LEGAL REGULATION OF THE EFFECTS OF MILITARY ACTIVITY ON THE ENVIRONMENT

Study for the German Federal Environmental Agency
- Excerpts -

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Executive Summary

1. While armed conflicts have historically tended to cause acute and localized environmental damage, modern weapons and their potential industrial targets (such as nuclear power plants or petrochemical facilities) have the potential to cause destruction on a much vaster scale. To date, no systematic studies have been undertaken to assess the overall scale of environmental damage resulting from warfare. Thus, it is difficult to compare such damage with that caused by routine, peacetime activities.

2. Existing international law provides limited protection against the contemporary threats posed by war to the environment:

   - The provisions of the law of armed conflict that focus specifically on environmental protection address a narrow range of cases, which involve such unusual means of warfare or such high levels of environmental damage that they are largely irrelevant to the ordinary conduct of hostilities.

   - Although the more general principles of international humanitarian law – including necessity, distinction, proportionality and humanity – articulate appropriate standards, which could be applied in a manner that limits environmental damage, they give states a wide degree of discretion and permit them to justify most environmental harms. Only wanton destruction like the oil pollution caused by Iraq during the 1990-1991 Gulf War, which served no military purpose, is clearly prohibited.

   - The extent to which the rules set forth in international environmental treaties and custom continue in force during wartime is unclear. However, even if they technically remain in force, they may not set forth appropriate standards, since they were developed to address peacetime issues, not the types of needs and trade-offs that arise during wartime.

   - The legal norms applicable during non-international conflicts are even less protective of the environment than those applicable to international conflicts.

   - Existing legal norms – limited though they are – are not universally accepted and have never been enforced, even when manifestly violated (such as during the 1990-1991 Gulf War).

3. The prospects are slim for significant reform of the law to provide greater environmental protection. Indeed, even the massive environmental destruction resulting from the First Gulf War proved insufficient to catalyze legal change. Two factors in particular inhibit reform:

   - Environmental protection generally requires a long-term perspective, while warfare is usually dominated by short-term exigencies. Thus, wartime needs tend to trump environmental values even for people acting in good faith.

- Moreover, the tremendous human toll inflicted by war has tended to overshadow its environmental consequences. Future efforts to develop and implement international humanitarian law will likely continue to focus on the alleviation of human suffering.

4. Options for change include the following:

- Broader application of existing rules of international humanitarian or environmental law.
- New procedural requirements.
- New substantive norms.

5. *Broader application of existing rules* – Although existing rules are far from perfect, they at least provide a basic framework of relevant principles, together with specific rules focusing on particular threats such as the bombing of dams and the destruction of agricultural lands. Extending their application to all armed conflicts would be desirable, including:

- *Non-international conflicts* – Recently, the Second Review Conference on conventional weapons adopted an amendment to extend the application of the Conventional Weapons Convention (CWC) to non-international conflicts. This is consistent with the policy of the International Committee of the Red Cross (ICRC) and many states (including the United States) to apply the same rules of armed conflict to both international and non-international conflicts. The recent CWC experience suggests that the time may be ripe to extend other rules of international humanitarian law to non-international conflicts.

- *NATO and UN actions* – Because not all NATO or UN member states are parties to the relevant international agreements, the applicability of existing rules to NATO and UN actions remains variable. To address this matter, decisions authorizing NATO and UN actions could provide for the application of existing rules regarding the environment.

- *Military manuals and training* – The more the existing rules are incorporated into national military manuals and training programs, the greater prospect that they will be implemented.

6. *Procedural requirements* – New procedural requirements are likely to prove acceptable to more states than new substantive requirements, since they impose less of a constraint on the military's flexibility in the conduct of warfare.

- Procedural requirements relating to assessment of potential environmental impacts and reporting on the rationale for targeting decisions seek to enhance the quality of decision-making, rather than to impose substantive constraints on possible outcomes.

