study on the Impact of Armed Conflict on Women*, ICRC, Geneva, 2001.

reflected in documents such as the Beijing Declaration and Platform for Action in 1995 and the UN Security Council WPS regime from 2000.[23]

Also of important practical significance, given its operational role, is the explicit shift in the ICRC's approach to gender and exclusion.[24] In 2004, the ICRC report *Addressing the Needs of Women Affected by Armed Conflict* declined to adopt gender-equality policies within the ICRC's humanitarian programming because the ICRC "is not mandated to engineer social change" considered a political act incompatible with the neutrality principle.[25] This position no longer applies. This position is now considered "inconsistent with the reality of the ICRC´s work as an actor engaged with the interpretation of international law [… and] fails to recognize the guarantee of equal rights between men and women, and prohibitions of discrimination, in international law".[26] More concretely, the ICRC 2019 Accountability to Affected People Institutional Framework (AAP Framework) considers a gender diversity lens to inclusive programming in all operations "essential to maintain the principle of impartiality" (non-discrimination) by making an effort to understand specific needs. [27] The AAP Framework was recently supplemented by the ICRC Inclusive Programming Policy which is more specific on gender.[28] The most significant and up-to-date operational guidance is the ICRC´s 2022 report Gendered Impacts of Armed Conflict and Implications for the Application of IHL recognises gender as a factor influencing civilian harm and attempts to assist States to plan their operations accordingly.[29]

Beyond this focus on operational guidance, an important area for updated and revised interpretation of IHL's treaty sources are the Commentaries on the Geneva Conventions. Originally published in 1960, they replicated the most egregious gender exclusions of the Conventions. By contrast, the 2020 updated Commentaries have demonstrated important progress along several axes, including: eschewal of traditional assumptions of gender passivity, significantly enhanced proscriptions of gender-based and sexual harm, affirmation of the importance of women's participation in relevant decision-making, and broader maximization of interactions with cognate regimes in international law to advance an overall more gender-inclusive articulation of IHL.[30]

Gender in armed conflict has gained considerable public attention recently, most notably, regarding sexual violence in armed conflict. From the limited statutory provisions of rape at the ICTY, expanded by the ICTR and SCSL, international jurisprudence has considerably developed gender-based crimes in armed conflict, for instance, recognising that sexual and gender-based violence can amount to an act of torture, an outrage against personal dignity, an

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[23] The Beijing Declaration and Platform for Action, The Fourth World Conference on Women, 15 September 1995; Security Council Resolutions on Women, Peace and Security, available at: https://peacemaker.un.org/wps/normative-frameworks/un-security-council-resolutions ; CEDAW General Recommendation (GR) N°30 on women in conflict prevention, conflict and post-conflict situations, CEDAW/C/CG/30, 1 November 2013.

[24] ICRC, Accountability to Affected People Institutional Framework, Geneva, January 2019, pp. 4-5.

[25] ICRC, *Addressing the Needs of Women,* above note 6, pp. 6-7.

[26] ICRC, *Gendered Impacts of Armed Conflict and Implications for the Application of International Humanitarian Law*, Geneva, June 2022, p. 36.

[27] ICRC, Accountability to Affected People Institutional Framework, Geneva, January 2019, pp. 4-5.

[28] ICRC, *Inclusive Programming Policy*, August 2022.

[29] ICRC, *Gendered impacts of armed conflict,* above note 27.

[30] See generally, O'Rourke, Geneva Convention III, above note 7.

act of terrorism, and of genocide.[31] The Rome Statute has consolidated and expanded these gains. It regulates new gender-based harms such as gender-based persecution and forced pregnancy, provides a definition of gender, prohibits any form of discrimination on gender, and requires gender-balance and gender expertise among staff.[32] Prompted by prosecutorial strategies, including various public policies that reaffirm gender as a social construction, ICC judges have made big strides addressing cases of rape and sexual slavery of girl soldiers, forced pregnancy, gender persecution, and the rape of men.[33] Further, States´ military strategies have not ignored the reality of gender in armed conflict. The WPS agenda has also meant an impulse to foresee gender obligations in armed conflict in some military manuals and to adopt the full range of implementing legislation on conflict-related sexual violence.[34] Further, studies show that the adoption of CEDAW General Recommendation Nº 30 on the rights of women in conflict prevention, conflict and post armed conflict has brought about increased state-reporting on women's rights in conflict under their human rights treaty-obligations.[35]

*Sources of international humanitarian law on the environment*

The Geneva Conventions were codified before the radical shift in protection of the environment in the 1972 Stockholm Framework on environment. Yet, while some important soft law instruments bridge some gaps between the environment and armed conflict, major environmental treaties reflect little attempt to address specific challenges of conflict.[36] Nowhere in the 1995 Vienna Convention on the protection of the ozone layer, the 1992 Climate Change Convention, nor the 1992 Convention on Biological Diversity, is the aggravated environmental harm of armed conflict expressly addressed. Consequently, developments in the protection of the environment in armed conflict have relied primarily on developments in State practice and *opinio juris* in order to capture both in customary international law, and this process has not proceeded without contention.[37] In the context of IHL's relatively static nature, the strategies of gender advocates for the enhancement of IHL – namely a focus on operational guidance and a focus on productive interactions with cognate regimes – define also the most significant dynamics in progress under IHL towards enhanced protection of the environment in armed conflict.

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[31] ICTY, *Prosecutor v Anto Furundzija,* IT-95-17/1-T, Judgment, 10 December 1998); ICTY, Prosecutor v. Jean-Paul Akayesu, ICTR-96-4-T, Judgment, 2 September 1998; SCSL, *Prosecutor v Issa Hassan Sesay, Morris Kallon and Augustine Gbao,* SCSL-04-15-T, Judgment, 2 March 2009.

