International humanitarian law and the protection of the environment in time of armed conflict

by Philippe Antoine

Introduction

The condition of our planet today is, to say the least, a cause for great concern. As recently stated by Ms. Gro Harlem Brundtland, Prime Minister of Norway and Chairman of the World Commission on Environment and Development: "We are living in an historic transitional period in which awareness of the conflict between human activities and environmental constraints is literally exploding".[1] A decisive battle is now under way to preserve a truly endangered planet from the threat of extinction.

Events such as the Chernobyl nuclear power accident, the gradual destruction of the world's forests, widespread water pollution, global warming, the thinning of the ozone layer and the destruction of humanity's genetic heritage have underscored the need to promote, support and if necessary direct efforts to protect the environment at local, regional and global levels.

In this article we shall primarily examine the existing provisions of international humanitarian law (IHL) for the protection of the environment.

First of all, we shall look at the interrelationship between the protection of the environment and IHL within the framework of public international law. Then we shall turn to the various existing provisions of IHL for the protection of the environment and highlight, through a practical example, the shortcomings of the present body of law.

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[1] Brundtland, G.H., "Environment: a decisive battle", *Forum*, Council of Europe, 2/89, p. 16.

Lastly we shall put forward various suggestions as to the future development of environmental law and outline a specific proposal.

I. Protection of the environment under public international law

1. The fundamental principles of international environmental law

What are the rules of international law governing the lawfulness or unlawfulness of damage caused to the environment in time of armed conflict?

The following two basic principles of international environmental law provide the answer to this question:

— *The obligation for States to avoid causing environmental damage beyond their borders*

This principle has been affirmed in numerous court decisions and arbitral awards, various regional and international conventions[2] and other international texts including, for example, the well-known Prin-

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[2] Bothe, M., Cassese, A., Kalshoven, F., Kiss, A., Salmon, J., Simmonds, K., *La protection de l'environnement en temps de conflit armé*, Commission of European Communities, Int. Doc., SJ/110/85, p. 17; Kiss, A., Shelton, D., *International Environmental Law, Transnational Publishers*, Graham and Trotman, New York, London, 1991;

— *Court decisions and arbitral awards:*

Sentence of Max Huber of 4 April 1928 in the Palmas Island case, in *Recueil des sentences arbitrales (Report of international arbitral awards)*, vol. II, p. 831; arbitral decision of 11 March 1941 in the Trail Foundry case, *ibid.*, vol. III, p. 1906; judgment of 9 April 1949 in the Corfu Channel case, International Court of Justice (ICJ), in *Reports of judgments*, 1949, Sijthoff, Leyden, p. 22.

— *International conventions:*

Art. 194 (2) of the Convention on the Law of the Sea (Montego Bay, 10 December 1982), in *International Legal Material (ILM)*, vol. XXI, 1982-II, p. 1308; Preamble to the Convention on Long-Range Transboundary Air Pollution (Geneva, 13 November 1979), in ILM, vol. XVIII, 1979-11, p. 1442; Art. 1 of the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (London, 29 December 1972), in Kiss, A., ed., *Selected Multilateral Treaties in the Field of the Environment*, Nairobi, UNEP, 1983, p. 283.

— *Regional conventions:*

Art. 3 of the Convention on the Protection of the Marine Environment of the Baltic Sea Area (Helsinki, 22 March 1974), in Kiss, A., *Selected Multilateral Treaties ..., op.cit.*, p. 405; Art. 4 of the Convention for the Protection of the Mediterranean Sea against Pollution (Barcelona, 16 February 1976), *ibid.*, p. 448; Art. 3 (a) of the Kuwait Regional Convention for Cooperation on the Protection of the Marine Environment from Pollution (Kuwait, 24 April 1978), *ibid.*, p. 486.

ciple 21 of the Stockholm Declaration.[3] It has also been applied by national legal authorities[4] and its customary nature is now widely accepted.

This is particularly interesting as, under the general rules of international responsibility, the existence of an armed conflict does not release the parties to the conflict from the obligation in question.[5]

— *The obligation for States to respect the environment in general*

The second principle has a broader field of application than the first since it lays down the obligation to respect the environment "in general", whatever legal system governs it, that of the signatory State or another State. This rule applies to all areas considered part of humanity's common heritage and is included in numerous international treaties and non-treaty texts, such as the well-known World Charter for Nature of 28 October 1982. Principle 5 of the Charter proclaims that "nature shall be secured against degradation caused by warfare or other hostile activities" and Principle 20 stipulates that "military activities damaging to nature shall be avoided".[6]

At the national level, both the practice of States and various consti-

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[3] UN Conference on the Human Environment (Stockholm, 5-16 June 1972), in *Revue générale de droit international public*, 1973, pp. 354 ff.

