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From Kuwait to Ukraine: Conflict's Implications on the Natural Environment and the Responses of International Humanitarian Law

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Summary: The natural environment has long been the silent casualty of war according to the *Guidelines on the Protection of the Natural Environment in Armed Conflict* issued by the International Committee of the Red Cross (ICRC). As presented by the ICRC, International Humanitarian Law (IHL) does not reflect the reality of warfare today. Hence, this article builds on the ICRC recommendations with the aim of underlining changes that are essential for protecting the environment during war. Drawing on the experiences from the past and applying them to the current conflict in Ukraine, I propose four broader categories of change. First and foremost, the consensus within the international community is viewed as the basis for any further developments. Thus far politicization has prevented agreement, yet the events since February 24th, 2022, show that there are lessons to be learned. Compromise on the standards and implementation is thus called for, particularly when it comes to the conditions severe, long-term, and widespread damage. From this point of view, international condemnation of environmentally harmful practices in warfare is limited by the conditions' disproportionately broad scope which arguably needs to be narrowed. Secondly, I suggest that mainstreaming environmental protection during armed conflict is of great importance. Such mainstreaming might be most relevant among military personnel during non-international armed conflicts because of the individualistic approach of national military manuals. Nonetheless, mainstreaming could prove appropriate in international armed conflicts as well, given the limited number of rules relating to the environment in international customary and treaty law. Thirdly, the interconnectedness between energy and environment, and the dangers associated with the destruction of energy infrastructure must be made very clear. Bombings or destabilization of nuclear power plants might be even more catastrophic than the burning and spills of oil wells. The last point of this brief is the need for greater accountability for environmental destruction incurred during armed conflict, especially from a systematic point of view. From this standpoint, the past events such as the establishment of the United Nations Compensation Committee for Kuwait, which inter alia addressed the environmental impacts of the conflict, or the ICC decision to focus more on environmental issues could provide inspiration in rela-

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tion to Ukraine. Besides, the situation in Ukraine could become a potential landmark case. Consequently, the aim of the four propositions presented here is to define the most pressing limitations of IHL related to the natural environment, and to outline potential recommendations for policy makers who address the crisis in Ukraine as well as any further conflicts to come.

Keywords: environment, environmental protection, warfare, Kuwait, Ukraine, International Humanitarian Law.

1 Introduction

The connection between environment and security issues is not new.[1] Destructive practices of the US army in Vietnam in the late 1960s and through the early 1970s first brough attention to the problem.[2] Yet, more attention should be arguably given to the protection of environment during armed conflicts. This is especially true amid the popularity of the green agenda and environmental movements across the world.[3] While in some instances environmentally harmful practices might be reduced due to conflict, such as cuts in industry, travel, transportation, or overconsumption of natural resources, evidence implies predominance of wars' negative effects.[4] Given the capacities of contemporary weapons and their side effects, the potential for environmental destruction during conflict is essentially unlimited.[5] These include biodiversity loss, food insecurity, scarcity of water, contamination. They can even contribute to climate change.[6] Another critical consequence is the limitation or collapse of services and utilities such as waste disposal, sewage systems, protection of nature reserves, forestry, management of wildlife etc.[7]

1 WESTING, Arthur H. The Military Sector vis-à-vis the Environment*. *Journal of Peace Research*, 1988, vol. 25, n. 3, pp. 259.; FREELAND, Steven, *Addressing the intentional destruction of the environment during warfare under the Rome statute of the international criminal court*, Cambridge: Intersentia, 2015, pp. 353.

2 MICHAELIS, Anthony R. Environmental Warfare. *Interdisciplinary Science Reviews*, 1991, vol. 16, n.2, pp. 97, 99.

3 HARVEY, Fiona, 2020. *'We´ve had so many wins': why the green movement can overcome climate crisis.* [online]. Available at: <https://www.theguardian.com/environment/2020/oct/12/climate-crisis-campaigns-pledge-real-change> Accessed: 15.07.2022.; UNITED NATIONS, 2020. *The Sustainable Development Agenda.* [online]. Available at: <https://www.un.org/sustainabledevelopment/development-agenda/> Accessed: 15.07.2022.

4 REUVENY, Rafael, Mihalache-O'Keef, Andreea. S. & Quan, Li. The effect of warfare on the environment. *Journal of Peace Research*, 2010, vol. 47, n. 6, pp. 750–751.; BAUMANN, Matthias & Kuemmerle, Tobias. The impacts of warfare and armed conflict on land systems. *Journal of Land Use Science*, 2016, vol. 11, n.6, pp. 673.

5 WESTING, 1988, pp. 257.

6 BAUMANN & Kuemmerle, 2016, pp. 673.; INTERNATIONAL COMMITTEE OF THE RED CROSS, 2020. *When Rain Turns to Dust: Uunderstanding and Responding to the Combined Impact of Armed Conflicts and the Climate and Environment Crisis on People's Lives,* Geneva: ICRC, pp. 8, 17.

7 WEIR, Doug. Civilian protection, environmental pollution and conflict – a role for the

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Additionally, remnants of war continuously impact the environment post-conflict. They either tend to be left behind, or if disposed, require further detonations and burning, thus causing damage either way.[8] In the long-term, environmental protection holds innumerable value and it inevitably is an irreplaceable asset for the rebuilding of society, economy, and order post-war. Moreover, it often forms an important part of people´s identity as cultural or spiritual heritage. Hence, if the so called 'ecological balance' is disturbed or destroyed during war, it cannot be replenished and life for anyone or anything after the conflict becomes endangered.[9] It is therefore essential for universal well-being to deal with the effects of warfare on the natural environment. Accordingly, this paper points to the necessary developments of IHL when it comes to environmental protection.

The article begins with explaining the historical context and the environmental issues Ukraine has faced since the invasion of Crimea, and more so as a result of the war in 2022. I then introduce the four propositions for change, namely the consensus on standards, the mainstreaming of environmental protection during armed conflicts, the interconnectedness between energy and environment, and lastly the accountability for environmental destruction during armed conflict. Ultimately, the article assesses the legal steps taken since February 2022.

