Legal Responsibility for Environmental Damage Caused by Russian and Ukrainian Wars: International Humanitarian and Criminal Law Perspectives

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ABSTRACT

Not only inflicted human casualties, the war between Russia and Ukraine, also injured the environment. Russia’s discriminating attacks on essential objects such as gas, energy, oil, and mining infrastructure become the most significant root cause. UNEP affirmed that the attacks resulted in widespread water, soil and air pollution, as well as a significant deterioration in Ukraine’s ecosystem stability. Accordingly, the study intends to examine the framework of international humanitarian and criminal law, specifically in terms of environmental protection, as well as to analyze accountability before the International Criminal Court. The study employed doctrinal method involving a statutory and conceptual approach. In this case, relevant legal instruments such as the 1949 Geneva Conventions and their Additional Protocols, as well as the Rome Statute, were being examined. Furthermore, the study is also certified by the evolution of legal doctrines in books, journals, and other credible sources. According to the findings, humanitarian law, which is underpinned by customary international law, protects the environment slightly better than international criminal law. In short, the state bears multiple duties for environmental damage caused by the outbreak of war. Individual accountability before the ICC, on the other hand, is being overlooked. It is due to the Rome Statute’s flaws, which include vagueness in the formulation of the articles, stringent standards for proof of environmental damage, and bias in proving mens rea. As a result, improvements in the enforcement of international crimes (war crimes and related types) that cause environmental damage are urgently required.

Introduction

Russia's invasion of Ukraine is illegal under international law. First, the Russian invasion breaches international law in general because it violates Article 2 (4) of the UN Charter, stating that No UN member is permitted to use force against another. Referring to international human rights (HAM) Act, thousands of people perished as a result of Russia’s attacks, providing compelling proof of an infringement of the right to life. Meanwhile, through the lens of international humanitarian law, Russia’s military attacks are classified as indiscriminate, that is, they do not distinguish between civilians and combatants, attacking both non-military objects and vital objects such as nuclear and oil installations, resulting in environmental pollution and damage.

Attacks on industrial facilities such as nuclear power plants, mining, and oil drilling can wreak havoc on the environment. The United Nations Environment Program (UNEP) reports that Ukraine's environmental conditions are apprehensive since Russia's invasion. Land, water and air pollution caused by damage to chemical, oil and other industrial

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infrastructure are evident. The phrase "nature is a forgotten victim of conflict" is apt to describe Ukraine's current environmental predicament. In an armed confrontation, the parties involved frequently ignore the environment and instead focus on distinguishing between the enemy (combatants), civilian and their objects. A contaminated environment, in fact, can disturb human existence and produce ecosystem instability. If an armed conflict cannot be avoided, international humanitarian law applies. The war can be either internal (non-international armed conflict, abbreviated 'NIAC') or international (international armed conflict, abbreviated 'IAC'). According to Article 3 of the 1949 Geneva Conventions (hereinafter written 'GC 1949'), NIAC is an armed conflict that occurs in the territorial territory of a state party to the GC 1949. NIAC engage in non-state armed groups and governmental armed forces, or solely occured in non-governmental armed groups. In brief, IAC refers to armed conflict between two or more countries. In NIAC and IAC scenarios, the parties involved must deploy the most effective weapons and warfare method to protect civilians and civilian objects.

It should be acknowledged that in times of armed conflict, environmental protection is not a top priority under international humanitarian law. In addition, the living environment is classified as component of civil objects, rather than as a stand-alone 'natural environment'. It can be seen in the Article 55 GC 1949 drafting, which explicitly places 'natural environment' under the subheading 'civilian objects'. This finding raises concerns about the effectiveness of international humanitarian law in environmental protection. Customary international humanitarian law (hereinafter written as 'CIHL') is one of the primary sources of law that applies in armed conflict circumstances. Violations of CIHL by parties to the conflict (individuals) may result in criminal prosecution before the International Criminal Court (International Criminal Court, hereinafter referred to as the 'ICC'). The International Criminal Tribunal for the Former Yugoslavia stressed it in the Tadic case, stating that CIHL violations might be classified as war crimes. War crimes, along with genocide, crimes against humanity, and aggression, are among the international crimes governed by the International Criminal Court’s Statute (sometimes known as the 'Rome Statute').