[32] ICC, Rome Statute, UN Doc. A/CONF. 183/9, 17 July 1998 (into force 1 July 2002), articles 7(1)(g)(h), 7(3), 8(2)(b)(e), 21(3), 36(8) and 42(9).

[33] ICC *Prosecutor v. Bosco Ntaganda,* ICC-01/04-02/06, Judgment, 8 July 2019; *Prosecutor v Dominic Ongwen,* ICC-02/04-01/15, Judgment, 4 February 2021; *Prosecutor v. Al Hassan Ag Abdoul Aziz Ag Mohamed Ag Mahmoud,* ICC-01/12-01/18, Amended Document Containing the Charges, 2 July 2019; *Prosecutor v. Jean-Pierre Bemba Gombo,* ICC-01/05-01/08, Confirmation of Charges, 15 June 2009.

[34] Danish Ministry of Defence, "Military Manual on International Law Relevant to Danish Armed Forces in International Operations, 2016", pp. 111, 207; UNSC Res. 2106 (2013) para. 2.

[35] Catherine O´Rourke and Aisling Swaine, *Protecting Women's Rights in Conflict: New Developments and Next Steps in the Synergy Between CEDAW and the WPS Agenda*, LSE Women, Peace and Security Working Paper Series, 26/2020.

[36] Declaration of the United Nations Conference on the Human Environment (Stockholm Declaration), Principle 26, Rio Declaration on Environment and Development, UN Doc. A/CONF.151/26(Vol. I) 12 August 1992, Principle 24 (reaffirmed at Rio + 20); UNGA Res. 37/7, World Charter for Nature, 28 October 1982, para. 5; UNGA Res. 47/37, Protection of the environment in times of armed conflict, 25 November 1992, Preamble.

[37] For example, the ICRC CIHL Rule 45 norm that AP1'sprotection of the environment applies also to non-international armed conflict has been contested as a norm of customary international law.

In all writing on IHL and the environment, it is clear the extent to which the events of two conflicts – environmental damage in the US-Vietnam War and the burning of Kuwaiti oil wells by Iraq – have defined legal responses to environmental damage of armed conflict. Indeed, the limited treaty-based express environmental protections that do exist in IHL – namely the Additional Protocol I protections – can be attributed to widespread recognition of the immediate and longer-term environmental harm posed by the military tactics in the Vietnam War. Further, whilst not specific to IHL, the Convention on the Prohibition of Military or Any Other Hostile Use of Environmental Modification Techniques (ENMOD) provisions constitute also an attempt to prevent a repeat of the environmental damage caused by the use of agent orange in Vietnam. Much more radical legal reforms were also proposed as a result of the Gulf War, including proposals for a fifth Geneva Convention dedicated to protection of the environment.[38] By contrast, attempted legal responses to the setting ablaze of oil wells in Kuwait ultimately proved less impactful and less coherent. The Jordanians, in particular, sought to lead legal developments, both faulting the ENMOD provisions and successfully leading the UNGA to refer the matter of 'Exploitation of the Environment as a Weapon of War' to the Sixth (Legal) Committee.[39] What these Committee discussions did reveal was that, while there was consensus that Iraqi actions had been unlawful, states differed as to the legal basis for characterising the actions as unlawful.[40] The upshot of these diverse positions was to lead to the ICRC to advise the UN Secretary General in a 1992 report that, whilst there was a consensus about "a number of gaps in the rules currently applicable", the best approach was not a new body of law. Rather, the ICRC recommended efforts to, variously, convince more states to accede to the existing instruments (AP1 and ENMOD), to enact implementing legislation at the national level, and to observe their existing international obligations, grounded in Hague IV, GC IV, Protocol 1, ENMOD, the Gas Protocol of 1925,the Biological Weapons Convention of 1972, the Conventional Weapons Convention and the draft Chemical Weapons Convention, and the customary international law principles of distinction and proportionality..

These developments culminated in the ICRC's 1994 Guidelines on the Protection of the Environment in Armed Conflict, which were essentially a restatement of the law of war provisions that the ICRC had cited in its report to the Secretary General two years earlier. The Guidelines begin with the assertion that "existing international legal obligations and … state practice" make up their foundation. Thus, developments to enhance IHL's environmental protections have likewise eschewed treaty-based developments and instead focused on operational guidance and restatements of customary IHL.

Where these proscriptions and protections have left uncertainty – or what Bothe et al characterise as 'gaps' – are threefold.[41] First, that the AP1 proscriptions in articles 35 and 55 against "widespread, severe and long-term" damage to the natural environment are too

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[38] See further Michael N. Schmitt, "Green War: An Assessment of the Environmental Law of International Armed Conflict", *Yale Journal of International Law*, Vol 2, N°1, 1997, p. 23.

[39] See further ibid. Also consider, UNGA Res. 47/37 above note 38; UNSC Res. 692, 20 May 1991, establishing a UN Compensation Fund for claims of environmental damage.

[40] Several states regarded it as contrary to the relevant UN Security Council Resolution 687; the US labelled the actions as wanton destruction and thus contrary to the Fourth Geneva Convention, whilst others emphasise how the action was contrary to customary principles of proportionality and necessity, whilst others referred to peacetime international environmental law.