2 Learning from the Past

Deliberate environmental damage in conflict has been long used as a tactic in war waging, despite presumed negative effects. Such methods can be traced as far back as to the 5th century BC when retreating Scythians poisoned wells and used the so-called 'scorched earth' method to slow down the Persian army. Later on, in the third Punic war (146 BC), Romans poisoned Carthaginian soil with salts to disable fertilization.[10] In the Anglo-Scottish wars (14th century) resources were purposely destroyed through field devastation, soil erosion, livestock raids, and woodland destruction.[11] In the modern era targeting of the environment continued. Notable instances include the scorched earth method used against the Napoleonic invasion of Russia (1812), in the French conquest of Algeria (1830-1847), during the American civil war (1861-1865) or the German retreat from Norway (1944) in WWII.[12]

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public health community. *Medicine, Conflict and Survival*, 2015, vol. 31, n. 1, pp. 7.

8 WEIR, 2015., pp. 6.

9 FRANCK, Hans Göran et al. II. Environmental Warfare. *Bulletin of Peace Proposals*, 1973, vol. 4, n. 1, pp. 43–44.

10 FREELAND, 2015, pp. 5.

11 SLAVIN, Philip, Warfare and Ecological Destruction in Early Fourteenth-Century British Isles, *Environmental History*, 19, 2014, pp. 531.

12 FREELAND, 2015, pp. 63; FREELAND, Steven. Conflict, scorched earth policies and environmental destruction. [online]. Available at: <https://www.ibanet.org/article/6D983066-BCDB-481A-8C79-BD47362BDB49> Accessed: 18.10.2022; NORSK FOLKEMUSEUM,

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Noticeably, the American use of the atomic bombs in Hiroshima and Nagasaki (1945) left behind immense environmental damage, impacting the ozone layer in the Northern Hemisphere, causing immense fires, and poisoning soil, water, and air for decades.[13] Nevertheless, it was the American use of herbicides, Rome plows, extensive bombing and reported weather modification in Vietnam which led to important changes in IHL. The outcome was the creation of the 1976 Environmental Modification Convention (ENMOD) and the 1977 Additional Protocol I. (AP I.). Despite this, legal changes did not result in successful environmental protection. More destruction famously occurred in 1990s. Detonation of thousands of oil wells in Kuwait caused long-term fires, severe air pollution, acid rain, lowered temperatures, oil droplets in the desert, two gigantic oil spills in the Gulf and more.[14] An on-site journalist for TIME magazine called the events in Kuwait an 'environmental inferno'.[15]

Again, the environmental destruction was followed by international outrage. Under these conditions, the UN General Assembly (GA) requested the ICRC to draft guidelines which would address the issue. These eventually came to light in 1994 and were reevaluated in 2020.[16] The Guidelines, nevertheless, provide only advice of what actors, especially states, ought to do; they are not binding.

3 Ukraine

The voluntary nature of the Guidelines becomes evident from the situation in Ukraine. The environment has been hit hard ever since the Crimean Peninsula was invaded by Russian troops in 2014. Reports have pointed to a large environmental burden due to flooding of mines, causing fear of heavy metal and radioactive contamination of water, big releases of methane, pollution of soil, and damage to protected areas.[17] The situation deteriorated after February 2022 when

n.d., Scorched Earth ... [online]. Available at: <https://norskfolkemuseum.no/en/scorched-earth-> Accessed: 20.5.2022

13 UKEssays. Environmental Impacts of the Manhattan Project. [online]. Available at: <https://www.ukessays.com/essays/environmental-studies/long-term-environmental-impacts-of-the-manhattan-project.php?vref=1> Accessed: 20.12.2021

14 MANNION, Antoinette M. The Environmental Impact of War & Terrorism. *Geographical Paper,* 2003, Issue 169, pp. 8.; SPADARO, Paola Andrea. Climate Change, Environmental Terrorism, Eco-Terrorism and Emerging Threats. *Journal of Strategic Security*, 2020, vol 13, n. 4, pp. 63.; CAGGIANO, Majk J. T. The Legitimacy of Environmental Destruction in Modern Warfare: Customary Substance Over Conventional Form. *Boston College Environmental Affairs Law Review*, 1993, vol. 20, n. 3, pp. 479–480.; MICHAELIS, 1991, pp. 101.

15 LEIBLER, Anthony. Deliberate Wartime Environmental Damage: New Challenges for International Law. *California Western International Law Journal*, 1992, vol. 23, n. 1, pp. 67.

16 ICRC a, 2020. *Rules and recommendations relating to the protection of the natural environment under international humanitarian law, with commentary.* [online]. Available at: <https://www.icrc.org/en/document/guidelines-protection-natural-environment-armed-conflict-rules-and-recommendations-relating> Accessed: 13.03.2022.

17 HOOK, Kristina & Marcantonio, Richard. Environmental dimensions of conflict and paralyzed responses: the ongoing case of Ukraine and future implications for urban warfare.

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the whole country was drawn into war. Air quality worsened due to emissions from heavy combat, bombardment of chemical plants and factories.[18] Fighting caused water shortages with expectation of further water pollution, while heavy shelling led to wildfires and deforestation, and attacks on wildlife refuges negatively impacted biodiversity.[19] Likewise, reports show that Russia is deliberately targeting the food sector, agricultural equipment, and warehouses.[20] Existing crops are destroyed, and fertile soil devaluated; according to the EU as much as 34% of Ukrainian agroecosystems cannot be cultivated.[21] Given that Ukraine belongs to the world's main grain producers, the implications are far reaching.[22]

Together with the months-long blockade of Ukraine's ports into the Black Sea, the consequences are felt globally in the form of a looming food crisis and increasing prices.[23] What is more, the suspected indiscriminate use of certain weapons as those containing white phosphorus has been very concerning. Once white phosphorus reacts with oxygen, it causes deadly burns and failure of organs in living beings.[24] Moreover, white phosphorus may remain in the environment for years as well as accumulate when in water or soil with low oxygen concentration. Through destroyed ecosystems of both animals and plants, the weapon's remnants impact the food chain for years after the conflict.[25] Equally problematic

Small Wars & Insurgencies, 2022, pp. 7–8, 16.; DENISOV & Averin, 2017. *Environmental Assessment and Recovery Priorities for Eastern Ukraine.* Vienna: Organization for Security and Co-operation in Europe.

18 FARIA, Giovana, 2022. *Scorched Earth: The Catastrophic Environmental Costs Of Russia's Invasion Of Ukraine.* [online]. Available at: <https://www.rferl.org/a/ukraine-environmental-catastrophe-russia-invasion-ecosystems/31919411.html> Accessed: 21.07.2022.

