

Protection of the National Environment by International Humanitarian Law during Armed Conflict: An Appraisal

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1. Introduction

Armed conflict has been unfortunately very much common in many parts of the world since time immemorial. The impact of armed conflict on human lives has proved to be catastrophic. Millions of people have been killed and many people have died because of war-related disease and starvation during the last decade. Many people have been permanently disabled and millions have been displaced as an unavoidable consequence. History has witnessed in addition to these direct human consequences, armed conflict creates multiple environmental impacts that affect people in the short and long term.¹ More particularly, environment was subjected to deliberate attacks by military commanders.² International Humanitarian Law (IHL) hence pursues to set limits on wreaking injury and destruction to people, objects including the national environment.³

The purpose of this article is to determine the extent of protection of national environment by referring to the regulations particularly in time of armed conflict. Distressingly despite having various rules on this issue, whether treaty-based or customary humanitarian law or principles of environmental or public international law, the protection of environment during armed conflict continues to be frequently ignored. The article endeavors to find out the significance of these laws and also to indicate the limitations of them, if any, as it concerns.

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¹ Houchins, D. L. 2002, "Extending the Application of the ICJ's July 8, 1996, Advisory Opinion to Environment-Altering Weapons in General: What is the Role of International Environmental Law in Warfare?", *Journal of Land Resources and Environmental Law*, Vol. 22, p. 478.

² Bruch, C. 1998, "Addressing Environmental Consequences of War: Legal, Economic and Scientific Perspectives", Environmental Law Institute Research Report, Washington D.C., 1, <http://www.bren.ucsb.edu/academics/courses/595E/Session%209/AddressEnvConseqWar.pdf> (Visited on 27 March, 2011).

³ Gasser, H. 195, "For Better Protection of the Natural Environment in Armed Conflict: A Proposal for Action", *The American Journal of International Law*, Vol. 89, No. 3, p. 637.

2. General Rules under the International Treaties

Some general principles of international law are applicable during armed conflict, such as the principle of distinction⁴ and the principle of proportionality⁵ to protect national environment. Precisely only military objectives may be attacked and no methods or means of warfare which cause excessive damage shall be employed. Also precautions shall be taken in military operations as required by international law.⁶

Many international environmental agreements and relevant rules of customary law continue to be applicable in similar fashion to the extent that they are not inconsistent with the applicable law of armed conflict.⁷ The Rio Declaration candidly enumerates warfare as inherently destructive of sustainable development. Hence states shall respect international law providing protection for the environment during war times and cooperate in its further development, as necessary.⁸

During war, states are also obligated by the principle that all appropriate means should be considered to prevent willfully caused large-scale destruction of the environment which cannot be justified under international law. The General Assembly and its Sixth Committee, also named as Legal Committee, as well as the expert meetings of the International Committee of the Red Cross (ICRC), are the

⁴ This principle prohibits all means and methods that cannot make a distinction between those who do take part in hostilities, and are therefore considered as combatants, and those who do not and are therefore protected persons. The sick and wounded, medical personnel, civilians and prisoners of war are all called protected persons.

⁵ The necessity for undertaking military action in a given situation in times of armed conflict states that even if there is a clear military target, it is not possible to attack it if the risk of civilians or civilian property being harmed is larger than the expected military advantage.

⁶ First Additional Protocol to the Geneva Convention, 1977 (AP I) Arts. 35, 48, 52 and 57.

⁷ Principle 3 of the 1992 Convention on Biodiversity and Principle 21 of the 1972 Stockholm Declaration on the Human Environment provide that states have, in accordance with the Charter of the United Nations and the principles of international law, ...the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other states or of areas beyond the limits of their national jurisdiction.

Principle 5 of the 1982 World Charter for Nature says "Nature shall be secured against degradation caused by warfare or other hostile activities." Principle 20 of the same Charter provides that "military activities damaging to nature shall be avoided."

