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INTERNATIONAL ENVIRONMENTAL LAW AT A CROSSROADS: ENVIRONMENTAL GOVERNANCE IN AN ERA OF GEOPOLITICAL FRICTION

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ABSTRACT

This essay analyses the failure of international environmental law to be able to successfully address the issue of climate change amid the present escalating geopolitical conflicts. Geopolitical tensions are one of the most overlooked causes of environmental degradation. The current geopolitical dynamics have reduced global cooperation and governance for climate mitigation. While powerful states have the resources to mitigate damage, the burden of climate change falls on the developing and least developed states. Moreover, in the era of armed conflicts at their highest levels since World War II, warfare remains a significant barrier to effective climate mitigation. The world's militaries, if treated as a single country in terms of fossil fuel consumption, account for 5.5% of total global emissions, that is the fourth-largest emitter after China, the USA, and India. This essay uses a doctrinal research methodology, based on primary sources such as international reports from the United Nations and other governance bodies, along with primary sources such as policy reports, credible journalism, and commentary. This essay argues for strengthening the presently existing international environmental governance mechanisms of international law, and to further take notice of the environmental degradation caused by chemical and biological military equipment.

KEYWORDS: *International Environmental Law, Geopolitical Conflicts*

1. INTRODUCTION

For decades, environment has been used both as a target of war and used as a weapon in wars (Parsons, 1998). However, environment remains the most overlooked impact areas of an armed conflict (Fain, 2004). Geopolitical tensions have increased the risks to environmental degradation. The pre-existing treaties such as the Convention on the Prohibition of Military or Any Hostile Use of Environmental Modification Techniques, 1976 (ENMOD), Additional Protocol I to the Geneva Convention particularly its Article 35(3) and Article 55(1) and the Rome Statute have failed to ensure environmental protection during armed

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conflicts (Cartera, 2008). Environmental protection does not neatly fall within one single legal regime mechanism, instead it falls at the intersection of the two regimes of International Environmental Law (IEL) and International Humanitarian Law (IHL) (Mouratidi, 2024). Both these legal regimes have failed to appropriately address the environmental concern during an international armed conflict. IEL such as ENMOD, Convention on Biological Diversity, Ramsar Convention, etc lay down the state obligations relating to natural environmental protection, but are mostly silent on their applicability in times of war. On the other hand, IHL such as Additional Protocol I to the Geneva Convention (Sachar, 2001) and the Rome Statute (Dormann, 2003) contain certain express provisions relating to environmental protection in an armed conflict. Hence, legal framework regarding environmental protection during a war cannot be understood in isolation of the either of these, a simultaneous analysis of both IEL and IHL is necessary to understand the complete picture. This failure can be seen across the present and previously existing geopolitical tensions across the world and the effect it is having on environment. This includes the Iraqi attack over Kuwait's oil fields (Al-Damkhi, 2007), the over-bombardment and destruction of the natural ecosystems of Ukraine (Wirthova, 2023) and Gaza (UNEP, 2024, 20.500.11822/45739), and the recent US-Israel-Iran war is causing enormous degradation to the Central Asian environment.

This essay argues that the systematic failure IEL and IHL is not coincidental, but deliberate. The inability and unwillingness to establish tighter thresholds for environmental destruction during wars, to replace or improvise upon the currently existing standard of 'widespread', 'long-term' and 'severe damage' is because it favours the sovereign and territorial interests of the powerful states. In the current geopolitical landscape, powerful nations are not held accountable for their actions against the natural environment, thereby sovereign interests of a few nations are prioritised over the long-term and collective interests of the environment and the larger humanity.

This essay is divided into four parts – Part I was the introduction. Part II discusses the evolution of treaties and rules relating to environment protection in the context of armed conflict. This part also identifies the main gaps in IEL and IHL frameworks. Part III points at the interplay between these legal lacunas and geopolitical conflicts, and how environmental destruction in a geopolitical conflict is facilitated by such gaps. Part IV attempts to give viable solutions to this problem and that how these gaps can be addressed in a practical setting.