19 PEREIRA, Paulo, Bašić, Ferdo, Bogunovic, Igor & Barcelo, Damia. Russian-Ukrainian war impacts the total environment. *Science of the Total Environment*, 2022, vol. 837, pp. 3, 4.; DUPREY, Brendan & Bondarenko, Olena, 2019. *Assessing environmental impacts of armed conflict: the case of Eastern Ukraine,* Kyjiv: Truth Hounds organization, pp. 5.; MCCARTHY, Joe, 2022. *How Russia's Invasion of Ukraine Is Harming Water, Air, Soil, and Wildlife.* [online]. Available at: <https://www.globalcitizen.org/en/content/environmental-impact-of-war-in-ukraine/> Accessed: 18.07.2022.

20 MCCARTHY, 2022.

21 PEREIRA, et al., 2022, pp. 2.

22 EISELE, Ines, 2022. *Five facts on grain and the war in Ukraine.* [online]. Available at: <https://www.dw.com/en/five-facts-on-grain-and-the-war-in-ukraine/a-62601467> Accessed: 19.09.2022.; BBC, 2022. *How much grain is being shipped from Ukraine?* [online]. Available at: <https://www.bbc.com/news/world-61759692> Accessed: 20.09.2022.

23 MCCARTHY, 2022.

24 BÉNÉZIT, Juliette & Slavicek, Marie, 2022. *War in Ukraine: What are white phosphorus bombs?* [online]. Available at: <https://www.lemonde.fr/en/international/article/2022/03/25/war-in-ukraine-what-are-white-phosphorus-bombs_5979151_4.html> Accessed: 19.10.2022; FALK, Thomas O., 2022. *Phosphorus bombs: What you should know about Russia's alleged use.* [online]. Available at: <https://www.aljazeera.com/news/2022/7/5/phosphorus-bombs-explainer> Accessed: 19.10.2022.

25 MOJABI, Seyed Mohammad et al., 2010, Environmental Impact of White Phosphorus Weapons on Urban Areas, *2010 International Conference on Environmental Engineering and Applications*, pp.113-114.

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has been the reduction of environmental oversight, management, and preventive measures. Ukrainian environmental institutions continuously cannot reach occupied territories or provide services where active fighting resumes.[26] In turn, reliable and complete data are not available, making forecasting of the aftermath on environment and human health very difficult.[27] As Pereira et al. note, it is nevertheless clear that the environmental harm to water, air, soil and wildlife is projected to be long-term.[28] Human health will inevitably be affected too.

4 Aiming for a Better Future

Based on these devastating Ukrainian experiences it is the purpose of this article to address the most pressing issues when it comes to an IHL-environment nexus, and to offer four propositions how to move forward. First and foremost, the consensus within the international community is viewed as the basis of any possible changes. Until now, politicization has prevented agreement. Yet the events since February 24th show that there are lessons to be learned from past conflicts. Up until this point, the core set of rules for environmental protection in international armed conflicts are set out by the Additional Protocol I. to the Geneva Conventions and the ENMOD Convention. For non-international conflicts national legislation and military manuals pave the way.

There are also problems with the way in which the environment is, or rather is not incorporated into IHL, but this commentary is primarily concerned with the core standards. Most crucially, there are differences between documents, meaning actors disagree on principles which should be kept, as is the case of AP I. versus ENMOD.[29] On one hand, AP I. (Part 3, Section 1, Article 35(3); Part 4, Section 1, Chapter 3, Article 55(1)) prohibits acts that would have "widespread, long-term *and* severe effects", while on the other ENMOD (Article 1) states that "widespread, long-term *or* severe effects" are prohibited.[30] Thus, while one points to the precondition that all three standards must be met (cumulative), for the other breach of any one of them is not acceptable (individual).[31] What is more, in the Rome Statute of the ICC the breaches must be accumulated too (Part 2, Article 8, (2)(b)(iv)); only then they could be prosecuted as a war crime.[32] Hence, depending on the circumstances

26 DUPREY & Bondarenko, 2019, pp. 6.
27 HOOK & Marcantonio, 2022, pp. 6–7.
28 PEREIRA, et al., 2022, pp. 2.
29 LEIBLER, 1992, pp. 110.; CAGGIANO, 1993, pp. 490–491.
30 LEIBLER, 1992, pp. 110.
31 ICRC b, 2020.Guidelines on the Protection of the Natural Environment in Armed Conflict: *Rules and Recommendations Relating to the Protection of the Natural Environment under International Humanitarian Law, with commentary.* pp. 29–30.
32 INTERNATIONAL CRIMINAL COURT, 2011. *Rome Statute of the International Criminal Court.* [online]. Available at: <https://www.icc-cpi.int/sites/default/files/RS-Eng.pdf> Accessed: 10.5.2022.

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(environmental modification or destruction), either of the conditions (cumulative/individual) can be viewed as applicable despite being contradictory. This lack of clarity in turn leads to problems of vagueness and individual interpretations, if not resolved.[33]

Aside from the cumulative versus individual conditions question, another issue is their literal meaning. In relation to AP I., Leibler suggests that widespread refers to at least an entire region of several hundred kilometers, long-term means lasting for at least several decades, and severe may be understood as causing death, ill-health or loss of sustenance to thousands of people in the present or in the future.[34] By contrast, the ENMOD Convention sets up much lower thresholds; widespread as an area of several hundred square kilometers, long-term meaning a time span of a few months (approximately a season), and severe to involve serious or significant disruption or harm to humans, natural and economic resources, or other assets.[35] According to Freeland, the ICC on one hand supports the cumulative interpretation, but on the other sees the conditions understood from AP I. as inadequate, causing uncertainties and ambiguities.[36] What is more, Rule 2 from the ICRC Guidelines suggests the three conditions are cumulative and determine the absolute ceiling of permissible destruction.[37]

Considering the implications of a destroyed natural environment for any population linked to that environment, it is the author's view that the ENMOD guidance should be followed, under which reaching any of the three thresholds in a conflict would constitute a breach of IHL (individual approach). If the ceiling is kept unattainably high (cumulative) as in AP I. and the Rome Statute, this may leave the door open for actions breaching only one or two of the three conditions, in turn forsaking the environment. In other words, the environment would be left vulnerable to significant impacts that fall just below the threshold of a war crime, e.g. that are severe and widespread but not long-term, or severe and long-term but not widespread. In turn, prosecution would be difficult as was the case with the Committee Established to Review the NATO Bombing Campaign Against the Federal Republic of Yugoslavia.[38] Thus, based on wide ranging environmental concerns of the 21st century in both peace and war time, and the limitations of the existing provisions (*de lege lata*) I suggest there is a need for revisions to achieve functional solutions (*de lege ferenda*). Hence, I argue that a compromise has to be reached on both standards and implementation to achieve meaningful and applicable protection. The standards are excessively broad in

33 LEIBLER, 1992, pp. 102.

34 LEIBLER, 1992, pp. 111; SASSÒLI, Marco. International Humanitarian Law: Rules, Controversies, and Solutions to Problems Arising in Warfare. Cheltenham: Edward Elgar Publishing Limited, 2019, pp. 570–571.