[4] Administrative Tribunal of Strasbourg, North Holland Province v. State Ministry of the Environment, 27 July 1983, *Revue juridique de l'environnement*, 1983, p. 343; District Court of Rotterdam, Handelswerkerij G.T. Bier *et al.* v. Mines de Potasse d'Alsace, 16 December 1983, in Bothe, M., *et al., op. cit.*, p. 24.

[5] Bothe, M., *et al., op.cit.*, p. 25.

[6] — *International treaties and conventions:*

Art. 2 of the Convention on Long-Range Transboundary Air Pollution (Geneva, 13 November 1979), in Kiss, A., *Selected Multilateral Treaties..., op.cit.*, p. 519; Art. IX of the Treaty on Outer Space (27 January 1967), *International Legal Material (ILM)*, vol. VI, 1967, p. 388; Art. 4 of the Convention for the Protection of the World Cultural and Natural Heritage (UNESCO, Paris, 23 November 1972), in Kiss, A., *Selected Multilateral Treaties ..., op.cit.*, p. 276; Preamble of the Convention on the Conservation of Migratory Species of Wild Animals (Bonn, 23 June 1979), *ibid.*, p. 500; Art. VII of the Agreement Governing the Activities of States on the Moon and Other Celestial Bodies (5 December 1979), *ILM*, vol. XVIII, 1979-II, p. 1436; Art. 145 of the Convention on the Law of the Sea (Montego Bay, 10 December 1982) concerning the "zone", *ILM*, vol. XXI, 1982-II, p. 1294.

— *Non-treaty texts:*

Principles 2, 3, 5, 6 and 7 of the Declaration of the UN Conference on the Human Environment (Stockholm, 5-16 June 1972), *Revue générale de droit international public*, p. 352 ff.

tutional texts and other laws[7] reaffirm the duty to protect the environment.

To sum up, while there is a customary practice in this area, IHL in its present state of development does not yet categorically affirm the existence of a general obligation for States to respect and protect the environment. Nevertheless the need to do so has been recognized by the international community.

2) The environment, human rights and IHL

The protection of the environment is an issue that has also been raised in the framework of international human rights law. Indeed, the right to life, which has been recognized since the 1972 Stockholm Declaration and enshrined in numerous national constitutions for more than 15 years, entails the right to the protection of the environment. The "right to a healthy environment" is in fact the most highly developed of the rights known as solidarity rights, which are part of the "third generation" of human rights.

According to a Council of Europe seminar on the environment and human rights held in Strasbourg in 1979, no one is entitled to destroy life slowly by contaminating the sources and basic necessities of life — water, air, space, fauna and flora — or to tamper with any of the elements that contribute to our present and, *a fortiori*, our future well-being and happiness. Although the environment is not everything, it is everywhere and conditions everything, and the definition and proclamation of, and respect for humanity's rights and duties in relation to the environment can no longer be postponed.[8]

The adoption in 1977 of the Protocols additional to the 1949 Geneva Conventions marked a turning point in the history of environmental protection in time of armed conflict, since the concept was first introduced into IHL in Article 35, para. 3, and Article 55 of Additional Protocol I.

The drafting of the 1977 Protocols was prompted by the need to reaffirm and strengthen the protection afforded civilians, combatants and prisoners of war in the Geneva Conventions, in particular by prohibiting certain methods and means of warfare. This amounted to

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[7] Kiss, A., "Un aspect du droit de vivre: le droit à l'environnement", in *Essays on the concept of a "right to live" (in memory of Yougindra Khushalani)*, Bruyland, Brussels, 1988, p. 66.

[8] *Revue juridique de l'environnement*, 1978, p. 423.

reaffirming and developing the body of rules known as the Law of the Hague.[9]

Protocol I provides the following set of basic rules in Part III, Section I, Article 35, under the heading "Methods and Means of Warfare":

"1. In any armed conflict, the right of the Parties to the conflict to choose methods or means of warfare is not unlimited.

