

Environmental protection during armed conflict

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Abstract

Protection of environment is a matter of concern not only for individuals but for the states also. In the present era of climate change, the human environment is at stake. The whole world has become deeply conscious of its impending consequences. But the position during wars or armed conflicts among countries posits a different challenge. There are plethora of Treaties, Conventions, Protocols etc. which talks about environmental protection during wars. However, the factual position is otherwise. Recently, use of chemical weapons including deadly gases in Syria is a burning example. Now, the time has come to form a body like International Court of Justice and International Criminal Court to try and punish the perpetrators of crime against environment including armed conflicts. Otherwise in absence of effective regulators, all such International instruments will be of no avail.

Keywords: environmental protection, armed conflicts, world court for environmental crimes

Introduction

From the beginning of recorded history, war has played a major role in shaping the course of events. Through geography changes, nations come and go, vanquished turn into conquerors and victors become victims, one of the constant elements of warfare is its degrading effects on the environment ^[1]. International Court of Justice in an advisory opinion on the Legality of the Threat or use of Nuclear Weapons; said that:

“States must take environmental considerations into account when assessing what is necessary and proportionate in the pursuit of legitimate military objectives. Respect for the environment is one of the elements that go to assessing whether an action is in conformity with the principles of necessity and proportionality” ^[2].” he Court (I. TC.J.) went on to say further in the same case *man beings including generations unborn.*” Here, it is noteworthy that according to Article 10 of the Convention on Civil Liability for Damage Resulting from Activities Dangerous to the Environment, 1993, the “Environment” includes ^[3]: *both abiotic and biotic, such as air, water, soil, fauna and flora and the interaction between the same factors; property which forms part of the cultural’ heritage; and aspects of the landscape.*

Wars and armed conflicts of all kinds invariably leave a deep and lasting impact on environment. Weaponry, troop movements, landmines, destruction of forests by defoliation or general military usage, poisoning of water sources, target-shooting of animals for practice, consumption of endangered species out of desperation, etc. are just some of the examples as to how wars and armed conflicts harm the environment. And though the environmentally destructive nature of countless military actions has not gone unnoticed in the international community, it is only in the last few decades that the international community, begun to focus attention on the term ‘environment’ as a separate category of concern in common parlance. Even customary international law remains of relatively limited utility in providing normative standards for the resolution of emerging environmental problems ^[4].

Historical Perspective

1) The Environment and Warfare before Vietnam

That war damages the environment is a truism so, too, can the forces of nature serve as a powerful weapon during war. Although the systematic examination of the relationship between the law of war and the environment is a relatively recent phenomenon, the conduct of war has always been inseparable from the use of environment. It is part of the annals of history that during pre-historic times, humans used land features for cover and concealment and used the products of the land-stone, wood, fire and even animals for military advantage. Such primitive environmental uses, though real, raised few concerns in a discussion of environmental degradation by war. In ancient India, for example, circa 4000 B.C., it is reported that combatants polluted the air by causing fumes that caused slumber and yawning ^[5]. During the Peloponnesian war, the Spartans saturated wood with pitch and sulphur and placed it afire under the walls of its enemy to cause toxic fumes ^[6]. In 146 B.C., during the Third Punic War, the Soil of Carthage was laced with salt to pollute the land and render it infertile ^[7]. To pollute an opponent’s water, the Romans threw dead animals into the wells of their enemies ^[8].

In the seventeenth and eighteen centuries, environmental modification became a defensive tactic. During the Franco-Dutch War of 1672 to 1678, dikes and dams in the Netherlands were cut and broken by the Dutch in order to create large scale flooding and impede the advance of French Forces ^[9]. In 1763, the British during the French and Indian wars gave blankets infected with small pox to Indians they suspected of being sympathetic to the French ^[10]. During the Napoleonic wars of 1796 to 1815, while the French advanced through Russia in the summer of 1812, the Russians prophesied a self-inflicted scorched earth policy to impede Napoleon’s progress ^[11]. The United States has its own shameful history of environmental warfare. In the U.S.- Navaho wars of 1860 to 1864, the United States deliberately destroyed sheep and other livestock, as well as fruit orchards and other crops of the Navaho, as part of its

successful strategy of subjugation ^[12]. The twentieth century brought first World War and the use of chemical weapons. Evidence of those actions still remain in the pockets of gas-tainted soils around Verdun and other areas of first World - War's infamous trench warfare. In 1938, during the second Sino- Japanese war, the Chinese adopted an identical tactic when they destroyed the Huayuankow dike on the yellow river to halt the Japanese invaders. Although a short-term military success, the operation killed thousand of civilians and flooded millions of acres of cultivated land. In the next decade, the Germans employed a similar technique by flooding a number of areas in the Netherlands to slow the Allied advance eastward. The European theatre also witnessed repeated attacks on hydro-electric dams. To cite only one example, raids on the Mohne and Eder dams in May 1943, although effectively depriving the Ruhr industrial complex of water and power, killed more than 1300 civilians and shut off drinking water and energy to the four million Germans in the region. Dam attacks continued during the Korean and Vietnam conflicts. This century witnessed the first major environmental damage caused by the destruction of oil facilities. In a notable chapter of the First World War, British Colonel Norton Griffiths destroyed Romanian Oil fields, the richest in Europe, to prevent them from falling into enemy hands when the Central Powers invaded. Romanian Oil was again a target in the Second World War. Most noteworthy were the 1943 air raids on the oil producing centre at Ploesti. Memorable for the feats of airmanship involved in the fifteen hundred mile flight, much of it through enemy fighter cover, the raids significantly damaged refineries and oil tanks fuelling the Reich's war machine. As might be imagined, all such attacks wrought extensive environmental damage.