35 FREELAND, 2015, pp. 78.

36 FREELAND, 2015, pp. 90.

37 ICRC b, 2020, pp. 29–30.

38 ICRC b, 2020, pp. 30.

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scope and should arguably be lowered, as they constrain the necessary international condemnation of environmentally harmful practices in warfare.[39]

While I acknowledge that the current climate is not likely to produce agreements within the UN Security Council (SC), any new IHL treaty, or re-define the old ones, there are ways how the re-standardization might be achieved, namely through the GA.[40] Via a resolution, a majority interpretation by the GA could change the unfavorable status quo by relying on customary law. More specifically, the generally recognized norms and principles may hold essential value when advancement of treaty law in the extent of the Hague or Geneva Conventions seems unlikely.[41] A good example is the GA Resolution 2603A that declared the US use of herbicides in the Vietnam war as contrary to IHL. Accordingly, the USA acted contrary to the 1925 Protocol for the Prohibition of the Use of Asphyxiating, Poisonous or Other Gases, and of Bacteriological Methods of Warfare.[42]

Moreover, should the GA call for the strict observance of the principles and objectives of the resolution, it would make it a requirement for all states not just contracting parties.[43] That is because under strict observance the community would require individual states to comply with the commonly agreed rules, principles, and norms. As such, it would be comparable to a custom. A good example of this is the strict observance of the prohibition of the threat or use of force in international relations.[44] On this basis, the International Court of Justice (ICJ) could act upon violations of the agreed standards, if requested to do so, i.e. the GA could request an advisory opinion. Another possibility how the Court might be involved is if Ukraine submits a case on the basis of a breached agreement, such as the 1994 Budapest Memorandum on Security Assurances.

In exchange for giving up their nuclear programs, Ukraine, Belarus, and Kazakhstan were guaranteed independence and protection from threats/acts of aggression (including nuclear arms) from Russia, the USA, and the UK. China and France provided weaker assurances. As a matter of fact, the ICJ has already received a motion for an investigation against the Russian Federation under the Genocide Convention.[45] The same could be then theoretically achieved in terms

39 LEIBLER, 1992, pp. 111; FREELAND, 2015, pp. 87.

40 FALK, Richard A. Environmental Warfare and Ecocide – Facts, Appraisal, and Proposals. *Bulletin of Peace Proposals*, 1973, vol. 4, n. 1, pp. 86.

41 FALK, 1973, pp. 81.

42 UN GENERAL ASSEMBLY (24th sess.: 1969), 1970. *Question of chemical and bacteriological (biological) weapons.* New York: UN. General Assembly (24th sess.: 1969), pp.16.

43 FALK, 1973, pp. 83.

44 UNHCR, 2023. *Strict observance of the prohibition of the threat or use of force in international relations, and of the right of peoples to self-determination*. [online]. <https://www.refworld.org/docid/3b00f1c94d.html> Accessed: 24.1.2023.

45 INTERNATIONAL COURT OF JUSTICE, 2022. *Ukraine institutes proceedings against the Russian Federation and requests the Court to indicate provisional measures,* The Hague:

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of severe environmental destruction, building on the unfortunate Ukrainian case. Given reports of the kinds of targets being selected (especially agriculture, industry, and energy infrastructure), the vast Ukrainian territory that has been attacked, the types of weapons being used, and the implications of the targets' destruction (pollution, burning, radiation, water shortages), we can expect to see environmental destruction that goes beyond the thresholds defined in ENMOD, possibly reaching AP I. ceilings. The most recent Russian claims that Ukraine possesses and plans to use a dirty bomb on its own territory under the pretext of blaming Russia gives further weight to this assessment. Dirty bombs contain radioactive materials designed to contaminate wide areas.[46] In combination with Vladimir Putin's statements about possible use of tactical nuclear weapons, there is a fear that Russia is planning to use some form of nuclear weapons and shift the blame on Ukraine.[47]

Secondly, I suggest that the mainstreaming of environmental protection during armed conflict holds great importance. Clear standards relating to the environment ought to be promoted and taken as seriously as core principles of IHL.[48] Such mainstreaming might be most relevant among military personnel because in the end it is they who implement the rules. Hook and Marcantonio have pointed to the need to train military and non-state actors on how to deal with the ecological issues associated with armed conflict.[49] Similarly, this has been inferred by Rule 27 of the ICRC Guidelines which refers to the national implementation of IHL rules protecting the environment. Under this rule, states ought to enact legislation for the regulation or imposition of sanctions applicable by national courts. In addition, the rule envisions training of armed forces in line with IHL provisions and encourages teaching IHL also to the civilian population (Rule 30). Relying on national committees or similar entities with responsibility for advising and assisting authorities involved in IHL implementation might prove to be beneficial.[50] As for direct training of military personnel on IHL nuances, Rule 29 implies "…to induce behavior compliant with the law, rules of IHL protecting the natural environment mu*st not be taught simply as an abstract and separate set of legal norms but rather must be integrated into the armed forces' regular activity*, training and instruction such that *they effectively influence their culture and its underlying values* [emphasis added]."[51]

International Court of Justice.

46 BEAUMONT, Peter & Roth, Andrew, 2022. *What are dirty bombs and why is Russia talking about them?* [online]. Available at: <https://www.theguardian.com/world/2022/oct/25/what-are-dirty-bombs-russia-ukraine> Accessed: 25.10.2022.

47 EDITORIAL BOARD, 2022. *Opinion: Putin threatens nuclear war. The West must deter disaster.* [online]. Available at: <https://www.washingtonpost.com/opinions/2022/10/03/putin-nuclear-war-ukraine-deter/> Accessed: 24.10.2022.