2. It is prohibited to employ weapons, projectiles and material and methods of warfare of a nature to cause superfluous injury or unnecessary suffering.

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".

The fact that paragraph 3 is included in an article on basic rules implies that the protection of the environment in time of international armed conflict should be given priority in the conduct of hostilities.

3. Humanitarian law and disarmament law

One of the most important texts relative to disarmament law is the Convention on the Prohibition of Military or any Other Hostile Use of Environmental Modification Techniques (ENMOD Convention adopted by the United Nations on 10 December 1976), which entered into force on 5 October 1978. The Convention stipulates, in Article 1, that:

"1. Each State Party to this Convention undertakes not to engage in military or any other hostile use of environmental modification techniques having widespread, long-lasting or severe effects as the means of destruction, damage or injury to any other State Party.

2. Each State Party to this Convention undertakes not to assist, encourage or induce any State, group of States or international organization to engage in activities contrary to the provisions of paragraph 1 of this article".

The ENMOD Convention also provides, in Article 5, that the States party shall consult one another and cooperate in solving any

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[9] Bretton, P., "Le problème des 'méthodes et moyens de guerre ou de combat' dans les Protocoles additionnels aux Conventions de Genève du 12 août 1949", *Revue générale de droit international public*, vol. 82, 1978, p. 34; Sandoz, Y., "Unlawful damage in armed conflicts and redress under international humanitarian law", *IRRC*, No. 228, May-June 1982, p. 144.

problems which may arise in relation to the objectives of, or in the application of the provisions of the Convention. Such consultation and cooperation may be undertaken within the framework of the United Nations and may include the services of appropriate international organizations (although none is specifically mentioned in the Convention). In addition, any State party to the Convention may lodge a complaint with an *ad hoc* Consultative Committee of Experts or directly with the United Nations Security Council.

The ENMOD Convention has been the object of much criticism. In particular Article 3, which authorizes the use of environmental modification techniques for peaceful purposes, is seen as vague. This leaves open the possibility that prohibited uses of such techniques may be substituted for peaceful ones. However, the Convention does have the merit of reflecting international concern for environmental protection.

A growing awareness of the deterioration of our natural environment began to emerge in the early 1970s. Concern about the problem led to the drafting of Article 35, para. 3, and Article 55 of Additional Protocol I, which were intended to prevent armed conflicts from leading to environmental damage.

Conversely, the deterioration of the environment may itself be the source of conflicts which further damage the biosphere.

While environmental stress is seldom the sole cause of internal or international conflicts, it nevertheless can be "an important part of the web of causality associated with any conflict and can in some cases be catalytic".[10]

The problem of rapid erosion, for example, has led to many conflicts. Excessive cultivation on the high plateaux of Ethiopia and the severe erosion which ensued were major causes of the drought and famine which ravaged the country in the early 1970s. A report written at the request of the Ethiopian Relief and Rehabilitation Commission found in 1975 that "the primary cause of the famine was not drought of unprecedented severity, but a combination of long-continued bad land use and steadily increased human and stock populations over decades".[11]

Another problem is that of "environmental refugees". This problem became particularly acute in Africa in 1984-85 when the massive emigration of many of the continent's 35 million famine victims exacerbated existing tension among certain States. The current conflicts in

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[10] World Commission on Environment and Development, *Our Common Future* (Brundtland Report), Oxford University Press, Oxford, New York, 1987, p. 291.

[11] *Ibidem.*

Ethiopia, Sudan and Somalia have also generated large population movements. One of the world's most serious cases of erosion outside Africa occurred in Haiti, giving rise to the exodus of one sixth of the country's population. In 1991 El Salvador, which has one of Central America's most serious erosion problems, and Guatemala together harboured more than one million refugees.

Although it is not always possible to establish a correlation between the spread of famine and mounting tension among States over environmental problems, and although such a correlation may vary in degree, the fact that it exists is undeniable.

This correlation corresponds to the following situations:

— armed conflict that is the direct cause of environmental damage;

— environmental damage that leads to tension or armed conflict, which itself exacerbates the damage.

The protection of the environment is therefore closely tied to IHL both prior to, during and after armed conflicts.

II. Legal provisions

There are two types of legal protection for the natural environment. The first is direct protection, which is afforded by provisions specifically intended to protect the environment. The second is indirect protection, which is a potential effect of various provisions not specifically aimed at protecting the environment.

