

## War and its destructive effects on the environment

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### Abstract

War and conflict result in human suffering, displacement and considerable harm to the environment. This damage is frequently due to the tactics and weaponry employed by opposing parties, which violate established legal standards designed to protect the environment during times of conflict <sup>[1]</sup>.

Even though international and domestic laws provide explicit protection for the natural environment, civilians, and civilian objects, they frequently become targets of attack. This paper discusses the destructive effects of war on the environment and examines the legal frameworks – international and domestic laws - geared towards the protection of the environment in times of war. To achieve this, the paper is divided into six parts. Part I introduces the paper while Part II discusses the meaning of the different terms under discussion. Part III examines the legal framework for the protection of the environment in times of an armed conflict – treaties and principles of international humanitarian law; while Part IV examines the destructive effect war has on the environment. Part V provides measures on the way forward and part VI concludes the paper.

**Keywords:** Non-formal education, illicit drugs, antidote

### Introduction

#### Conceptual Clarification

#### Environment

The term “Environment” basically refers to the conditions around us, encompassing both physical and spiritual factors that impact the progress, maturation, and survival of living organisms. According to the United Nations Stockholm Conference on Human Development, humans are both shaped by and shape their environment, which provides them with sustenance and fosters their intellectual, moral, social, and spiritual advancement <sup>[1]</sup>.

Black Law Dictionary defines environment as “The totality of physical, economic, cultural, aesthetic, and social circumstances and factors which surround and affect the desirability and value of property and which also affect the quality of people’s lives. The surrounding conditions, influences or forces which influence or modify <sup>[2]</sup>.”

The National Environmental Standard and Regulation Enforcement Agency Act, 2007 defines ‘environment’ in the following perspectives; ‘Environment’ include water, air, land, animals living therein and in relationship exist among these or any of them <sup>[3]</sup>. Section 20 of the 1999 Constitution of the Federal Republic of Nigeria defines environment as

- a. The water
- b. Forest and wildlife
- c. All layers of the atmosphere
- d. All organic and in-organic matter and living organisms, and
- e. The interacting nature system that includes the component referred to in paragraphs (a) – (d).

Therefore, it can be asserted that the concept of 'environment' includes every facet of air, water, land, forests, and wildlife. Consequently, the environment should be safeguarded to ensure the ongoing existence and well-being of humans, plants, and animals that rely significantly on the environment.

### War

War according to the Oxford Advance Learners Dictionary is a state of armed conflict between different countries or different groups within a country. The term War shall thus be juxtaposed with the term armed conflict. An armed conflict is said to exist when there is an armed confrontation between the armed forces of States <sup>[4]</sup>, or between governmental authorities and organized armed groups or between such groups within a State <sup>[5]</sup>. Other situations of violence, such as internal disturbances and tensions are not considered to be armed conflicts <sup>[6]</sup>.

War and/or a state of armed conflict is regulated by the laws of armed conflict also referred to as international humanitarian law <sup>[7]</sup>, international human rights law, national human rights law as well as the rules of customary international humanitarian law <sup>[8]</sup>. These laws and customs set out the various rules, means and methods by which warfare is to be conducted. It also sets out principles that must be adhered to and persons – civilians, and civilian objects that are to be protected during the course of conflict. In the realm of international humanitarian law governing armed conflicts, the term "environment" encompasses both the natural surroundings and essential resources crucial for civilian survival. These resources encompass items vital for sustaining civilian populations, such as food supplies, agricultural areas, crops, livestock, drinking water sources, and irrigation systems. Deliberate attacks on these resources, whether motivated by intentions to starve civilians, compel their displacement, or for any other reason, are considered assaults on the environment. Such attacks have direct repercussions on civilian populations <sup>[9]</sup>.

