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Legal Perspectives for the Protection of the Environment Against the Effects of Military Activities During International Armed Conflict

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Abstract 1

War is the human activity with the greatest potential for damaging the environment. The technological evolution of the means of waging war now extends even to using the environment as a weapon. The potential for long-term, serious damage on a global scale now exists, and the threat is severe enough to warrant considerable attention to environmental protection during wartime.

The purpose of this thesis is to examine the legal aspects concerning the effects of man's warlike activities on the environment. The study consists of two parts. The first part considers international treaties and customary rules, and will attempt to assess the present state of international law concerning the protection of the world's natural environment in time of armed conflict. After exploring some of the criticisms concerning the effectiveness of the existing rules, the thesis considers potential consequences arising from violations of these provisions and proposes how they can be modified to provide more effective protection of the environment in time of hostilities.

The second part focuses on state responsibility for environmental protection and preservation. This part includes a case- by-case analysis of selected opinions of the ICJ and international tribunals related to the issue of State responsibility for environmental protection. We will attempt to show that States are responsible for their acts causing environmental damage to other States.

The conclusion will attempt to suggest ways in which the relevant law might be improved.

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Abstract 2

Military devastation and environmental contamination are the most immediate threats to humankind. It is evident that disruption of the environment and the destruction of its resources have become, in this century, prominent aspects of warfare. The present generation, which is living in a time when the instruments of death and devastation have become well developed, is perhaps more willing than previous ones to examine the use of force in international law.

This thesis assesses the law that might govern military activities affecting the environment during hostilities. We will endeavor to present examples of some environmental modifications undertaken in warfare, and prove that the present law is not capable of overcoming major obstacles.

The study consists of two parts. Part I explores what role the law has or could have in disposing international norms more favorably towards protection of the environment during armed conflict. Therefore, we will approach the subject with a historical survey, which is an important first step in a legal analysis. The survey is followed by analyses of the main provisions of international conventions and recent activities related to the protection of the environment in time of war (Chapter 1). We will analyze the current humanitarian law pertaining to the environment in Chapter II. We will examine how traditional law of war (*Hague* and *Geneva Conventions*) and modern law of war (the 1977 *Protocol I* Additional to the Geneva Conventions) protect the environment in time of hostilities. Environmental forces can be used for military purposes. Methods employed in the Vietnam war included mechanical deforestation, defoliation, and rainmaking by the seeding of clouds in order to render enemy trails impassable. The 1977 *Convention on the Prohibition of Military or Any Hostile Use of Environmental Modification Techniques* is analyzed in Chapter III. Chapter IV is dedicated to the examination of the prohibition of conventional weapons and weapons of mass destruction. The 1980 *Inhumane Weapons Convention* and international conventions regarding the effects of weapons of mass destruction on the environment are considered in

this chapter. Analysis of the law of war follows. Chapter V deals with the evolution of cultural norms relating to war and the environment. First, we will determine whether traditional norms can be interpreted as providing protection for the environment. Second, we will examine different doctrinal views on the existence of customary international law for the protection of the environment in time of war, and discuss whether customary international law protects the environment in time of hostilities.

Part Two includes an analysis of State responsibility for environmental matters. Chapter 1 examines the historical development of State responsibility. It then focuses on the modern concept of the responsibility of the State for breach of international obligations. Chapter II of this part discusses types of responsibility and the problems in practising State responsibility. International conventions, some international related cases and the Stockholm declaration are discussed in this chapter. The international community has started to give concerted attention to international responsibility for the protection of the environment. We will discuss whether peacetime environmental norms examined in the first and second chapters of this part remain effective during hostilities, and if so, between whom and in what circumstances. We will examine the ILC's Draft Articles on "State Responsibility" in which massive pollution of the atmosphere or the seas is classified as an international crime. Chapter III addresses the responsibility of States for environmental damage in international armed conflict. We will show that States are responsible for all their officials, including those in their armed forces.

As we will see, most commentators have criticized environmental conventions that protect the environment. From these criticisms two major proposals have emerged. Some call for the creation of a new convention and others suggest amendments to the existing mechanisms. The thesis proposes that the relevant law is difficult to apply and therefore both options are necessary on the basis that the environment must be adequately protected. The thesis concludes with suggestions as to how these improvements might be achieved and with policy recommendations that aim to suggest pathways to the improvement of environmental

law.

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Résumé

Depuis les temps les plus lointains, les dommages à l'environnement sont une partie intégrante de la guerre. Ce qui distingue l'époque actuelle, c'est d'abord le progrès constant de la science et de la technologie qui a permis à l'homme de mettre au point de nouvelles méthodes dont l'impact sur l'environnement est de plus en plus nocif, c'est ensuite la conviction croissante de la nécessité d'une protection de l'environnement même en temps de conflits armés.

La thèse évalue le droit régissant les activités militaires qui affectent l'environnement pendant les hostilités. Nous voulons déterminer quel rôle le droit a ou peut avoir dans la création des normes internationales plus favorables à la protection de l'environnement en temps de guerre. L'étude comprend deux parties. Dans la première partie nous analysons les principaux articles des conventions internationales relatives à la protection de l'environnement en temps de guerre. La deuxième partie porte sur une étude de la responsabilité de l'État pour les dommages à l'environnement.

Nous abordons donc ce sujet avec un bref rappel de quelques activités militaires ayant causé des effets sévères à l'environnement. Le premier chapitre débute par une observation générale des différents instruments qui se rapportent à la dégradation de l'environnement par les activités militaires. Puis, nous procédons à une analyse des principaux articles des conventions internationales relatives à la protection de l'environnement en temps de guerre. Nous analysons le droit humanitaire actuel en ce qu'il a de pertinent en matière environnementale dans le chapitre II. Nous nous attachons par la suite à voir comment le droit traditionnel de la guerre (les *conventions de la Haye et de Genève*) et le droit moderne de la guerre (*Protocole I* Additionnel de la Convention de Genève de 1949) protègent l'environnement en temps de guerre. Des modifications de l'environnement peuvent être utilisées à des fins militaires. Ainsi les méthodes utilisées lors de la guerre du Vietnam incluaient le déboisement mécanique, la défoliation et la provocation de la pluie par semence de nuages afin de rendre les chemins impraticables aux forces ennemies. La *Convention sur*

l'interdiction d'utiliser des techniques de modification de l'environnement à des fins militaires ou toutes autres fins hostiles a été analysée dans le chapitre III. Le chapitre IV se consacre à l'examen de la prohibition de l'utilisation des armes conventionnelles et des armes de destruction de masse. Ce chapitre s'attarde également sur les accords internationaux concernant ces armes: la *Convention sur l'interdiction ou la limitation de l'emploi de certaines armes classiques* de 1980, les Conventions internationales concernant les effets des armes de destruction de masse (armes chimiques, biologiques et armes nucléaires) sur l'environnement. Le chapitre V s'occupe de l'évolution des normes culturelles relatives à la guerre et à l'environnement. Dans un premier temps, nous avons déterminé si les normes traditionnelles peuvent être interprétées dans le sens de la protection de l'environnement. Nous avons examiné ensuite les opinions doctrinales sur l'existence d'un droit coutumier international en matière de protection de l'environnement en temps de guerre. Nous avons discuté enfin de la question de savoir si la coutume internationale protège l'environnement en temps de guerre.