⁸ The Rio Declaration, 1992, Principle 24.

appropriate forums to deal with this subject.⁹ Parties to a non-international armed conflict are also encouraged to apply the same rules. States are correspondingly urged to incorporate such rules in their military manuals and instructions on the laws of war. Moreover, in cases not covered by international agreements, the environment remains under the protection and authority of the principles of international law derived from established custom, the principles of humanity and the dictates of public conscience.¹⁰

3. Guidelines for Military Manuals and Instructions on the Protection of the Environment in Times of Armed Conflict

The matter of protecting the environment during the armed conflict was placed on the agenda of the UN General Assembly, which adopted Resolution 47/37 (1992) on the subject. At the request of the Assembly, the ICRC submitted two reports in which it reviewed existing legal provisions on the protection of the environment, as well as proposals for their reform, and suggested a series of outstanding problems for consideration by the UN Sixth Committee. The ICRC then drafted a model set of instructions to the military, entitled *Guidelines for Military Manuals and Instructions on the Protection of the Environment in Time of Armed Conflict* and then submitted it to the forty-ninth session of the General Assembly in 1994.¹¹ The Guidelines are drawn from existing international legal obligations and from state practices. They seek to promote an active interest in, and concern for, the protection of the environment within the armed forces of all states.

In a resolution adopted in the same year, the UN General Assembly referred to the 1994 Guidelines on the Protection of the Environment in Times of Armed Conflict. The General Assembly invited all states to disseminate widely the revised guidelines for military manuals and instructions on the protection of the environment in times of armed conflict received from the ICRC and to give due consideration to the possibility of incorporating them into their military manuals and other instructions addressed to their military personnel.¹²

Many countries have accordingly incorporated provisions into their military manuals or in other instruments before or after this resolution prohibiting the employment or use of methods which are intended or of a like nature to cause widespread, long-term and severe damage to the natural environment. For instance, Germany's Law

⁹ Agenda 21, Para. 39.6 (a).

¹⁰ Fourth Hague Convention respecting the Laws and Customs of War on Land, 1907 (H.IV) Preamble, AP I Art. 1(2), Second Additional Protocol to the Geneva Convention, 1977 (AP II) Preamble.

¹¹ Gasser, above note 3, p. 640.

¹² UN General Assembly, Res.49/50, 9 December 1994, Sec. 11. <http://www.un.org/documents/ga/res/49/a49r050.htm> (Visited on 20 February, 2011)

Introducing the International Crimes Code (2002) enumerates that in connection with an international armed conflict, he, who carries out an attack with military means that may be expected to cause widespread, long-term and severe damage to the natural environment and thereby could be excessive in relation to the overall concrete and direct military advantage anticipated, shall be liable to imprisonment for not less than three years.¹³ Spain's Military Criminal Code (1985) is more particular and punishes a soldier who destroys or damages, without military necessity, places of historical or environmental importance and natural sites, gardens and parks of historical-artistic or anthropological value and, in general, all those which are part of the historical heritage.¹⁴ Under the International Crimes Act (2003) of the Netherlands, "intentionally launching an attack in the knowledge that such an attack will cause ... widespread, long-term and severe damage to the natural environment which would be clearly excessive in relation to the concrete and direct overall military advantage anticipated" is a crime, when committed in an international armed conflict.¹⁵

4. Main International Treaties with Rules on the Protection of the Environment in Times of Armed Conflict

The adoption of provisions for the protection of the environment during armed conflict traces back from ancient origin. In the words of Deuteronomy, "When you are at war, and lay siege to a city for a long time in order to take it, do not destroy its trees by taking the axe to them, for they provide you with food; you shall not cut them down. The trees of the field are not men that you should besiege them. But you may destroy or cut down any trees that you know do not yield food, and use them in siege-works against the city that is at war with you, until it falls."¹⁶ Hugo Grotius, on the other hand, broadened the scope considerably in his book *On the Law of War and Peace*, published in 1625 where he observes, "First do not destroy anything in areas you occupy and the enemy does not. Second, do not destroy anything when it appears that victory is likely and imminent. Third, do not destroy anything the enemy can obtain from somewhere else. Fourth, do not destroy anything the enemy cannot use to wage war. Finally, man-made objects ... are to be treated in accordance

¹³ Germany's Law Introducing the International Crimes Code (2002), Art. 1, Sec. 12(3), http://www.icrc.org/customary-ihl/eng/docs/v2_cha_chapter14_rule43%5C (Visited on 22 February, 2010).