In contrast to international humanitarian law, most experts believe that environmental protection takes a distinct approach. The former classifies it as a civil object, whereas the latter distinguishes this matter. In other words, the environment has its own level of protection and is not included in civil objects. It is governed by Rome statute, Article 8(2)(b)(iv) — purposeful attack on the environment that causes widespread, long-term, and

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3 Ibid, p. n.
4 Pasal 3 Geneva Conventions 1949 ['GC 1949'].
5 Pasal 2 GC 1949.
severe damage (hence referred to as 'WLS') is classified as a war crime. However, its application and practice is quite problematic, thus it is elaborated on the discussion section.

The study of environmental issues—the victims of armed conflict is not novel. Tom Caroccia (2018) in his work titled ‘Rescuing the International Criminal Court: Crimes Against Humanity and Environmental Destruction,’ he examines how environmental destruction might be classified as a crime against humanity. Reana Keenen (2019) conducted research entitled ‘When All Else Fails, Look to the Courts: Using Hybrid Tribunals to Build Judicial Capacity and End Environmental Destruction in Post-Conflict Countries.’ Keenen investigated and recommended a judicial paradigm for penalizing environmental violators in post-conflict countries. In the same line Abonyi (2021) in his article entitled ‘Invasion of Ukraine by Russia: The Legal Implications’ examines Russia’s justification for its invasion of Ukraine, then how discussion between the two nations resolve the problem and the types of sanctions that can be imposed on Russia in general, the ICC for instance. Referring to the studies, the present research narrows down the following research questions. First, how does international humanitarian law and international criminal law safeguard the environment during armed conflict? Second, can environmental destruction in Ukraine be categorized as a violation of humanitarian law and a war crime?

Research Methods

The study employed a doctrinal (normative juridical) method incorporating a statutory and conceptual approach. The study discusses how international instruments such as GC 1949, Additional Protocol (AP) I to the Geneva Conventions 1949 (hereinafter written 'AP I') and also the Rome Statute regulate environment protection during armed conflict, as well as how an individual can be held accountable for causing environmental damage. In addition, the evolution of legal theories through earlier scientific publications and other relevant sources is also given to support the analysis.

Results and Discussion

1. International Humanitarian and Criminal Law Framework for Environmental Protection

   a. The Intersection of International Humanitarian Law and International Criminal Law

   International humanitarian and international criminal law are two aspects of international law that are inextricably linked. International humanitarian law governs the activities of armed conflict parties, including the use of weapons and tactics of violence. When conflict is inevitable, humanitarian law mitigates its impact by controlling the weapons and tactics, differentiating opponents (combatants) from objects and civilians, and prohibiting aggression against vulnerable combatants (hors de combat). The following international instruments govern humanitarian law: The Hague Conventions of

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1899 and 1907 on Land Law and Customs; GC 1949 and AP I-III.\textsuperscript{14} Meanwhile, persons suspected of genocide, crimes against humanity, war crimes, and aggression are prosecuted under international criminal law. The Rome Statute, Article 8, states that war crimes include major violations of the GC 1949 and its Protocol, as well as violations of CIHL. As a result, they compliment one another.

\textbf{b. International Humanitarian Law}

There are several fundamental principles in international humanitarian law that must be addressed if armed conflict rises, including 1) \textit{humanity}; 2) \textit{necessity}; 3) \textit{discrimination}; and 4) \textit{proportionality}.\textsuperscript{15}

1) The principle of \textit{humanity} urges conflicting parties to stop causing unnecessary suffering to the enemy, either through the used weapons or tactics.

2) The principle of \textit{necessity} underlines that violence is only performed to achieve military goals.

3) The principle of \textit{discrimination} is closely linked to the second principle, to achieve its goal, the conflicting parties must be able to distinguish which targets can and cannot be attacked (lawful or unlawful).