La deuxième Partie porte sur l'analyse de la responsabilité de l'État pour les dommages à l'environnement. Le premier chapitre examine le développement historique de la responsabilité de l'État et plus particulièrement le concept moderne de responsabilité de l'État pour une violation d'une obligation internationale. Le deuxième chapitre analyse les différents types de responsabilité et quelques problèmes qui en découlent. Les conventions internationales, les décisions judiciaires internationales et la Déclaration de Stockholm sont abordées dans ce chapitre. La communauté internationale a commencé à accorder une attention au problème de la responsabilité d'État sur le chapitre de l'environnement. Nous nous sommes attachés à savoir si les normes environnementales en temps de paix étudiées dans cette partie restent efficaces en période d'hostilité et si oui entre quelles parties et en quelles circonstances. Nous avons examiné les projets de la CDI concernant la responsabilité d'État, projets qui considèrent la pollution massive de l'atmosphère ou des océans comme un crime international. Le chapitre III porte sur la responsabilité des États pour un dommage environnemental en temps de conflits armés. Nous avons montré que les États sont

responsables pour les actes de tous leurs officiels y compris les forces armées.

Nous avons pu constater que la plupart des auteurs critiquent le droit actuel. De ces critiques deux positions majeures peuvent être dégagées. Les uns proposent la rédaction d'une nouvelle convention, les autres suggèrent la modification du droit existant. L'examen du droit actuellement en vigueur révèle que les accords internationaux ont besoin d'être clarifiés par rapport aux dommages environnementaux résultant d'activités militaires en temps de guerre. La thèse arrive à la conclusion selon laquelle les deux opinions sont nécessaires à une meilleure protection de l'environnement.

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Glossary

Ad hoc: For this purpose.

Causa proxima non remota spectatur: It is the immediate, not the remote, cause that should be considered; an efficient adequate cause being found, it must be considered the true case unless some other independent cause is shown to have intervened between it and the result.

Delicto: See delictum.

Delictum: A crime of offence; a violation of law, either natural or positive.

Ex delicto: An action 'ex delicto' is an action of tort; an action arising out of fault, misconduct, or malfeasance. If cause of action declared in pleading arises from breach of duty growing out of contract, it is in form 'ex delicto' and case.

Jus cogens: A term derived from Roman law designating rules which may not be altered by contracting parties, as contrasted with *ius dispositivum*, those which may be so altered. In modern usage the term is almost met with in international law, where there are no such peremptory rules imposed by customary international law, though there is noting to prevent sovereign states from creating peremptory international law by treaty, and to a small extent this has been done, *e.g.* by the United Nations Charter. Limitations on the freedom of state action imposed by self-interest, common sense, or the desired to be well-regarded, are wholly distinguishable from *ius cogons*.

Jus strictum: Strict law; law interpreted without any modification, and in its utmost rigor.

Jus aequum: Equitable law. A term used by the Romans to express the adaption of the law to the circumstances of the individual case as opposed to jus strictum.

Opinio juris: A necessary component in the formation of customary Law: the belief that a practice is obligatory rather than habitual.

Pacta sunt servanda: The rule that treaties are binding on the parties, often said to be a rule of customary law.

Pro tanto: For so much; as far as it goes

Per se: By himself or itself; taking alone; unconnected with other matters.

Res communis: A description applied to areas of territory indicating that they are not open to acquisition by any state, but may be enjoyed by any member of the international community.

Restitutio in integrum: restoration of original position.

Sic utere tuo ut alienum non laedas: so use your own property as not to injury another's.

Sine: Without

Status quo: The existing state of things at any given date; The state of affairs as it existed (prior to something).

Stricto sensu: in a strict sense

Terra nullius: Territory that belongs to no State.

Travaux préparatoires:The preparatory material detailing the negotiating history of a treaty or international conference.

Vis major: A great or superior force; A loss that results immediately from a natural cause without the intervention of man, and could not have prevented by the exercise of prudence, diligence, and care.

Abbreviations

ABAJ	Americal Bar Association Journal
AFDI	Annuaire Français de Droit International
AJIL	Americal Journal of International Law
Am.Soc'y Int'l. L.Proc.	American Society of International Law Proceedings
Ann. Air & Sp. L	Annals of Air and Space Law
ATS	American Treaty Series
AUJIL&Policy:	American University Journal of International Law and Policy
B.C.Third World L.J.	Boston College Third World law Journal
BFSP	British and Foreign State Paper
Brit.-U.S.Cl.Arb.	British-United States Claims Arbitral Tribunal (1910)
BUILJ	Boston University International Law Journal
BYIL	British Yearbook of International Law
C. de D.	Les Cahiers de Droit
Cal.W.Int'l.L.J.	California Western International Law Journal
Can.Y.B.Int'L.L.	Canadian Yearbook of International Law
Can.T.S.	Canadian Treaty Series
Case W.J.I.L.	Case Western Journal of International Law
CCD	Conference of the Committee on Disarmament
CDDH	Diplomatic Conference on the Reaffirmation and Development of International Humanitarian Law Applicable in Armed Conflict
CE	Conference of Government Experts
CITES	Convention on International Trade in Endangered Species of Wild Flora and Fauna
Col. J.Trans.L.	Colombia Journal of Transnational Law
Comd.	Command Papers, Laid by Command of the Crown before UK Parliment
Conf	Conference
Cornell.Int'l.L.J.	Cornell International Law Journal
CSD	Claim Settlement Declaration
CTS	Consolidated Treaty Series, ed. Clive Parry
Dick.J.Int'l.L.	Dickson Journal of International Law
Doc	Document
Dr	Draft
E.Y.B.	European Yearbook
ECE	Economic Commission for Europe
Ecology Law Q.	Ecology Law Quarterly

EEC	European Economic Commission
EEZ	Exclusive Economic Zone
Emory Int'l. L.R.	Emory International Law Review
Enmod	Environmental Modification Convention
EPAJ	International Protection Agency Journal
G.C.C.	General Claims Commission
GA	General Assembly
GAOR	General Assembly Official Records
GBTS	Great Britain Treaty Series
GIPRI	Geneva International Peace Research Institute
H.L.	House of Lords
H.C.R.	James Brown Scott: The Hague Court Reports 2 Vols. New York,1916-1932
HMSO	Her Majesty's Stationary Office
Harv. Int'L.L.J.	Harvard International Law Journal
HMSO	Her Majesty's Stationery Office
Hous.J.Int'l.L.	Houston Journal of International Law
I.L.R.	International Law Reports
IAEA	International Atomic Energy Agency
IASL	Institute of Air and Space Law
ICAO	International Civil Aviation Organization
ICJ	International Court of Justice
ICPR	International Commission for the Protection of the Rhine
ICRC	International Committee of Red Cross
ILC	International Law Commission
ILM	International Legal Material
Int.Arb.	J.B.Moore: History and Digest of the International Arbitration, 6 Vols. Washington 1898
Int'l. & Comp.L.Q.	International and Comparative Law Quarterly
Int'L Adj.M.S.	**J.B.Moore**: International Adjudications, Ancient and Modern, History and Documents, etc., Modern Series, 6 vol. New York, 1929-33.
Int'L.Bus.Lawyer	International Business Lawyer
IRRC	International Review of Red Cross
Iran-U.S.T.R.	Iran-United States Claim Tribunal Reporter
IUCN	International Union for the Conservation of Nature
J of Sp.L.	Journal of Space Law
JALC	Journal of Air law and Commerce
jd.	Jurisdiction