48 FALK, 1973, pp. 81.

49 HOOK & Marcantonio, 2022, pp. 4.

50 Ibid, pp. 107–108.

51 Ibid, pp. 111–112.

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The ICRC envisages military manuals, field manuals, courses and videos to be used for such purposes. Rank and responsibility ought to be taken into consideration to achieve IHL compliance.[52] In reference to the assistance, ICRC adds Rule 31 referring to legal advice to the armed forces. Here again, the idea of IHL legal advisers is underlined, but this time for the sake of military commanders at the appropriate level.[53] Most importantly however, mainstreaming and training for proper implementation on all sides is needed in order to prevent dismissive responses when such issues are raised, as was the case with Russia's 'special operation'. Russia accused other states of being hypocritical in reaction to the raised environmental concerns by several member states during the 5th UN Environmental Assembly.[54] While on one hand this stance is not unfounded because of proven environmental destruction by other states in previous conflicts throughout history, on the other hand it should not be considered valid reasoning on Russia's part either. To say that one can destroy the environment because others have done so before is illogical, especially when there are well-founded fears that the negative impacts will not stay within Ukrainian borders and will eventually be felt by Russia too.

Thirdly, the interconnectedness between energy and environment, and the dangers stemming from energy infrastructure (if destroyed) must be made very clear. Water and energy infrastructures has become a deliberate and popular target/tactical weapon in warfare despite its dual use (military, and civilian). This trend is very noticeable in the MENA region.[55] After all, not only have Kuwait's oil fields been destroyed by the retreating Iraqi army, but allied forces targeted much of Iraq's water and energy infrastructure in retaliation.[56]

Ukraine is no different in this regard. The east of Ukraine, where the majority of fighting has occurred since 2014, is heavily industrialized and has substantial water and energy infrastructure.[57] This heightens the risks even more, for bombings or destabilization of water and energy plants might be even more catastrophic than the previous burning and spills of oil wells. For example, in response to the 2014 annexation, 85% of water supplies from the river Dnipro were cut off from the Crimean Peninsula by Ukrainians. Consequently, a local titanium plant ran out of cooling water, releasing pollutants into the air. Many of the local population experienced respiratory problems, allergic reactions, and

52 Ibid b, pp. 111–112.

53 ICRC, pp. 114.

54 DHINGRA, Ritu, 2022. *The War Between Russia and Ukraine – An Environmental Disaster.* [online]. Available at: <https://www.iucn.org/fr/node/32961> Accessed: 19.07.2022.

55 SOWERS, Jeannie L., Weinthal, Erika & Zawahri, Neda. Targeting environmental infrastructures, international law, and civilians in the new Middle Eastern wars. *Security Dialogue*, 2017, vol. 48, n. 5, pp. 411.

56 SOWERS, et al., 2017.

57 UKRAINER.NET, 2022. *Crimes against the environment after one month of Russia's war against Ukraine.* [online]. Available at: <https://en.ecoaction.org.ua/crimes-against-environment.html> Accessed: 18.07.2022.

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skin burns as a result. In addition, crops and other vegetation were negatively affected too.[58] In a turn of events, in early stages of the war in February 2022, the Russian army destroyed the Ukrainian dam on the North Crimean Canal which blocked that water supply.[59] As the ICRC Guidelines imply, in the end the natural environment was, yet again, the silent casualty of the attacks, notwithstanding the impact on civilians. According to energy law counsel at CMS Cameron McKenna, Nabarro Olswang, these kinds of attacks on energy infrastructure are a deliberate tactic.[60] This view is supported by Ecoaction, a Ukrainian environmental NGO. According to Ecoaction, in the first month of the war alone their staff recorded more than 100 environmental crimes committed by the Russian army. Approximately one third were related to energy and nuclear safety. Reports state the Russian side has bombed or damaged multiple power plants, among the most noticeable ones the nuclear plants Zaporizhzhia and Chernobyl. Other affected ones were Hydropower plant Kakhovska, and a thermal plant Tripillya, oil refineries, Chernihiv and Lviv oil storages.

Drilling platforms, gas and oil pipelines were damaged also.[61] More than 10 000 ha of forests in the Chernobyl Exclusion Zone caught on fire due to shelling; here, radioactive air pollution has been confirmed by the commissioner for human rights in the Verkhovna Rada (Ukrainian Parliament), although the local regulator claimed the risks were low.[62] Eight months into the war, Russia has doubled down on energy infrastructure attacks. Amnesty International reported that Russia is purposefully targeting civilian infrastructure including energy facilities with the end goal of disrupting industrial production, transportation, and depriving civilians of water and electricity as winter approaches. Reportedly, about 40% of Ukrainian energy facilities have been seriously damaged as of

58 DEUTSCHE WELLE, 2018. *Crimea: Mysterious chemical incident evokes memories of Chernobyl disaster.* [online]. Available at: <https://www.dw.com/en/crimea-mysterious-chemical-incident-evokes-memories-of-chernobyl-disaster/a-45376308> Accessed: 20.07.2022.; HOOK & Marcantonio, 2022, pp. 2.

59 RODIONOV, Maxim, 2022. *Russian troops destroy Ukrainian dam that blocked water to Crimea – RIA*. [online]. Available at: <https://www.reuters.com/world/europe/russian-troops-destroy-ukrainian-dam-that-blocked-water-crimea-ria-2022-02-26/> Accessed: 20.07.2022.

60 CARELLA, Claudia, 2022. *Ukraine: the war fought on the energy front: Interview with Ukrainian energy expert Maryna Ilchuk.* [online]. Available at: <https://fsr.eui.eu/ukraine-the-war-fought-on-the-energy-front/> Accessed: 17.07.2022.

61 UKRAINER.NET, 2022; FARIA, Giovana, 2022. *Scorched Earth: The Catastrophic Environmental Costs Of Russia's Invasion Of Ukraine.* [online]. Available at: <https://www.rferl.org/a/ukraine-environmental-catastrophe-russia-invasion-ecosystems/31919411.html> Accessed: 21.07.2022.; UNEP, 2022. *UN warns of toxic environmental legacy for Ukraine, region.* [online]. Available at: <https://www.unep.org/news-and-stories/press-release/un-warns-toxic-environmental-legacy-ukraine-region> Accessed: 20.07.2022.

62 FROST, Rosie, 2022. *Chernobyl: Radioactive air pollution released by massive forest fires, officials warn.* [online]. Available at: <https://www.euronews.com/green/2022/03/28/chernobyl-radioactive-air-pollution-released-by-massive-forest-fires-officials-warn> Accessed: 22.07.2022.