[41] Michael Bothe, Carl Bruch, Jordan Diamond, and David Jensen, 'International law protecting the environment during armed conflict: gaps and opportunities', IRRC, Volume 92 Number 879 September 2010.

restrictive and their precise scope is uncertain.[42] Second, that elements of the environment are too vulnerable and likely to become military objectives (as arguably, for example, in the Vietnam case), invalidating their protection as civilian objects. Third, a gap is created by the lack of clarity about practical issues of proportionality, where environmental damage is collateral to attacks against military objectives..[43] Together these gaps point to practical challenges around assessing likely environmental damage, in particular in a context of evolving scientific and social understanding of the extent and implications of damage to the natural environment.

Further, it is worth noting that developments in IHL to enhance the protection of the environment have by-and-large not addressed the differential and disproportionate impacts of environmental damage on a population on the basis of the gender roles and norms within a society. Meanwhile, developments in IHL to bring greater express attention and understanding to matters of gender have engaged in quite circumscribed ways with the protection of the environment.

## Coming in from the periphery (2): reassessing definitions of harm in international humanitarian law

*Gender and definitions of harm*

Despite the overall positive trajectory in IHL's attention to women and gender, the definition of harm under IHL remains a key axis of gender critique. The concept of 'harm' is central both to feminist legal work and also the gendered analysis of conflict. Eschewing legal categories of *inter alia* tort, crime, violations, the feminist focus on 'harm' instead centres gendered experience. In the context of feminist legal work, lived experience of harm is typically contrasted with legal categories, with the ultimate aim of enhancing legal capture for such harm. In summary, IHL's involved definitions and categories of conflict struggle to encompass women's diverse gendered experiences of conflict harm. As for gender, whilst the Geneva Law treaties refer to the principle of equality and non-discrimination on the basis of sex, the term gender is neither mentioned in the 1949 Geneva Conventions nor in the 1977 Additional Protocols (created when gender provisions were absent in international law).[44] IHL´s recognition of gendered experiences is limiting, especially regarding women and girls whose protection only refers to sexual violence, pregnancy, motherhood and the provision of separate quarters and sanitary conveniences.[45]

By contrast, feminist empirical work has drawn a number of noteworthy contrasts between legal categories of conflict and harm and women's experiences of conflict and harm. For example, much feminist scholarly work on conflict has focused on revealing connections and continuities between harm that occurs pre-conflict, during conflict and post conflict. Harm that occurs with a nexus to conflict and harm that occurs in the 'private' sphere and thus outside of

[42] The ICRC 2020 Guidelines provide substantive commentaries on the meaning of widespread, long-term and severe addressing Rule 2, paras. 56-72.
[43] ICRC Guideline Rule 7 provides substantive commentary on the meaning of proportionality in attack.
[44] Michelle Jarvis and Judith Gardam, "The Gendered Framework of International Humanitarian Law and the Development of International Criminal Law", in Indira Rosenthal, Valerie Oosterveld and Susana Sácouto (eds), *Gender and International Criminal Law*, Oxford University Press, Oxford, 2022, p. 52.
[45] Ibid, p. 53.

IHL regulation. A central focus of such work has been revealing continuities in sexual and gender-based violence and broader structural conditions of conflict.

An essential insight from empirical and household-level analysis of the gendered impacts of conflict has been to distinguish between so-called first- and second-order conflict harms. Particularly influential in this work has been World Bank-sponsored study by Buvinic et al synthesising the disparate evidence-base in order to discern major headline findings in gendered experience of conflict that identify a wide set of differences between men and women and gender inequality as a crucial factor for adaptation.[46] Until recently, there has been relatively little rigorous work on the effects of conflict on individuals and households, including its effects on gender roles and inequalities, because large-scale, high-quality household surveys are generally not available for countries affected by violent conflict. Where these surveys are available, the foremost difficulty is the rigorous attribution of causality. It is virtually impossible to design scientific experiments to test the consequences of conflict on people randomly assigned to variations in conflict situations. In addition to these hurdles, there is a general lack of empirical information on gender variables at the individual and household levels, logistical difficulties and risks involved in both conducting research and acting as a research subject in conflict and post-conflict situations.

These factors working against the documentation of gendered harm in conflict have resonance also for the documentation of environmental harm. Despite these limitations, recent research on the consequences of conflict has advanced and has benefitted from more and better micro-level data, increased use of innovative approaches, and quasi-experimental variation. A growing number of longitudinal household-level data sets and follow-up household surveys in post-conflict settings that integrate pre-war data are facilitating new microstudies on the impacts of war.[47] The more that studies by different researchers in different settings are able to observe regularities in the legacy of conflict on human development and gender inequality, the more confident we can be that the result is a valid assessment of conflict consequences rather than a spurious finding.[48]

The emerging empirical evidence is organized using a framework that identifies both the differential impacts of violent conflict on men and women (first-round impacts) and the role of gender inequality in framing adaptive responses to conflict (second-round impacts). First-round impacts of violent conflict include excess male mortality and morbidity as an obvious direct and indirect consequence of violent conflict, resulting in widowhood, incremented responsibilities for women to ensure livelihood increasing their exposure to sexual and gender-based violence, asset and income loss, forced displacement, or migration. Thus, whilst it is clear that men predominantly experience reduced mortality and physical injury due to conflict, violent conflicts affect population health in ways that extend beyond the direct effects of violence through a combination of increased exposure to infectious disease, acute malnutrition, poor sanitation, and a lack of health services. The evidence suggests that women and children have more exposure to these direct effects of war on health than men do.[49] The Buvinic et al study has contributed enormously to our understanding of the gendered distribution of conflict's effects. Conflict effects experienced disproportionately by women include poor