Of course, it was in the Second World War that the only instances in history of wartime environmental destruction by nuclear weapons took place when U.S. aircraft bombed Hiroshima and Nagasaki in August, 1945. Tens of thousands died immediately, with thousands of others doomed to suffer the effects of radiation for decades to come. The target area was reduced to a virtual wasteland. One eyewitness of the explosion in Hiroshima described the destruction:

"Within a few seconds the thousands of people in the streets and the gardens in the Centre of the town were scorched by a wave of searing heat. Many were killed instantly, others lay writhing on the ground, screaming in agony from an intolerable pain of their burns. Everything standing upright in the way of the blast, walls, houses, factories, and other buildings, was annihilated..... Horses, dogs, and cattle suffered the same fate as human beings. Every living thing was petrified in an attitude of indescribable suffering. Even the vegetation did not escape. Trees went up in flames, the rice plants lost their greenness, the grass burned on the ground ^[13]." That those weapons are dwarfed by modern nuclear capabilities emphasizes the environmental apocalypse that their widespread use would ensure today.

Despite the destructiveness of such events, the international community paid scant attention to their environmental consequences. The limited expressions of concern were from a purely anthropocentric perspective, as demonstrated by the failure to mention the environment in the four Geneva Conventions promulgated in the immediate aftermath of World War II. In part, this may have been because, as Geoffrey Best has perceptively noted, until the Second World War, man's destructive capabilities primarily threatened the anthropogenic

environment ^[14]. It was also surely the result of a failure to understand the complex interrelationships between human activities and the environment, the fragility of the environment, or even its finite nature. Until the war in Vietnam, whatever protection the environment enjoyed under International law was purely coincidental.

2) Vietnam and its aftermath

During the Vietnam conflict, the environment began to play a prominent role in considerations of warfare's means and methods. For military planners, Vietnam presented unique challenges. United States and South Vietnamese forces faced both regular North Vietnamese Army troops who had infiltrated the South and indigenous guerrilla units- the Vietcong- supplied via a complex network of trails from the North and from Cambodian and Laotian sanctuaries. Among the factors that contributed to the communist forces' ultimate success was an ability to blend into the surrounding vegetation and forests whenever threatened. Operating from these areas, they effectively employed small unit tactics to wear down the U.S. and South Vietnamese forces. While this did little to "win the war" militarily, it drove the political cost up measurably, especially in the United States.

Understandably, U.S. forces worked hard to defeat these tactics. One approach was to destroy forests and dense vegetation to deny the enemy cover, mobility, logistic support, and, in some cases, sustenance. U.S. forces utilized two techniques beyond merely bombing the targeted zones with conventional munitions to accomplish this end. First, they dropped herbicides over enormous areas of South Vietnam, both in wooded areas (86%) and on crop lands (14%). By one estimate, approximately one- tenth of South Vietnam was sprayed during the war. At the same time, U.S. troops used heavy tractors with large blades attached- Rome plows- to cut through vegetation and trees. Initially, the effort concentrated on clearing lands alongside roads to minimize the risk of ambushes. However, in 1967 large tracts began to be levelled; by the end of the war, Rome plows had cleared nearly three-quarters of a million acres. Though more labour intensive than spraying, plowing was more effective in rendering an area unusable. As might be expected, both techniques caused extensive damage to the flora (the military objective) and fauna of the region. In particular, the operations led to massive soil erosion in Vietnam's hilly terrain. The effect on animal habitats was especially severe, for the vegetation that regenerated proved less capable of supporting animal life than in the past ^[15].

Between 1963 and 1972, the Air Force also seeded clouds in operations designed to lengthen the rainy season since the roadways were unpaved, U.S. forces hoped that extended rainfall would soften the road surfaces and cause them to collapse, thereby showing movement along the Ho Chi Minh trail. Disagreement exists over the success of these operations. Nevertheless, there is little doubt that increasing rainfall can cause negative environmental consequences, including increased soil erosion, destruction of vegetation, and disease among animals.

For the first time, the environmental impact of military operations drew domestic and international attention. Multiple factors contributed to this new phenomenon. A general increase in environmental awareness coincided with the Vietnam war to help focus public attention on the environmental effects of the war. So, too, did anti-war sentiments.

3) The Gulf War

The Gulf war brought warfare's environmental destructiveness to the forefront of international attention. Even before the air campaign commenced on January 17, 1991, there were clear indications that, environmentally speaking, this conflict would represent a new model. Two days after the air war commenced, the Iraqi began pumping oil into the Persian Gulf from sea Island Terminal, an offshore oil loading dock. The flow was stemmed only after coalition air forces bombed the terminal^[16]. Not to be deterred, the Iraqis exacerbated the pollution by dumping oil into the Gulf from five tankers moored at Mina al-Ahmadi. The Defense Department estimates that by the end of the conflict, the Iraqis had intentionally spilled between seven and nine million barrels of oil^[17]. It eventually covered approximately 600 square miles of water and spread along 300 miles of shoreline. To place the Iraqi's actions in context, the spill was the largest, international or accidental in history. Not all of the oil that found its way into the Persian Gulf derived from Iraqi actions. In fact, the first oil spill of the war may have come on the morning of the seventeenth when U.S. Navy aircraft bombed an Iraqi oil platform at Mina al-Bakr. A week later, Navy planes hit the Amuriah, an Iraqi tanker that was refuelling an air-cushioned landing craft. French aircraft struck a tanker of their own that same day. Other air attacks may also have contributed to the spills.