¹⁴ Spain's Military Criminal Code (1985), Art. 77(7), http://www.icrc.org/customary-ihl/eng/docs/v2_cha_chapter14_rule43%5C (Visited on 22 February, 2011).

¹⁵ International Crimes Act (2003), Art. 5(5) (b). http://www.icrc.org/customary-ihl/eng/docs/v2_cha_chapter14_rule43%5C (Visited on 22 February, 2011).

¹⁶ 20:19-20, <http://www.biblegateway.com/passage/?search=Deuteronomy+20%3A19%2CDeuteronomy+20%3A20&version=NASB> (Visited on 10 January, 2011).

with the first four principles".¹⁷ Equally the Declaration of Saint Petersburg in 1868 reiterated states should endeavour to accomplish during war to weaken the military forces of the enemy as their only legitimate object of attack.¹⁸ At present various instruments of IHL contain direct and indirect provisions for the protection of national environment in times of armed conflict. They are- Fourth Hague Convention respecting the Laws and Customs of War on Land, 1907 (H.IV); and Regulations Respecting the Laws and Customs of War on Land (H.IV.R), Eighth Hague Convention relative to the Laying of Automatic Submarine Contact Mines, 1907 (H. VIII); Fourth Geneva Convention relative to the Protection of Civilian Persons in Time of War, 1949 (G.C.IV); Hague Convention for the Protection of Cultural Property in the Event of Armed Conflict, 1954 (H.CP); Convention on the Prohibition of Military or any Other Hostile Use of Environmental Modification Techniques, 1976 (ENMOD); First Protocol Additional to the Geneva Conventions of 12 August 1949 and relating to the Protection of Victims of International Armed Conflicts, 1977 (AP I); Second Protocol Additional to the Geneva Conventions of 12 August 1949 and relating to the Protection of Victims of Non-International Armed Conflicts, 1977 (AP II); (United Nations) Convention on Prohibitions or Restrictions on the Use of Certain Conventional Weapons Which May be Deemed to be Excessively Injurious or to Have Indiscriminate Effects, 1980 (CCW)¹⁹; with Protocol on Prohibitions or Restrictions on the Use of Mines, Booby-traps and Other Devices (CCW.P.II); and Protocol on Prohibitions or Restrictions on the Use of Incendiary Weapons (CCW.P.III), The San Remo Manual, 1994.

Above mentioned Conventions and Protocols do contain various rules for the protection of the environment during armed conflict, such as, destruction of the environment not justified by military necessity violates IHL. Under certain circumstances, such destruction is punishable as a grave breach of IHL and as such will be treated as a war crime.²⁰ The general prohibition on destroying civilian objects, unless such destruction is justified by military necessity, also protects the

¹⁷ Dycus, S. 1996, *National Defense and the Environment*, Hanover, NH, University Press of New England, p. 140.

¹⁸ Declaration Renouncing the Use, in Time of War, of Explosive Projectiles under 400 Grammes Weight. Saint Petersburg, 29 November / 11 December 1868, <http://www.icrc.org/ihl.nsf/FULL/130?OpenDocument> (Visited on 10 March, 2011).

¹⁹ The CCW is made up of a framework convention and five protocols. The weapons currently covered by the CCW include:

- Weapons leaving undetectable fragments in the human body (Protocol I)
- Mines, booby-traps and other devices (Protocol II)
- Incendiary weapons (Protocol III)
- Blinding laser weapons (Protocol IV) and
- Explosive remnants of war (Protocol V).