[46] Mayra Buvinic et al, "Violent Conflict and Gender Inequality: An Overview", *World Bank Research Observatory* 28, 2012.
[47] Christopher Blattman and Edward Miguel, "Civil War", *Journal of Economic Literature*, Vol 48 Nº 1, 2010.
[48] Buvinic et al, above note 48, p. 7.
[49] Hazem A. Ghobarah, Paul Huth and Bruce Russett," Civil Wars Kill and Maim People - Long After the Shooting Stops", *American Political Science Review*, Vol. 97 Nª2, 2003, 189-202.

nutrition and sanitation, vulnerability to poverty, longer-term health impacts of conflict, including disability and PTSD; migration and displacement, with attendant loss of assets and loss of income. Further, these first-round impacts often result in reductions in household income and consumption, triggering coping strategies that have gender implications,[50] leading in turn to second-order conflict effects. The empirical evidence on some of the second-round impacts of violent conflict on individuals and households are associated with responses that differ by gender, including adaptive responses by households to the violent shock. The demographic changes triggered by the sex-unbalanced mortality and morbidity of conflict alter or change marriage and fertility patterns and can create opportunities for political participation among those who have been formally excluded. The destruction of assets and the disruption of state and market institutions due to conflict require households to accommodate sudden sharp declines in household income and consumption. Households reallocate labor between the genders and reallocate resources assigned to children's well-being to cope with the aftermath of these conflicts.

Overall, the literature review reveals the heterogeneity of impacts across contexts, conflicts, and countries for girls and boys, women and men. Although many households rebound from the shock inflicted by conflict, women left alone to provide for their families may be particularly vulnerable to poverty that can persist across generations. The available evidence also highlights the many gaps in knowledge about the gender-differentiated effects of and adaptive responses to conflict.

*The environment and definitions of harm*

Within international humanitarian law, and indeed international law more broadly, remains a core tension around the rationale for the protection of the environment and attendant definitions of harm to the environment. The traditional dichotomy in such discussions is – as Michael Schmitt helpfully outlines – between the 'utilitarian' approach, which values the environment for what it offers humankind, primarily food, shelter, fuel and clothing.[51] Alternatively, the 'intrinsic value' approach, that is value that is independent of the uses to which humans may exploit the environment. This latter approach is not instead of the utilitarian value, but rather in addition to utilitarian value. Intrinsic value is inherently more difficult to measure, as the point of departure is not the human self. Nevertheless, connections between intrinsic and utilitarian value could be approached through, for example, considering the broader significance of ecosystem function and species regeneration capacity.[52] Interestingly, writing in 1997, Schmitt attributes this utilitarian view both to the ICRC – on the grounds of its concerns that an 'intrinsic value' perspective might displace focus from the protection of humans – "whereas warfighters tend to be concerned that it may distort proportionality calculations and thereby immunize valid military objectives".[53] Although IHL has held a largely anthropocentric view protecting the environment to the extent that it is relied upon by civilians, the negotiations of the Additional Protocols revealed two positions among ICRC delegates that were reflected in the resulting provisions: Article 55 is clearly anthropocentric while Article 35(5) protects the environment as such reflecting an intrinsic approach.[54]

[50] Buvinic et al, above note 48, p. 8.
[51] Schmitt, above note 40, p. 6
[52] Ibid.
[53] Ibid, page 7.
[54] ICRC 2020 Guidelines paras 18-21.

One provocative idea is that, by emphasising the gendered effects of environmental harm in conflict, gender advocates in fact reinforce and retrench an anthropocentric and utilitarian approach to the environment. By emphasising distinctions in impact between men and women, boys and girls, gender advocates once again conceive the environment as of value only for its immediate human benefit and without intrinsic worth. An alternative view is to say that, as the empirical evidence indicates that both women and the environment are more vulnerable to longer-term and indirect effects of war, that in fact a gendered analysis of environmental harm is essential to understanding the intrinsic value of the environment and the full effects of conflict on the environment.

The dominance of anthropocentrism in international law's concern with the environment has been critiqued not only in respect of IHL. Rather, it is a concern that has been levelled at international law more broadly. For example, Alan Boyle is trenchant in his critique of the submission of the UN Office of the High Commissioner for Human Rights to the Paris Agreement negotiations.[55] Boyle describes the submission as 'conceptually imperialist' and 'myopic' because it focuses only on the harmful impact of climate change on the rights of humans, rather than on the environment as such.[56] As Boyle notes, this anthropocentric and utilitarian approach is precisely the one opposed by ecologists and ecological theorists, because it fails to understand and appreciate the ecological reality and biological diversity. "By looking at the problem in moral isolation from other species and the natural world, we simply reinforce the assumption that the environment and its natural resource exist only for immediate human benefit and have no intrinsic worth in themselves. But… we cannot afford to ignore the fundamental value of natural capital – the climate, biodiversity, ecosystems, the marine environment and so on – in sustaining life on earth."[57]

Contemporary work on climate change, most notably the periodic reports of the International Panel on Climate Change, has arguably functioned to render this human/environment distinction obsolete, or at least anachronistic. The growing and deepening evidence-base provided by the IPCC is unequivocal about "the interdependence of climate, ecosystems and biodiversity, and human societies".[58] The evidence-base yielded and analysed through the IPCC reports is compelling in revealing the interdependent nature of harm to the environment and harm to human and social life. Thus, interestingly, there is a shared dynamic in interventions by environmentalists and gender advocates into the conception and definition of environmental harm in armed conflict, namely the investigation, empirical documentation and emphasis on "the indirect effects of war on human populations, mediated through its destruction of biological habitat".[59] Interested also in household-level effects of conflict, and in drawing on extant population-based public health data, this work yields a clearer picture of the full scale of harm resulting from destruction of the environment in armed conflict.[60] For example, Leaning's analysis focuses on four military activities that can be seen as having prolonged and pervasive environmental impact with grave attendant consequences for human

[55] Alan Boyle, "Climate, Change, the Paris Agreement and Human Rights", *ICLQ* Vol 67 N°4, 2018, 759–777.
[56] Ibid.
[57] Ibid.
[58] IPCC 2023, above note, p. 5.
[59] Jennifer Leaning, Tracking "the Four Horsemen: The Public Health Approach To The Impact Of War And War-Induced Environmental Destruction In The Twentieth Century", in Jay E. Austin and Carl E. Bruch (eds), *The Environmental Consequences of War,* Cambridge University Press, 2000, 384-401.