L.R.	Law Reports
LNTS	League of Nations Teaties Series
Loc. Cit.	Loco Citato (lat) The Place already Cited
Los Ang.Int'l & Com.L.J	Los Angles International and Commercial Law Journal
Mary's L.J.	Saint Mary's Law Journal
MAT	Mixed Arbitral Tribunal
McGill L.J.	McGill Law Journal
N.Y.Sch.J.Int'L. & Comp.L.	New York School Journal of International and Comparative Law
Naval War C. Rev.	Naval War College Review
NILR	Netherlands International Law Review
NYIL	New York Yearbook of International Law
NYS	New York State Reporter
OECD	Organization of Economic Co-operation and Development
OEEC	European Nuclear Energy Agency of the OECD
P.	Page
Pace Env'l.L.Rev.	Pace Environmental Law Review
Pace Y.B.Int'l.L.	Pace Yearbook of International Law
PCA	Permanent Court of Arbitration
PCIJ	Permanent Court of International Justice
PL	Public Law
RIAA	Reports of International Arbitral Awards
Ref.	Reference
Res.	Resolution
RGDIP	Revue générale de droit international public (paris)
SIPIR	Stockholm International Peace Research Institute
S.	Section
Standford J.Int'L.L.	Standford Journal of International Law
Suffolk Tran. L.J.	Suffolk Transnational Law Journal
Suffolk Tran.L.R.	Suffolk Transnational Law Review
Syr.J.Int'l.L.& Com.	Syracuse Journal of International Law
TIAS	Treaties and Other International Acts Series
U.Chi.L.R.	University of Chicago Law Review
UK	United Kingdom
UK Misc	UK Miscellaneous Papers
UKPP	UK Parlimentary Papers (House of Commons and Command)
UKTS	UK Treaty Series
UN	United Nation

UN	United Nations
UNCLOS	United Nations Convention On the Law of the Sea
UNEP	United Nations Environmental Programme
UNGA	United Nations General Assembly
UNIDIR	United Nations Institute for Disarmament Research, Geneva
UNRIAA	United Nations Reports of International Arbitration Awards
UNTS	United Nations Treaty Series
US	United States
USC	US Code
USSR	Union of Soviet Socialist Republic
UST	United States Treaties
Va.J.Int'l.L.	Virginia Journal of International Law
Vol.	Volume
W.Res.J.Int'l.L.	Western Reserve Journal of International Law
Y.J.Int'l.L.	Yale Journal of International Law
Y.B.Inst.Intt'l.L.	Yearbook of Institute of International Law
YUN	Yearbook of the United Nations

Introduction

1. Protection of the Environment

The issue of environmental protection is connected to many other complex questions: the management of burgeoning technology; depletion of resources; the control of weapons of mass destruction and restraints on the use of force; indeed, the world-order itself. Man-made damage to the environment affects not only human life but also the different species of plants and animals whose survival is becoming more and more closely linked to human activity. It destroys irreplaceable resources.

Damage to the environment by man's activities raises the important issue of implementation of a legal system for its protection. General principles of law recognized by civilized nations, judgments or advisory opinions of the world court and arbitral or other international tribunals and opinions of legal scholars supply useful evidence of the existence of international environmental law.[1] What can be determined from all of these sources is that there is a basic obligation upon States to protect and preserve the human environment and, in particular, to use the best practicable means available to prevent destructive impacts on resources.[2]

Environmental destruction becomes even more problematic in an increasingly overpopulated world. Recent environmental disasters -- such as the 1984 industrial

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[1]See Kiss & Shelton, *International Environmental Law* (England: Transnational, 1991) at 95-113.

[2]See Joyner & Kirkhope, "The Persian Gulf War Oil Spill: Reassessing the Law of Environmental Protection and the Law of Armed Conflict" (1992) vol.24, Case W.J.IntL.L. 29 at 43.

accident in Bhopal, India and the 1986 Chernobyl nuclear disaster in the former Soviet Union -- are evidence that environmental accidents have effects beyond the borders of individual States. Global environmental protection has only recently[3] attracted the attention of the international community. The UN Conference on the Human Environment, which had its background in prior international conventions and regional agreements[4], produced a set of normative guidelines for States concerning the preservation and enhancement of the human environment. The Stockholm Declaration[5], which was adopted by the Conference, states in its second principle that "[t]he natural resources of the earth including the air, water, flora and fauna and especially representative samples of natural ecosystems must be safeguarded [...]." This duty of the people of the world to safeguard natural resources and ecosystems should apply to all States in order to prevent serious damage to the human

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[3]Some forms of environmental damage such as air pollution have been known since the twelfth century and have been subject to strict control. See T. Bennett & W. Rowland, *The Pollution Guide* (Toronto: Clarke, Irwin & co., 1972) p.71.

[4]For example, 1960 *Antarctica Treaty* (Washington) 402, U.N.T.S. 71; U.K.T.S. 97 (1961), Cmd. 1535; 12 U.S.T.794. 1963 *Treaty Banning Nuclear Weapons Tests in the Atmosphere, in Outer Space and Under water* (Moscow), 480 U.N.T.S. 43; U.K.T.S. 3 (1964), Cmd. 2245; 14 U.S.T. 1313, T.I.A.S. 5433; A.T.S. 26 (1963); 57 A.J.I.L. 1026. 1967 *Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies*, T.I.A.S. No. 6347; A.T.S. 24 (1967). 6 ILM 386. 610 U.N.T.S. 205; U.K.T.S. 10 (1968), Cmd. 3519; 18 U.S.T. 2410, 1969 *International Convention on Civil Liability for Oil Pollution Damages*, done at Brussels, NOV. 29, 1969, in 9 I.L.M. 45 (1969); U.K.T.S. 77 (1975), Cmd. 6056; 26 U.S.T. 765; Another Convention for protection of the environment is the 1978 *Kuwait Regional Convention for Co-operation of the Marine Environment from Pollution*, 1140 U.N.T.S. 133; 17 I.L.M. 511 (1978). This Convention obliges the contracting States to prevent, abate and combat pollution of the marine environment in the Sea Area caused by intentional discharge from ships (Article IV). The Convention exempts warships or other State owned ships used on Government non-commercial service from the application of the provisions of the Convention (Article XIV). The text is reprinted in Rummel-Bulska, I. & O. Osafo *Selected Multilateral Treaties in the Field of the Environment*, vol. 2 (Cambridge: Grotius Limited, 1991) at 283.

[5]Stockholm Declaration on the Human Environment, UN. DOC. A/CONF.48/14, at 72 reprinted in 11 I.L.M. 1416 (1972) [hereinafter Stockholm Declaration].

environment. The cornerstone of the Stockholm Principles' mandate against environmental degradation is found in Principle 21, which holds each State responsible for its action causing damage to the environment of other States.