The ecological and natural resource ramifications of war are frequently overshadowed by the social and human toll of armed conflicts. Nevertheless, the environmental fallout carries consequences that transcend national borders and immediate generations, as emphasized by the UN resolution establishing this official date. Throughout history, water sources have been contaminated, agricultural fields destroyed, forests decimated, soils contaminated, and

wildlife slaughtered in the pursuit of military advantage<sup>[8]</sup>. The breakdown of institutions during conflicts exacerbates environmental risks, with implications for people's health, livelihoods, and security. These outcomes, in turn, can hinder post-conflict peace building efforts<sup>[9]</sup>.

About 1.5 billion people, over 20% of the world's population, live in conflict-affected regions, endangering both human and ecological life<sup>[12]</sup>. Examples from Afghanistan, Colombia, and Iraq highlight significant environmental degradation due to warfare, including massive deforestation, toxic pollution from deliberate acts, and disruption of biodiversity hotspots. Rebel activity in places like Colombia and the Democratic Republic of Congo exacerbates issues such as illegal logging, poaching, and invasive species proliferation. Conflict also damages water infrastructure in places like Gaza and Yemen, posing serious health and environmental risks. Addressing these environmental impacts of conflict is urgent and requires international intervention<sup>[13]</sup>.

### **Legal Framework for the Protection of the Environment in times of an Armed Conflict**

In international humanitarian law, the protection of the environment during armed conflict relies on three main treaties: the ENMOD Convention<sup>[14]</sup>, AP I<sup>[15]</sup>, and the Rome Statute<sup>[16]</sup>. While AP I and the Rome Statute mention the "natural environment," they lack precise definitions. The ENMOD Convention offers broader protection by prohibiting environmental warfare but has limitations in its coverage and doesn't encompass the full range of environmental targets<sup>[17]</sup>.

The treaties governing conduct during armed conflict lack a clear, comprehensive definition of the environment, often focusing on human-centered perspectives or using the term "natural environment" without precise delineation. This ambiguity leaves the extent of protection for the natural environment unclear within the laws of armed conflict<sup>[18]</sup>.

International environmental law complements international humanitarian law in safeguarding the environment during conflict. Specific environmental treaties remain applicable, and broader agreements can enhance protection measures. While definitions of "environment" vary, some treaties recognize the intrinsic value of ecosystems. For example, the UN Convention on the Law of the Non-Navigational Uses of International Watercourses includes living resources and dependent flora and fauna in its definition of the environment<sup>[19]</sup>.

These protective laws shall be examined albeit briefly in 3 categories: those that directly address the issue of environmental protection; the general principles of IHL that are applicable to environmental protection; and the provisions that can be considered to provide indirect protection to the environment during times of conflict.

### **Provisions explicitly targeting the protection of the environment in times of armed conflict**

#### **1. Convention on the Prohibition of Military or Any Other Hostile Use of Environmental Modification Techniques (ENMOD)**

The ENMOD Convention, adopted by UN Resolution 31/72 on December 10, 1976, was opened for signature in Geneva on May 18, 1977, and took effect on October 5, 1978. It comprises ten articles and an Annex detailing the Consultative Committee of Experts<sup>[20]</sup>. Article I of the

Convention prohibits Contracting Parties from using "environmental modification techniques" for military purposes if they cause significant and lasting harm to another State Party. It states:

Article I:

1. Each State Party to this Convention undertakes not to engage in military or any other hostile use of environmental modification techniques having widespread, long lasting or severe effects as the means of destruction, damage or injury to any other State Party.
2. Each State Party to this Convention undertakes not to assist, encourage or induce any State, group of States or international organization to engage in activities contrary to the provisions of paragraph 1 of this article.

Article II delineates the precise meaning of "environmental modification techniques." The article states:

As used in article I, the term "environmental modification techniques" refers to any technique for changing - through the deliberate manipulation of natural processes - the dynamics, composition or structure of the Earth, including its biota, lithosphere, hydrosphere and atmosphere, or of outer space.