²⁰ H.IV.R Art. 23(g), G.C.IV Arts. 53 and 147, AP I Arts. 35(3) and 55.

environment.²¹ In particular, states should take all measures required by international law to avoid:

- (a) making 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 objectives, or are themselves military objectives;²²
- (b) attacks on objects indispensable to the survival of the civilian population, such as foodstuffs, agricultural areas or drinking water installations;²³
- (c) attacks on works or installations containing dangerous forces, namely dams, dykes and nuclear electrical generating stations, even where they are military objectives, if such attack may cause the release of dangerous forces and consequent severe losses among the civilian population and as long as such works or installations are entitled to special protection under A P I;²⁴
- (d) attacks on historic monuments, works of art or places of worship which constitute the cultural or spiritual heritage of peoples.²⁵

In addition, the indiscriminate laying of landmines is likewise prohibited. The location of all pre-planned minefields must be recorded. Any unrecorded laying of remotely delivered non-self neutralizing landmines is also not allowed. Special rules limit the placement and use of naval mines.²⁶ The Conventions also entertain that care shall be taken in warfare to protect and preserve the natural environment. 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 and thereby prejudice the health or survival of the population.²⁷ Moreover, the 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 is proscribed. Here 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

²¹ H. IV. R Art. 23(g), G.C.IV Art. 53, AP I Art. 52, AP II Art. 14.

²² CCW.P.III. Art. 2(4).

²³ AP I Art. 54, AP II Art. 14.

²⁴ AP I Art. 56, AP II Art. 15.

²⁵ H.CP Arts 3,4, AP I Art. 53, AP II Art. 16.

²⁶ AP I Arts. 51(4) and 51(5), CCW.P.II Art. 3, H.VIII Arts 1, 2 and 5.

²⁷ AP I Arts. 35(3) and 55.

and atmosphere, or of outer space.²⁸ Attacks against the natural environment by way of reprisals are also prohibited for states party to AP I.²⁹

States are urged to enter into further agreements providing additional protection to the natural environment in times of armed conflict.³⁰ Again there exists the provision saying works or installations containing dangerous forces, and cultural property shall be clearly marked and identified, in accordance with applicable international rules. Same way, parties to an armed conflict are encouraged to mark and identify works or installations where hazardous activities are being carried out, as well as sites which are essential to human health or the environment.³¹

Also provisions of the San Remo Manual of 1994 are relevant at this juncture. It directs due regard by states shall be given to the protection and preservation of the marine environment namely of the exclusive economic zone and the continental shelf³². Article 44 of the same instrument observes methods and means of warfare should be employed with due regard for the natural environment taking into account the relevant rules of international law. On the other side, the CCW. P.III prohibits making forests or other kinds of plant cover the object of attack by incendiary weapons,³³ still the forest becomes legitimate target of attack if used in military operations in any of the ways for covering, concealing or using as camouflage. The scope of protection is restricted to a specific criteria, nonetheless, this provision is significant since it protects a particular segment of the environment from a particular category of weapon.³⁴

The UN General Assembly in 2001 adopted another resolution that categorically considers damage to the environment in times of armed conflict impairs ecosystems and natural resources long beyond the period of conflict, and often extends beyond the limits of national territories and the present generation. It therefore declares 6 November each year as the “International Day for Preventing the Exploitation of the Environment in War and Armed Conflict.”³⁵

²⁸ ENMOD Arts. I and II.

²⁹ AP I Art. 55(2).

³⁰ AP I Art. 56(6).

³¹ AP I Art. 56(7), H.CP Art. 6.

³² Art. 35.

³³ CCW.P.III, above note 22.

³⁴ Jensen, E.T. 2005, “The International Law of Environmental Warfare: Active and Passive Damage During Armed Conflict”, *Vanderbilt Journal of Transnational Law* Vol. 38, p. 174.

³⁵ UN General Assembly, Res. 56/4, 13 November 2001, Preamble and Sec. 1, <http://daccess-dds-ny.un.org/doc/UNDOC/GEN/N01/475/24/IMG/N0147524.pdf?OpenElement> (Visited on 20 February, 2011).