4) The principle of proportionality is complicated to apply. In short, force should not be used excessively. Once military objectives achieved, the parties must stop using violence to minimize casualties and unnecessary suffering.

Even though they are not explicitly stated, these essential concepts are governed in GC 1949 and apply to the environment as an item that must be safeguarded. The supplementary protocol from GC 1949, AP I, particularly controls environmental protection in armed conflict as follows, Article 35(3)\textsuperscript{16} and 55(1).\textsuperscript{17} The articles appeared as a result of the gloomy history of the Vietnam War, which caused severe environmental devastation.\textsuperscript{18} These two articles have essentially the same formulation: the ban of utilizing violent weapons and strategies that cause WLS to the environment. Article 55(1) casts a broader light on WLS, stating that it must not only harm the environment but also endanger the health and safety of the human population. Article 55(2) also forbids using environmental devastation as a method of reprisals against enemies.

The prohibition in Articles 35(3) and 55(1) makes WLS is not particularly regulated in AP I. Experts, on the other hand, often understand 'widespread' as 'less than several hundred square kilometers' enemies.\textsuperscript{19} The 'long-term' concept thus relates to the period of environmental damage, which is greater than ten years.\textsuperscript{20} Meanwhile, 'severe' is defined

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\textsuperscript{16} Pasal 35(3) Additional Protocol I to the Geneva Conventions 1949 ['AP I'] menyatakan “it is prohibited to employ methods or means of warfare which are intended, or may be expected, to cause widespread, long-term and severe damage to the natural environment.”

\textsuperscript{17} Pasal 55(1) AP I menyatakan “care shall be taken in warfare to protect the natural environment against widespread, long-term and severe damage. This protection includes a prohibition of the use of methods or means of warfare which are intended or may be expected to cause such damage to the natural environment and thereby to prejudice the health or survival of the population.”


\textsuperscript{19} Ibid. p. 181.

\textsuperscript{20} Ibid.
\end{footnotesize}
as long-term environmental harm that threatens human existence and produces substantial health concerns. An example of a violation of Articles 35(3) and 55(1) is the First Persian Gulf War (Gulf War). In Gulf War I, Iraq intentionally spilled approximately seven to nine million barrels of oil into the Persian Gulf. Iraq was found guilty by the UN Security Council in account of environmental loss and damage, as well as substantially diminishing biological resources.

Environmental protection, as noted in the introduction, has many interpretations under international humanitarian law, depending on whether the environment is a civil object or stands alone. Despite the fact that the backdrop of Russia-Ukraine is IAC, a brief mention of AP II (Protection of Victims of Non-International Armed Conflict) is included because it specifies the environment as a necessary item for civilian life. Article 14 AP II, often known as customary international law, regulates:

“Starvation of civilians as a method of combat is prohibited. It is therefore prohibited to attack, destroy, remove or render useless, for that purpose, objects indispensable to the survival of the civilian population, such as foodstufs, agricultural areas for the production of foodstufs, crops, livestock, drinking water installations and supplies and irrigation works.”

In the context of NIAC, conflicting parties must not assault livestock, plantations, or water installations. Even though they are not officially referred to as "living environments," these objects serve that purpose and are critical for civilians. Aside from GC 1949 and AP I, the Convention on the Prohibition of Military or Any Other Hostile Use of Environmental Modification Techniques (hereafter referred to as the 'ENMOD Convention') is a common international agreement used as a reference in assessing environmental protection. Although the WLS formulation in AP I and the ENMOD Convention is nearly identical, the two instruments have different scopes. In AP I, the environment is considered a victim of armed conflict, and opposing parties are prohibited from intentionally or accidentally harming it. Meanwhile, the ENMOD Convention prohibits party countries from utilizing the environment as a modified weapon in such a way as to harm other Contracting States. Aside from that, the WLS proof in AP I is cumulative since the conjunction used is "and", whereas the ENMOD Convention utilizes the conjunction "or". This indicates that the ENMOD Convention does not need that all criteria be met in order to be classified as instrument violation.