2. EVOLUTION OF LAW RELATING TO ENVIRONMENTAL PROTECTION IN INTERNATIONAL ARMED CONFLICTS AND THE EXISTING GAPS

The main contention is that there is no mutually accepted definition of 'natural environment' (Menhinick, 2016) allowing a window for manipulation and an opportunity to evade responsibility and repair by the major global powers, which increases in times of geopolitical conflicts when international players dodge accountability- leaving the natural environment to suffer. Another major threat to the environment is the use of ‘Environment Modification Technqiues’ as a tool in wars. This technique, in war has been used since time immemorial. There are evidences of use of such techniques as far back as to the 5th century BC when retreating Scythians used the so-called ‘scorched earth’ method to slow down the Persian army (Kleymeonov, 2017). Only recently, from the Vietnam War of the 1970s has the world started to acknowledge the impact of such techniques on the environment (Chiarini, 2022). Ecocide, the wilful destruction of the environment, was coined during the Vietnam War due to strategic and tactical decisions that directly targeted the environment (Chiarini, 2022). This led to the creation of ‘Convention on the Prohibition of Military or Any Hostile Use of Environmental Modification Techniques’ (ENMOD) in 1976. Environmental modification techniques involve deliberately manipulating natural processes such as weather patterns, ocean currents, or ecosystem dynamics to change the earth's atmosphere, biota, or hydrosphere (Convention on the Prohibition of Military or Any Other Hostile Use of Environmental Modification Techniques, 1976). The very next year, in 1977- Additional Protocol I was adopted. Article 35(3) and Article 55(1) expressly address the issue of environment in a warring circumstance. These two treaties prohibit the environmental damage in a geopolitical armed conflict to a maximum limit of 'widespread', 'long-term' or/and 'severe damage' (Convention on the Prohibition of Military or any other hostile use of environment modification technique, 1976) (Additional Protocol I to the Geneva Convention, 1976). The noticeable difference between these three provisions is the deliberate use of ‘and’ and ‘or’ respectively in setting the standard of environmental degradation. Additional Protocol I requires all standards to be met- ‘widespread’, ‘long-term’ and ‘severe damage’. The problem however is that there is no specific standard or definition of the terms 'widespread', 'long-term' and 'severe damage' making such a regulation as vague, redundant and without real consequences (Weinstein, 2005). There has been an attempt to define these words in reference to ENMOD, where “"Widespread" is defined as "encompassing an area on the scale of several hundred square kilometers"; "long-lasting" is defined as "lasting for a period of months, or approximately a season"; and "severe" is defined as "involving serious or significant disruption or harm to human life, natural and economic resources or

other assets." (US Department of State, 2009-2017). But still this is again an extreme vague meaning with no clarity, moreover it only applies in reference to ENMOD and not the Additional Protocol I making it a very abstract and weak attempt in the so called 'right direction'. Another landmark treaty, that follows the same benchmarks to evaluate environmental degradation in an armed conflict is the Rome Statute 1998, which established the International Criminal Court (Rome Statute, 1998). Environment Crimes are recognised under this statute (Drumbl, 2000) especially under Article 8(2)(b)(ii) and Article 8(2)(b)(iv) (Rome Statute of the International Criminal Court, 1998). Rome Statute also keeps environment central to the cultural, social, religious and spiritual life of human settlements (ICC Office Of the Prosecutor Policy On Addressing Environmental Damage Through The Rome Statute, 2025). It further acknowledges the important role of the natural environment to commit genocide. This can be through environmental damage, illegal exploitation of natural resources, or illegal dispossession of land, etc (ICC Office Of the Prosecutor Policy On Addressing Environmental Damage Through The Rome Statute, 2025). This was a forward attempt in criminalising environment war crimes, however still the Rome Statute suffers through multiple lacunas. Firstly, despite the ongoing criticism against ENMOD and Additional Protocol I, the Rome Statute also remains silent on the meaning of 'widespread', 'long-term' and 'severe damage'. Secondly, Rome Statute is of a criminal nature. Thus, in order to convict a nation state- intent and the physical act must be established separately. It must be established that these attacks were done with the intent or knowledge that the attack will create a widespread, long-term and severe damage to the natural environment (ICC Office Of the Prosecutor Policy On Addressing Environmental Damage Through The Rome Statute, 2025). Thirdly, the attack must not be militarily excessive. Only attacks which are 'clearly' excessive in relation to the military advantage anticipated are punishable. (Rome Statute, 1998). Any attack to the contrary even if it causes widespread, long-term and severe damage to the natural environment can be excused. Fourthly, there is no liability for attacks caused negligently (Lara, 2015). This can be very well used by the attacking nation-state to escape any punishment. Dr. Stijn Cornelis van Huis argued that there is no scope to alone bring 'environmental crimes' to ICC, it must be clubbed with other crimes that fall within the jurisdiction of ICC (Van Huis, 2019).