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mid-October 2022 and there will be power outages in the coming weeks.[63] Most crucially however, environmental damage related to power plants (particularly nuclear ones) will not be felt in Ukraine alone. It is likely to spread through borders to the Russian federation, Belarus, European Union as well as other neighboring countries, similarly to Kuwait where the oil spills and air pollution spread beyond its borders.[64] It is therefore in the international community's best interest to limit attacks on this kind of infrastructure.

The fourth point made here is that accountability for environmental destruction during armed conflict ought to be regarded more seriously and in a systematic fashion. This means including environmental damages in armed conflicts in the agenda of law enforcing institutions (international and national). Environmental breaches must be acknowledged as equally important as purely anthropocentric concerns, and adequately prosecuted in turn. The armed conflicts of the past decades have repeatedly revealed the limits of contemporary international legal mechanisms on environmental protection. The ICRC notes that so far, few people have been held individually criminally liable for war crimes related to the environment.[65] The reason being that states decide not to comply due to military and political reasons even where there are applicable environmental provisions.[66] Reaching the given standards of widespread, long-term, and severe in combination with definite intent has proven to be equally difficult. As noted above, the International Criminal Tribunal for the Former Yugoslavia (ICTY) decision on Yugoslavia v. NATO (1999), relating to the bombardment of chemical plants and oil installations, concluded that the evidence did not meet the thresholds of AP I. Articles 35(3) and 55. It also stated that the bombing may have served a clear and important military purpose, that it would be necessary to have insight into the intelligence NATO had about the nature of targets, and whether different means could have achieved the same results. At the same time, ICTY deemed the standards widespread, long-term, and severe as imprecise, extremely stringent, and difficult to be achieved. Importantly, it referred to Article 55 as reflecting current customary law, making it applicable to non-parties to AP I.[67]

In terms of Omar Al-Bashir tried by ICC (2009), the prosecution issued an arrest warrant for crimes against humanity, war crimes and genocide, which additionally covered acts of contamination and bombing of wells and water

63 AMNESTY INTERNATIONAL, 2022. *Ukraine: Russian attacks on critical energy infrastructure amount to war crimes*. [online]. Available at: <https://www.amnesty.org/en/latest/news/2022/10/ukraine-russian-attacks-on-critical-energy-infrastructure-amount-to-war-crimes/> Accessed: 21.10.2022.; BRZEZINSKI, Bartosz, 2022. *Russia intensifies airstrikes on Ukraine's energy infrastructure.* [online]. Available at: <https://www.politico.eu/article/russia-intensifies-airstrikes-on-ukraines-energy-infrastructure/> Accessed: 21.10.2022.

64 HOOK & Marcantonio, 2022, pp. 16–17.

65 ICRC b, 2020, pp. 110.

66 ICRC, n.d.

67 ICRC, n.d.

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pumps in Darfur. However, this argument was disproven by the judges because "… there are no reasonable grounds to believe that such a contamination was a core feature of their attacks."[68] Despite this, there are some positive examples in case law too. For one, the Nuremberg military Tribunals (1945) convicted German military officer Alfred Jodl for scorched earth practices in Norway.[69] Then, in the 1990s, the aforementioned SC Resolution 687 established the United Nations Compensation Committee for Kuwait, which among other issues addressed also the environmental impacts of the invasion caused by Iraq.[70] Hussein and his 11 associates were formally charged for the environmental damage under the Supreme Iraqi Criminal Tribunal.[71] In the new millennium, the ICJ decided in the case DRC v. Uganda (2005) a duty of reparation for looting, plundering and exploitation of Congolese natural resources as an occupying power.[72] More recently, in 2016, the ICC issued a policy paper on case selection and prioritization which noted that "The office [of the prosecutor] will give particular consideration to prosecuting Rome statute crimes that are committed by means of, or that result in, inter alia, the destruction of the environment, the illegal exploitation of natural resources or the illegal dispossession of land."[73]

What is thus legally possible? Primarily, ICRC suggests codification of environmental protection into a functional instrument, applicable in both international and non-international armed conflicts.[74] As stated before, ICRC Rules 29 and 31 build on the idea that legal advice to state authorities, military personnel, and civilians might prevent harmful practice. Nonetheless, if this advice fails, as seems to be the case in Ukraine where the Russian army has proven very little compliance with IHL in general, ICRC suggests retribution in the form of criminal liability. Based on the current mechanisms, individuals may be held individually criminally accountable by the Rome Statue which stipulates that intentional environmental destruction is a war crime.[75] The ICC may take action if the crime occurred after July 1st 2002 (after Rome Statute entered into force), on the territory of a signatory party, on the territory of a state that accepted the court's jurisdiction, if the perpetrator originates from one of the signatory states,

68 ICC, 2009. *Situation in Darfur, Sudan: In the Case of the Prosecutor v. Omar Hassan Ahmad Al Bashir ("Omar Al Bashir").* [online]. Available at: <https://www.icc-cpi.int/sites/default/files/CourtRecords/CR2009_01517.PDF> Accessed: 18.10.2022.

69 ICRC b, 2020, pp. 110.

70 SOWERS, et al., 2017, pp. 414.

71 SOWERS, et al., 2017.

72 ICRC, n.d. *The Environment and International Humanitarian Law.* [online]. Available at: <https://casebook.icrc.org/case-study/environment-and-international-humanitarian-law> Accessed: 19.10.2022.

73 VIDAL, John & Bowcott, Owen (2016). *ICC widens remit to include environmental destruction cases.* [online]. Available at: <https://www.theguardian.com/global/2016/sep/15/hague-court-widens-remit-to-include-environmental-destruction-cases> Accessed: 19.10.2022.