5. Implementation and Dissemination

It reveals that provisions regarding the protection of the environment during war time are not less in number but the question of implementation and dissemination of these provisions is crucial. States are to respect and ensure respect for the obligations under international law including the rules providing protection for the environment in times of armed conflict.³⁶ Not only that states shall also disseminate these rules, making them known as widely as possible in their respective countries, and include them in their programmes of military and civil instruction.³⁷ 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 those providing protection to the environment in times of armed conflict.³⁸

Furthermore, in the event of armed conflict, the parties thereto are encouraged to facilitate and protect the work of impartial organizations contributing to preventing or repairing damage to the environment, pursuant to special agreements between the parties concerned or, as the case may be, the permission granted by one of them. Such work should be performed with due regard to the security interests of the parties concerned.³⁹ Most importantly, in the event of breaches of rules of IHL protecting the environment, measures shall be taken to stop any such violation and to prevent further breaches. Military commanders are required to prevent and, where necessary, to suppress and to report to competent authorities about the breaches of these rules. In serious cases, offenders shall be brought to justice.⁴⁰

Not only that, Article 90 of the AP I also provides for the establishment of an international Fact-finding Commission which will have the power to inquire into serious violations and grave breaches of the Geneva Conventions and the Protocol. It means respect towards the Conventions and the Protocol has to be ensured. Regrettably the Commission has not yet functioned due to the lack of support from the state parties.⁴¹ The ENMOD Convention does not prescribe any enforcement machinery as such. For resolving any dispute resulting from this Convention, the

³⁶ G.C.IV Art. 1, AP I Art.1 (1).

³⁷ H.IV.R Art.1, G.IV Art.144, AP I Art. 83, AP II Art. 19.

³⁸ AP I Art. 36.

³⁹ G.C.IV Art. 63, AP I Arts. 61-67.

⁴⁰ G.C.IV Arts. 146-147, AP I Arts. 86-87.

⁴¹ Rakate, P.K. and McDonald, N.D. 2001, "Desperate Measures? The Protection of the Environment through the Law of Armed Conflict", *South African Year Book of International Law*, Vol. 26, p. 141.

parties can seek remedy before the UN Security Council. In 1991 the Governing Council of the United Nations Compensation Commission (UNCC) expressed its concern about the environmental damage occurred during the armed conflict in the Gulf area that resulted in the pollution of waters by oil, air pollution from burning oil wells and other environmental damage to the surrounding areas.⁴² During the Gulf War, Iraq was alleged for the violation of ENMOD Convention through the military occupation of Kuwait and also by flooding the Persian Gulf with oil slicks.⁴³ This is why, the UN Security Council in a resolution of 1991 reaffirmed under international law that Iraq was responsible for any direct loss, damage including environmental damage and the depletion of natural resources or injury to foreign Governments, nationals and corporations through its unlawful invasion and occupation of Kuwait.⁴⁴

The Rome Statute of the International Criminal Court (ICC) incorporates the provision of intentional environmental damage during armed conflict as a war crime. So far, it requires that the attack is made intentionally having the knowledge of causing 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.⁴⁵ Reading this provision, some points come to the front. It will be a crime when the damage is done intentionally and also with the knowledge that such attack will result into the consequence of severe and lengthy damage to the environment. Moreover, for determining the liability under this provision, the damage to the natural environment must be clearly excessive in relation to the military advantage anticipated. Here the principle of proportionality comes to play that a balance must be struck between the military advantage anticipated and the damage to the natural environment as a civilian object unless an element of the environment is considered as a military object. Similarly in 1992, during a debate in the Sixth Committee of the UN General Assembly on the protection of the environment in times of armed conflict, Canada recapitulated the conclusions of the Ottawa conference and also referred to the rule of proportionality. It observed a balance needs to be drawn between the protection of the environment and the needs

⁴² UNCC, Governing Council, Decision 16/11, 31 May 1991, Sec. A, http://www.icrc.org/customary-ihl/eng/docs/v2_rul_rule44 (Visited on 24 February, 2011).