Eyewitnesses to the smoke on the Kuwaiti oil fields at the end of the Persian Gulf War described the scene as hell on earth. Aside from the many expressions used to describe it, the act was also called 'ecocide'. This label suggests that such conduct directed against the environment might be seen as a threat to the security of the people connected with that environment. Environmental security is usually referred to as a "community's state of assurance that its stability as a community will not be threatened by a lack of proper management of the natural resources it deems to be necessary parts of its identity -- the community's specific cultural, historical, and philosophical context within which the community defines itself."[6] Such a concept rests on the assumption that the maintenance of environmental security is connected to the governing body's ability to ensure the desired quality of the environment.[7]

One of the goals of the international community is to protect the welfare of humanity. Environmental degradation that threatens international peace and security and therefore endangers all life is considered as the major threat to that welfare: "Environmental security links issues of peace, development and environment in an interrelated political concept."[8] This implies that the same methods embodied in the *UN Charter* for peacekeeping should be applied to protect the environment. The

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[6]Weintraub, B.A. "Environmental Security, Environmental Management, and Environmental Justice" (Spring 1995)12 Pace Envtl. L. Rev. 533 at 546.

[7]*Ibid.*

[8]See Kiss, *supra*, note 1 at 379.

Security Council would have a leading role in adopting mandatory measures for environmental protection.[9]

The term environmental security can be said to have two dimensions. First, concerning the environment, security refers to the maintaining of an ecological balance at least to the extent that use of the environment meets the need of the present generation without endangering the right of future generation to an ecologically balanced environment and a healthy life. Environmental security should also take into account the rights of future generations. This has been emphasized in the Stockholm Declaration. It states that "To defend and improve the human environment for present and future generations has become an imperative goal for mankind-a goal to be pursued together with, and in harmony with, the established and fundamental goals of peace and of world-wide economic and social development."[10] Principle II of the Declaration states that "[t]he natural resources of the earth [...] must be safeguarded for the benefit of present and future generations [...].[11] Second, regarding the notion of security in the traditional sense, it refers to the prevention and management of conflict resulting from environmental degradation.[12]

2. The Concept of the Environment

Any method of defining the environment is subject to debate. As Caldwell remarked, "everyone understands [the term environment] but no one is able to define

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[9]*Ibid.*

[10]See preamble to the Stockholm Declaration, *supra*, note 5

[11]*Ibid.*

[12]Brunnée, J. "Environmental Security in the Twenty-First Century: New Momentum for the Development of International Environmental Law?" (May, 1995) 18 Fordham Int'l L.J. 1742 at 1742.

[it]."[13] In general, however, definitions of the environment tend to fall into one of two approaches: human-centric or nature-centric.

If the environment is defined in terms of human relationships to the resources of nature, it describes a type of economic resource. Environmental damage, according to this approach, is simply a calculation of economic or social loss arising from damage to the economic resource.[14]

In the nature-centric approach, the environment is treated with the autonomous status of its values, while in its human-centric aspect, it is studied in terms of how it conditions the relation between men in their capacities as developers of agriculture and industry and in terms of their relationship with plants and animals.

The definition of the environment in the *Ozone Convention* is nature-centric. It defines adverse effects on the environment to include: "changes in the physical environment or biota, including changes in climate, which have significant deleterious effects on human health or on the composition, resilience and productivity of natural and managed ecosystems, or on materials useful to mankind."[15]

A nature-centric definition of the environment has been given as follows::

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[13]Caldwell, L.K. *International Environmental Policy and Law*, 1st ed. (Durham, NC: Duke University Press, 1980) at 170.

[14]D. Tolbert, "Defining the Environment", in G. Plant, *Environmental Protection and the Law of War: A 'Fifth Geneva' Convention on the Protection of the Environment in Time of Armed Conflict* (London: Belhaven Press, 1992) at 256-261.

[15]*Convention for the Protection of the Ozone Layer* (Vienna), UKTS 1 (1990) Cm. 910; 26 ILM (1987), 1529. In force Sept. 22, 1988. Article 3 para. 2.

"The environment includes the earth and its natural processes, including its biosphere, lithosphere, hydrosphere, atmosphere, outer space and particularly those aspects of its processes which preserve its biodiversity such as its ecosystems and habitats."[16] This approach can be found in some international law documents such as the Stockholm Declaration and *Enmod Convention*.

The Enmod Convention provides a broad definition of the environment. It covers "the dynamics, composition or structure of the Earth, including its biota, lithosphere, hydrosphere and atmosphere, or of outer space."[17]

Both nature and human-centric approaches can be found in the *North American Agreement of Environmental Cooperation*.[18] The objectives of the agreement are, *inter alia*, to

> "(a) foster the protection and improvement of the environment in the territories of the parties for the well-being of present and future generations;
> (b) promote sustainable development based on cooperation and mutually supportive environmental and economic policies;
> (c) increase cooperation between the parties to better conserve, protect, and enhance the environment, including wild flora and fauna."[19]

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[16]Michael A. Meyer, "A Definition of the Environment" in Plant, G. *Environmental Protection and the Law of War: A 'Fifth Geneva' Convention on the Protection of the Environment in Time of Armed Conflict* (London: Belhaven Press, 1992) at 255-256. Diversity means a "measure of the variety of particular elements in an ecosystem. The term often is used to refer to the diversity of species." See Bruce Pardy, *Environmental Law: A Guide to Concepts*, (ButterWorths: Canada Ltd.: 1996) at 66.

[17]Article II of the *Convention on the Prohibition of Military or Any Hostile Use of Environmental Modification Techniques (Geneva)* 31 UST 333, 16 ILM (1977), 88. *(Hereinafter Enmod Convention)* In force Oct. 5, 1978. See Appendix III for the text of the Convention.

[18]US Trade Representative Office, Environmental Impact of NAFTA (US: Government Institutes, Inc. 1994) 160-200.

[19]*Ibid*. Article 1.

Turning to the law of States[20], some have laid down a definition of the term environment in the same way that international law has done. The law of England in s. 29 defines the environment as consisting of one or more of the following media: air, water, and land. Pollution of the environment means the release, by any means, into land, air or water of substances which are capable of causing harm to man or any other living organisms supported by the environment. "Harm" means harm to "the health of living organisms or other interference with the ecological systems of which they form part and, in the case of man, includes offence caused to any of his senses or harm to his property."[21]

The U.S. have also taken measures to define the environment. The purpose of the *United States National Environmental Policy Act* is: "To declare a national policy which will encourage productive and enjoyable harmony between man and his environment; to promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man; to enrich the understanding of the ecological systems and natural resources important to the Nation and to establish a Council on Environmental Quality."[22]

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[20]Bakacs, in his article on Hungarian environmental law, defines the environment. He states: "There are several complementary definitions of `environment'. Firstly, the environment can be considered as a complex entity of the living world, with delicate interactions between biotic and abiotic factors. The environment can also be considered as that part of nature and of society containing life. Finally the environment is the whole of the natural and social-artificial conditions and factors in co-ordinate system of space and of time, which are in interaction with each other. Of primary importance are the connection, the inherence and the possible or existing interactions of the environmental components and symptoms with the living world. [...] From the legal point of view, 'environmental' problems are those having symptoms of and effects on the quality of life." See T. Bakacs, *Hungary*, in R. Blanpain & M. Boes, *International Encyclopedia of Laws*, vol. 1 (Deventer: Kluwer Law and Taxation Publishers, 1992) at Hungary-22.

[21]See David Hughes, *Environmental Law*, 2ed ed. (London: Butterworths, 1992) at 291; Link Laters & Paines Solicitors, "United Kingdom", in Blanpain *supra*, note 20 at 47.

[22]42 U.S.C.4341; Amended by PL. 94-52, July 3, 1975; PL. 94- 83, August 9, 1975.