The descriptors "widespread," "long-lasting," and "severe" in the ENMOD Convention echo those in Protocol I to the 1949 Geneva Conventions<sup>[21]</sup> and in the 1980 Convention on Conventional Weapons. While these instruments mention the "natural environment," the ENMOD Convention simply uses the term "environment" without qualification<sup>[22]</sup>.

The ENMOD convention prohibits the military use of the environment as a weapon, setting a lower threshold for damage compared to Additional Protocol I. Unlike UNEP's involvement in negotiation, its monitoring of ENMOD implementation and enforcement is not systematic. ENMOD replaces the triple cumulative standard with a single criterion: "widespread, long-lasting, or severe" for prohibited conduct, distinguishing it from Additional Protocol I<sup>[23]</sup>. In ENMOD, "long-lasting" means lasting for months or approximately a season, while in Additional Protocol I, "long-term" spans decades<sup>[24]</sup>. ENMOD has been relatively successful as there have been no reported instances of large-scale environmental modification tactics similar to the "Vietnam scenarios" since its inception in 1976.

#### **2. Additional Protocol I to the Geneva Conventions of 1949**

The Additional Protocol I to the Geneva Conventions, adopted in 1977, contains two pertinent provisions: Articles 35 and 55, which forbid warfare causing widespread, long-term, and severe damage to the natural environment. Article 35(3) provides:

It is prohibited to employ methods or means of warfare which are intended or maybe expected to causes widespread, long-term and severe damage to the natural environment

Article 55 states:

1. Care shall be taken in warfare to protect the natural environment against widespread, long term and sever damage. This protection includes a prohibition of the method or means of warfare which are intended or may be expected to cause such damage to the natural

- environment and thereby prejudice the health or survival of the population
2. Attacks against the natural environment by way of reprisal are prohibited.

Article 55 of Additional Protocol I broadens the responsibility to protect the environment during conflict, focusing on safeguarding civilian populations, while Article 35(3) specifically addresses environmental protection. Additionally, Article 55(2) of International Humanitarian Law prohibits retaliatory actions against the natural environment. While IHL aims to limit damage to a tolerable level, concerns arise regarding highly destructive warfare methods' potential for severe environmental devastation, which could weaken civilian protection and hinder measures to safeguard conflict victims<sup>[25]</sup>.

Adhering to International Humanitarian Law (IHL) principles is crucial in armed conflict to protect the environment and ensure the well-being of civilian populations reliant on it for sustenance. However, Articles 35 and 55 of Additional Protocol I to the 1949 Geneva Conventions may not adequately safeguard the environment due to the stringent and ambiguous criteria for establishing damage. Meeting the triple cumulative standard of "widespread, long-term, and severe" harm is challenging given the vague definitions of these terms<sup>[26]</sup>.

### 3. Rome Statute of the International Criminal Court

Article 8 of the Rome Statute grants the International Criminal Court (ICC) jurisdiction over war crimes, including serious violations of the 1949 Geneva Conventions and their 1977 Protocols. Article 8(2)(b)(iv) explicitly prohibits actions causing incidental loss of life, injury to civilians, or damage to civilian objects, as well as widespread, long-term, and severe harm to the natural environment, unless such damage is clearly excessive compared to the anticipated military advantage. This provision introduces tests of proportionality and military necessity, assessing the harm's overall impact compared to military gain. It requires proof of both the physical act of causing harm (*actus reus*) and the intentional knowledge of the resulting harm (*mens rea*)<sup>[27]</sup>.

Crimes against the environment fall under Section (b) rather than Section (a) of the Rome Statute, which covers grave breaches of the Geneva Conventions, releasing states from a formal obligation to prosecute such crimes. Article 8(2)(b)(iv) applies solely to International Armed Conflicts (IAC), leaving a legal gap regarding Non-International Armed Conflicts (NIAC). Although environmental protection isn't explicitly mentioned under Article 8(2)(e) for NIAC, the Article indirectly safeguards the environment when it is included within cultural goods or enemy property<sup>[28]</sup>.