⁴³ In 1991, the United Kingdom condemned Iraq in a report submitted to the UN Security Council on operations in the Gulf War for inflicting environmental damage by causing oil spills and oil fires in Kuwait. UK, Letter dated 13 February 1991, to the President of the UN Security Council, UN Doc. S/22218, 13 February 1991, http://www.icrc.org/customary-ihl/eng/docs/v2_rul_rule44 (Visited on 24 February, 2011). Also see *Supra* note 2 at 1.

⁴⁴ UN Security Council, Res.687, 3 April 1991, Sec. 16, http://www.icrc.org/customary-ihl/eng/docs/v2_rul_rule44 (Visited on 20 February, 2011).

⁴⁵ ICC Statute, Art. 8(2) (b) (iv).

of war and further concluded environment as such should not form the object of direct attack under the principle of distinction.⁴⁶ In the same year during a debate in UN General Assembly on the environmental impact of Gulf War, Austria suggested while drawing the principle of proportionality between the military necessity of an action and its possible detrimental effects on the environment, it is generally applied in favor of military necessity. It correspondingly phrases this as the “shortcoming” of the present legal regime.⁴⁷

In the judgment of the *Gabcikovo –Nagymaros Project case* in 1977,⁴⁸ the International Court of Justice (ICJ) considered whether protection of the environment amounted to an “essential interest” of a state to be invoked for justifying by way of “necessity” through the actions of the state which were not consistent with the obligations of the state under international law. The court opined a state of necessity could be invoked only in exceptional circumstances which could include a grave danger to the ecological preservation of all or some of the territory of a state and primarily in the last two decades the issue of safeguarding the ecological balance has come to be considered as an ‘essential interest’ of all states.

In another instance the ICJ also has shown great concern regarding environmental protection in times of war. When delivering its Advisory Opinion on the legality of the Threat or Use of Nuclear Weapons in 1996, it referred to Articles 35(3) and 55 of AP I and mentioned these provisions are powerful constraints for all the states.⁴⁹ The ICJ has also declared clearly the environment is under daily threat and that it is not an abstraction but represents the living space, quality of life and the very health of human beings, including unborn generations.⁵⁰ It continued the existence of general obligation of states to ensure that activities within their jurisdiction and control respect the environment of other states or of areas beyond national control now assumes as a part of the corpus of international law relating to the environment.⁵¹ It also referred to the General Assembly resolution 47/37 of 1992 on

⁴⁶ Canada, Statement before the Sixth Committee of the UN General Assembly, UN Doc. A/C. 6/47/SR.8, 1 October 1992, Sec. 20, http://www.icrc.org/customary-ihl/eng/docs/v2_rul_rule43 (Visited on 20 February, 2011).

⁴⁷ Austria, Statement before the Sixth Committee of the UN General Assembly, UN Doc. A/C.6/47/SR.8, 1 October 1992, Sec. 37, http://www.icrc.org/customary-ihl/eng/docs/v2_rul_rule43 (Visited on 20 February, 2011).

⁴⁸ Hungary/ Slovakia, ICJ, 1997, <http://www.icj-cij.org/docket/files/92/7375.pdf> (Visited on 20 February, 2011).

⁴⁹ Advisory Opinion, 1996, ICJ Rep., p. 226. <http://www.icj-cij.org/docket/files/95/7495.pdf> (Visited on 20 February, 2011).

⁵⁰ Id.

⁵¹ Id.

the Protection of the Environment in Times of Armed Conflict which is also of interest in this context.

4. Limitations

ENMOD contemplates to prohibit clearly environmental exhaustion to protect human welfare. Unfortunately it has not collected enough parties to justify a claim of universal application.⁵² It exclusively functions at the interstate level and is subject to geo-political implications.⁵³ More categorically, ENMOD intends to limit modification of the natural environment for using as a weapon of war or to prevent the manipulation of the environment.⁵⁴ On the other hand, from 1977, we can specifically refer to AP I as the first international law to protect the natural environment during warfare.⁵⁵ The shortcomings or limitations are outlined from these two vital instruments as they contain the major and direct rules for the protection of the natural environment. None of these documents ineptly applies to conflict within nation-states. However, AP II does, but with significantly weaker legal language.⁵⁶