[60] Alastair W.M. Hay, Defoliants: The Long-Term Health Implications, in *Environmental Consequences of War,* above note 61, pp. 402-425.

populations, namely: the production and testing of nuclear weapons; aerial and naval bombardment of terrain; dispersal and persistence of landmines and buried ordnance; and deliberate and collateral effects of environmental destruction and contamination, through the use or storage of military despoliants, toxins, and waste. In line with the gender research surveyed, such work is candid in setting out the methodological challenges and limitations of conducting such research in conflict-affected settings, but highly useful in ascertaining the immediate and longer-term direct and indirect effects of environmental destruction.[61]

## Gender, conflict and the environment: improving understanding of the harm

Much of the literature addressing IHL and the environment reference two defining conflicts and conflict methods in underpinning subsequent development of the law: first, deliberate destruction by US forces – including the use of agent orange – of the natural environment which was being used by to military advantage to Communist forces to conceal their movements, logistics and provide them sustenance during the Vietnam War (1959–1975); and second, the deliberate setting ablaze of Kuwaiti oil wells by Iraqi forces in the Iraq-Kuwait War (1990). More recent empirical and legal studies primarily address two further forms of environmental harm, namely the destruction and exploitation of natural resources,[62] and the military actions which exacerbate climate change.[63] Whilst not claiming to be exhaustive list, these key lines of documented environmental harm in conflict are useful for the organisation of this section.

From the extant literature, it is possible therefore to discern the following key lines of environmental destruction due to military activities in conflict, namely:

a. The polluting effects of certain weapons;
b. The pollution released in attacks on chemical, pharmaceutical and oil facilities;
c. The destruction and exploitation of natural resources;
d. Military actions exacerbating the onset or impacts of climate change.

This draws on extant documentation of environmental harm and gender harm resulting from conflict to provide an initial mapping of the gender-conflict-environment nexus.

### *a. The polluting effects of certain weapons*

Certain weapons can have a serious impact on the environment which in turn threatens the means of survival, health and livelihood of the civilian population. Given the importance of the natural environment to the survival of humans, including their ability to produce and consume food, IHL requires that care be taken in warfare to protect the natural environment against widespread, long-term and severe damage. This duty of care includes a prohibition on the use of means and methods of warfare intended or expected to cause such damage to the natural environment and thereby prejudice the health or survival of the population. The prohibition on starvation of the civilian population as a method of warfare and the destruction of objects indispensable to the latter's survival expressly includes 'agricultural areas for the production of foodstuffs, crops, livestock (...) and irrigation works' as examples of such protected objects.

[61] For example, Leaning, above note 61, p. 391.
[62] For example, Phoebe Okowa, *Protection of Natural Resources in Armed Conflict*, United Nations Audiovisual Library of International Law, 2020.
[63] Stuart Parkinson and Linsey Cottrell, *Estimating the Military's Global Greenhouse Gas Emissions*, November 2022.

Critically, protecting the environment requires the application of the basic rules on distinction, precaution and proportionality to minimise harm to civilians and civilian objects, including the environment.[64] Furthermore, the rules prohibiting means and methods of warfare which cause widespread, long-term and severe damage to the environment are also relevant as these too may make farming impossible. In addition to these general prohibitions, a number of instruments prohibit the use of specific weapons, such as chemical weapons, which may cause long-term damage to the environment.[65]

Drawing on Buvinic et al's documentation of household-level effects of conflict, we can readily identify the gendered effects of reduced ability to produce and consume food.[66] Women and girls are more exposed to the indirect effects of harm to agriculture and food production, most notably, acute malnutrition. Nutrition bias, which means that households typically favour men and boys over women and girls for the allocation of scarce nutrition.[67] Further, women's lower body mass makes them vulnerable to the harmful effects of the pollution caused by weapons.

Consider, for example, the evidence-base that has emerged concerning the longer-term adverse effects of the use of agent orange, the military herbicide containing the hazardous chemical compound dioxin that was widely disseminated in South Vietnam during the Vietnam War (1959–1975). Studies of the impact on women's reproductive health echoed economics studies reporting that women and children are more vulnerable to the indirect effects of war aftermath.[68] In addition to polluting the environment and causing cancers and other diseases in those directly exposed to it, dioxin has caused high rates of pregnancy loss, congenital birth defects and other health problems in their children.[69] The women had a high number of miscarriages and premature births. About two-thirds of their children had congenital malformations or developed disabilities within the first years of life. Most of the families were poor, aggravated by impaired health in the men, the burden of caring for disabled children, and feelings of guilt and inferiority.[70] Studies based on data from US military archives on the herbicide operations, estimate the prevalence of disabilities among Vietnamese people using the 2009 Population Census. The results demonstrate that the legacy of Agent Orange continues, with ongoing adverse (although small) effects on health even more than 50 years since the end of the war. Critically, the health burden of severe mobility disability has been mostly borne by ethnic minority women in the affected areas.[71] The impact of certain polluting weapons, as agent orange, is thus clearly gendered.

b. *The pollution released in attacks on chemical, pharmaceutical and oil facilities*