- Military commanders already are required to engage in targeting analysis to ensure that a potential target is a military objective (as required by the principle of distinction) and that the attack would not cause excessive collateral damage (as required by the principle of proportionality). The purpose of additional procedural requirements would be to help ensure that environmental considerations are taken into account in this targeting analysis, for example, by requiring military decision-makers to examine whatever information is readily

available about potential environmental consequences, and to provide a statement of reasons as to why they concluded that the concrete and direct military advantage anticipated from an attack justified the expected environmental damages.

- Although procedural requirements would involve additional burdens for the military, these could be kept low through appropriate standards. Moreover, the burden of some requirements (such as a statement of reasons regarding proportionality analysis) could be deferred until after the hostilities cease.

- For these reasons, procedural requirements would seem to represent a reasonable compromise: They allow military decision-makers to retain their flexibility in applying the broad principles of distinction and proportionality, but impose some procedural regularity in order to ensure that military decision-makers exercise their authority in a reasonable manner.

7. *New substantive requirements* – By comparison, new substantive requirements – such as a prohibition against the intentional infliction of air or marine pollution as a method of warfare, or against attacks on oil facilities – would likely encounter greater resistance.

   - The same objection raised by some states (including the United States) to existing environmental norms – namely that what is permissible depends on the circumstances and cannot be specified in absolute rules – applies with equal force to many proposed new norms. If the heavily-qualified prohibition in Geneva Protocol I against attacking dams and nuclear power plants has proven controversial, then proposals to prohibit attacks on oil tankers or chemical factories would be even more problematic.

   - Although such requirements are unlikely to gain widespread acceptance in the near term, they might be pursued by a "coalition of the willing" with the aim of influencing the longer-term evolution of cultural and legal norms. This has been the approach pursued in the land mines context. Whether it will actually prove successful in modifying the behavior of non-participating states remains uncertain.

8. *Longer-term cultural change* – Given the difficulties in adopting new legal norms, an alternative approach is to focus on raising public and military consciousness about the environmental effects of war, so that military decision-makers give greater weight to environmental factors. Recent history suggests that changes in consciousness (for example, about the acceptability of civilian casualties) can have a profound effect on the conduct of hostilities – perhaps even greater than legal change itself.

I
Introduction

> Josephus says that, if trees could speak, they would cry out that since they are not the cause of war, it is wrong for them to bear its penalties.[1]
>
> Necessity knows no law.[2]
>
> Every effort must be made to limit the environmental destruction caused by conflict. While environmental damage is a common consequence of war, it should never be a deliberate aim. The international community must unreservedly condemn all deliberate destruction of the environment during conflict.[3]

Throughout human history, the environment has been one of war's many victims.[4] Thucydides records the scorched earth tactics used by the Greeks during the Peloponnesian Wars.[5] The Romans salted the soils of Carthage after winning the Punic Wars. The Dutch breached their dykes in 1792 to prevent a French invasion. More recently, during the Vietnam War, the United States destroyed 14% of Vietnam's forests, including 54% of its mangrove forests, through chemical defoliants, bulldozers and bombings.[6] Near the end of the First Gulf War, Iraq burned hundreds of oil wells and dumped massive amounts of oil into the Persian Gulf.[7] And the ongoing civil war in the Congo has decimated the country's wildlife, killing thousands of elephants, gorillas and okapis.[8]

Some of the earliest norms to regulate warfare had an environmental component[9] and, today, military practices common in the past, such as the destruction of agricultural lands, are outlawed by the laws of war.[10] Nevertheless, even contemporary international law contains

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[1] Hugo Grotius, *De Jure Belli ac Pacis Libri Tres* (1646), *reprinted in* 2 *Classics of International Law* 747 (James Brown Scott ed. 1925), *quoted in* Betsy Baker (1993), at 351.

[2] St. Thomas Aquinas, *Summa Theologica,* Pt. II, 1st part, question 96, Art. 6.