AP I prohibits the uses of weapon that cause “widespread, long-lasting and severe” environmental effects whereas ENMOD prohibits the uses that cause “widespread, long-lasting or severe” environmental effects. Neither of these documents delivers a precise definition of what is “widespread,” or “long-lasting,” or “severe.” But in the understanding relating to Article I of the ENMOD Convention submitted, together with the text of draft convention, by the conference of the Committee on Disarmament to the UN General Assembly states that the terms “widespread”, “long-lasting” and “severe” shall be interpreted as-

- (a) “widespread”: encompassing an area on the scale of several hundred square kilometers;

⁵² Popović, N. A. F. 1995, “Commentaries, Humanitarian Law, Protection of the Environment, and Human Rights”, *The Georgetown International Law Review* Vol. 8, pp. 80- 81. Twenty state parties are necessary for its application (Art. IX) but still it is lacking the required numbers. As of October 24, 2011 seventeen members are party to it. [http://www.icrc.org/IHL.nsf/%28SPF%29/party_main_treaties/\\$File/IHL_and_other_related_Treaties.pdf](http://www.icrc.org/IHL.nsf/%28SPF%29/party_main_treaties/$File/IHL_and_other_related_Treaties.pdf) (Visited on 24 October, 2011).

⁵³ Ibid, p. 82.

⁵⁴ Jensen, D. and Halle, S. 2009, “Protecting the Environment During Armed Conflict, An Inventory and Analysis of International Law”, United Nations Environmental Programme, p. 12, http://postconflict.unep.ch/publications/int_law.pdf (Visited on 20 March, 2011).

⁵⁵ Bruch, above note 2, p. 5. Also see, Jensen and Helle, above note 54, 12.

⁵⁶ Bruch, above note 2, p. 6.

- (b) “long-lasting” : lasting for a period of months, or approximately a season;
- (c) “severe” : involving serious or significant disruption or harm to human life, natural and economic resources or other assets.⁵⁷

But this understanding is not same as that of the AP I. To name, under AP I, the term “long-term” is interpreted as a matter of decades.⁵⁸ Besides from the commentaries we can conceive that ‘widespread’ referred to less than several hundred square kilometers, ‘long-term’ referred to ten years or more and ‘severe’ required damage that would be likely to prejudice, over a long term, the continued survival of the civilian population or would risk causing it major health problems.⁵⁹

Clearly ENMOD prevents the use of environment as a weapon when environmental modification damages another ENMOD Party. It is consequently contended to be applicable to advanced modification technology only.⁶⁰ Another problem is that areas outside the jurisdiction of all states such as the high seas are generally considered not to be within the scope of the Convention unless there results an affect on a state party’s activities.⁶¹

Article 1 of ENMOD uses the terms “widespread, long-lasting or severe effects,” and it is important to note that because of the disjunctive “or,” these are meant to be alternatives. Unlike in ENMOD, the adjectives “widespread, long-term, and severe” used in AP I are joined by the word “and,” meaning that it is a triple, cumulative standard that is nearly impossible to achieve.⁶² Also, ENMOD embodies “deliberate” acts and what was or not was deliberate may be impossible to establish

⁵⁷ Conference of the Committee on Disarmament, Understanding relating to Article I of the 1976 ENMOD Convention, UN Doc. A/31/27, 1976, pp. 91-92, http://www.icrc.org/customary-ihl/eng/docs/v2_rul_rule45_sectionb (Visited on 20 March, 2011).

⁵⁸ International Humanitarian Law, Treaties and Documents, <http://www.icrc.org/ihl.nsf/COM/470-750044?OpenDocument> (Visited on 20 January, 2011).

⁵⁹ Sandaz, Y., Swinarski, C. and Zimmermann, B. 1987, *Commentary on the Additional Protocols of 8 June, 1977 to the Geneva Conventions of 12 August, 1949*, pp. 416-417.

⁶⁰ Bruch, above note 2, p. 5.