c. International Criminal Act

In the Rome Statute, the article explicitly regulates environmental protection is Article 8(2)(b)(iv) which reads:

“other serious violations of the laws and customs applicable in international armed conflict, within the established framework of international law, namely,

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21 Ibid.
22 Costi, "Reverberating Effects in Armed Conflict: An Environmental Analysis."
25 Modifikasi yang dimaksud menurut Pasal II The Convention on the Prohibition of Military or Any Other Hostile Use of Environmental Modification Techniques ["Konvensi ENMOD"] yaitu "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."
26 Ibid. Lihat juga Pasal I(1) Konvensi ENMOD.
intentionally launching an attack in the knowledge that such attack will cause [...] widespread, long-term and severe damage to the natural environment which would be clearly excessive in relation to the concrete and direct overall military advantage anticipated.\(^{27}\)

At first glance, the ban in the Rome statute, Article 8(2)(b)(iv), appears to be identical to Article 35(3) AP I. However, as with criminal law in general, a person’s evil intent (guilty mind or mens rea), in this case inflicting WLS to the environment, must be satisfied before a person may be deemed to have committed a war crime.\(^{28}\)

The following factors must be met under Article 8(2)(b)(iv):\(^{29}\)

1) The perpetrator launched an attack.
2) The attack was such that it would cause [...] widespread, long-term and severe damage to the natural environment and that [...] damage would be of such an extent as to be clearly excessive in relation to the concrete and direct overall military advantage anticipated.
3) The perpetrator knew that the attack would cause [...] widespread, long-term and severe damage to the natural environment and that [...] damage would be of such an extent as to be clearly excessive in relation to the concrete and direct overall military advantage anticipated.
4) The conduct took place in the context of and was associated with an international armed conflict.
5) The perpetrator was aware of factual circumstances that established the existence of an armed conflict.

Even though this Article explicitly regulates the natural environmental protection, no one has been convicted of breaching it to date. Several investigations have shown that the elements in Article 8(2)(b)(iv) have large parameters, making proof problematic.\(^{30}\) To begin, as it is included in war crimes, environmental damage or attacks must fulfill the elements of war crimes itself, "committed as a part of a plan or policy or as part of large-scale commission of such crimes."\(^{31}\)

Additionally, The Rome Statute, Article 8(b), refers to international armed conflicts (IAC). It demonstrates its limitations in accommodating environmental crimes in the setting of internal armed conflict (NIAC). The WLS elements in Article 8(2)(b)(iv) are cumulative, marked with the link ‘and’ (widespread, long-term and severe damage). The use of this connector sets the parameters of this article even higher. Importantly, the Rome Statute does not elaborate these three elements (widespread, long-term and severe damage). For a brief explanation, the WLS elements, please refer to the guidelines issued by the International Committee of the Red Cross (ICRC) in 2020 entitled 'Guidelines on the Protection of the Natural Environment in Armed Conflict'.\(^{32}\)

\(^{27}\) Pasal 8(2)(b)(iv) UN General Assembly, Romo Statute of the International Criminal Court, 1998. [Statuta Roma]
\(^{28}\) Hal ini dapat dilihat dari formulasi dalam Pasal 8(2)(b)(iv) "[...] in the knowledge that such attack will cause WLS [...]".
\(^{29}\) Pasal 8(2)(b)(iv) Elements of Crime ["EOC"] Statuta Roma.
In interpreting the WLS element, the ICRC Guidelines refer to the interpretation of two instruments—the ENMOD Convention and AP I. Regarding ‘widespread’, the ICRC Guidelines interpret this element as damage covering hundreds of square kilometers. The ICRC Guidelines do not define "long-term" in any way; the paper simply indicates that the factor in question refers to "the ability of certain substances to persist in a particular natural environment." The fourth aspect is 'severe,' to which the ICRC Guidelines allude, meaning harm that threatens the health and sustainability of the human population and the environment.