1. Direct protection

Direct protection of the natural environment is guaranteed by Article 55 and Article 35, para. 3, of Protocol I. This type of protection was first proposed on 21 March 1972 at the Conference of Government Experts on the Reaffirmation and Development of International Humanitarian Law Applicable in Armed Conflicts, which was organized by the ICRC. Among the texts proposed were the following draft articles:

"It is forbidden to use weapons, projectiles or other means and methods which upset the balance of the natural living and environmental conditions".

"It is forbidden to use means and methods which destroy the natural human environmental conditions".[12]

The International Red Cross and Red Crescent Movement also began to address this issue at about the same time, for example at the 22nd International Conference of the Red Cross, where it was stated that:

"With regard to the property essential for the survival of the civilian population, emphasis was laid on the importance of protecting the natural environment".[13]

Although the proposal put forward by the ICRC at the Diplomatic Conference of 1974-77 (CDDH) did not contain any provisions specifically aimed at protecting the environment, many of its stipulations implied respect for natural resources, in particular objects indispensable to the survival of the civilian population. Several other delegations to the Conference also deemed it necessary to draw attention to the environment and made proposals to that effect. Committee III established an informal working group entitled "Biotope", which was responsible for assessing various environment-related amendments proposed by the States.

There were two distinct tendencies among these amendments. The first is exemplified by draft article 49 *bis*, entitled "Protection of the natural environment", which was submitted to the CDDH on 19 March 1974 by the Australian delegation.[14] It reads as follows:

"1. Without prejudice to the rights of a High Contracting Party in its own territory, it is forbidden to despoil the natural environment as a technique of warfare.

2. Attacks against the natural environment by way of reprisal are prohibited.

3. A breach of this Article shall constitute a grave breach of the present Protocol".[15]

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[12] *Report on the Work of the Conference of Government Experts on the Reaffirmation and Development of International Humanitarian Law Applicable in Armed Conflicts*, second session, ICRC, Geneva, 1972, CE/COM III/C5, vol. II (Annexes), p. 52.

[13] 22nd International Conference of the Red Cross (Tehran, 1973), Commission on International Humanitarian Law, Doc. P/7/b, p. 8.

[14] According to P. Bretton, *op.cit.*, p. 59, this was not unrelated to the problem of French nuclear testing which was taking place at the time in the Pacific.

[15] *Official Records of the Diplomatic Conference on the Reaffirmation and Development of International Humanitarian Law Applicable in Armed Conflicts, Geneva (1974-1977)*, Federal Political Department, Bern, 1978, CDDH/III/60, vol. III, p. 220.

The immediate aim of the draft article was to guarantee specific protection of the natural environment, among other civilian property, and to prohibit attacks by way of reprisal. Its ultimate aim, however, was to increase protection of the civilian population against the effects of hostilities. This article, which was renumbered 48 *bis* and adopted by consensus, was the basis for Article 55 of Additional Protocol I.

The second tendency can be seen in a joint proposal put forward by the delegations of three socialist States, namely, Czechoslovakia, Hungary and the German Democratic Republic. This proposal, instead of focusing on the survival and well-being of the civilian population, aimed to guarantee the protection of the environment by restricting the methods and means of warfare used. The second tendency, which was directly prompted by the magnitude of the environmental damage caused by the United States during the Vietnam war, led to the adoption of the third paragraph of Article 35 of Protocol I, entitled "Basic rules".[16]

As for Additional Protocol II relating to non-international armed conflicts, a provision similar to Article 55 of Protocol I (draft Article 48 *bis*) was adopted by Committee III by 49 to 4 votes with 7 abstentions, but was ultimately rejected in plenary session.

One of the most delicate issues was that of defining the critical threshold for severe environmental damage.

Although Article 35, para. 3, and Article 55, para. 1, of Protocol I have different aims, the coherence of the prohibition they lay down is ensured by the common use of the criterium of "widespread, long-term and severe damage".

It is interesting to compare this wording with that of Article I(1) of the 1976 ENMOD Convention, which mentions "environmental modification techniques having widespread, long-lasting *or* severe effects".

The use of the different conjunctions (and/or) in the two texts implies that while Protocol I prohibits only methods or means of warfare which simultaneously transgress all three of the conditions mentioned, the ENMOD Convention prohibits all those which transgress any one of the said conditions. The Convention therefore has a broader application.