### 4. Customary International Humanitarian Law

Customary international humanitarian law includes provisions for protecting the natural environment during conflicts. Rule 43 outlines principles for conducting hostilities concerning the environment:

- a. Only military objectives can be targeted, not the natural environment itself.
- b. Destruction of the natural environment is forbidden unless absolutely necessary for military purposes.

- c. Attacks causing excessive damage to the environment compared to the military advantage gained are prohibited.

Rules 44 and 45 apply to both international and non-international armed conflicts. Rule 44 prioritizes minimizing environmental damage in warfare methods, while Rule 45 prohibits methods causing severe and widespread environmental harm. However, these rules are established only for international conflicts, not non-international ones<sup>[29]</sup>. Safeguarding water resources and installations is crucial for environmental protection, especially in conflict zones where they're often targeted to control or harm civilians. Humanitarian organizations prioritize maintaining water supply, especially in refugee and IDP camps. Although humanitarian law lacks specific provisions for water protection in conflicts, it recognizes its vital importance for civilian survival and prohibits attacks on water resources<sup>[30]</sup>.

### Key principles of International Humanitarian Law (IHL) relevant to protecting the environment during times of armed conflict

The core principles of International Humanitarian Law (IHL) that are relevant to protecting the environment during armed conflict include:

#### 1. Distinction

The principle of distinction mandates parties to differentiate between combatants and civilians, as well as between military objectives and civilian objects, aiming to minimize harm to civilians and the environment. Article 52(2) of Additional Protocol I defines military objectives as those making an effective contribution to military action, suggesting that targeting environmentally significant sites would violate the principle of distinction and Article 52(2). However, in practice, applying this principle can be challenging, particularly when considering industrial facilities like power plants or chemical factories, which may have significant environmental impacts but contribute directly to military action<sup>[31]</sup>.

#### 2. Military Necessity

The principle of military necessity dictates that military force should only be used to achieve specific military objectives and prohibits actions lacking clear military goals. This is echoed in the 1907 Hague Convention IV, Article 23(g), which prohibits the destruction or seizure of enemy property unless essential for war necessities. This provision has environmental significance as "enemy property" may include protected areas and valuable natural resources, indirectly protecting them.

#### 3. Proportionality

The principle of proportionality mandates balancing military advantage with potential harm to civilians and the environment, forbidding excessive damage relative to military benefit. Additional Protocol I, Article 57, defines disproportionate attacks as causing collateral damage surpassing expected military gain. Deliberate pollution during the Gulf War is deemed unlawful due to disproportionate responses to threats, like destroying villages or forests for minor objectives<sup>[32]</sup>.

#### 4. The principle of humanity

The principle of humanity bars the infliction of unnecessary suffering, injury, and destruction. Thus, parties are forbidden from using starvation as a tactic or targeting objects vital for civilian survival. This includes actions like contaminating water sources and destroying agricultural land and forests, observed in conflicts like Darfur, classified as inhumane warfare methods<sup>[33]</sup>.

#### 5. Precaution

This principle obliges parties to take precautions to avoid or minimize harm to civilians and the environment during military operations. This includes selecting means and methods of warfare that minimize environmental damage<sup>[34]</sup>.

#### 6. Martens clause

These principles form a framework for reducing the environmental impact of armed conflict and preserving natural ecosystems and resources. They also include the Martens Clause, adopted at the 1899 Hague Conference (II) concerning the laws and customs of war on land. The clause states that:

Until a more complete code of the laws of war is issued, the High Contracting Parties think it right to declare that in cases not included in the Regulations adopted by them, populations and belligerents remain under the protection and empire of the principles of international law, as they result from the usages established between civilized nations, from the laws of humanity and the requirements of the public conscience.

This is also contained in the preamble of the 1907 Hague Convention IV and in the Additional Protocol to the Geneva Conventions of 1949, the clause is represented thus:

In case not covered by this protocol or by any other international agreement, civilians and combatants remain under the protection and authority of the principles of international law derived from the established customs, from the principles of humanity and from the dictates of public conscience<sup>[35]</sup>.