Several studies suggest that international criminals who cause environmental damage can be prosecuted in ways other than through the Rome Statute, Article 8(2)(b)(iv). Ramlogan (2008) argues that Article 8(2)(e)(iv) is pertinent enough to criminalize perpetrators. The author, on the other hand, does not find a strong enough connection because what is protected in this article is the protected object. The things in concern are "buildings dedicated to religion, education, art, science or charitable, historic monuments, hospitals or places where the sick and wounded purposes are collected". Furthermore, if these objects become military objects, they may lose their immune status. In contrast to Ramlogan, Patel (2016) believes that Article 7 of the Rome Statute concerning crimes against humanity, particularly crimes against humanity of extermination and crimes against humanity of deportation or forcible transfer of population, has a high level of relevance. As an alternative, he specified as a relevant basis crimes against humanity of inhumane acts of a similar character intentionally causing great suffering or serious injury to body or mental or physical health.

2. Analysis of Legal Liability for Environmental Damage in Ukraine

More than a year ago, the Russia – Ukraine war killed ten thousand people, displaced millions, and caused widespread environmental damage. UNEP has identified thousands of cases of air, water and soil pollution as well as a drastic reduction in ecosystem stability. This pollution is caused by damage to nuclear power plants, industrial sites, mines, and oil storage facilities. Access to precise information about Russia's attacks on parts of Ukraine's natural environment is limited. Several authorities, however, claim that Russia's invasion of Ukraine breached numerous parts of international law. Aside from the invasion itself, which is illegal under international law, the Russian military initiated discriminatory strikes on civilians, civilian objects, and key infrastructure. Russia has breached international humanitarian law by systematically destroying energy infrastructure and densely populated areas.

Since 10 October 2022, the Russian military has engaged out discriminatory and systematic strikes on Ukrainian energy installations and infrastructure, according to the Independent International Commission of Inquiry on Ukraine (Commission for Ukraine). From 10 October 2022 to 1 February 2023, 13 attacks on Ukrainian energy plants and
infrastructure were carried out utilizing hundreds of missiles and drones armed with weaponry.\textsuperscript{39} Other attacks on gasoline and energy infrastructure had already been carried out by the Russian military prior to October 10, 2022. There had also been pollution from chemical leaks, according to UNEP.\textsuperscript{40} Since Ukraine's pharmaceutical sector is dispersed throughout multiple areas, this contamination is widespread. Table 1 displays data on hazardous chemical releases in Ukrainian territory.

UNEP also stated that private farms were also targeted, generating a soaring death of livestock, the carcasses which can also cause health problems. Furthermore, Ukraine's biodiversity industry is suffering from 'severe' consequences.\textsuperscript{41} Ukraine is home to around 35\% of Europe’s biodiversity, including approximately 70,000 protected and endemic uncommon animals and plants. According to data from the European Forest Fire Information System, over 30\% of nature conservation areas and nearly one million hectares of protected areas were damaged.\textsuperscript{42}

\textbf{Table 1}

<table>
<thead>
<tr>
<th>Industrial Site</th>
<th>Location</th>
<th>Date</th>
<th>Description of the Incident</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coke Plant</td>
<td>Avdiivka</td>
<td>March 13, 2022</td>
<td>Large fire caused by shelling.</td>
</tr>
<tr>
<td>Sumy Khimprom</td>
<td>Sumy</td>
<td>March 21, 2022</td>
<td>Release of ammonia; the gas cloud covered an area of 2.5 km\textsuperscript{2}.</td>
</tr>
<tr>
<td>SOE Khimprom</td>
<td>Chernihiv</td>
<td>March 23, 2022</td>
<td>Depressurizing of a tank with liquid ammonia (12 tons), followed by a fire in the working premises.</td>
</tr>
<tr>
<td>Scientific-Industrial Enterprise Zorya</td>
<td>Rubezhne, Luhansk oblast</td>
<td>April 5, 2022</td>
<td>Release of the 80 tons of nitric acid caused by the hit of storing tank. The radius of the affected area reached 3.5 km.</td>
</tr>
<tr>
<td>Severodonetsk Azot</td>
<td>Severodonetsk</td>
<td>May 5, 2022</td>
<td>Heavy shelling in the one of the largest ammonia producers in Ukraine.</td>
</tr>
<tr>
<td>Azovstal</td>
<td>Mariupol</td>
<td>May 29, 2022</td>
<td>Release of liquid ammonia due to the damage of pumping station. The radius of the affected area reached 2.5 km.</td>
</tr>
<tr>
<td>Ammonium pipeline Tolyatti – Odessa</td>
<td>Nearby town of Bakhmut in Donetsk oblast</td>
<td>May 30, 2022</td>
<td>Release of technical (low pressure) ammonium from a non operational by-pass pipe. At least six communities were under threat of chemical pollution.</td>
</tr>
</tbody>
</table>