In addition the Protocol focuses on protecting the natural environment regardless of the weapons used, whereas the Convention aims specifically to prevent the hostile use of environmental modification

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[16] *Ibid*, CDDH/III/SR 13-40 of 15 December 1975, no. 10.

techniques (for example, with respect to tidal waves, hurricanes or earthquakes).[17]

It is also important to note that the prohibition in the Protocol applies in time of armed conflict only, whereas the Convention applies both in time of armed conflict and in time of peace.

Furthermore, the two treaties ascribe different meanings to various terms. According to the interpretative agreement of the ENMOD Convention, the term "widespread" should be understood as encompassing an area on the scale of several hundred square kilometres, the term "long-lasting" as referring to a period of months, or approximately a season, and the term "severe" as involving serious or significant disruption or harm to human life, natural economic resources or other assets.[18]

It is much more difficult to give an exact interpretation of the terms used in the Protocol, since its provisions protect the natural environment as such and are therefore less specific (Committee III and its "Biotope" group did very little to clear up this point). However, it is generally understood that "widespread" implies an area of less than several hundred square kilometres, "long-term" refers to ten years or more and "severe" involves "damage as would be likely to prejudice, over a long term, the continued survival of the civilian population or would risk causing it major health problems".[19]

The two texts should not be seen as redundant, but rather as distinct and complementary, since one deals with geophysical warfare and the other with environmental warfare. This fact was pointed out by several delegations (Argentina, Egypt, Mexico, Venezuela) in their statements following the adoption by the CDDH of various articles on the environment.

IHL is quite different in this respect from disarmament law.

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[17] *Commentary on the Additional Protocols of 8 June 1977 to the Geneva Conventions of 12 August 1949*, Sandoz, Y., Swinarski, C., Zimmermann, B., eds., ICRC, Martinus Nijhoff Publishers, Geneva, 1987, pp. 414-415, paras. 1450-1451, and pp. 416-417, para. 1454.

[18] Arrassen, M., *Conduite des hostilités — droit des conflits armés et désarmement* (1983 thesis), Bruylant, Brussels, 1986, p. 297; *Commentary on the Additional Protocols, op.cit.*, p. 417, note 117.

[19] Arrassen, M., *op.cit.*, pp. 294-295; *Commentary on the Additional Protocols, op.cit.*, pp. 416-417, para. 1454.

2. Indirect protection

a) Additional Protocol I

Additional Protocol I contains a series of provisions which, although they do not aim primarily to prevent specific attacks against the environment, nevertheless provide many forms of indirect protection in this respect.

Article 51, for example, prohibits indiscriminate attacks (paras. 4 and 5), attacks which "employ a method or means of combat the effects of which cannot be limited as required by this Protocol" (para 4 (c)) and attacks by bombardment which treat as a single military objective a number of clearly separated and distinct military objectives (para. 5 (a)). It also affirms the principle of proportionality (para. 5 (b)).

Article 52, which deals with the general protection of civilian objects, limits attacks strictly to military objectives (paras. 1 and 2).

Article 54 protects 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" (para. 2).

Article 56 protects works and installations containing dangerous forces, "namely dams, dykes and nuclear electrical generating stations" (para. 1).

The adoption of the latter provision was prompted by the accusation that the Americans had attacked dykes during the Vietnam war to induce catastrophic flooding.

Article 57 lists a number of precautions which must be taken with respect to attacks and their planning.

Article 58 sets forth various precautions which the belligerents must take with respect to their own territory to ensure the protection of, among other things, civilian objects.

b) Additional Protocol II

Numerous provisions similar to those contained in Protocol I were put forward by Committee III but later discarded in plenary session. The desire for simplification which underlay the drafting of Protocol II explains why Article 14 (Protection of objects indispensable to the survival of the civilian population) and Article 15 (Protection of works and installations containing dangerous forces) are the only provisions which afford indirect protection of the environment.

c) *The Convention of 10 October 1980 on Prohibitions or Restrictions on the Use of Certain Conventional Weapons which May be Deemed to be Excessively Injurious or to Have Indiscriminate Effects, and its three protocols*

Additional Protocols I and II of 1977 prohibit the indiscriminate use of weapons, but not weapons themselves, and do not specify to which weapons the prohibition applies.