Soon after Desert storm began, the Iraqi's started destroying oil wells to complement their maritime misconduct. For instance, on January 21, they detonated sixty wells in the vicinity of Al Wafra in Kuwait. They also set fire to the Mina ash Shuaybah and Mina Abd Allah Oil installations on the Coast. Nevertheless, it was not until just prior to the start of the ground war on February 23-24 that systematic destruction began in earnest, with the Al Burgan oil fields suffering the heaviest toll. By the end of hostilities, the Iraqis had damaged or destroyed 590 oil well heads. Of these 508 were set afire, and eighty-two were damaged in a manner that caused oil to flow from them. The blazes reached their peak during may and June, when 4.5 million barrels of oil per day were lost to the fires. Several comparisons illustrate the gravity of this situation. The oil fires generated eighty-six billion watts of heat, roughly equal to that of 500 forest fires. Daily soot release into the atmosphere, which drifted as far away as the Himalayas, was the equivalent of 10% of global biomass burning, while sulphur dioxide output appropriated 57% of the emissions from electrical utilities. Carbon dioxide production was at the level of 2% of the fossil fuel and biomass burning that occurs worldwide on a daily basis^[18].

The International community mounted an aggressive campaign to contain the spills and put out the fires. Ultimately, two million barrels of oil were recovered from the Gulf^[19]. The battle against the burning oil wells also went well. Nearly, thirty firefighting teams from ten countries attacked the blazes, extinguishing them much more quickly than had been expected^[20]. Despite predictions of doom, the environmental damage was not catastrophic. The United Nations Environment Programme (UNEP) reported in May 1992 that the oil well fires did not affect the global climate and that the pollution they caused was not severe enough to result in major human health problems^[21]. Nevertheless, the pooling oil, oil mist, and settling soot did damage the terrestrial environment, particularly the fragile desert ecosystem. In many areas, the annual seed flora failed to set, and perennial vegetation, critically important

because its roots and a food source for many animals, incurred damage or died. Additionally, oil harmed intertribal habitats such as mangroves, beaches, and mud flats. Though no major threat to individual human health surfaced, the increase in inhalable particulates that the fires caused was significant when considered in terms of exposure of a large population. This exposure could potentially increase the prevalence and severity of disease, both chronic and acute^[22]. Of course, the overall assessment may change as unexplained health problems begin to develop among those who were present during the conflict.

As a final note, it is important to remember that although the oil spills and fires stole the headlines, the war caused a great deal of additional environmental damage. Mines presented a particular problem. On many occasions, the Iraqis indiscriminately laid mine fields without adequately marking them or accurately recording their location. This made large areas of land impassable and posed a significant danger to humans and animals alike. Massive mine-clearing efforts had to be mounted to make the land usable again. To a lesser extent, the same is true of unexploded Ordnance (UXO), i.e., the remnants of munitions that failed to explode^[23].

The war also had less sensational, though still significant, effects on the environment. For instance, explosions and vehicle movement disrupted the desert ecosystem by loosening its surface, rendering it susceptible to wind and water erosion. Enormous quantities of hazardous materials were also generated, ranging from dishwater and human waste to antifreeze and engine oil. However, these minor problems were successfully handled by the U.S. military forces.

International Legal Texts

Environmental protection is heralded as a laudable goal by a broad variety of international agreements. There are over 900 international agreements that purport to protect the environment^[24]. Only a small subjects of these agreements demonstrates the use of environment as a tool of war. The description of some significant such international agreements are being reproduced as such:

i) Declaration Renouncing the Use, in Time of War, of Certain Explosive Projectiles, 1868, ST. Petersburg.

"Considering: That the progress of civilization should have the effect of alleviating as much as possible the calamities of war; that the only legitimate object which States should endeavour to accomplish during war is to weaken the military forces of the enemy; that for this purpose it is sufficient to disable the greatest possible number of men; that this object would be exceeded by the employment of arms which uselessly aggravate the sufferings of disabled men, or render their death inevitable; that the employment of such arms would, therefore, be contrary to the laws of humanity; The contracting Parties engage mutually to renounce, in case of war among themselves, the employment by their military or naval troops of any projectile of a weight below 400 grammes, which is either explosive or charged with fulminating or inflammable substances."

ii) Protocol for the Prohibition of the Use in War of Asphyxiating, Poisonous or other gases, and of Bacteriological Methods of Warfare, 1925^[25]

"Whereas the use in war of asphyxiating, poisonous or other gases, and of all analogous liquids, materials or devices, has been justly condemned by the general opinion of the civilized

world; and Whereas the prohibition of such use has been declared in Treaties to which the majority of Powers of the World are Parties; and To the end that this prohibition shall be universally accepted as a part of international law, binding alike the conscience and the practice of nations;

Declare: That the High contracting parties, so far as they are not already parties to Treaties prohibiting such use, accept this prohibition, agree to extend this prohibition to the use of bacteriological methods of warfare and agrees to be bound as between themselves according to the terms of this declaration.”

iii) Convention for the Protection of Cultural Property in the Event of Armed Conflict, The Hague, 1954 ^[26]

“Recognizing that cultural property has suffered grave damage during recent armed conflicts and that, by reason of the developments in the technique of warfare, it is in increasing danger of destruction;

Being convinced that damage to cultural property belonging to any people whatsoever means damage to the cultural heritage of all mankind, since each people makes its contribution to the culture of the world; Considering that the preservation of the cultural heritage is of great importance for all people of the world and that it is important that this heritage should receive international protection; Guided by the principles concerning the protection of cultural property during armed conflict, as established in the conventions of the Hague of 1899 and of 1907 and in the Washington Pact of 15 April 1935;

Being determined to take all possible steps to protect cultural property;

Have agreed upon the following provisions: (from Article 1 to Article 21)

iv) Declaration of the United Nations Conference on the Human Environment: Stockholm, 1972 ^[27]

Principle 1:

“Man has the fundamental right to freedom, equality and adequate conditions of life, in an environment of a quality that permits a life of dignity and well-being, and he bears a solemn responsibility to protect and improve the environment for present and future generations. In this regard, policies promoting or perpetuating apartheid, racial segregation, discrimination, colonial and other forms of oppression and foreign domination stand condemned and must be eliminated.”