⁶¹ Dinstein, Y. 2001, “Protection of the Environment in International Armed Conflict”, *Max Planck Yearbook of United Nations Law*, Vol. 5, p. 529.

⁶² Jensen and Helle, above note 54, p. 11. Also see, Jensen, above note 34, p. 171.

in international court. Conversely, AP I does not require intentional damage; it is enough that the environmental damage may reasonably have been expected.⁶³

All kinds of environmental destructions, therefore, are not overthrown by the Protocol. It only seeks to strike the destruction intended or reasonably expected to cause widespread, long-term and severe damage to the environment. The high and stringent threshold of three elements under Articles 35 or 55 are unable to provide adequate protection to the environment. Moreover, it is suggested environmental damage that meets any of these three elements exposes to be more than the international community, during armed conflict, should tolerate.⁶⁴ Specifically put, neither AP I or the ENMOD applies in all types of destruction or damage.⁶⁵

Again AP I has not even defined the term “natural environment” in particular concerning its Articles 35(3) and 55.⁶⁶ The ICRC Commentary suggests it should be understood in the widest sense and covers the biological environment in which a population is living including fauna and flora and climatic elements as well.⁶⁷ In 1993’s report to the UN General Assembly as mentioned earlier, the ICRC stated AP I does not necessarily cover all cases of damage to the environment. Besides, not all states are party to it. Therefore, the earlier conventional and customary rules, especially those of the Hague (1907) and Geneva (1949), continue to be very important.⁶⁸ Regarding the protection of the environment in times of non-international armed conflict, the report also provides that Article 3 common to the 1949 Geneva Conventions and AP II have not established a specific protection for the environment in times of non-international armed conflict. But the environment is still protected by general rules of IHL like prohibition of use of indiscriminate means and methods of warfare, wanton destruction of property. It further reported among all the existing provisions, worth mentioning articles are 14 and 15 of AP II of 1977 and provisions of the World Heritage Convention of 1972. The latter applies in all armed conflicts and hence could play an important role, greater efforts should therefore be made to ensure its full implementation.⁶⁹

⁶³ Bruch, above note 2, p. 5.

⁶⁴ Popovic, above note 52, p. 76.

⁶⁵ Dinstein, above note 61, p. 541.

⁶⁶ Dinstein, above note 61, p. 534.

⁶⁷ Id.

⁶⁸ UN Doc. A/48/269, 29 July 1993, Sec. 34. http://www.icrc.org/customary-ihl/eng/docs/v2_rul_rule43 (Visited on 21 February, 2011).

⁶⁹ Ibid, sec. 95.

10. Conclusion

It is apparent now international community has very much realized the enormous damage and debilitating effect that can be inflicted on the environment by war. The number and the contents of existing rules, regulations and studies are the evidences of this.⁷⁰ But at the same time the potential of modern destructive methods of warfare is prescribing the immediate need for imperative measures to safeguard more specifically and evidently the environment. As a consequence, new mechanisms must be sought and the existing means must be put into effect in the strict sense for averting and preventing damage to the environment, terminating it and punishing those responsible for it.⁷¹ The desire of the state parties is a must for the enforcement of these legal mechanisms. Creating awareness is also important for it. International non-governmental organizations through their performance by assessing whether governments and armed opposition groups are respecting their human rights and humanitarian law obligations can play a great role in this respect.⁷²

⁷⁰ Drumbl, M. A. 1998, "Waging War against the World: The Need to Move from War Crimes to Environmental Crimes", *Fordham International Law Journal* Vol. 22, p. 122; Bouvier, A. 1997, *Recent Studies on the Protection of the Environment in Time of Armed Conflict in Introduction to International Humanitarian Law*, New Delhi, Indian Centre For Humanitarian Law and Research, ICRC, p. 249.

⁷¹ See, Bouvier, above note 70, p. 249.

⁷² Weissbrodt, D. 1987, "Humanitarian Law in Armed Conflict: The Role of International Nongovernmental Organizations", *Journal of Peace Research*, Special Issue on Humanitarian Law of Armed Conflict, Vol. 24, No. 3, p. 302.