This problem prompted the ICRC to organize two conferences for government experts, one in Lucerne in 1974 and the other in Lugano in 1976. In addition the CDDH recommended, in its Resolution 22, that a conference of government experts be convened no later than 1979. In follow-up to this recommendation conferences were held in September 1979 and September 1980. They led to the adoption on 10 October 1980 of the 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, and its three protocols: Protocol I on non-detectable fragments, Protocol II on mines, booby-traps and other devices and Protocol III on incendiary weapons.

With respect to the environmental damage caused by various means and methods of warfare, it is regrettable that the 1980 Convention is silent on the subject of explosive munitions. The large-scale environmental damage caused by the intensive and widespread use of explosive munitions in Vietnam provided ample proof of the need to address this problem.[20]

Protocol I on non-detectable fragments is of little relevance to the problem of weapons-induced environmental damage.

Protocol II on mines, booby-traps and other devices deals with weapons that were used on a massive scale during the Second World War, the Indochina wars, the Arab-Israeli wars and more recently in Afghanistan.

While such weapons are not of a nature to cause widespread, long-lasting and severe damage to the natural environment, they can nevertheless be harmful to it in many ways. In addition to causing various accidents which kill or maim people and livestock, they can hamper the resumption of agricultural and other production and mar the landscape by blasting craters in the ground and scattering the remains of

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[20] "A total of over 14 million tonnes of munitions was directed against the whole of Indo-China by the USA", Stockholm International Peace Research Institute, *World Armaments and Disarmament: SIPRI Yearbook 1978*, Taylor and Francis Ltd., London, 1978, p. 44, quoted in Arrassen, *op.cit.*, p. 281, note 169.

destroyed vehicles, barbed wire and other war refuse over wide areas.

Protocol II plays an important role in that it deals with the use of mines and booby-traps (Articles 3 to 6), the recording and publication of the location of minefields, mines and booby-traps (Article 7), the protection of United Nations forces and missions from the effects of minefields, mines and booby-traps (Article 8) and international co-operation in the removal of minefields, mines and booby-traps (Article 9).

d) Protocol III on incendiary weapons

Protocol III on incendiary weapons is of particular interest. It has been estimated that over 100,000 tonnes of napalm were used in Vietnam between the beginning of the hostilities and March 1968 as part of a strategy of devastation carried out by the American armed forces. This strategy included defoliation of forests and plantations, destruction of rice paddies, incendiary bombardments and the razing of entire areas by fire and bulldozers operated by ground troops.

Although tens of thousands of square kilometres of vegetation and crops were devastated, this environmental warfare nevertheless fell short of military expectations since the natural humidity of the climate prevented fires from spreading easily.

The conclusion of a 1973 United Nations report on incendiary weapons states, with respect to the destruction of the natural environment: "Although there is a lack of knowledge of the effects of widespread fire in these circumstances, such attempts may lead to irreversible ecological changes having grave long-term consequences out of all proportion to the effects originally sought. This menace, though largely unpredictable in its gravity, is reason for expressing alarm concerning the massive employment of incendiaries against the rural environment".[21]

It should be noted in this respect that Protocol III, although it consists of only two articles (one on definitions and the other on the protection of civilians and civilian objects), plays an important role by stipulating that "it is prohibited in all circumstances to make the civilian population as such, individual civilians or civilian objects the object of attack by incendiary weapons" (Art. 2 (1)) and thereby affirming the provisions of Articles 51 and 52 of Additional Protocol I.

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[21] *Napalm and other incendiary weapons and all aspects of their possible use*, Report of the Secretary-General, United Nations, New York, 1973, p. 55, para. 189.

In addition the Preamble to the 1980 Convention reiterates word for word Article 35, para. 3 of Additional Protocol I, recalling that "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".

II. Future developments

1. Shortcomings in the protection mechanisms

Do the existing legislative provisions afford effective and satisfactory protection for the natural environment in the event of armed conflict?

Some authors, such as Géza Herczegh, consider that "all forms of environmental warfare have been banned".[22] There is no doubt that the introduction of the 1977 provisions constituted a step forward for IHL and addressed a major contemporary concern for the need to preserve the planet and ensure the future of all its inhabitants.

However several recent conflicts, such as the Iran-Iraq war and the Gulf war, to mention but two, have clearly demonstrated that the existing provisions for the protection of the environment suffer, in terms of their practical application, from various shortcomings.