[3] UN Secretary-General Kofi Annan, Message for 6 November 2002 Observance of International Day for Preventing the Exploitation of the Environment in War and Armed Conflict, UN Press Release, SG/SM/8463.

[4] *See generally* Lanier-Graham (1993); SIPRI (1976).

[5] Thucydides, *The Peloponnesian Wars* (Richard Crawley trans), ch. IX ("The next summer, just as the corn was getting ripe, the Peloponnesians and their allies invaded Attica … and sat down and ravaged the land.").

[6] Popovic (1995), at 69; *see infra* notes 53-64 and accompanying text.

[7] *See infra* notes 65-75 and accompanying text.

[8] UNEP (2000), *African Environment Outlook, available at*: http://www.unep.org/aeo/246.htm.

[9] *See* Green (1991), at 223-24 (discussing various norms put forward by Josephus, Maximilian II in 1570, and Friedrich of Prussia during the Seven Years' War protecting, *inter alia*, beasts of labor, foodstuffs, wooded areas, fields and gardens, and farm property).

[10] Geneva Protocol I, art. 54.

few norms specifically addressing the environmental consequences of war. Instead, the environment continues to rely for protection primarily on the basic principles of necessity, proportionality and distinction, which indirectly protect the environment by helping to limit war's destructiveness.

Two developments over the past several decades have given greater prominence to the problem of environmental protection during wartime: (1) the development of international environmental law, which reflects the growing importance of environmental values internationally; and (2) the vastly more destructive potential of modern warfare. These developments raise the questions:

- Is international law sufficiently protective of the environment during wartime? Does it draw the appropriate balance between environmental and military concerns? Are its norms sufficiently precise to guide people acting in good faith? Are they enforced sufficiently to deter potential lawbreakers?

- To the extent existing law is inadequate, can it be improved?

The present study attempts to assess the adequacy of existing law in pragmatic terms – are we doing as much as we can? – rather than against a more absolute standard – are our actions sufficient to protect the environment? The answer to this latter question is almost certainly negative. But this should not be a surprise. We will never do *enough* to protect the environment from the consequences of warfare; the environment will almost inevitably suffer harm. The more relevant question is whether we can reasonably attempt to do more and, if so, what?

Like the current debate about trade and the environment, the protection of the environment during wartime poses potential tensions between bodies of law that arose separately and have different core objectives. In contrast to the trade and environment debate, however, where environmental actors have pressed strongly for a reassessment of international trade rules, law of war experts have more successfully resisted the intrusions of environmentalists. As a result, despite the increasingly destructive nature of warfare, there has been little or no development in international humanitarian law to address specifically environmental concerns.[11]

In considering how to move forward, realism requires us to recognize at the outset the extraordinary difficulties involved:

To begin with, there is the familiar problem of applying any legal rules during time of war. Hersh Lauterpacht's famous quip – "if international law is, in some ways, at the vanishing point of law, the law of war is, perhaps even more conspicuously, at the vanishing point of international law"[12] -- may be hackneyed, but nonetheless has more than a grain of truth. Environmental critics of the law of war need to remember that, as poorly as the environment may have fared during wartime, humans have fared even worse.

Protection of the environment during wartime poses a particularly intractable problem because of the differing time horizons involved: while environmental problems tend to be relatively long term, short-term exigencies dominate in wartime. Thus, although we can

[11] *Cf.* Grunawalt (1996), at 17-18 (comment of Professor Michael Bothe that law of war experts have displayed an "attitude of benign neglect to what ha[s] happened in the field of environmental law").

[12] Lauterpacht (1952), at 382.

attempt to elaborate detailed norms, in the heat of battle, immediate military needs will almost always trump longer-term environmental considerations.