By applying both human-centric and nature-centric views of the environment to the issue of environmental damage caused by armed conflict, it becomes possible to address a number of important issues such as global climate change, degradation of the ozone layer, pollution of the atmosphere, threats to endangered species, degradation of terrestrial fauna and flora and their habitats, the effects of defoliants, and deliberate oil-spills.

One problem is whether human transformation of nature forms part of the environment. It is difficult to determine whether or not attacks on the means of the survival of human populations such as attacks upon agricultural land or attacks upon culturally important sites and monuments should be considered attacks on the environment. If we take the ICRC Commentary definition of the natural environment, it should be understood in the broadest sense to cover not only objects indispensable to the survival of the human population, such as foodstuffs, drinking water and livestock (which are mentioned in Article 54 of the 1977 *Geneva Protocol I* to the 1949 *Geneva Conventions*[23]), but also forests and other vegetation mentioned in *Protocol III* to the *Inhumane Weapons Convention*[24] as well as flora, fauna and other

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[23]1977 *Protocols I and II Additional to the Geneva Conventions of August 12, 1949 and Relating to the Geneva Protection of Victims of International Armed Conflicts*, 1125 UNTS. 3, 1125 UNTS 609, 16 I.L.M. (1977), 1391. In force December 7, 1978. See Appendix II (2.3) for the text of the protocol I. [Hereinafter 1977 *Geneva Protocol I*].

[24]1980 *Convention on Prohibition or Restrictions on the Use of Certain Conventional Weapons Which May be Deemed to be Exhaustively Injurious or to Have Indiscriminate Effects*. Oct. 10, 1980, 19 ILM 1523 (1980). (Hereinafter *Inhumane Weapons Convention).*
Concluded at Geneva on October 10, 1980
Entry into force: December 2, 1983, in accordance with Article 5, paragraphs 1 and 3.
Registration: December 2, 1983, No. 22495.
Status: Signatories: 51. Parties: 62.

Parties: Argentina, Australia, Austria, Belarus, Belgium, Benin, Bosnia and Herzegovina, Brazil, Bulgaria, Canada, China, Croatia, Cuba, Cyprus, Czech Republic, Denmark, Djibouti, Ecuador, Finland, France, Germany, Georgia, Greece, Guatemala, Hungary, India, Ireland, Israel, , Italy, Japan,

biological and climatic elements.[25] Since the emphasis on the definition of the environment is on the natural processes of the earth as distinct from human activities, there is no scope for protecting the environment as it may be affected by human actions. For example, culturally important sites and buildings would not come within the purview of the definition; these are protected elsewhere. This conclusion can also be derived from Article 2 of the *UNESCO Convention*[26]. It defines natural heritage as:

Jordan, Lao People's, Democratic Republic, Latvia, Liechtenstein, Luxembourg, Malta, Mauritius, Mexico, Mongolia, Morocco, Netherlands, New Zealand, Niger, Norway, Pakistan, Philippines, Poland, Romania, Russian Federation, Slovakia, Slovenia, South Africa, Spain, Sweden, Switzerland, Togo, Tunisia, Uganda, Ukraine, United Kingdom, United States of America, Uruguay, Yugoslavia.

Signatories:Afghanistan, Egypt, Iceland, Nicaragua, Nigeria, Portugal, Sierra Leone, Sudan, Turkey, Viet Nam. UN Treaty Data Base, general table of contents, available: [http://www. un.org/Depts/ Treaty/bible/Front_E/tocGEN.html].

[25]Plant, *supra*, note 16 at 25.

[26]1972 *Convention for the Protection of the World Cultural and Natural Heritage*. (Hereinafter *UNESCO Convention*) UKTS 2 (1985); 27 UST 37; 11 ILM (1972), 1358. List of the States Parties which have signed the Convention as of August 1, 1997. Ratification (R); aacceptance (Ac) accession (A) or of the notification of succession (S).
Afghanistan (r), Albania, (r), Algeria (r), Andorra (ac), Angola (r), Antigua and Barbuda (ac), Argentina (ac), Armenia (s), Australia (r), Austria (r), Azerbaijan (r), Bahrain(r), Bangladesh(ac), Belarus(r), Belgium(r), Belize(r), Benin(r), Bolivia(r), Bosnia and Herzegovina(s), Brazil(ac), Bulgaria(ac), Burkina faso(r), Burundi(r), Cambodia(ac), Cameroon(r), Canada(ac), Cape verde(ac), Central African Republic(R), Chile(r), China(r), Colombia(ac), Congo(r),Congo, Democratic Republic of the(r), Costa rica(r), Côte d'ivoire(r), Croatia(s), Cuba(r), Cyprus(ac), Czech republic(s), Denmark(r), Dominica(r), Dominican Republic(r), Ecuador(ac), Egypt(r), El salvador(ac), Estonia(r), Ethopia(r), Fiji(r), Finland(r), Former Yugoslav Republic Of Macedonia, the(s), France(ac), Gabon(r), Gambia(r), Georgia(s), Germany(r), Ghana(r), Greece(r), Guatemala(r), Guinea(r), Guyana(ac), Haiti(r), Holy see(a), Honduras(r), Hungary(ac), Iceland(r), India(r), Indonesia (ac), Iran (Islamic rep. Of) (ac), Iraq (ac), Ireland (r), Italy(r), Jamaica (ac), Japan (ac), Jordan(r), Kazakhstan(ac), Kenya (ac), Kyrgystan (ac), Lao People's Democratic Republic(r), Latvia (ac), Lebanon(r), Libyan Arab Jamahiriya(r), Lithiania(ac), Luxembourg(r), Madagascar(r), Malawi(r), Malaysia (r), Maldives(ac), Mali(ac), Malta(ac), Mauritania(r), Mauritius(r), Mexico(ac), Monaco(r), Mongolia(ac), Morocco(r), Mozambique(r), Myanmar(ac), Nepal(ac), Netherlands ,(ac), New zealand(r), Nicaragua(ac), Niger(ac), Nigeria(r), Norway(r), Oman(ac), Pakistan(r), Panama(r), Papua New Guinea(ac), Paraguay(r), Peru(r), Philippines(r), Poland(r), Portugal(r), Qatar(ac), Republic of Korea(ac), Romania(ac), Russian Federation (r), Saint Christopher and Nevis(ac), Saint Lucia(r), San Marino(r), Saudi Arabia(ac), Senegal(r), Seychelles(ac), Slovakia(s), Slovenia(s), Solomon Islands(a), South Africa(r),

> "[...] natural features consisting of physical and biological formations or groups of such formations, which are of outstanding universal value from the aesthetic or scientific point of view; geological and physiographical formations and precisely delineated areas which constitute the habitat of threatened species of animals and plants of outstanding universal value from the point of view of science or conservation; natural sites or precisely delineated areas of outstanding universal value from the point of view of science, conservation or natural beauty."[27]

3. The Environmental Impact of War

All human activities may disturb the human environment but warfare can cause far greater destruction. U.S. military tactics in Vietnam -- including extensive bombing and shelling, herbicide spraying, and land-clearing to prevent enemy access to large land areas -- provide one example.[28] The use of weapons against the environment causes long-term or even irreversible damage to natural resources. The environment itself may also be used as an instrument of warfare[29] to support other

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Spain(ac), Sri lanka(ac), Sudan(r), weden(r), Switzerland (r), Syrian Arab Republic(ac), Tajikistan(s), Thailand(ac), Tunisia(r), Turkey(r), Turkmenistan(s), Uganda(ac), Ukraine(r), United Kingdom of Great Britain and Northern Ireland(r), United Republic of Tanzania(r), United States of America(r), Uruguay(ac) Uzbekistan(s), Venezuela(ac),Viet nam(ac), Yemen(r), Yugoslavia(r), Zambia(r), Zimbabwe(r).