Therefore, this provision closes potential loopholes in the framework to prevent unacceptable conduct by involved parties. The suggested expansion of the clause to include environmental concerns, supported by the International Union for Conservation of Nature, seeks to strengthen the "principle of humanity" and "public conscience" in protecting the environment in the absence of explicit treaty law.

#### Provisions within IHL treaties that indirectly contribute to the protection of the environment

These provisions can be categorized into five main categories<sup>[36]</sup>

**1. Rules limiting or prohibiting certain weapons and methods of warfare:** Various weapons and warfare methods can inflict substantial environmental harm. Chemical or biological weapons, for instance, can contaminate land, water, and air extensively, endangering human health and ecosystems for the long term. Treaties like the Chemical Weapons Convention and the Biological

Weapons Convention outlaw these weapons and limit others with indiscriminate or excessive effects, indirectly safeguarding the environment.

#### 2. Clauses protecting civilian objects and property:

Under International Humanitarian Law (IHL), civilian objects, including natural resources like forests, water sources, and agricultural land, are protected. Deliberate attacks on such objects, vital for civilian survival, are prohibited. This safeguarding of civilian infrastructure and resources indirectly aids in protecting the environment during armed conflict.

**3. Clauses protecting cultural heritage sites:** Cultural heritage sites, including natural landmarks and ecosystems, are protected under International Humanitarian Law (IHL) as part of broader cultural property protection. Deliberate attacks on these sites, including historic monuments, museums, and reserves, are prohibited, preserving biodiversity and ecosystems during armed conflict.

#### 4. Rules concerning installations containing dangerous forces:

Military installations with environmental risks, like nuclear power plants or chemical facilities, have specific rules under IHL. Parties must take precautions to prevent or reduce the release of harmful substances from these sites, minimizing potential environmental damage if targeted.

#### 5. Limitations on certain specifically defined areas:

Special environmental areas like wetlands or wildlife reserves may have protected status under IHL. Parties in conflict are barred from military operations in these areas, except in rare cases, with precautions to limit environmental harm<sup>[37]</sup>.

These IHL provisions indirectly protect the environment in armed conflict by regulating warfare methods, safeguarding civilian objects, preserving cultural heritage, mitigating risks from hazardous installations, and limiting military activities in sensitive areas. By integrating environmental concerns into IHL, these rules reduce the environmental impact of conflict and promote sustainable resource management during war.

### Effects of Armed Conflict on the Environment

#### 1. Pollution

Intense conflicts require vast fuel resources, leading to high CO2 emissions and worsening climate change. Extensive vehicle use damages landscapes and biodiversity, while explosive weaponry exacerbates environmental harm. Urban attacks produce debris, polluting air and soil. Disrupted industry and infrastructure, like water treatment, also cause pollution. Loss of energy sources can escalate impacts, forcing reliance on more damaging fuel sources<sup>[38]</sup>.

Severe pollution can result from deliberate or accidental harm to industrial, oil, or energy facilities in armed conflicts. Attacks on these sites can cause widespread pollution and fear. Tactics like destroying agricultural infrastructure and burning crops threaten food security and rural livelihoods, with potential cross-border impacts on air and water pollution. In extreme cases, they may affect weather patterns or the global climate.

Weapons used in conflicts have enduring environmental effects. Landmines, cluster munitions, and other remnants contaminate agricultural land, soil, and water with hazardous materials. Significant conflicts generate vast amounts of military debris containing pollutants, posing risks to soil, groundwater, and human health. Damaged

naval vessels, submarines, and offshore oil installations can also contribute to marine pollution.

Many weapons contain toxic components, while others emit radiation. Incendiary weapons like white phosphorus release toxins and damage habitats through fires. Past use of chemical defoliants had harmful effects on public health and ecosystems in Vietnam and other areas.