The paradigmatic example of this sort of environmental harm is the deliberate setting on fire of Kuwaiti oil wells in the Kuwait war. Saddam Hussein's last order was to set all of Kuwait's oil wells on fire. In this massive act of retribution, over 700 oil wells burned for 10 months, and it took over 20,000 firefighters to extinguish all of the well fires. The oil fires represent the largest uncontrolled, continuous release of burning petrochemicals, with the total fine

[64] PERAC Principles, above note 5, principle 14; ICRC 2020 Guidelines, rules 5-10.
[65] See, generally, ICRC 2020 Guidelines, rules 19-25.
[66] Buvinic et al, above note 48, p. 117.
[67] Ibid, pp. 119, 133.
[68] Le Thi Nham Tuyet & Annika Johansson, "Impact of chemical warfare with agent orange on women's reproductive lives in Vietnam: A pilot study", *Reproductive Health Matters*, Vol. 9, N°18, 156-164,
[69] Ibid.
[70] Ibid.
[71] Nobuaki Yamashita and Trong-Anh.Trinh, "Long-Term Effects of Vietnam War: Agent Orange and the Health of Vietnamese People After 30 Years", *Asian Economic Journal*, Vol.36, N°2, 180-202.

particulate matter emissions estimated at 3 billion kilogrammes. The attacks had immediate devastating environmental consequences, including substantial damage to the ecosystem and to ground water. The effects were manifold and diverse and included adverse effect on agriculture and food production.[72] The prohibition on starvation of the civilian population as a method of warfare and the destruction of objects indispensable to the latter's survival expressly includes "agricultural areas for the production of foodstuffs, crops, livestock (...) and irrigation works" as examples of such protected objects.

The utilitarian gendered effects noted above apply here also, namely: women's environmental exposure makes them more vulnerable to lifetime reproductive health risks and disease. Arnetz et al's randomized study on families affected by the 1991 Gulf War reveals the impact of exposure to sixteen environmental chemicals including smoke from oil burning fires, depleted uranium, nerve gas, mustard gas, and contaminated food, drink and bathing.[73] The study concludes that exposure to chemicals increased the risk of adverse birth outcomes such as congenital anomalies, still birth and low birth weight by 2 to 4 times.[74] Longer-term effects, such as the emergence of respiratory diseases attributable to the attack and a marked increase in breast cancer, due to the combined effect of chronic stress accumulation due to the attack and carcinogenesis. In the Kuwait example, there was a marked increase in breast cancer incidence rates around 1997 (i.e., the end of the latency period).[75]

*c. The destruction and exploitation of natural resources*

The AP1 and APII provisions on the protection of natural resources have been described as 'rudimentary'[76] The experience of armed conflict in Angola, Sierra Leone, Liberia and across the Great Lakes Region reveal the centrality of the exploitation of natural resources in causing, sustaining and exacerbating these conflicts. Further, recent research suggesting that at least forty percent of all intrastate conflicts over the last sixty years have a link to natural resources.[77] In turn, these conflicts evidence how armed conflict involves the damage, degradation, and destruction of natural resources that sustain livelihoods and communities. Also of relevance is the prohibition on the destruction of real or personal property. However, the prohibition is not absolute, and destruction can be justified if rendered absolutely necessary by military operations. Protection is also afforded by the prohibition on pillage, i.e., the taking of property belonging to private individuals. While the prohibition on destruction relates to the land itself and any crops still growing, that on pillage relates to crops that have already been harvested and to livestock and could be applied to the looting of natural resources.

Recent empirical literature has begun to measure the substantial costs of violent conflict on economies and communities, including the economic and household-level effects of the destruction of natural resources. These costs encompass the most immediate and observable

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[72] Samira A.S et al, "The Gulf War Impact on the Terrestrial Environment of Kuwait: An Overview" in *Environmental Consequences of War,* above note 61, 316-337.

[73] Bengt Arnetz et al, "1991 Gulf War Exposures and Adverse Birth Outcomes", *US Army Med Dep J.,* 2013, pp. 58-65.

[74] Ibid.

[75] Charles W. Cange, "The life course model as a framework for post-conflict health analysis: reflections on the Gulf War critical period," *Medicine, Conflict and Survival*, Vol.32, N°4, pp: 282-294. Breast cancer is one particular condition that shows a link between chronic stress accumulation and carcinogenesis. A focus on breast cancer underscores the impact of stress on hormonally sensitive areas of the body.

[76] Okowa above note 64.

[77] UNEP, *From Conflict to Peacebuilding: The Role of Natural Resources and the Environment,* Nairobi, 2009, p. 8.

consequences of war, such as damage to the national productive structure and the redirection of resources from productive to military uses, as well as more indirect effects on households' assets and income and other attributes of economic well-being. As Buvinic et al note: "Gender roles and inequality are clearly important in terms of how individuals and households experience the loss of assets and income during conflict and how they accommodate these losses."[78] These factors help to explain the interaction between violent conflict and poverty and the channels through which violent conflict can perpetuate household poverty, which in turn lead to what Buvinic et al identified as 'second-round impacts' of conflict. The destruction of assets, such as natural resources, and the disruption of state and market institutions due to conflict require households to accommodate sudden sharp declines in household income and consumption. Households reallocate labour between the genders and reallocate resources assigned to children's well-being to cope with the aftermath of these conflicts. Evidence indicates that child stunting may be the most persistent negative economic effect of violent conflict. Faced with sudden income loss and loss of assets, poor households tend to choose to protect their sons. This conflict finding corresponds with economic shock data from 59 developing countries, which found that infant mortality rises with negative economic shocks and that female infants' survival is especially sensitive to such shocks.[79] Accordingly, as armed conflict exacerbates the economic deprivation of households reliant on natural resources, this has a negative impact on child health, especially girl infant survival.