Another major lacuna of International Environmental Law is that many other multilateral treaties either indirectly address (Convention on Biological Diversity 1992) or are silent (Ramsar Convention 1971) on their applicability during times of war (Bothe, Bruch, et, al., 2010). This confusion and silence have serious consequences and uncertainty on what areas of environment should be agreed by between the parties to the conflict to be off-limits.

3. EXPLOITATION OF EXISTING LEGAL LACUNAS BY THE POWERFUL GEOPOLITICAL STATES

The above already existing lacuna of International Environmental Law and International Humanitarian Law is heightened in the light of modern-day geopolitical map of the world. In fact, it has been found that higher the energy consumption is of a country's military, lower is their chances of ratifying to international environmental agreements. (Norton, 2022) Powerful countries can very well mould and manipulate IEL to suit their needs. Countries like US and Russia cause enormous environmental impact across the world on account of their military activities. United States has launched 251 military interventions since 1991 to 2022 (Congressional Research Service, 2022). The US controls about 750 bases in at least 80 countries worldwide and spends more on its military than the next 10 countries combined (Hussein and Haddad, 2021). According to the U.S. Department of Defense (DOD), their Scope 1 and Scope 2 emissions were over 636 million metric tons of CO_2e ($MMTCO_2e$) for the 2010–2019 decade. These estimates are incomplete and conservative, as they, at minimum, exclude the DOD's Scope 3 emissions. (Thombs, Jorgenson, Clark, 2025). Further, it must be noticed that the geopolitical position and strength of the nation-states such as USA, Russia, Iraq, Israel allows them to safely opt out of and to not ratify multiple international treaties without any real consequences. These geopolitically strong countries prioritise their national sovereignty and the free will of their governing authority, thus keeping their sovereign interests over the global environment protection demand. Iraq bombed largest Kuwaiti oil field, two major oil refineries and multiple other similar spots (Zedalis, 1991) in order to obtain compliance of Kuwait. This led to air pollution as dense smoke (Zedalis, 1991) in the air and toxic fumes, and it also led to outbreak of respiratory-related health problems and skin disorders (Seacor, 1994). The Iraq was still able to escape legal liability because it was not a party to either Additional Protocol I or the ENMOD (Cusato, 2019). Similarly, United States of America has not ratified the Additional Protocol I to the Geneva Convention (Levie, 1998) and it is not a party to the Rome Statute of International Criminal Court (Catera, 2008). The reasoning given for such non-ratification by a US official was that the terms- 'widespread', 'long-term' and 'severe damage' are too vague and broad (Levie, 1998). However, it is interesting to note that the US ratifies ENMOD that uses the same word. The only logical rationale behind such defiance and hypocrisy is that ENMOD only restricts the use of environmental modification techniques whereas Additional Protocol I is opposed to the idea of armed violence that degrades the environment based on previously mentioned (Cohan, 2003). Further, International Court of Justice has also failed to truly penalise states for environmental crimes because its jurisdiction is limited to countries who are parties to the Rome Statute. ICJ decision on