Principle 2:

“The natural resources of the earth, including the air, water, land, flora and fauna and especially representative samples of natural ecosystems, must be safeguarded for the benefit of present and future generations through careful planning or management, as appropriate.”

Principle 6:

“The discharge of toxic substances or of other substances and the release of heat, in such quantities or concentrations as to exceed the capacity of the environment to render them harmless, must be halted in order to ensure that serious or irreversible damage is not inflicted upon ecosystems. The just struggle of the people of ill countries against pollution should be supported.”

Principle 7:

“States shall take all possible steps to prevent pollution of the

seas by substances that are liable to create hazards to human health, to harm living resources and marine life, to damage amenities or to interfere with other legitimate uses of the sea.”

Principle 26:

“Man and his environment must be spared the effects of nuclear weapons and all other means of mass destruction. States must strive to reach prompt agreement, in the relevant international organs, on the elimination and complete destruction of such weapons.”

v) Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on their Destruction; 1975 ^[28]

“Determine to act with a view to achieving effective progress toward general and complete disarmament, including the prohibition and elimination of all types of weapons of mass destruction, and convinced that the prohibition of the development, production and stockpiling of chemical and bacteriological (biological) weapons and their elimination through effective measures, will facilitate the achievement of general and complete disarmament under strict and effective control.”

vi) Convention on the Prohibition of Military or any Hostile use of Environmental Modification Techniques, 1976 (The ENMOD CONVENTION) ^[29]

Article I, Para 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.”

Article II:

“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 ENMOD Convention is specifically intended to prevent use of the environment as a means of warfare, by prohibiting the deliberate manipulation of natural processes that could produce phenomena such as hurricanes, tidal waves or changes in climate.

vii) Protocol Additional to the Geneva Conventions of 12 August 1949, and Relating to the Protection of Victims of Non-International Armed Conflicts (Protocol. II (1977) ^[30]

Article 14:- Protection of Objects indispensable to the survival of the civilian population:

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

Article 16: Protection of Cultural objects and of places of worship:

“Without prejudice to the provisions of the Hague convention for the Protection of Cultural property in the Event of Armed

Conflict of 14 May, 1954, it is prohibited to commit any acts of hostility directed against historic monuments, works of art or places of worship which constitute the cultural or spiritual heritage of peoples, and to use them in support of the military effort."

Article 15: Protection of works and installations containing dangerous forces:

"Works or installation containing dangerous forces, namely dams, dykes and nuclear electrical generating stations, shall not be made the object of attack, even where these objects are military objectives, if such attack may cause the release of dangerous forces and consequent severe losses among the civil population."

viii) Protocol Additional to the Geneva Conventions of 1949, and Relating to the Protection of Victims of International Armed Conflict (Protocol I) [31]

Article 35, Para 3:

"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."

Art. 55, Para 1:

"Care should 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."

Para 7 of the Preamble:

"Recognizing the prohibition, embodied in the pertinent arguments and relevant principles of international law, of the use of herbicide as a method of warfare."

ix) Rio Declaration on Environment and Development, 1992 [32] [The United Nations Conference on Environment and Development]

Principle 24:

"Warfare is inherently destructive of sustainable development. States shall therefore respect international law providing protection for the environment in times of armed conflict and cooperate in its further development, as necessary."

x) Convention on the Prohibition of the Development, Production, Stockpiling and use of Chemical Weapons and on their Destruction, 1993 [33]

"State Parties are required not to develop, produce, otherwise acquire, stockpile or retain chemical weapons, or transfer, directly or indirectly, chemical weapons to anyone; not to use chemical weapons; not to engage in military preparations for use of chemical weapons; not to assist, encourage, or induce anyone to engage in any activity prohibited to a State Party under the Convention."

xi) Rome Statute of the International Criminal Court, 1998 [34] Article 8, Para-2 lit. b (iv):

"Intentionally launching an attack in the knowledge that such attack will cause incidental loss of life or injury to civilians or damage to civilian objects or widespread, long-term and severe damage to the natural environment which would be clearly

excessive in relation to concrete and direct overall military advantage anticipated."

xii) Convention on Cluster Munitions, 2008 [35]

"Concerned that cluster munitions remnants kill or maim civilians, including women and children, obstruct economic and social development, including through the loss of livelihood, impede post-conflict rehabilitation and reconstructions, delay or prevent the return of refugees and internally displaced persons, can negatively impact on national and international peace- building and humanitarian assistance efforts, and have other severe consequences that can persist for many years after use."

"Reaffirming the Declaration of the Oslo Conference on Cluster Munitions, by which, inter alia, states recognised the grave consequences caused by the use of cluster munitions and committed themselves to conclude by 2008 a legally binding instrument that would prohibit the use, production, transfer and stockpiling of cluster munitions that cause unacceptable harm to civilians, and would establish a framework for cooperation and assistance that ensures adequate provision of care and rehabilitation for victims, clearance of contaminated areas, risk reduction education and destruction of stockpiles."

xiii) Protocol III, Annexed to the Convention on Prohibitions or Restrictions of the use of Certain Conventional Weapons which May be deemed to Be Excessively Injurious or to Have Indiscriminate Effects, 1980 [36]

Article 2 Para 4 of Protocol III:

"It is prohibited to make forests or other kinds of plant cover the object of attack by incendiary weapons except when such natural elements are used to cover, conceal or camouflage combatants or other military objective or one themselves military objectives."

Para 7 of the Preamble:

"Recognizing the prohibition embodied in the pertinent agreements and relevant principles of international law, of the use of herbicide as a method of warfare."