*d. Military actions exacerbating the onset or impacts of climate change*

Deforestation and the release of greenhouse gases constitute two consequences of military actions which exacerbate the onset of climate change. Military operations may directly result in large-scale deforestation, as in Syria, impacting civilian livelihood, environmental and climate resilience.[80]. Further, a keyway in which conflict exacerbates environmental degradation is through prolonged displacement, which substantially impacts already fragile ecosystems and is destructive for biodiversity. For example, settlement of refugees in the Virunga national park, in the DRC, had a devastating impact on deforestation and loss of biodiversity.[81]

The consequences of resulting reduced access to firewood and water caused by the exacerbation of climate change have direct effects for women. Access to adequate water (in terms of both quality and quantity) for cooking, drinking and washing purposes is a necessity for preserving the health of a population. Furthermore, in rural areas, water is essential for irrigation purposes. Women are often hardest and earliest hit by the environmental degradation and water scarcity occasioned by armed conflict, as the cases of Mali and Yemen show, as they often bear the responsibility of providing water and carrying out tasks for which water is necessary, such as cooking, cleaning and washing.[82] In wartime, they have to walk greater distances and wait for longer periods of time to meet household needs.[83] Likewise, women typically bear responsibility for cooking and the attendant gathering of firewood. Deforestation

[78] Buvinic et al. above note 48.
[79] Sarah Baird, Jed Friedman, and Norbert Schady, "Aggregate Income Shocks and Infant Mortality in the Developing World", *The Review of Economics and Statistics*, Vol. 93, N° 3,2011, pp. 847-856.
[80] Tara Najim et al, *Axed & Burned: How Conflict-caused Deforestation Impacts Environmental, Socio-economic and Climate Resilience in Syria*, Pax, March 2023.
[81] Okowa, above note 64.
[82] DCAF, above note 11, pp. 29, 37.
[83] ICRC Addressing the Needs of Women, p. 57

results in women and their children having to walk further for longer to collect firewood,[84] exposing them to higher rates of sexual and gender-based violence.[85]

Interestingly, where we have seen specific research on the gender-conflict-environment nexus is on the topic of climate change. In the last small number of years, a range of significant studies on the gender-conflict-climate change nexus have emerged from legal, policy and academic domains.[86] By and large, these studies have focused primarily on how climate change is itself a catalysing and exacerbating factor in conflict, for example, how water scarcity can lead to armed conflict over control of or access to major water sources and how such conflicts in turn have disproportionate gender effects. These studies have not, however, focused on how the military means and methods which exacerbate climate change have gendered effects. Whilst important for further understanding the full scale and cost of climate change, these studies are less immediately usable for IHL, for example, in assessing what constitutes 'impermissible environmental damage' or proportionate environmental harm. Further, the enhanced evidence-base on the gender-conflict-climate change nexus is welcome and very valuable; framing this evidence more broadly as harm to the environment would present this evidence as more readily applicable to IHL obligations and rules.

## Gender, conflict and the environment: enhancing legal and operational capture

This article argues that IHL would benefit from integrating a gender analysis of the environment to better inform its operational principles and, as a result, enhance the protection of both civilians and the natural environment. Accordingly, the article seeks to open a discussion on the convenience of adopting a gender analysis to address environmental issues in armed conflict. We conclude by illustrating this claim with regards to the ICRC´s two key reports of 2020 on the topic: *When Rain Turns to Dust* (focused on the protection of civilians) and the updated *Guidelines on the Protection of the Natural Environment in Armed Conflict* (focused on the conduct of hostilities). It is now up to States to adopt such a practice in the conduct of their military operations.

The ICRC report *When Rain Turns to Dust* foregrounds the need to protect the population from the compounded effects of environmental harm and warfare.[87] The report acknowledges information gaps to attain this goal and urges States to develop context-specific analyses of the "humanitarian consequences of conflicts and climate risks occurring in tandem and to deepen understanding of how these consequences may vary according to people´s individual

[84] 2004 Guidelines on Gender, page 55.

[85] Ibid, p. 55.

[86] For example, Keina Yoshida et al, "Defending the Future: GENDER, CONFLICT AND ENVIRONMENTAL PEACE" LSE Centre for WPS, GAPS UK and WIPC, 2021; Lonenzo Angelini and Margot Jones, "Climate Change, Gender Equality and Peacebuilding: The Value of Gender-Sensitive and Climate-Sensitive Conflict Analysis," *European Peacebuilding Liaison Office*, Civil Society Dialogue Network Discussion Paper N°18. , 2022; UNEP, UN Women, DPPA, UNDP, Gender, Climate & Security: Sustaining inclusive peace on the frontlines of climate change, 2020; Kvinna Til Kvinna, POSITION PAPER: THE CLIMATE, GENDER AND CONFLICT NEXUS, 2022, www.kvinnatillkvinna.org; Rowena Maguire, "Gender, climate change and the United Nations Framework Convention on Climate Change", in Kate Ogg and Susan H. Rimmer (eds), *Research Handbook on Feminist Engagement with International Law* 2019; Christiane Fröhlich and Giovanna Gioli (2015)" Gender, Conflict, and Global Environmental Change", *Peace Review: A Journal of Social Justice* Vol. 27, N°2, 2005, 137-146,.