To take the example of the Iran-Iraq war, no fewer than 447 oil tankers were attacked in the Persian Gulf between 1 May 1980 and 31 December 1987, and in 1984 alone 2,035,000 tonnes of oil were spilled into the sea. None of either country's oil-producing facilities was spared (such as Abadan, Khorramshahr, Tabriz, Bandar Khomeini and Kharg Island in Iran, and Basrah, Kirkuk, Dura, Khanaqin and Faw in Iraq).

The two belligerent States can therefore reasonably be considered to have caused widespread, long-term and severe damage to the environment.[23]

At the time neither Iran nor Iraq had ratified Protocol I, whereas

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[22] Herczegh, G., "La protection de l'environnement naturel et le droit humanitaire", in *Studies and essays on international humanitarian law and Red Cross principles in honour of Jean Pictet*, Swinarski, C., ed., ICRC, Martinus Nijhoff Publishers, Geneva, The Hague, 1984, p. 732.

[23] David, E., "La guerre du Golfe et le droit international", *Belgian Review of International Law*, 1987-I, p. 164, no. 17.

all the other Persian Gulf States, which suffered as third parties from the damage, were party to the Protocol.[24]

In addition the International Fact-Finding Commission provided for under Article 90 of Protocol I had not yet been constituted.[25]

With respect to compensation for war damages, Article 91 of Protocol I stipulates: "A Party to the conflict which violates the provisions of the Conventions or of this Protocol shall, if the case demands, be liable to pay compensation. It shall be responsible for all acts committed by persons forming part of its armed forces". Unfortunately this important article contains no provisions as to the practical application of the principle it states.

Neither IHL nor international environmental law deal effectively with the problem of compensation since the aim of the former is to "regulate hostilities in order to attenuate hardship"[26] and that of the latter is to prevent damage.

Consequently, and in view of these many shortcomings, Yves Sandoz, ICRC Director of Principles, Law and Relations with the Movement, stated that "if we look forward to further progress, we shall have to seek it through a broader recognition of the applicability of the essential standards of IHL from the moment that armed hostilities begin".[27]

2. Solutions

If this situation is to be improved, two major characteristics of IHL must be taken into account: first of all, the fact that "the whole of this law depends upon the good faith of the parties in conflict, and on the common interest in applying humanitarian standards which are of

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[24] United Arab Emirates (9 March 1983), Kuwait (17 January 1985), Bahrain (30 October 1986), Saudi Arabia (21 August 1987) and Qatar (5 April 1988), *IRRC*, No. 280, January-February 1991, pp. 78 ff.

[25] See Ashley Roach, J., "The International Fact-Finding Commission — Article 90 of Protocol I additional to the 1949 Geneva Conventions", *IRRC*, No. 281, March-April 1991, pp. 167-189.

[26] Pictet, J., "International Humanitarian Law: definition" in *International Dimensions of Humanitarian Law*, Henry Dunant Institute, UNESCO, Martinus Nijhoff Publishers, Dordrecht, Boston and London, 1988, p. xix.

[27] Sandoz, Y., *op.cit.*, p. 153. Regarding the legal instruments which exist outside of the framework of international humanitarian law and apply to the Iran-Iraq war, see David, E., *op.cit.*, p. 165, concerning a 1983-1984 report of experts on the subject, the Kuwait Regional Convention for Cooperation on the Protection of the Marine Environment from Pollution (24 April 1978) and the attitude adopted by the UN Security Council in its resolution 540.

benefit to all the victims";[28] and secondly, the fact that over-regulation of IHL tends to be counter-productive since specific rules are narrower in scope than general ones and their introduction thus tends to restrict the applicability of general prohibitions to precise cases.[29]

The first characteristic, namely dependence on the good faith of the parties, is unavoidable. The second points to the danger inherent in drafting a convention aimed specifically at the protection of the natural environment in wartime, along the lines of the Hague Protocol of 14 May 1954 for the Protection of Cultural Property in the Event of Armed Conflict.

The environmental damage wreaked during the Iran-Iraq war was the subject of various discussions within the European Parliament. During one of these, Karl-Heinz Narjes, a member of the Commission of European Communities, proposed convening a meeting of experts in environmental law and IHL to investigate ways of heightening the effectiveness of the existing rules.