'Yugoslavia v. NATO', (Yugoslavia v. United States of America, 1999) the court dismissed USA and Spain while handing down its admissibility decision as these countries did not recognise the compulsory jurisdiction of ICJ. (UNEP, 2009). Given the huge military impact of these powerful countries, it becomes a crucial nation to comply with the multilateral environmental treaties. The Russia-Ukraine war has also created enormous consequences for the natural environment especially falling within the Ukrainian territory. Air quality has worsened as a consequence of the emissions from heavy combat, bombardment of chemical plants and factories (Faria, 2022). The white phosphorus remains are likely to be suspended in air, water and soil which has great possibility of disrupting the natural ecosystems and the food chain (Mojab and Feizi, et al., 2010). When the navies of Russia and Ukraine were stationed in the Black Sea in Spring 2022, a high number of dolphin and porpoise dead bodies were washed up to the beaches (Zajicek, 2025). The Ukrainian Environment ministry has estimated a release of 175 million tons of extra carbon dioxide into the atmosphere during the process of mobilization, fighting, and reconstruction. This is equal to the annual emissions of the Netherlands ((Zajicek, 2025). In Gaza, the satellite images suggest that around 48% of tree cover and farmland was destroyed between 7 October 2023 to 21 March 2024. Bombardment by Israel has approximately led to accumulation of 22.9m tonnes of debris and hazardous material, which also contains of human remains (Ahmed and Gayle, et. al., 2024). Approximately 57% of the water infrastructure of Gaza including desalination plants and Water Sanitation and Hygiene Systems has completely or partially been destroyed (UNEP, 2024). This has led to release of untreated sewage into the coastal waters and marine system causing long-term marine pollution. The destruction by Israel in Gaza is so huge that there is demand for it to be called as 'ecocide' and be prosecuted as a war crime. But again, the threshold to be prosecuted under the Rome Statue and Additional Protocol I is so high that it is difficult to hold Israel responsible for ecocide (Ahmed and Gayle, et. al., 2024). The Stop Ecocide International Foundation convened a panel of legal experts who submitted a proposal that International Criminal Court (ICC) should be amended to include ICC's jurisdiction to adjudicate cases relating to commission of ecocide. It further suggested that the following definition should be incorporated to define ecocide in the statute- "unlawful or wanton acts committed with knowledge that there is a substantial likelihood of severe and either widespread or long-term damage to the environment being caused by those acts." (Hemptinne, 2022). Further, in the first two weeks of the ongoing US-Israel-Iran conflict, more than 5m tonnes of CO_2 has been released where 0.14 tonne of CO_2 is equal to driving a car for 350 miles (Stewart and Kumar, 2026). The bombing of military facilities can release what are called as 'forever chemicals' into the environment. The bombing of oil reservoirs can exert localised climatic effects (Stewart and Kumar, 2026). This growing

degradation of environment due to war has increased the need for a better mechanism and structure of international environmental.

4. VIABLE SOLUTIONS

The possible solutions to this problem are- first, there is a need to define the standards of- 'widespread', 'long-term' and 'severe damage' such that the bar can be lowered and it can actually be practically implemented. Secondly, the above-mentioned nations and others who do not ratify or are parties to these multilateral internation treaties should be incorporated. This can be achieved through United Nations' bodies such as United Nations Security Council (UNSC) and United Nations General Assembly (UNGA) (Wirthova, 2023). However, given the structure of UNSC, it is nearly impossible for it to implement such a change. Nonetheless, the best possible alternative to this challenge is using the route of UNGA instead of UNSC. UNGA can pass resolutions which are legally non-binding but can create international environment customary law in an international armed conflict (UNEP, 2009). Thirdly, environment related sensitisation and awareness shall be created amongst the citizens such that the citizens can pressurise the government into engaging in environmentally-responsible military actions (Lara, 2015). Fourthly, a single body should be created to hold states and individuals personally liable, to have power to adjudicate, penalise, impose civil liability and develop laws and regulations relating to this area. This will reduce the fragmentation of these powers amongst different bodies which only weakens the International Environmental Law. Recently, a major win for the international community is the adoption of Draft Principles on Protection of the Environment in Relation to Armed Conflicts (PERAC) in 2022. This is a significant step to fill the gaps in the present international legal system. It develops the obligations of states in respect to their environmental obligations before, during and after an armed conflict. More of such steps should be welcomed.

5. CONCLUSION

Today, International Environmental Law is at crossroads. The environmental destruction of the environment due to war is quite evident and has been assessed through satellite images, environmental assessments and factual data by the many national and international organisation. The structural deficiencies in the legal mechanisms addressing environmental concerns in a war is favours the powerful countries allowing them to utilise and manipulating these loopholes in their national interest rather than the benefit of the environment and civil population, thereby defeating the very purpose of such legal mechanisms. The vague, highly and similarly worded standards established across the IEL and IHL treaties- 'widespread', 'long-term' and 'severe damages' (Levie, 1998) and the requirement

to establish 'intent' in the Rome Statute (ICC Office Of the Prosecutor Policy On Addressing Environmental Damage Through The Rome Statute, 2025) very well serves the vested interests of militarily strong nations such as USA, Russia, Israel and previously Iraq. These nations have conveniently declined to sign, ratify or be parties to the aforementioned treaties. Along with this, many other IEL multilateral treaties are silent on the point that whether they are applicable in times of war or not. Thus, there is an imminent need for reform. The UNGA can step up to pass non-binding resolutions creating a basis for future international environment customary law.

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