## 2. Deforestation

In conflicts, deforestation increases for several reasons. Communities may overharvest wood and charcoal for fuel due to sudden reliance on these resources. Armed groups or criminals may exploit weakened management systems for deforestation. Civilian survival strategies may also lead to overharvesting or harmful practices like artisanal oil refining. Conflicts can disrupt community-based sustainable resource management<sup>[39]</sup>.

Resource extraction funding conflicts can cause environmental harm. Armed groups vie for control over oil, minerals, or timber, degrading ecosystems. Processing methods like mercury in gold mining contaminate water. Private companies in conflict zones may operate with minimal environmental oversight, worsening damage.

## 3. Human displacement

Conflict-induced displacement causes major environmental impacts, particularly in makeshift camps lacking essentials like water, sanitation, and waste management. Camp location is critical as locals may deplete resources like firewood. Displaced individuals may migrate to urban areas, adding pressure on local environmental services. In some cases, regions traversed by displaced people, like pastoralists, strain fragile ecosystems. Extensive refugee movements pose environmental challenges across borders as neighboring nations struggle to accommodate them and meet their needs.

## 4. Habitat Destruction

Military activities often destroy natural habitats through bombing, shelling, and land clearing, causing biodiversity loss and ecosystem disruption. For instance: Gulf War (1990-1991): Iraqi forces burned Kuwaiti oil wells, releasing vast amounts of soot and greenhouse gases, impacting air quality and potentially climate change<sup>[40]</sup>. Vietnam War: The US used Agent Orange, an herbicide, to destroy vegetation, containing dioxin, harming generations of Vietnamese and causing massive deforestation<sup>[41]</sup>.

## 5. Loss of Agricultural Land

Conflict can disrupt agricultural activities, leading to the abandonment of farmland, destruction of crops, and loss of livestock. This loss of agricultural land reduces food production and can contribute to food insecurity and famine.

## 6. Displacement of Wildlife

Military activities can displace wildlife from their natural habitats, leading to population declines and disruptions in ecological balances. Displacement may also result in increased human-wildlife conflicts as animals seek alternative habitats.

## 7. Long-Term Environmental Damage

Some environmental damage caused by war can have long-lasting or permanent effects, such as soil contamination with

unexploded ordnance, which poses risks to human safety and impedes land use and development.

## 8. Climate Change

The environmental impacts of war, including habitat destruction, deforestation, and pollution, can contribute to climate change by releasing greenhouse gases, reducing carbon sinks, and disrupting natural processes that regulate the climate<sup>[42]</sup>.

## 9. Destruction of infrastructure

Wars and conflicts often result in massive destruction of infrastructures, ranging from buildings and roads to bridges and factories. Rebuilding this infrastructure requires raw materials like cement and steel. Their production is energy intensive and generates significant GHG emissions. For example, cement production is one of the main industrial sources of CO<sub>2</sub> emissions<sup>2</sup>.

## The Way Forward

### 1. Reducing Conflict-related Emissions:

Industrialized nations bear the responsibility of curbing greenhouse gas emissions associated with conflicts. This can be achieved by shifting towards less militarized and more eco-friendly security technologies, including reducing reliance on fossil fuels and implementing energy-efficient warfare strategies. Furthermore, developed countries can allocate resources towards the research and advancement of sustainable low-tech solutions. Utilizing electric vehicles, while ensuring adherence to traceability measures and duty of care, could serve as a viable alternative. However, it remains crucial to ensure the reliable availability of sustainable electricity infrastructure for military endeavors<sup>[43]</sup>.

### 2. Assistance for environmental recovery after conflicts

Following the cessation of armed conflicts, regions grappling with severe environmental issues are commonly left in their wake. Advanced nations in the Northern hemisphere have the capacity to offer both technical expertise and financial support for environmental rehabilitation in these areas. This assistance encompasses tasks such as decontaminating areas tainted by unexploded ordnance and rejuvenating ecosystems that have suffered damage.