[27]*Ibid.*

[28]A. Westing, Ambio, vol. IV, no. 5-6 (1975) p.221.

[29]For example the climate can be affected by water vapor, sulphur dioxide, carbon dioxide and oxides of nitrogen. Oxides of nitrogen at high altitudes can affect the ozone layer, which is dangerous to the biosphere since it absorbs most of the powerful solar ultraviolet radiation. It can harm plant and animal life on the earth's surface. See H.A.V. Briceno, *The Aerospace Environmental Hazards: Diagnosis and Proposals for International Remedies* (LL.M. Thesis, McGill University, IASL, 1981) at 30. Environmental Modification Techniques are: 1. Fog and cloud dispersion; 2. Fog and cloud generation; 3. Hailstone production; 4. Release of materials which might alter the electrical properties of the atmosphere; 5. Introduction of electromagnetic fields into the atmosphere; 6. Generating and directing destructive storm; 7. Rain and Snow-making; 8. Control of lightning; 9. Climate modifications; 10. Disruption of the ionized or ozone layers; 11. Change of the physical, chemical and electrical parameters of the seas and oceans; 12. Addition of radioactive material into the ocean and

military activities or it may by attacked by other instruments of war to prevent the enemy's use of it (*e.g.* setting fire to oil wells and creating smoke to conceal military activities, or destroying the crops on which an enemy depends).[30] The outcome of such attacks is likely to be disastrous. National responsibility for them must be established under international law since they affect the life of the whole community. It is this damage resulting from conflicts that international law must control.

4. The Relationship Between Laws of War and Environmental Law

The term 'war' concerns the use of force by one State against another State in order to impose its will on the latter. It does not depend upon the recognition of a formal state of war but includes situations of armed conflict and military occupation in general as has been reflected in the most recent documents. In the four 1949 *Geneva Conventions* its scope is defined as extending to "all cases of declared war or of any other armed conflict which may arise between two or more of the High Contracting Parties, even if the state of war is not recognized by one of them."[31] The 1954 *Convention for the Protection of Cultural Property in the Event of Armed Conflict* similarly states that the "Convention shall apply in the event of declared war or of any other armed conflict which may arise between two or more of the High Contracting Parties, even if the state of war is not recognized by one or more of

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seas; 13. Generation of large tidal waves (tsunamis); 14. stimulation of earthquake/tsunamis; 15. Large-scale burning of vegetation; 16. Generation of avalanches and landslides; 17. Surface modification in permafrost areas; 18. River diversion; 19. Stimulation of volcanoes. See J. Goldblat,. Ambio, IV (1975) 187; E.E. Hinnawi & M.H. Hashmi "Natural Resources and the Environmental Series", Vol.7 (Dublin: Tycooly International, 1982), at 22.

[30]See H.H.Almond, "The Use of the Environment as an Instrument of War" (1991) vol.2, YIL.

[31]The 1949 *Geneva Convention IV Respecting the Laws and Customs of War on Land., signed in August* 1949, entry into force Oct. 21, 1950, 75 UNTS (1950)287-417 (En. Fr.); 157 BFSP (1950) 355-423 (Eng.); UKTS 39 (1958) Cmnd. 550 (Eng. Fr.); ZZZII UKPP (1958-1959) 11 (Eng. Fr.); 50 AJIL (1956) 724-83 (Eng.).

them."[32] The meaning of the term 'war' depends on the context. We use that term for this study to cover all kinds of international armed conflict in which humanitarian law is applicable and use the term 'armed conflict' for the same meaning where this is preferable.

Hague law governs what methods and means are appropriate in warfare and determines the rights and duties of belligerent in the conduct of operation, whereas Geneva law which is also called humanitarian law indicates against what and whom those methods can be used. This tends to safeguard military personnel placed *hors de combat* and civilians not taking part in hostilities. Thus, these bodies of law are complementary. [33]

International environmental law and the law of war are two important bodies of law. The first one has developed during the twentieth century but the latter has been developing for centuries. International environmental law comprises those substantive, procedural and institutional rules of international law whose primary objective is to protect the environment.[34]

Humanitarian law applicable to armed conflict is referred to mainly in the Geneva Conventions and the 1977 Geneva Protocols. Humanitarian law "can be looked upon as a subdivision of human rights. Since armed conflicts create special

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[32]*UNESCO Convention*, *supra*, note 26.

[33]See Jean Pictet, "International Humanitarian Law: Definition" in UNESCO, *International Dimensions of Humanitarian Law* (Geneva: Henry Dunant Institute 1988) at XIX-XX; Michael N. Schmitt, "Green war: An Assessment of the Environmental Law of International Armed Conflict" 22 Y. J. Int'l. L. 1 at 66.

[34]See Philippe Sands, *Principles of International Environmental Law I: Frameworks, Standards and Implementation* (Manchester: Manchester University Press, 1994) at 17.

problems, special regulations have been made to supplement the general provisions on human rights. This is the function of humanitarian law".[35] The law of war is applicable in time of armed conflict and military occupation in general, and does not depend upon the recognition of the existence of a formal state of war.[36]

The law of war has recently developed limitations on environmental destruction similar to international environmental law. By limiting the means of destruction, it requires belligerents to consider the environmental impact of their actions.

The observations of experts on both law of war and environmental law are directed to the protection of human life. The primary purpose of the law of war is to mitigate the human suffering in war and to achieve the maximum humanitarian restraint in warfare compatible with the nature of war. That is why the ICRC has styled the contemporary law of war as the humanitarian law of armed conflict. The conclusion that can be drawn from limiting the means of warfare is that a weapon which disables must not be given additional effects, *i.e.* it must not increase the suffering. While the 1899 and 1907 Hague Regulations laid down a number of rules for protection of the civilian population in occupied areas, the 1949 *Geneva Convention* concerned itself exclusively with the treatment of civilians.

Environmental law, on the other hand, suggests that the primary focus of environmental protection efforts should be to improve the human condition. Principle

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[35]Asbjörn Eide, "Internal Disturbance and Tensions", in UNESCO, *International Dimensions of Humanitarian Law* (Geneva: Henry Dunant Institute, 1988) 241 at 248.

[36]A. Roberts, & R. Guelfe eds. *Documents on the Law of War* (Oxford: Clarendon Press, 1982) at p.1.

1 of the Rio Declaration states that "[h]uman beings are at the center of concerns for sustainable development".[37] According to this, the protection of wildlife or other natural resources, for example, is not a goal in itself, but rather a necessity for ensuring a higher, sustained quality of life for humans.