This is not simply a practical problem, it is a normative one as well. For it is by no means clear what the appropriate tradeoff should be between military and environmental values. Wanton damage is, of course, always wrong, since it has no military justification. That is what made the environmental destruction by Iraq during the First Gulf War such an easy case. But other types of damage raise the problem: How much importance should we place on winning, or minimizing casualties, versus protecting the environment? Leaving aside the issue of what is practicable, there is the issue: what is the optimal level of environmental protection?[13]

The law of war, in general, contains few absolutes. It does not attempt to prevent all damage – an impossible task given warfare's intrinsic destructiveness – but to strike a balance between military and humanitarian imperatives. Thus, it accepts some civilian casualties, so long as they are unintended and not disproportionate to the expected military benefit. If the law of war accepts the possibility of civilian deaths, then it is difficult to contend that it should not accept some level of environmental damage as well.[14] Indeed, the balancing approach reflected in the law of war appears particularly appropriate for environmental norms, which usually are not stated in absolute terms, but incorporate some kind of balancing test themselves.[15]

The question then is: What is the appropriate balance? How do we compare environmental versus military and humanitarian considerations? If an enemy force is located in a tropical forest, for example, and we are considering whether to defoliate the forest prior to the attack, how do we compare the casualties avoided with the environmental damage caused? People will answer this question very differently, depending on their values. One cannot simply assume that more environmental protection is always better and that military objections to stronger standards are always invalid. The challenge is not simply to provide more environmental protection, but to determine how much environmental protection is appropriate.[16]

Another preliminary question needing attention is: what types of wartime environmental damage are of international concern? Despite claims about the intrinsic value of the environment or about individuals as holders of environmental rights, international environmental law – at least in its present stage of development – still has primarily an inter-state orientation. It does not address environmental protection generally, including a state's treatment of its own environment. Instead, it addresses environmental protection only when the interests of other states are involved, either directly (as in the case of transboundary environmental harm) or more generally, when an action affects the interests of the

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[13] As Christopher Stone notes, "It is too easy to jump into the discussion supposing we know what is morally right – protection of the environment– and are faced only with designing institutions that will insulate commanders and politicians from some overriding, morally indifferent, principle of 'military and political necessity.' The truth is not so simple." Stone (2000), at 19.

[14] *See, e.g.,* Grunawalt (1996), at 375 (remark by Admiral Bruce Harlow that "if the need is so great that we all agree it warrants the killing of human beings, it is not unreasonable to conclude that collateral environmental damage, although important, is collateral to that primary issue of justifiable homicide").

[15] Environmental norms differ in this respect from many human rights, which are viewed as absolutes: torture of civilians or of prisoners of war is wrong, regardless of the circumstances, even when it may serve some military purpose (for example, as a means of obtaining vital information). In contrast, environmental norms – even during peacetime – usually involve trade-offs with other values such as economic well-being.

[16] *See* Stone (2000), at 19-20 ("If the problems of targeting populated areas, blockades, sieges and the various other interpersonal conflicts are hard to resolve..., how much harder is it to weigh humans, on one pan of the scale, against some quality of the environment, on the other?").

international community as a whole (for example, because a resource is found in the global commons). In this respect, international environmental law differs from human rights law, which applies to a state's treatment of its own citizens.

Given the limited scope of international environmental law generally, what types of environmental damage during wartime should international law address? Consider the following cases:

- *A belligerent injures its own environment* – Often a state may injure its own environment in the conduct of warfare. It may over-exploit natural resources to generate revenue, or burn its fields when retreating to deprive the enemy of food.[17] Since purely local pollution is not usually addressed by international law even in peacetime, it is difficult to see why this is an appropriate subject of international regulation during wartime.[18]

- *A belligerent injures the environment of a neutral state or a resource or area of common international concern* – This is also an easy case, but for the opposite reason. When a state injures the environment of a neutral state or an area of common international concern, then the interests of other states are clearly implicated. The problem arises in defining which environmental resources are of international concern. Specific sites designated under an international convention such as the World Heritage Convention or the Ramsar Convention would seem to qualify, as would resources such as Antarctica and the high seas, which are beyond national jurisdiction, and global resources acknowledged to be of common concern such as biodiversity, the ozone layer and climate. But destruction of a forest or a coral reef that has not been internationally listed could be considered a matter of domestic rather than international concern, and might not fit within this category.