### 3. Advocating for fairness in addressing climate issues and fostering sustainable development

The concept of climate justice underscores the socioeconomic and environmental gaps between industrialized nations, often termed as countries of the North, and developing nations, often referred to as countries of the South. These disparities raise questions about the right of developing countries to industrialize while also addressing the historical and ongoing responsibility for greenhouse gas emissions borne by the most industrialized nations. Climate justice remains central to international climate negotiations, necessitating a balance between industrial development rights and environmental preservation imperatives. COP28 and subsequent conferences will play a vital role in shaping this balance through eco-diplomacy efforts.

#### 4. Avoid situating troops or military material in fragile ecosystems or protected areas

This statement suggests refraining from deploying military personnel or equipment in delicate environments or areas designated for conservation, such as national parks. The intention is to prevent potential damage or disruption to these ecosystems, which are often rich in biodiversity and serve important ecological functions. By avoiding such placements, the aim is to minimize negative impacts on the environment and preserve these areas for future generations.

#### 5. Map areas of ecological importance and fragility

To "map areas of ecological importance and fragility" means to identify and document locations that are significant for their ecological value and are particularly vulnerable to disturbance or degradation. This process involves assessing various factors such as biodiversity, habitat types, ecosystem services, and susceptibility to human activities or natural disasters. By creating maps that highlight these areas, decision-makers can better understand where conservation efforts should be prioritized and where activities such as development or resource extraction should be carefully managed or avoided to protect the environment. These maps serve as valuable tools for environmental planning, management, and conservation initiatives.

#### 6. Designating demilitarized zones (DMZs)

By establishing DMZs, military activities such as training exercises, weapon testing, and troop movements are restricted or prohibited within these areas. This limitation reduces the direct physical impact of military operations on the environment, including habitat destruction, pollution, and disturbance of wildlife; thus allowing for the preservation of rare or endangered species and their habitats. DMZs can serve as symbols of peace and cooperation, fostering dialogue and collaboration on environmental issues that transcend political boundaries.

#### Conclusion

In conclusion, the ramifications of war on the environment are profound and far-reaching, leaving a legacy of destruction, degradation, and ecological imbalance in its wake. Throughout history, conflicts have exacted a heavy toll on the natural world, resulting in habitat destruction, pollution, loss of biodiversity, and depletion of natural resources. From scorched earth tactics to the widespread use of chemical weapons, the methods of warfare employed have inflicted irreparable harm on ecosystems and the delicate balance of life on Earth.

It was observed that the environmental impacts of war extend beyond the battlefield, affecting civilian populations and ecosystems across vast regions. Displacement of communities, destruction of infrastructure, and contamination of land, air, and water sources exacerbate humanitarian crises and pose long-term risks to human health and well-being. Moreover, conflicts often exacerbate existing environmental challenges, such as deforestation, desertification, and climate change, further intensifying vulnerabilities and undermining efforts towards sustainable development and resilience.

Despite the existence of numerous environmental protection laws during armed conflicts and the significant advancements made by the ICRC Guidelines of 2020,

including the establishment of definitions for key terms in Articles 35 and 55 of the Protocols and robust recommendations for addressing environmental attacks during conflicts, the environment continues to suffer the impacts of armed conflicts before, during, and after the conflicts.

In conclusion, recognizing the destructive effects of war on the environment underscores the imperative of pursuing peace, protecting ecosystems, and forging a sustainable future for generations to come. Only through collective action and shared responsibility can we mitigate the environmental costs of conflict and pave the way towards a more peaceful and environmentally sustainable world.