The observations of environmental experts are also based on the recognition of humanity's position in the global ecosystem. An American environmentalist and writer noted that "there is a need for every citizen to realize that the earth is not here for humans to manipulate but [that] we exist as part of an interrelated world."[38]

Major Schafer has studied at length the philosophical and the practical relationship between international laws of armed conflict and international law for environmental protection. He mentions that there is much that the two philosophies share. Both are concerned with the exploitation of the environment. Law of war is directed to the benefit of humanity, and environmental law to the survival of society. The law of war limits the destruction of the environment in the name of humanity; environmental law prohibits environmental devastation in the name of nature of which

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[37]United Nations Conference on Environment and Development: Rio Declaration on Environment and Development, adopted at Rio de Janeiro, June 14, 1992, 31 ILM 874 (1992). Sustainable development means "development that meets the needs of the present generation without compromission the ability of future generations to meet their own needs. Such sustainable development is a multi-faceted concept consisting of three main components of themes: ecological sustainability, social sustainability and economic sustainability. It is not merely an environmental concept, but incorporates the ideals of social justice and well-being, and qualitative improvement in living standards. It is based on the principles of intergenerational equity, intragenerational and interregional equity." See Pardy, *supra*, note 16 at 267.

[38]See Cahn, "A Search for an Environmental Ethic", EPAJ; 6-8 (Nov. - Dec. 1979); quoted in B.K.Schafer, "The Relationship Between the International Laws of Armed Conflict and Environmenal Protection: The Need to Reevaluate What Types of Conduct Are Permissible During Hostilities", 19 Cal.W.Int'l.L.J. 287 at 316.

mankind is considered to be a part.[39] Both philosophies try to protect humanity from unnecessary suffering.

Schafer enumerates some observations that can be made concerning the relationship between the law of war and environmental law. He states that the law of war will sometimes refer to environmental law to assist in any analysis of its violation.[40] Environmental law, for example, can be useful for interpreting the 1977 *Geneva Protocol I*. Article 54 of that Protocol states that belligerents must not "attack, destroy, remove or render useless 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 [...].[41] As Schafer points out, the message is clear. The law of war needs to consider the impact of military activities on, for example, objects indispensable to the survival of the civilian population.We take aquifers as an example to show that how environmental law can be used to interpret some provisions of the law of war. Chemicals, for example, may percolate through the soil and contaminate ground water. Schafer writes: "It might not be too farfetched for military civil engineers to become proficient in the area of underground hydrology, so they can give commanders advice on the environmental impact of proposed military operations."[42] Can belligerents, for example, contaminate underground waters in time of war? The

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[39]See Schafer, *supra*, note 38 at 319.

[40]See Schafer, *supra*, note 38 at 320. Preamble to the World Charter for Nature states that mankind is a part of nature and life depends on the uninterrupted functioning of natural systems which ensure the supply of energy and nutrients. *World Charter for Nature*, UNGA Res. 37/7, 37 UNGAOR Suppl. No. 51) at 17, UN Doc. A/37/51 (1982).

[41]See *supra*, note 23.

[42]See Schafer, *supra*, note 38 at 320.

law of war may use the experience of environmental law in such situations. Aquifers are rock layers containing underground formations of water, and release it in appreciable amounts. The rock holds water-filled pore spaces and when the spaces are connected, the water flows through the matrix of the rock. Aquifers contain perhaps sixty times more fresh water than all the lakes and streams on the surface of the earth. They can be used for agricultural purposes and supply surface waters and wells. Most international waters are linked to these sources. Where there exists a hydrologic link, a causal relationship can be established between surface water and groundwater; contamination of one section of the water system can affect the quantity, quality or potential economic value of another section.[43]

Aquifers are easily contaminated by hazardous substances. It would thus be very expensive to clean. The environmental protection community has appreciated for a long time their importance to the environment.

Recently the international legal community has considered aquifers, and acknowledged the indissociable nature of surface and groundwater. The inclusion of aquifers within the legal regime governing international water resources has only recently been considered in the development of international water law. The Helsinki Rules use the term 'aquifer' to include "all underground water bearing strata capable of yielding water on a practicable basis, whether these are in other instruments or contexts called by another name such as 'groundwater reservoir', groundwater catchment area' etc. including the waters in fissured or fractured rock formations and

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[43]Gabriel Eckstein, "Application of International Water Law to Transboundary Groundwater Reso-urces, and the Slovak-Hungarian Dispute over Gabcikovo-Nagymaros (1995) 19 Suffolk Transnat'l. L. R. 67 at 85.

the structures containing deep, so-called 'fossil waters'"[44]

The 1986 Seoul Groundwater Rules[45] adopted by the ILC provides that under the law and duties of international law, States must consider the interdependence of "groundwater and other waters, including any interconnections between aquifers ..."[46] Article two of the ILC Draft Article on the *Non-Navigational Uses of International Watercourses* defines "watercourses" as a "system of surface and underground waters constituting by virtue of their physical relationship a unitary whole and flowing into a common terminus".[47]

Concerning the protection of the community's water resources, the European Economic Commission (EEC) has enacted several directives that consider groundwater under the rules of international water law.[48] For example, Article two of the EEC Council Directive 80/778 relating to the Quality of Water Intended for Human Consumption states that "water intended for human consumption" is defined as any water used for that purpose, regardless of its origin.[49]

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[44]See Seoul, August 30, 1986, 62 ILA 251 (1987); Sands, *supra*, note 34 at 350.

[45]See Brown Weiss, *International Environmental Law: Basic Instruments and References* (US: Transnational Publishers, 1992) at 403.

[46]*Ibid.*

[47]*Ibid.* at 405.

[48]Council Directive 80/778, Art. 2, of July 15, 1980 relating to the Quality of Water Intended for Human Consumption, 1980 O.J. (L 229) 1, amended by Directive 81/858 consequent upon the Accession of Greece, 1981 O.J. (L 319) 19, and the Act of Accession of Spain and Portugal of 12 June 1985, 1985 O.J. (L 302) 9, reprinted in European Community Deskbook 245-49 (1992). See Eckstein, *supra*, note 43 at 95.

[49]*Ibid.*

The Charter of the UN Economic Commission for Europe (ECE) on Ground-Water Management asserted that groundwater should be protected since its pollution affects the environment as a whole.[50]

We can conclude that both environmental law and the law of war have common goals. Further, international environmental law can be used to interpret some provisions of the law of war that relate to limiting environmental damage in time of armed conflict.

5. Historical Overview of Combat Practices in Previous Conflicts

Since ancient times, as early as the Persian-Scythian war of 512 BC and the Peloponnesian war of 431-404 BC, wars have caused loss of life and destruction of property, as well as environmental damage that not only impaired the quality of human life but ultimately threatened its continued existence. Since the end of World War II, about 150 armed conflicts have occurred, more than 26 of them international. At least 12 of these wars have caused considerable environmental damage.[51]

The scars of these wars continue to disfigure the face of the earth. The long-term effects of war on the environment can vary depending on the sort of military operations carried out.[52] We will examine only a few notable incidents of deliberate

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[50]See Article II of the U.N. Economic Commission for Europe, Charter on Ground-Water Manage-ment at 1-2, U.N. Doc. E/ECE/1197, ECE/ENVWA/12, U.N. Sales No. E.89.II.E.21 (1989). See Eckstein, *supra*, note 43 at 96.

[51]See See Arthur H. *Westing, Warfare in a Fragile World; Military Impact on the Human Environment*, SIPRI (London: Taylor & Francis; New York: distributed in the US by Crane, Russak, 1980) at 13-14; E. El-Hinnawi and M.H.Hashmi, *The State of the Environment* (London: Butter Worths, 1987) at 143-151.