- *A belligerent injures the environment of the enemy* – This is both the most typical and the hardest case. Although transboundary environmental harm is the paradigmatic subject of international environmental law, the essence of warfare is to gain a military advantage by injuring the enemy. So it is not obvious why – and under what circumstances – the belligerents themselves should be entitled to legal protection against environmental injury by the other side, except to the extent that the injury is wanton and serves no military purpose. One could argue that the environment as such is the injured party – it has an interest in not being harmed. But this position is difficult to maintain given that, at present, international environmental law does not generally recognize the environment as having interests or rights of its own even in peacetime. This leaves the individual as the interested party, as in other areas of international humanitarian law, where individuals are the primary object of protection. On this view, a belligerent should be limited in the environmental damage it inflicts on the enemy, based on the effects that this damage will have on individuals (and in particular, civilians). The issue then becomes whether civilians are adequately protected against environmental harms under existing rules of international humanitarian law, or whether these need to be supplemented.

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The issue of environmental protection during wartime has received only sporadic attention by the international community, usually in response to particular events. The widespread environmental destruction during the Vietnam War, as well as the use of weather

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[17] Most of the environmental damage during the Vietnam War, for example, occurred in South Vietnam, which consented to the use of defoliants and Rome ploys by the United States. Schmitt (1997), at 11.

[18] Similarly, international humanitarian law in general provides protections only for enemy combatants and civilians, not a state's own citizens. Instead, a state's treatment of its own citizens during wartime is addressed by human rights law.

modification techniques by the United States, led to the inclusion of specific environmental provisions in the 1977 Geneva Protocols and to the adoption of a separate treaty prohibiting the use of environmental modification techniques. In the early 1980s, the hypothesis that the widespread use of nuclear weapons would trigger a nuclear winter spawned significant concern, but no new legal norms. Concern about the environmental consequences of war re-emerged in the early 1990s as a result of the massive oil spills and fires caused by Iraq during the First Gulf War. But, despite numerous conferences and proposals, and despite the political boost given to environmental issues generally during the run-up to the 1992 UN Conference on Environment and Development (UNCED), proposals for new and stronger legal rules withered on the vine. Military law experts successfully argued that existing legal norms were adequate and simply needed better implementation and enforcement. After the early 1990s, the subject of environmental protection during wartime moved out of the limelight again, only occasionally reemerging – for example, during the Kosovo conflict, in reaction to the use of depleted uranium and the bombing of petrochemical facilities by NATO. Recently, the issue has gained renewed prominence as a result of the proposal by the Executive Director of UNEP, Dr. Klaus Topfer, to develop a "green Geneva Convention."[19]

Military activities can damage the environment in a variety of ways: peacetime training and operations can cause pollution and disrupt wildlife, the stationing of troops can generate substantial wastes,[20] and the remnants of war such as land mines can have continuing consequences for both humans and wildlife. The present study does not attempt to address the totality of military effects on the environment, but instead focuses on damage resulting from the conduct of hostilities: the bombing of dangerous facilities, for example, or the burning of forests or the deliberate release of pollutants.

The report initially reviews in Part 2 the various threats to the environment posed by war and the history of war's impact on the environment. Part 3 then surveys existing legal norms and implementation mechanisms, including those found in the law of war, international environmental law and international human rights law. It concludes that existing norms provide relatively little protection for the environment. Part 4 then assesses potential ways to strengthen the law. Although any reforms would face an uphill struggle, two of the more promising avenues are procedural requirements aimed at improving the transparency and quality of decision-making, and efforts to raise public concern and to promote stronger cultural norms to protect the environment during wartime. Part 5 concludes with several concrete recommendations for moving the issue forward.