The Dissimilarities between the ENMOD Convention and Protocol I

The convention on the Prohibition of military or any other Hostile use of Environmental modification technique (ENMOD) is an instrument of international disarmament law specifically intended to protect the environment in the event of armed conflict. It prohibits hostile use of the environment as a means of warfare. The provisions of Protocol I of 1977 additional to the Geneva Conventions of 1949 form an essential complement to those of the ENMOD Convention, as they directly prohibit damage to the environment during armed conflict, though without mentioning it specifically. This is particularly the case with generally customary principles regarding the conduct of hostilities, such as the principles of distinction, which limits attacks to military objectives, and that of proportionality, which prohibits the use of means and methods of warfare that causes excessive damage. However, the two instruments which were signed in 1977, were designed to achieve different purposes, and there is no overlap in substance [37].

In its temporal sphere of application, protocol I is narrower in

scope than the ENMOD Convention. Although Protocol I draws no distinction between enemy territory and the territory of the belligerent causing the environmental damage, the instrument applies only to international armed conflicts. For its part, the ENMOD convention is germane to any situation in which an environmental modification technique is deliberately resorted to for military or hostile purposes and inflicts sufficient injury on another state party.

Where weaponry is concerned, the Protocol has a wider scope than the ENMOD Convention. Whereas the ENMOD convention is confined to one single type of weaponry, i.e. an environment modification technique, the Protocol protects the natural environment (within prescribed circumstances) and the population- against damage inflicted by any weapon whatsoever. In its thrust, the Protocol protects the environment (the environment as victim), whereas the ENMOD convention protects from manipulation of the environment (the environment as weapon).

The Protocol goes much further than the ENMOD convention in protecting the natural environment not only against intentional (or deliberate) infliction of damage in the course of warfare, but also against “purely unintentional and incidental damage” which, however, can be “expected”^[38].

In the ENMOD convention the three terms are enumerated alternatively (“widespread, long-lasting or severe effects”), whereas in the Protocol they are listed cumulatively (“Widespread, long-term and severe”). Thus, under the ENMOD convention suffice it for one of the three yardsticks to be met, but under the Protocol all three conditions must be satisfied concurrently^[39].

The Rome Statute

Among the broad variety of international agreements, environmental protection has been included as an important goal. Only a small subset of these agreements demonstrates any consensus on what constitutes acceptable or unacceptable use of the environment as a tool of war. It is only very recently that the international community has made tentative inroads into contemplating the prosecution of those who engage in an unacceptable use of the environment during wartime. In this latter regard, the language of the Rome Statute of the International Criminal Court is important^[40].

Under the language of the Rome Statute, international infliction of harm to the environment may constitute a “War Crime:” Article 8 (2) (b) (iv) of the Rome Statute of the International Criminal Court stigmatizes as a war crime.

“Intentionally launching an attack in the knowledge that such attack will cause incidental loss of life or injury to civilians or damage to civilian objects or widespread, long-term and severe damage to the natural environment which would be clearly excessive in relation to concrete and direct overall military advantage anticipated.”

By way of overview, there are three principal components to the language of Article 8 (2) (b) (iv):

1. The actual physical act, or actus reus, which consists of inflicting “widespread, long-term and severe damage” to the natural environment;
2. The mental element or mens rea, namely that the infliction of this harm must be done intentionally and with knowledge that the attack will create “widespread, long-term and severe damage” to the natural environment; and

3. Even if both the physical and mental elements are found, military advantage can operate as a defense to criminal wrong-doing.

A successful prosecution under the Rome Statute will, first and foremost, have to show that the accused committed “Widespread, long-term and severe” damage to the natural environment. Of great importance is that all three elements must conjunctively be proven. The language of “Widespread, long-term and severe” has woven its way into other international agreements relating to the use of the environment in times of war, for example Article I of the 1977 United Nations Convention on the Prohibition of Military or Any other Hostile use of Environmental Modification Technique (“ENMOD Convention”) and the 1977 Protocol I to the 1949 Geneva Convention (“Protocol I”). To this end, the Rome Statute may not advance environmental concerns beyond the progress made in these prior documents. In fact, by providing that all three elements must be conjunctively shown to exist, this language regresses from the wording of the ENMOD Convention, which bases liability disjunctively on proof of only one of these three characteristics^[41].

ICRC Guidelines for Military Manuals and Instructions on the Protection of the Environment in Times of Armed Conflict: (“Environmental Guidelines”)-

“Intended as a tool to facilitate the instruction and training of armed forces in an often neglected area of international humanitarian law: the protection of the natural environment. The Guidelines [...]... sole aim is to contribute in a practical and effective way to raising awareness.... They are an instrument for dissemination purposes.”

The Environment Guidelines provide in relevant part that the “destruction of the environment not justified by military necessity violates international humanitarian law..... under certain circumstances, such destruction is punishable as a grave breach of international humanitarian law.” The Environmental Guidelines state that its guidelines are drawn from existing international legal obligations and, as such, constitute a baseline of *jus Commune* among nations^[42]. Many detailed rules are provided in Article III (9) of the Environment Guidelines, which cover numerous issues ranging from barring incendiary weapons in forested regions to precluding the use of naval mines. These rules translate often vague international norms into daily practice. In this regard, Article IV of the Environment Guidelines is particularly important:

“In the study, development, acquisition or adoption of a new weapon, means or method of warfare, states are under an obligation to determine whether its employment would, in some or all circumstances, be prohibited by applicable rules of international law, including these providing protection of the environment in times of armed conflict.”

In the interplay between environmental integrity and military aggression in the “established principles of the international law of armed conflict”, there are a number of relevant, pre-existing conventions. These conventions give rise to a corpus of principles. Some of these principles go beyond the categories of conduct expressly prescribed by the Rome Statute, but could arguably, form part of the International Criminal Court’s residual jurisdiction. As a result, if and when environmentally-related litigation begins under the International Criminal Court, it will be important to draw the following international treaty provisions, in addition to protocol I and the ENMOD

Convention, into any environmental war crimes trial ^[43].