A first meeting was organized in Brussels in September 1983 and three subsequent meetings were held by the end of 1984. The experts concluded that international cooperation was of paramount importance and must imperatively be reaffirmed and developed.

Although they defined various tasks that needed to be accomplished, the experts resisted the temptation to propose setting up yet another specialized international organization and pointed instead to various existing institutions capable of carrying out the tasks.

Following their example, we would recommend wider and more effective implementation of the existing legal instruments rather than the creation of additional rules.

Let us now turn to our proposal.

3. Demilitarized nature reserves

Ideally, the environment should receive total and unconditional protection. However, this will not be the case until there is a truly universal awareness of the value of our environmental heritage. At present, not even the right to life enjoys worldwide respect. As a result, thousands of people die each day of hunger, cold and illness. In

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[28] Sandoz, Y., *op.cit.*, p. 154; Herczegh, G., *op.cit.*, p. 733.

[29] David, E., "Evolution du droit humanitaire en un droit du moindre mal", in *Le droit international humanitaire, Problèmes actuels et perspectives d'avenir (colloquium, 13 and 14 December 1985), Les cahiers du droit public*, Université de Clermont 1, ed., Centre de recherches et d'études de droit humanitaire et des droits de l'homme, 1987, pp. 31 ff.

these circumstances it makes little sense to prohibit, for example, the cutting down of trees by people living in the Himalayas in northern India. Nevertheless, to strengthen the protection of existing nature reserves would have a profound impact on the future by enabling us to leave to coming generations a legacy consisting of special areas in which the natural environment, the biotope and the biocenosis are at least as structurally rich as those we inherited from our forefathers. In other words, these protected nature reserves would be true ecological sanctuaries which everyone would be required to respect as a form of minimum protection in all circumstances, including of course in the event of armed conflict.

It should be mentioned here that Committee III submitted to the CDDH a draft article providing for the protection of nature reserves (Article 48 *ter)*,[30] but the article was sent back to the working group and was unfortunately not adopted.

Our proposal, along the lines suggested by Alexandre Kiss, is that nature reserves should be demilitarized within the meaning of Article 60 of Protocol I of 1977.[31] Not only would this provide effective protection for the reserves, but it would do so under an existing rule.

Moreover, the violation of demilitarized zones is listed in Article 85, para. 3(d) of Protocol I and thus clearly constitutes a grave breach. Is it too much to hope that all nature reserves will one day be demilitarized as Antarctica has been?

Conclusion

The protection of the natural environment raises enormous problems which have ramifications in every branch of international law, including IHL.

It is also a major concern within the field of IHL, as is clearly demonstrated by the existence of numerous treaties on the protection of the environment in the event of armed conflict.

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[30] *"Article 48 ter*: Publicly recognized nature reserves with adequate markings and boundaries declared as such to the adversary shall be protected and respected except when such reserves are used specifically for military purposes", *Commentary on the Additional Protocols, op.cit.*, p. 664, para. 2138.

[31] Kiss, A., "Les Protocoles additionnels aux Conventions de Genève de 1977 et la protection des biens de l'environnement", in *Studies and Essays on international humanitarian law..., op.cit.*, p. 191.

As for the implementation of IHL, we must bear in mind that, on the one hand, it is still highly dependent on the good faith of the States and that, on the other hand, protection of the environment is a matter of moral principle as well as legislation. As proclaimed in the World Charter for Nature, adopted by the United Nations in 1982: "Every form of life is unique, warranting respect regardless of its worth to man, and, to accord other organisms such recognition, man must be guided by a moral code of action". We must also bear in mind that both individuals and States are more likely to think twice before setting off a conflict when there are tested, effective and, if necessary, coercive procedures for the settlement of differences, as is often the case in national legislation.

However, such procedures are extremely rare at the international level, especially when it comes to the settlement of environmental disputes.

In that respect IHL, despite its many shortcomings in terms of practical implementation, is no less developed than most other branches of international law.

We therefore believe that the most sensible way to strengthen the protection of the environment in the event of armed conflict is to improve the implementation of the existing instruments and extend the scope of certain provisions, for example by ensuring the demilitarization of nature reserves.

This would constitute major progress in the field of environmental protection in the event of armed conflict. To go any further would be to overstep the limits of IHL. Emphasis should therefore be placed on ensuring that the principle of prevention — a key concept for the protection of the environment — is introduced as effectively as possible among the emergency rules to be applied in the event of hostilities.

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