Accordingly, it is possible to establish that Russia has breached international humanitarian law and customs. The techniques employed, which are discriminatory and disproportionate, demonstrate that Russia has obviously and conclusively broken the law. The Russian invasion not only affected residents and civilian goods, but also the ecosystem. The sorts of environmental degradation in Ukraine have previously been explained, including pollution from hazardous chemicals and a reduction in biodiversity. Seeing the serious and widespread impact, as well as prolonged recovery process, the damage meets the elements of 'widespread', 'long-term' and 'severe' as regulated in Articles 35(3) and 55(1) AP I. Thus, Russia deserves and should be held accountable for all of his activities.

This is extremely troublesome in the context of international criminal law since it incorporates political considerations. Even from the standpoint of the Rome Statute, it has

\begin{footnotesize}
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  \item United Nations Environment Programme (UNEP), "The Environmental Impact of the Conflict in Ukraine - A Preliminary Review."
  \item Ibid. p. 30.
  \item Ibid.
\end{itemize}
\end{footnotesize}
been explained that Article 8(2)(b)(iv) has very high parameters. Mainly concerned with establishing the accused's mens rea. The mens rea element is very subjective, and it is difficult to demonstrate how someone may be claimed to 'know' that their acts will cause WLS to the environment. Furthermore, no cases have been brought before the ICC that have tried war crimes as defined in Article 8(2)(b)(iv). Thus, using other articles in the Rome Statute, such as Article 8(2)(e)(iv) as stated by Ramlogan and Article 7 as stated by Patel, will not solve the matter. In fact, these two articles are overly broad and exacerbate the burden of proof.

**Conclusion**

Environmental protection during armed conflict is already regulated by international humanitarian and criminal law. The former mention it in Articles 35(3) and 55(1) AP I. The latter, on the other hand, indicated that a person can be declared to have committed a war crime if he purposefully and knowingly causes WLS damage to the environment. Other articles of the Rome Statute, such as Article 8(2)(e)(iv) and Article 7, could also be used, albeit they appear to be a bit imposing. Furthermore, as affirmed by the Independent International Commission of Inquiry on Ukraine, Russia has been determined to have actively violated international humanitarian law and should be held accountable for any environmental damage and loss in Ukraine. The fact that environmental protection and principles in armed conflict have been elevated to the rank of customary international law strengthens Russia's responsibilities as a state. Individual responsibility under international criminal law, however, must be emphasized. The absence of precedent at the ICC (and other International Courts) and the stringent parameters of Article 8(2)(b)(iv) of the Rome Statute make it difficult to prosecute the perpetrators. As a result, for the first time, the prosecutor of the ICC's Office must take the risk of investigating and criminalizing international crimes that inflict massive environmental damage.

**Suggestion**

Significant advances in international crime enforcement (both in the context of war crimes and other sorts), particularly in environmental harm, are urgently required. The initial approach could be to provide specific explanations and parameters about widespread, long-term, and severe elements. One of the reasons for the low number of cases presented to the ICC is a lack of clarity and a proclivity for high requirements in Article 8(2)(b)(iv). Aside from that, adjustments in other areas are needed so that the prosecutor of the ICC Office has the courage to take decisive steps against political constraints.

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