- *The World Charter for Nature, Principle 5*: Nature shall be secured against degradation caused by warfare or other hostile activities ^[44].
- *The Rio Declaration, Principle 24*: Warfare is inherently destructive of sustainable development. States shall therefore respect international law providing protection for the environment in times of armed conflict and cooperate in its further development, as necessary ^[45].
- *The International Law Commission Draft Articles on State Responsibility* creates a limited basis for criminalizing intentional environmental harms. Article 19(3)(d) provides that an international crime may result from, inter alia, a serious breach of an international obligation of essential importance for the safeguarding and preservation of the human environment, such as those prohibiting massive pollution of the atmosphere or of the seas. This is one of the few international agreements prior to the Draft Statute of the International Criminal Court that demonstrated a willingness to criminalize environmental degradation ^[46].
- *The International Law Commission Draft Code of Crimes Against the Peace and Security of Mankind*: in familiar language, Article 20 recognizes some environmental crimes as “*war crimes*”:
 - i) Extensive destruction.., of property, not justified by military necessity and carried out unlawfully and wantonly;
 - ii) Employment of poisonous weapons or other weapons calculated to cause unnecessary suffering;
 - iii) Wanton destruction of cities, towns or villages, or devastation not justified by military necessity; and
 - iv) In the case of armed conflict, using methods or means of warfare not justified by military necessity with the intent to cause widespread, long-term and severe damage to the natural environment and thereby gravely prejudice the health or survival of the population and such damage occurs. As regards (iv) above, the Commentaries moderate the discussion, by emphasizing that a violation of this standard is “*not characterized as a grave breach entailing individual criminal responsibility.*” As a result, there are readily accessible defenses to liability. First, “*military necessity*” constitutes a defense. Second, there is also an intentionality requirement, which requires the intent to cause “*gravely prejudicial consequences to the population.*” In other words, whether the consequences are gravely prejudicial to the environment does not really enter into consideration. Lastly, the damage must have actually occurred, which means that there can be no liability for planning or attempting to desecrate the environment for military purposes ^[47].

The 1907 Hague Regulations, Article 22, which states that it is prohibited “*to destroy or seize the enemy’s property, unless such destruction or seizure be imperatively demanded by the necessities of war.*” This is one of the earliest suggestions that there are limits on what a warring party can do to “*property.*” Although not explicitly mentioned, the natural environment can be considered to constitute “*property,*” although it is unclear whether the natural environment within the global commons would fall within the notion of “*property*” since it is neither privately nor nationally owned ^[48].

The 1949 Geneva Convention IV, Article 53: Any destruction

by the occupying power of real or personal property belonging individually or collectively to private persons, or to the State, or to other public authorities,... is prohibited, except when such destruction is rendered absolutely necessary by military operations. As with the Hague Regulations, this provision is limited by the military necessity defense and is inapplicable to the global commons. Additionally, this provision requires the destruction to occur within a nation that is actually occupied by another. To this end, indiscriminate aerial bombing in which enemy forces are not occupying the other nation’s territory would fall outside the rubric of Article 53 ^[49].

Resolution 687 of the Security Council was adopted in the aftermath of the Persian Gulf War and made Iraq accountable for “*any direct loss, damage, including environmental damage and the depletion of natural resources.....as a result of Iraq’s unlawful invasion and occupation of Kuwait.*” This resolution is an important precedent upon which to ground civil liability for environmental desecration eventually. The creation of the United Nations Compensation Commission to value damages and assess liability is also an important step in implementing responsibility for environmental wrongdoing during war-time. It is estimated that the total environmental damage resulting from the Iraqi aggression approaches US\$40 billion, divided among damage to public health, groundwater resources, terrestrial resources, and marine and coastal resources, and from oil lakes ^[50].

In sum, these fragments, together with the express pronouncements in the Rome Statute, provide some definitional guidelines as to the permissible use of the environment during war-time. Unfortunately, they create a “*current international legal framework [that] is vague and unenforceable in environmental matters*”. The background to, and the language of, the Rome Statute reveal a stagnation in the drive to sanction the use of the environment as a tool of war. Consideration should be given to developing ways of going beyond this language ^[51].

4) The Post-Gulf War Period

Serious attention to the Gulf War’s environmental impact was apparent as early as March 1991, when Japan proposed that the Governing Council of the United Nations Environment Programme (UNEP) adopt a declaration of principles proscribing the environmentally destructive techniques witnessed during the war. Simultaneously, France recommended a prohibition against targeting ecological areas and “*World heritage documents* ^[52].” Both proposals were raised two months later during UNEP’s sixteenth Session, at which Canada and Greenpeace announced their sponsorship of conferences on the environmental law of War. Additionally, UNEP’s governing council endorsed a prohibition against weapons that could “*Cause particularly serious effects on the environment.*”

i) London Conference, 1991

In June 1991, Greenpeace, in conjunction with the London School of Economics and the British Centre for Defence studies, convened its conference in London. For the conference, Professor Glen Plant of the London School of Economics developed a straw man outline of what the elements of a Fifth Geneva convention on the Environment might look like. Despite generating a great deal of attention and Greenpeace support, the proposal has not led to a serious international effort

to produce an agreement along the lines suggested ^[53].

ii) Ottawa Conference (1991)

In July 1991, the Canadian Ministry of External affairs convened its own conference. The prevailing view of those who gathered in Ottawa was that the existing law adequately addressed the environmental effects of war. However, they recognized the need to consider the evolutionary nature of environmental concerns when applying existing prescriptions. In other words, the 'value' of the environment would shift over time an important factor in performing the balancing tests that dominate the law of war. The conference also took the position that peacetime norms generally remain applicable during hostilities. In this conference, the U.S. participants clearly were taking the stance that the present law suffices, that is, it reflects the global community's values and serves its aspirations. By the Ottawa Conference, the lines of demarcation between two opposing camps were becoming clear. One side, exemplified by Greenpeace, had adopted an intrinsic worth approach and took the stance that more law was needed. The anthropocentric, on the other hand, hesitated to extend the law further out of concern that the hands of the decision makers might be tied. In their view, the law should be left alone to evolve within the existing framework ^[54].