74 ICRC, n.d.

75 SOWERS, et al., 2017, pp. 413–414.

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or if the SC refers a case to ICC.[76] ICRC Rule 28 supports this aim and directs responsibility for war crimes, including those related to environment, to commanders and other superiors, even for war crimes committed by subordinates. If those in power "… knew, or had reason to know, that the subordinates were about to commit or were committing such crimes and did not take all necessary and reasonable measures in their power to prevent their commission, or if such crimes had been committed, to punish the persons responsible."[77]

According to the Rule, this applies both in international and non-international armed conflicts, without the precondition of harm caused to human beings. In other words, it results in liability for the harm to the natural environment per se. At the same time however, the question whether the crime (destruction of environment) was the means, or the result might have impact on the prosecution. Also, the prosecution could take into consideration the measure of inflicted damage on an affected community, and whether illegal exploitation of natural resources or illegal dispossession of land took place.[78] Additionally, the ICRC proposed broadening the principles of the SC Resolution 687, creating a permanent UNCC that could deal with compensations for wartime environmental damage.[79] While these are first steps for tackling the problem, the international community must see that there is opportunity for prevention as well as actual resolution to the crimes. Put differently, there are many suggestions how environmental protection in armed conflict might be achieved, such as preemptively altering the means of warfare but also how to enact prosecution if the deed is done. The only remaining problem is the enactment which remains in the hands of actors, namely states. Thus, there seems to be a need for a turning point in states' position. Considering the type and amount of environmental destruction being carried out in Ukraine, with potential far-reaching cross-border effects, this might just be such a point in IHL, with similar implications to Vietnam or Kuwait.

5 National and International Steps Toward Legal Action

There have already been national attempts to pursue justice with regard to the environmental damage in Ukraine. In early March, the Ukrainian Mistry of the Environment initiated an investigation into crimes against environment, and the State Environmental Inspection preemptively estimated environmental damages to be as much as USD 77 million.[80] Ecoaction is likewise attempting to bring international criminal charges against the Russian Federation for per-

76 ICC, n.d. How the Court works. [online]. Available at: <https://www.icc-cpi.int/about/how-the-court-works> Accessed: 23.10.2022.

77 ICRC b, 2020, pp. 109.

78 Ibid, pp. 110.

79 ICRC, n.d.

80 Weekly updates of environmental damage done by the Russian army: https://mepr.gov.ua/en/timeline/Novini.html.; UKRAINER.NET, 2022.

petrating ecocide.[81] From the international side, the Organization for Security and Cooperation in Europe, the UN Environmental Programme and the Ukrainian government have launched a digital platform EcoDozor to record incidents together with environmental risk assessments intended to help researchers and policy makers prioritize environmental threats.[82] The European Union has likewise acknowledged the environmental impacts. In the plans for rebuilding Ukraine environmental questions ought to be at the top of the agenda, as implied by the EU Commissioner for Environment and the UN Resident Coordinator for Ukraine.[83] Nonetheless, reconstruction is expected to take generations which underlines the importance of the aforementioned four points.[84]

Another positive development since May 2022 is the adoption of 27 Draft Principles by the UN International Law Commission, applicable to international as well as non-international armed conflicts, addressing pre-conflict, conflict, and post-conflict protection.[85] In sum, it is meant to be a mixture of treaty law including IHL, plus new best practices for state and non-state actors. Meanwhile, the principles have been forwarded to the GA for final consideration and should be evaluated in the coming months during the 73rd session. Work is still in progress according to the ILC website. ILC expects states will implement the rules via domestic law and military manuals.[86] Therefore, it is possible to conclude that there is a notable national and international interest in the environmental damage arising out of the conflict in Ukraine. More than that, this is obvious from the fact that Ukraine, supported by other predominantly European states, has taken the issues to international courts.

In terms of the ICC, this court may act in questions of genocide, crimes against humanity, war crimes and crimes of aggression. Individuals can be charged; however, the court may take action only if states are either incapable or unwilling to prosecute offenders by their own national criminal institutions. Bringing a case before the ICC requires input, yet neither Russia, nor Ukraine are signatory parties to the Rome Statute. It was likewise improbable that the SC

81 MCCARTHY, 2022.

82 To see the in-depth geo-visual data, go to: https://www.ecodozor.org/index.php?lang=en;bOSCE, n.d. *Environmental Impact of War: Initial Data for Risk Assessment.* [online]. Available at: <https://www.osce.org/project-coordinator-in-ukraine/520265> Accessed: 18.07.2022.; UNEP, 2022.; OSCE, 2022.

83 UNEP, 2022.

84 AGENCE FRANCE-PRESSE, 2022. *Plans to Rebuild Ukraine Should Address Environment, EU Commissioner Says.* [online]. Available at: <https://www.voanews.com/a/plans-to-rebuild-ukraine-should-address-environment-eu-commissioner-says/6641987.html> Accessed: 22.07.2022.

85 To see the Draft Principles, go to: https://documents-dds-ny.un.org/doc/UNDOC/LTD/G22/348/04/PDF/G2234804.pdf?OpenElement.

86 HULME, Karen & Hessami, Elisabeth B., 2022. *New Legal Protections for the Environment in relation to Armed Conflict.* [online] Available at: <https://www.iucn.org/story/202207/new-legal-protections-environment-relation-armed-conflict> Accessed: 19.07.2022.

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would submit the Ukrainian case, for Russia and possibly China would most likely veto such an attempt. Nevertheless, the Rome Statute offered a leeway (Article 14, paragraph 1) whereby the signatory states have the right to refer to the ICC prosecutor a situation in which there is evidence that one or more crimes within the jurisdiction of the Court have been committed. Such a joint submission was provided in relation to the situation in Ukraine on March 1st, 2022 by a number of states and was supported by other joining parties throughout March to April. In addition, Ukraine has twice exercised its prerogative to accept the court's jurisdiction (applicable since November 2013-). Therefore, the prosecutor has announced he will open an investigation into any past and present allegations of war crimes, crimes against humanity or genocide on the Ukrainian territory since November 2013.[87]

At the time of this article being written (2022), the investigation is ongoing. In terms of the results, it is not possible to state what the outcome will be. What is clear though, is that the prosecution would have to make a successful case that the environmental crimes have been committed. Namely, to prove a breach of existing law (e.g., disproportionality, insufficient military advantage), the deliberate act of destruction (*actus reus*), causality, plus criminal intent (*mens rea*) among others. But even with a favorable decision, it is debatable whether Russian high command would be prosecuted because those individuals held responsible would have to be caught or extradited from Russia, something which is deemed unlikely while the current regime in Moscow holds. Another problem is the likely course of action in which Russian state representatives would claim jurisdictional immunity.[88] Such immunities are applicable to officials except in matters of war crimes, crimes against humanity, and genocide. What could be therefore an option for Ukraine (and the prosecutor) is to build a case around the question of genocide, war crimes, and crimes against humanity, and incorporate the vast environmental breaches into it. In respect to this, van Huis argues that environmental harm cannot be addressed on its own but must be tied with other crimes in the jurisdiction of the ICC. He claims it is because the 2016 policy paper is no legal instrument that could put 'environmental crimes' on the same level as the four main ones.[89] Simultaneously, should the environmental damage be tied to the other crimes, it would hinge on the ICC decision in the matter of genocide, crimes against humanity, war crimes and crimes of aggression. In other words, failure in one would mean failure in the other.