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  26. David Jensen and Silja Halle, "Protecting the Environment During Armed Conflict: An Inventory and Analysis of International Law" *United Nations Environment Programme*, November 2009
  27. David Jensen and Silja Halle (eds.), "Protecting the Environment During Armed Conflict: An Inventory and Analysis of International Law" *United Nations Environment Programme*, November 2009, see: <<https://www.unep.org/resources/report/protecting-environment-during-armed-conflict-inventory-and-analysis-international>> accessed 26 April 2024.
  28. Yoram Dinstein, "Protection of the Environment in International Armed Conflict", *Max Planck Yearbook of United Nations Law*, Vol. 5, 2001, pp. 526–530; Karen Hulme, *War Torn Environment: Interpreting the Legal Threshold*, Martinus Nijhoff, Leiden, 2004, pp. 72–73; Julian Wyatt, "Law-Making at the Intersection of International Environmental, Humanitarian and Criminal Law: The Issue of Damage to the Environment in International Armed Conflict", *International Review of the Red Cross*, Vol. 92, No. 879, 2010, pp. 619–620.
  29. The Practical Guide to Humanitarian Law: Protected Objects and Property" < <https://guide-humanitarian-law.org/content/article/3/protected-objects-and-property/>> accessed 26 April 2024.
  30. *Ibid.*
  31. David Jensen and Silja Halle (eds.), "Protecting the Environment During Armed Conflict: An Inventory and Analysis of International Law" *United Nations Environment Programme*, November 2009, see: <<https://www.unep.org/resources/report/protecting-environment-during-armed-conflict-inventory-and-analysis-international>> accessed 26 April 2024.
  32. David Jensen and Silja Halle (eds.), "Protecting the Environment During Armed Conflict: An Inventory and Analysis of International Law" *United Nations Environment Programme*, November 2009, see: <<https://www.unep.org/resources/report/protecting-environment-during-armed-conflict-inventory-and-analysis-international>> accessed 26 April 2024.
  33. David Jensen and Silja Halle (eds.), n. 36.
  34. See: Rule 8, 9 and 10 of Part II: General Protection of the Natural Environment under International Humanitarian Law in *The Environment and International Humanitarian Law: Protecting the*

- environment during armed conflict” <<https://casebook.icrc.org/case-study/environment-and-international-humanitarian-law>> accessed 26 April 2024.
35. Article 1(2) Additional Protocol I (herein after AP I).
  36. Philippe Antoine, “International humanitarian law and the protection of the environment in time of armed conflict” <<https://international-review.icrc.org/sites/default/files/S002086040007114X.a.pdf>> accessed 26 April 2024
  37. The categorization and explanation provided are based on the principles and provisions of International Humanitarian Law (IHL) as reflected in various international treaties and conventions, as well as customary international law. These principles are widely recognized and upheld by the international community to mitigate the humanitarian and environmental impact of armed conflict. Specific treaties and conventions that contribute to the protection of the environment during armed conflict include: The Chemical Weapons Convention (CWC), which prohibits the use of chemical weapons and requires the destruction of existing stockpiles. The Biological Weapons Convention (BWC), which prohibits the development, production, and stockpiling of biological weapons. The Geneva Conventions and their Additional Protocols, which regulate the conduct of armed conflict and provide protections for civilians, cultural property, and the natural environment. The Hague Convention for the Protection of Cultural Property in the Event of Armed Conflict, which aims to safeguard cultural heritage sites and objects during times of war. Various regional agreements and customary international law principles that address environmental protection during armed conflict. These sources collectively establish a legal framework that indirectly protects the environment by regulating the means and methods of warfare, safeguarding civilian objects and property, preserving cultural heritage sites, mitigating risks from dangerous installations, and limiting military activities in environmentally sensitive areas.
  38. Conflict and Environment Observatory, “How does war damage the environment?” (June 4, 2020) <<https://ceobs.org/how-does-war-damage-the-environment/>> accessed 26 April 2024.
  39. “Conflict and Environment Observatory, “How does war damage the environment?” (June 4, 2020) <<https://ceobs.org/how-does-war-damage-the-environment/>> accessed 26 April 2024.
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  42. Alice Louise Bunker, “Protection of the environment during armed conflict: One gulf, two wars.” *Review of European Community and International Environmental Law*, (2004) Vol. 23, pp. 201-213.
  43. “Consequences of Armed Conflict” <<https://www.justicepaix.be/en/the-impact-of-armed->
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