iii) Munich Conference

In December 1991, a third major international conference convened in Munich. Co-sponsored by the International Council of Environmental Law (ICEL) and the Commission on Environmental Law of the International Union for the Conservation of Nature and Natural Resources, and financed in part by the Dutch government, it brought together a distinguished group of scholars and petitioners. They produced a series of innovative recommendations that are particularly useful in focusing attention on alternatives to the current state of affairs. As to the present law, the conference recommended that Protocol I, and other relevant legal instruments, be universally accepted. It stressed the importance of customary international law norms (e.g. military necessity) to environmental protection, as well as the need to disseminate effectively the law of armed conflict. The Conference's recommendations provide a useful point of departure in discussions of how new law might be shaped ^[55].

iv) Rio Conference

A fourth Conference of significance, although dedicated to environmental law issues extending well beyond armed conflict, was the June 1992 United Nations Conference on the Environment and Development (UNCED) in Rio de Janeiro. It issued the Rio Declaration, Principle 24 of which specifically addressed environmental concerns in warfare: "*Warfare is inherently destructive of sustainable development. States shall therefore respect international law providing protection for the environment in times of armed conflict and cooperate in its further development, as necessary.*" The compromise character of the declaration is apparent. It responds to claims of the law's adequacy when it urges respect, but displays a revisionist flavour by encouraging cooperation in the law's continued development ^[56].

v) U.N. Interventions

As the various conferences were being held, the United Nations

proper was addressing the matter. The effort began in earnest in July 1991 when the Jordanian representative forwarded a note verbale to the Secretary-General faulting the ENMOD Convention for its effectiveness in preventing Gulf War environmental damage. The General Assembly referred the matter to the Sixth (Legal) Committee, which placed the item on its 1991 agenda under the title "*Exploitation of the Environment as a Weapon in Time of Armed Conflict*". During the multiple meetings of the Sixth Committee, there was general consensus that Iraq's intentional dumping of oil into the Persian Gulf and setting ablaze of oil wells constituted violations of international law.

But, unfortunately, there was no consensus on the legal basis for characterizing the environmental destruction as wrongful. Disagreements arose in the Sixth Committee over whether new law was needed.

As this debate unfolded, the ICRC was planning its twenty-sixth International Conference, at which one topic was to be environmental damage during warfare. When the Conference was later cancelled, the ICRC decided to convene a meeting of experts in April 1992 to consider the issue. The United Nations took advantage of this opportunity by asking the ICRC to study and report back on current activities in the field.

In its 1992 report to the Secretary-General, the ICRC noted that experts generally had concluded that, despite a "*number of gaps in the rules currently applicable,*" the best approach was not a new body of law. Finally, the ICRC called for a study of how the natural environment per se might be better protected. The Sixth Committee reviewed this report. Based on its review of the initial ICRC report, the Sixth Committee recommended that the ICRC continue its work in the field and again report its conclusion. By resolution, the General Assembly agreed.

Retasked, the ICRC began a second round of consultations. By its third meeting, the I.C.R.C. completed a draft, the I.C.R.C. Guidelines, which it forwarded to the United Nations. The General Assembly after taking necessary steps by 1994, without formally approving the Guidelines, urged all States to consider incorporating them into their law of armed conflict directives ^[57].

vi) German Law of War Manual

In fact, increased awareness of warfare's environmental implications slowly is beginning to be reflected where it will have its greatest practical effect- in guides for planners, warfighters, and operational lawyers. The German Law of war manual is among the most progressive. Not only this 1992 document provide for basic protections based on such principles as military necessity, unnecessary suffering, and distraction, but it also includes prohibitions that track those found in Protocol I and ENMOD. What is most noteworthy about the German manual is that it clarifies the ENMOD and Protocol I terminology that is the source of much controversy ^[58].

vii) San Remo Manual

Another example of a law of war guide that addresses the environment is the San Remo Manual. Drafted for the International Institute of Humanitarian Law by a group of distinguished experts between 1988 and 1994 as a "*restatement*" of the international law of armed conflict at sea, this influential guide takes a different approach than its German Counterpart. Whereas the German Manual adopts the

phraseology of Protocol I and ENMOD, the San Remo Manual employs the “*due regard*” standard of care found in the Law of the Sea Convention ^[59].

viii) Navy Manual of the U.S.

None of the primary U.S. law of war manuals highlights environmental concerns to any significant degree. However, while the Navy’s old manual was also silent on this issue, the newly published Navy Manual does mention the topic. It represents the most current expression of U.S. Policy on the subject ^[60].

ix) NATO Initiative

Finally, mention should be made of a NATO initiative in the Environmental field that has borne little fruits thus far. In January, 1994 Norwegian, German, and Canadian representatives recommended that NATO’s Committee on the Challenges of Modern Society Conduct a pilot study on environmental protection. At present, the proposal has been placed on hold pending further assessment of its merits ^[61].

Lastly, the comments of the ICRC’s Hans-Peter Gasse may reflect the prevailing attitude. Speaking at the 1991 London Conference in his personal capacity, he noted that: “*the ICRC does not look so much at the environment as such but more at the environment in the context of and around human beings. As you know the Geneva Conventions are geared essentially to the protection and safeguarding of human beings in times of armed conflict.... [The environmental provisions of Geneva law] protect the environment for human beings- when both civilians and combatants are affected* ^[62].”