87 ICC, 2022. *Ukraine*. [online]. Available at: <https://www.icc-cpi.int/ukraine> Accessed: 23.10.2022.

88 MÉDECINS SANS FRONTIÈRES, n.d. *Immunity*. [online]. Available at: <https://guide-humanitarian-law.org/content/article/3/immunity/> Accessed: 23.5.2022.

89 VAN HUIS, Stijn Cornelis, 2019. *Environmental Crimes Brought Before ICJ and ICC Tribunals: A Distant Prospect?* [online]. Available at: <https://business-law.binus.ac.id/2019/11/05/environmental-crimes-brought-before-icj-and-icc-tribunals-a-distant-prospect/> Accessed: 23.10.2022.

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Similarly to the ICC, ICJ has limited reach. The court adjudicates only disputes between states, which are filed by states. Moreover, ICJ can consider disputes only between states which recognize the court's jurisdiction. As with the ICC, neither Russia nor Ukraine recognize the ICJ. However, both are parties to Convention on the Prevention and Punishment of the Crime of Genocide (1948), Article 9 of which establishes that any dispute about its interpretation, application or fulfillment should be submitted to the ICJ.[90] In line with that, mere three days after the war started Ukraine filed an application to the ICJ against Russia regarding a dispute relating to the Genocide Convention. According to the application Russia started its 'special operation' on the basis of false claims about an occurring genocide in Ukraine. Contrary to its own arguments however, it appears Russia is now pursuing such actions against Ukrainian nationals.[91] Russia has questioned the court's jurisdiction in this case, which has in turn been dismissed by the court. Reportedly, the court has not received any evidence from the Russian side that would support Russia's argumentation about self-defense so far. While the court has no power to enforce its decisions in favor of Ukraine, which would compel Russia to immediately suspend its military operation, it delegitimizes Russia's actions internationally.[92] With respect to the Genocide Convention, there are no references or connections to the natural environment however, only to the human population.

Another possible legal route could be a separate case. A case could for example go before the ICJ based on a relevant environmental convention which both countries ratified, similarly to Argentina v. Uruguay (2006), or South Korea considering a case against Japan under the United Nations Convention on the Law of the Sea.[93] The result would depend on the ability to calculate the devastation and its compensation in the form of pecuniary damages. Should this be impossible due to the nature of the damage (e.g. polluted air and water sources for decades), just satisfaction is another option. In sum, there are multiple legal pathways open to Ukraine (or individuals), nevertheless there are many questions and uncertainties about the results. These include the general political unwillingness to deal with environmental issues, the jurisdiction of legal bodies, the standing of

90 UN, 1948. *Convention on the Prevention and Punishment of the Crime of Genocide.* [online]. Available at: <https://www.un.org/en/genocideprevention/documents/atrocity-crimes/Doc.1_Convention%20on%20the%20Prevention%20and%20Punishment%20of%20the%20Crime%20of%20Genocide.pdf> Accessed: 23.10.2022.

91 ICJ, 2022. *Ukraine institutes proceedings against the Russian Federation and requests the Court to indicate provisional measures.* [online]. Available at: <https://www.icj-cij.org/public/files/case-related/182/182-20220227-PRE-01-00-EN.pdf> Accessed: 23.10.2022.

92 SOUSA, Flávia Salazar, 2022. *Understanding the ICJ's Order on the Allegations of Genocide in Ukrainian Territory (Ukraine v. Russian Federation).* [online]. Available at: <https://basicint.org/understanding-the-icjs-order-on-the-allegations-of-genocide-in-ukrainian-territory-ukraine-v-russian-federation/> Accessed: 23.10.2022.

93 ZHIGUO, Gao & JIANGTAO, Qian, 2021. *Potential victimized countries can take legal action against Japan dumping radioactive waters.* [online]. Available at: <https://www.globaltimes.cn/page/202104/1221493.shtml> Accessed: 25.10.2022.

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environmental damages (considered alone or in relation to humans), the evidence and statute of limitations, and finally the enforcement. Hence, the course of action remains unclear. Results may take years and the implementation of a decision will depend on the political situation that unfolds. Nonetheless, there are initial positive indications that the Ukrainian government and the international community are actively considering environmental damages in their future legal steps against the aggressor.

6 Conclusions

Overall, it is very hard to estimate the extent of the environmental damage in Ukraine given that the war is still ongoing. Nevertheless, it is clear that recovery of the country including its environment will be a long and difficult process. It is in this light that I outline four propositions for change of the law applicable during conflict. Primarily, I argue that the definitions of the three conditions (long-term, severe, widespread) have to be unified within IHL. Ideally, their threshold ought to be lowered to assure as much environmental protection as possible. Currently, the rather unclear terms leave room for individual interpretation and set unreachable ceilings. Secondly, mainstreaming or normalization of environmentally cautious actions should take place within army personnel to warrant appropriate behavior on the battlefield because the environment cannot afford to be a secondary concern. The ICRC guidelines detail various ways in which such mainstreaming may take place. Crucial is that the IHL rules, including those referring to environmental protection, ought to be taken as a norm and followed automatically. If achieved, this measure could have great preventative effects. Thirdly, energy infrastructure, if damaged or destroyed, has extensive impacts on the environment. Moreover, this type of infrastructure is classified as dual use, meaning attacks must carefully evaluate proportionality of military gains versus civilian need. Despite that, energy infrastructure has become one of the main targets in Russia's 'special operation' in Ukraine, including extremely vulnerable nuclear power plants. The targeting worsened before and during the winter. Lastly, environmental destruction must be diligently included in criminal charges along other war crimes if justice ought to be served in full extent. Here, both the ICRC and ILC guidelines and principles can serve as reference for actors on how to alter their behavior in conflicts. Equally, the inclusion of environmental damage in the legal steps taken so far is deemed to be a good sign. Hopefully, despite the lamentable destruction in Ukraine, this case can serve as a turning point for the international community's willingness to act. It is essential to keep in mind that the environment knows no borders. Hence, it is vital for all that the status quo changes.

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