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[19] Alex Kirby, "World 'Needs Green Geneva Convention,'" *BBC News*, 10 Feb. 2003.

[20] Leggett (1992), at 74 (describing wastes generated by Coalition forces during the 1990-1991 Gulf War, including plastic bags, subsistence-related garbage, solvents, acids, lubricants and electrical waste). For a comprehensive review of the effects of military activities on the environment during peacetime, *see generally* SIPRI (1980).

V
Recommendations

1. *Attempt to develop greater normative consensus among military decisionmakers through discussion of environmental case studies.*[21] Given the generality of norms such as necessity, distinction and proportionality, there is considerable room for discretion and disagreement about their implications in concrete cases. Moreover, since they do not explicitly mention the environment, there is a danger that environmental considerations will not even factor into the decision-making process. Both problems could be addressed by expert meetings that consider the implications of international humanitarian principles in the context of concrete cases involving potential environmental damage (e.g., bombing a petrochemical plant or an oil tanker). Discussion of concrete cases would help sensitize military officials to environmental factors and to the tradeoffs involved between military and environmental values. The meetings might be convened by the ICRC, NATO, UNEP or an expert body of high repute in military circles, such as the San Remo Institute of International Humanitarian Law.

2. *Propose that UNEP undertake a comprehensive review of the environmental effects of warfare.* To date, most of the discussions of the environmental effects of warfare have been anecdotal, and have not attempted to assess systematically the magnitude of war's impacts on the environment, as compared to other environmentally-destructive practices. A comprehensive review of the scientific information could help: (a) give the issue greater prominence and help generate political will, and (b) provide better information about which types of military activities pose the greatest environmental threat and therefore should be the highest priorities for action. As one commentator notes, "Without a reliable base of knowledge, it is simply not possible to develop and implement appropriate environmental mitigation measures in a timely, cost-effective manner."[22]

3. *Introduce a resolution at the International Conference of the Red Cross and/or in the UN General Assembly urging states to protect the environment during non-international armed conflicts and to respect the relevant rules of international humanitarian law.* This statement would attempt to build on the recent trend towards the greater application of international humanitarian principles and treaties during non-international conflicts.

4. *Introduce a resolution in the International Conference of the Red Cross, requesting that the ICRC renew its efforts to incorporate environmental provisions into military manuals.* There is widespread agreement on the need for better implementation of existing rules. Revision of military manuals to reflect current thinking about the environment would be a first step in this direction.

5. *Propose in NATO that environmental rules be incorporated into the Combined Rules of Engagement for NATO forces, and seek to include in UN Security Council decisions authorizing the use of force reference to the importance of environmental protection.* Although rules of engagement generally reflect existing legal norms, rather than create new ones, they can also reflect policy considerations that go beyond the existing law. Thus, they present an opportunity to articulate rules that states might not be willing to acknowledge as legal obligations. For example, the rules of engagement for NATO or United Nations forces might

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[21] Fleck (1996), at 534.

[22] *See* Biswas (2000), at 315.

contain a requirement to consider environmental effects as part of targeting analysis, and to refrain from actions that would cause significant environmental damage unless absolutely necessary. As discussed above, however, it should be recognized that efforts to include any environmental provisions that go beyond existing legal norms would be likely to encounter resistance.

6. *Investigate within IUCN the possibility of convening a diplomatic conference to consider the proposed convention on the prohibition of hostile military actions in protected areas.* Proposals to develop a protected area convention have enjoyed considerable support and little clear opposition. This convention would thus appear to have the best prospect of success of any substantive reform proposal.

7. *Propose procedural requirements, including in particular environmental assessments and statements of reasons.* The proposals might begin with soft law instruments, such as a resolution of the UN General Assembly, the Red Cross Conference or UNEP. The idea would be to promote familiarity with the proposals and to build support, with a view to the possible adoption of a legal instrument.