Conclusion

Armed Conflicts wreak havoc on different kind of victims, but when the victim is the environment, perpetrators go unpunished. The international community has sought to protect the environment, both as an object and in its humanitarian capacity, through conventional and customary international laws. Yet the environment continues to suffer, and since Nuremberg, no individual has been charged with an environmental crime.

The international laws of armed conflict provide the environment with a degree of protection in times of modern warfare. Yet, that protection, is at best, limited. In many instances, military necessity and the preoccupation with ameliorating human suffering have outweighed environmental concerns. As technology evolves, and the means and methods of warfare become more advanced, States have found that the environment itself may be manipulated through the use of weapons of mass destruction, such as chemical and biological armaments, to achieve efficient military operations and desired outcomes. It is with this foreboding reality that states must reaffirm and reformulate current regimes to protect the environment.

A basic tenet behind international environmental law is the notion of state responsibility for environmental destruction. The Stockholm Declaration and its progeny have extended that principle to the waging of modern warfare, but with marginal success. Customary international law, the laws of war, and their corresponding weapons conventions diminish the importance of this responsibility and of ultimate liability.

States must recognize the extensive ecological damage that deliberate environmental modification causes. The current

corpus of laws, however, does not furnish a clear understanding of this potential. States must reconcile divergent interpretations and ambiguous terms in conventions such as *ENMOD* and Protocol I to provide states with clear guidelines for military operations.

States have diminished their reliance on biological toxins, and as a result, the use of such weapons for purposeful environmental modification may be unlikely. Yet, State cannot confidently assert a similar statement about chemical armaments. Differing opinions on the legality of their use reveals the possibility of resorting to those weapons for environmental purposes. The Chemical Weapons Convention, however, may provide a remedy. Establishing an explicit proscription on the employment of chemical agents in armed conflict may establish a distinct customary principle of international law. Signatory States should ratify the Chemical Weapons Convention to prevent extensive environmental damage by purposeful modification and through the use of chemical weapons.

Finally, the adoption of the Fifth Geneva Convention on the Environment can support the curtailing of deliberate environmental modification and the strengthening of an environmentally protective regime. Such a convention would ameliorate the infirmities of the current set of laws of armed conflict by pronouncing clear standards for military operations and defining quanta of proof of environmental damage. Moreover, the Convention should incorporate facets of the Proposed Convention of the Crime of Ecocide to provide definite Criminal elements and ultimate criminal liability. Increasing the economic and penal costs can alter State action and behaviour. These steps can ensure compliance with State responsibility for deliberate environmental modification in times of armed conflict, In the last, all the stakeholders should not lose sight of an old adage - “*When two elephants fight, it’s always the grass that gets hurt.*”

Suggestions for Improvement in the Present Scenario

1. A Crime, named geocide or ecocide, literally a killing of the earth, is the environmental counterpart of genocide, and would be enshrined in a single international convention. It is suggested making it a crime to recklessly or intentionally harm the environment, both within and outside of, the context of war.
2. Proof of intentionality can be difficult to establish. In this regard, lessons can be learned from the domestic context. In North America, Environmental wrongdoing is generally prosecuted as a public welfare offence and normally on a negligence standard. Given these lessons from domestic law, we ought to reevaluate the merit of collapsing environmental wrongdoing within a criminal context geared to prosecute humanitarian pariahs on an intentionality basis.
3. The extent of the damage, together with the pervasiveness of the mental element, would consequently only inform sentencing principles. If enforcement authorities are given sufficient discretion in terms of sentencing, then the broader liability provision can not only be effective, but also respect shared notions of fundamental justice.
4. The jurisdiction of an international tribunal would lie in the transboundary nature of environmental violence, together with the pernicious effects on the global commons. Any international tribunal, however, ought to be guided by the

principles of complementarity in its relationships with national courts.

5. In negotiating jurisdiction, it is important for an ecocide convention to apply equally to natural persons, legal persons, public authorities, and states. State responsibility is particularly crucial in order for civil damages and restitution to be viable remedies.
6. Any right, however, is but theoretical without a remedy; there can be no crime without punishment. Thought must be given to how ecocide could be enforced, and to what organizations could be optimally suited to engage in this enforcement.
7. Collapsing environmental crimes within the permanent International Criminal Court might not be the most effective way to sanction such crimes. There should be an International Environmental Court to deal with Ecocide crimes.
8. There should be a separate Ecocide convention which would be more than simply a criminal statute, but an organization designed to enhance awareness and to develop methods to maximise incentives not to engage in environmentally pernicious military initiatives in the first place. It can also drawing from the United Nations Compensation Commission, be involved in valuating environmental damage and perfecting methods of assessment.
9. At present, the jurisdiction of the International Criminal Court is limited to natural persons. This limitation makes it impossible to find any institutional or State liability should it be difficult to prove that the actions of one or some individuals accounted for the environmental desecration. Secondly, and more importantly, sentencing is based on imprisonment, fines and forfeiture of the proceeds of the crime. There does not appear to be much room to compel restitution, remediation of blight, civil liability or, simply put, to clean up the environmental harm. Therefore, it is important for such a Court to be empowered to decide on both criminal as well as civil matters.
10. The International peace-keeping or peace-enforcement forces can be allotted a “*green-keeping*” mandate which could help integrate international environmental norms into an internecine conflict.
11. Ecocide could also apply in times of peace. Peace time infractions of this nature ought to also be prosecuted within the rubric of an international environmental Court.
12. The forces of international financial expansion may also wreak havoc on the environment. Particularly troubling examples are the ongoing forest fires in the Amazon basin and in Indonesia. In both cases, there is compelling evidence that these fires had been deliberately set by enterprises seeking to clear the forests for economic development. The effects on the environment are clear: immediate destruction, an inability of ecosystem regeneration, and contribution to global warming. Such conduct ought to fall within an ecocide convention and be sanctioned by an international environmental Court.

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