[87] 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,* July 2020.

characteristics, including their gender, age, capacity or occupation" to address people´s needs and vulnerabilities.[88] This operational gap can be addressed considering the way gender and other identities intersect with the environment compounding the differentiated experiences of women, girls, men and boys in armed conflict. Indeed, this approach is already aligned with the ICRC´s position. The ICRC´s 2019 Accountability Framework and complementary 2022 Inclusive Programming Policy urge to consider gender and other factors compounding discrimination in inclusive programming relying on the participation of the affected people.[89] By stressing consideration of all 'diversity factors' affecting exclusion, the ICRC´s accountability framework creates ample room to include policies that tackle the way gender and other identities intersect with the environment, thus, addressing these specific harms in armed conflict.[90]

The ICRC *Guidelines on the Protection of the Natural Environment in Armed Conflict* are underpinned by the aim of due regard to the environment in deciding the means and methods of warfare.[91] In practice, this requires the parties to the conflict to take all feasible precautions to minimize incidental harm at all times, even in the absence of scientific evidence on the environmental impact of an attack.[92] During targeting, this general obligation imposes a duty of proportionality that prohibits launching attacks which may be expected to cause excessive harm in relation to the concrete and direct military advantage anticipated.[93] Accordingly, the proportionality test requires the parties to the conflict to assess i) the foreseeable environmental harm and ii) whether that harm would be excessive in relation to the military advantage. In so doing "it is particularly important that account is taken of the attack´s indirect effects (also referred to as "reverberating", "knock-on", "cascading" [...] on the civilian population and civilian objects that are reasonably foreseeable".[94] There already exists, therefore, a basis for IHL´s environmental risk assessment in attack to include not only the immediate and derivative effects on the natural environment but also on persons and property.[95]

Assessing the reasonably foreseeable harm (and thus the excessiveness) of environmental harm is, at the present stage of scientific knowledge, a particularly difficult task. Hence, the importance of the precautionary principle to avoid or minimise incidental damage to the environment, even in the absence of certainty as to the effects of certain military operations.[96] One reason is that environmental harm is more complex to quantify than other harms due to its long-term effects and for damage purely to elements of the natural environment.[97] Another reason is that the calculus of human harm is inaccurate largely due to IHL´s traditional lack of interest in the way gender discrimination intersects with other identities and situations (including the environment) determining the differentiated effects of targeting on women, men, girls and boys.[98] This inaccuracy might increase in future with the use of automatic weapons

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[88] Ibid p. 43.
[89] ICRC, Accountability to Affected People, above note 28, pp.6; ICRC, Inclusive Programming, above note X, p.4.
[90] Ibid p. 3.
[91] ICRC 2020 Guidelines, above note 4, Rule 1.
[92] Ibid para. 44.
[93] Ibid, Rule 7.
[94] Ibid para. 117.
[95] ILC, *Draft Articles on the Prevention of Transboundary Harm from Hazardous Activities,* UN Doc. A/RES/56/82, 12 December 2001, Art. 7, commentary.
[96] ICRC CIHL, Rule 44.
[97] Emanuela-Chiara Gillard, "Proportionality in the Conduct of Hostilities: The Incidenteal Harm Side of the Assessment", Research Paper, Chatman House, December 2018, para. 139.
[98] Jarvis and Gardam, above note 46, p. 64.

systems where the digital bodies targeted 'lack' a gender and where human agency is entangled with data-driven judgments that dilute ethical responsibility.[99]

Integrating a gender perspective to IHL´s environmental risk assessment can enhance understanding of the foreseeable harm during targeting necessary to assess excessive harm. A gender lens provides critical information on the human component of environmental harm explaining how women, men, girls and boys are differently affected by the environment and, conversely, how these gender relationships affect the environment.[100] Accordingly, it is suggested that States integrate a gender analysis of environmental harm at two stages: a) *ex ante,* when assessing the reasonably foreseeable damage to the environment as part of their IHL obligations of proportionality and precautions and, b) *ex post*, to fulfil their protection obligations. To this end, when assessing environmental harm at these stages, States´ military manuals and practice may consider asking the following questions: How is the environment 'intrinsically' affected? And, additionally, how does the gender differentiated impact on women, girls, men and boys compound and shape the nature of environmental harm? States would accordingly be proactive in adopting a concrete and responsible measure of due diligence that satisfies the foreseeability test to assess excessive harm in military operations. Further, States would fill a serious information gap, gathering more reliable information on the diversity of human – gendered – needs to better protect and assist the civilian population from the effects of environmental harm in armed conflict.[101]

## Conclusion

Gender and the environment no longer occupy the periphery of IHL. Today, both matters represent the cutting-edge of IHL. If IHL is to remain relevant and practically applicable to a world seized by environmental degradation and gender inequality, the enhanced understanding, regulation and application to the gender-conflict-environment nexus is essential. This article has focused on the clear affinities and shared strategies used to date – with some success – to advance both matters towards the mainstream of IHL. The lack of necessary data to fully understand the gender-conflict-environment nexus is problematic, though we argue that this data-gap may be less severe than it originally appears. As we have outlined, existing documentation of immediate, long-term, direct and indirect effects of conflict is available for both gender harm and environmental harm. A commitment to connecting and deepening these data points in order to inform the application of IHL rules is a project that we have sought to tentatively advance here.

[99] Matilda Arvidsson, "Targeting, Gender, and International Posthumanitarian Law and Practice: Framing the Question of the Human in International Humanitarian Law", *Australian Feminist Law Journal*, Vol. 44, Nº1, 2018, pp.20, 23.27.

[100] Jody Prescott, "Climate Change, Gender and Rethinking Military Operations, in *Rising Temps and Emerging Threats: The Intersection of Climate Change and National Security* in the 21st Century, Vermont Journal of Environmental Law, Vol 15:4, 2014.

[101] Prescott, above note 116.

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