[52]*Ibid.* at 15. D. Momtaz, "Les règles relatives à la protection de l'environnement au cours des conflits armés à l'épreuve du conflit entre l'Irak et le Koweit", (1991) AFDI, XXXVIII, at 204.

environmental modification undertaken in the past.

The practice of environmental modification for hostile purposes goes back many centuries. About 2400 B.C., Sumer was dependent on the water supply of a rival kingdom, Umma. Entemenar, the ruler of Sumer, in an attempt to end generations of war over water supplies, ordered that a canal be dug to divert water from the Tigris to the Euphrates watershed. This action caused the groundwater level in the desert soil to rise, which led to rapid salinization of the border lands and ultimately the collapse of Umma as a military power. The final result was domination of the region by Sumer for some times. Finally, these tactics ruined the desert soils of Sumer, leading to the economic ruin and disappearance of Sumer itself.[53]

The environment was frequently damaged during the second (218-201 BC) and third (149-146 BC) Punic Wars between the Roman Republic and the Carthaginian Punic Empire, wars that resulted in Roman hegemony over the western Mediterranean.[54] Local tribes set off avalanches and landslides in order to block the Carthaginian army from using the main travel routes in the Savoy Alps. In 146 BC, the Roman army ploughed salt into the fields of Carthage. As a result of this environmental damage, Carthage's economic base was destroyed and Carthage never recovered as a world power.[55]

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[53]Roots E.F., "International Agreements to Prohibit or Control Modification of the Environment for Military Purposes: An Historical Overview and Comments of Current Issues", in Schiefer, H.B, ed. *Verifying Obligations Respecting Arms Control and the Environment: A Post Gulf War Assessment* (Regina: University of Saskatchewan, 1992) at 13-14.

[54]The New Encyclopedia Britannica, 1992, vol. 9 at 800.

[55]See Roots, *supra*, note 53 at 13.

Chemical weapons were used extensively during World War I (1914-1918). Large amounts of agricultural and forest lands, especially in France and Belgium, were devastated.[56]

Carpet bombing and nuclear weapons destroyed certain parts of the world during World War II. Numerous tropical Pacific Ocean island ecosystems and enormous quantities of agricultural land and forest were devastated.[57] Westing provides a list of some of the ecological devastation of World War II: "heavy use of high-explosive and incendiary munitions for area bombing of densely populated urban and industrial areas, two cities - Hiroshima and Nagasaki - destroyed by nuclear weapons, numerous tropical Pacific Ocean island ecosystems devastated, some 200 thousand hectares (17 percent) of Dutch agricultural lands destroyed by Germany through intentional salt-water inundation, at least 1.2 million hectares laid waste by Germany in far northern Norway as an impediment to an expected Soviet advance."[58]

5.1. Eco-terrorist Acts During the Second Indochina War

The first major conflict which led the international community to consider seriously the question of environment destruction during hostilities was the second Indochina War which the USA was ingaged in from 1961 to 1973. This was the largest and perhaps the most expensive war the U.S. ever engaged in. It attacked North Vietnam, Cambodia and Laos to support its war against the guerrilla forces in

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[56]*Ibid.*

[57]*Ibid.*

[58]See Westing, *supra*, note 51 at 17-18.

South Vietnam.[59] The U.S., by using a variety of hostile techniques such as the massive use of high-explosive munitions (about 14 million tons of bombs, shells and so on), the careless dissemination of chemical anti-plant agents (about 55000 tons of herbicides), and employment of heavy land-clearing tractors, caused widespread environmental disruption.[60] (See table 1).

Table 1. Hostile actions by the USA during the Second Indochina War: regional intensities

	On an area basis (per hectare)			On a population basis (per capita)		
Region[61b]	Munitions fired Kg	Herbicides sprayed[61a] liters	Land cleared m^2	Munitions fired kg	Herbicides Sprayed[61a] liters	Land cleared m^2
South Vietnam	587	4.2	190	577	4.1	180
Military Region I	1 166	4.4	250	1 066	4.0	230
Military Region II	268	2.0	60	669	4.9	160
Military Region III	1 431	12.7	660	890	7.9	410
Without Saigon				1 833	6.3	850
Military Region IV	134	1.7	10	77	1.0	0
North Vietnam	67	?	0	57	?	0
Cambodia	42	?	0	113	?	0
Laos	94	?	0	773	?	0
Indochina	189	1.0	40	306	1.6	70

Source: Westing, A.H. *Warfare in a Fragile World; Military Impact on the Human Environment*, SIPRI (London: Taylor & Francis; New York: distributed in the US by Crane, Russak, 1980) at 100

[59]Arthur H. Westing, *Ecological Consequences of the Second Indochina War* (Stockholm: Almqvist & Wiksell, 1976) at 1-8.

[60]SIPRI, World Armament and Disarmament, *SIPRI Yearbook* (New York: Humanities Press, 1977) at 198-200.

[61]a)To convert any of the given herbicide volume data to average kilograms of active ingredients, multiply by 0.7569.
b) The regions are depicted by SIPRI (1976: maps 1.1 and 1.2).

The massive U.S. herbicidal program in this war was conducted in the forests of South Vietnam and had a serious effect on the ecosystem. (See Table 2.)

Table 2. Herbicidal crop destruction from the air by the USA during the Second Indochina War

Year	Crop lands Sprayed[62a] 10^3 ha (10 km^2)	Food destroyed (dry weight)[62b] 10^6 kg	Entire annual diets denied[62c] 10^3
1961	?	?	?
1962	0.3	0.27	1.5
1963	1.4	1.20	6.4
1964	5.4	4.50	24.1
1965	12.7	10.63	56.9
1966	48.3	40.55	217.2
1967	97.5	81.92	438.8
1968	96.9	81.37	435.9
1969	86.8	72.89	390.5
1970	14.4	12.14	65.0
1971	0.2	0.16	0.9
1972	0	0	0
1973	0	0	0
Total	363.8	305.62	1637.3

Source: Westing, A.H. *Warfare in a Fragile World; Military Impact on the Human Environment*, SIPRI (London: Taylor & Francis; New York: distributed in the US by

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[62]a) The crop lands aerially sprayed each year are based on the total volume of herbicides expended each year (SIPRI, 1976, table 3.2), the standard application of 28,062 liters per hectare (SIPRI, 1976: table 3.1), and the overall proportion of crop-destruction missions carried out, that is, 14,1 per cent (SIPRI, 1976: table 3.3).

b) The amount of food destroyed is based entirely upon the production levels of upland rice (Oryza sativa; Gramineae) in South Vietnamese shifting slash-and-burn, or rai, agriculture. An average annual yield of such upland rice is reported to be 1,400 kilograms per hectare, which - with a weight loss of 40 per cent in the conversion to milled - becomes 840 kilograms.

c) The number of entire annual diets denied is based upon south Vietnamese rai agriculture being able to sustain an average of 4.5 Montagnards per hectare per year, which represents 511 grams per capita per day of milled rice or its equivalent.

Crane, Russak, 1980) at 101

The U.S. sprayed Agent Orange which contains dioxin, as an anti-plant chemical-warfare agent. An estimated amount of more than 110 kg of this extremely toxic substance was applied over a four-year period to 10 million hectares of inhabited forest and agricultural lands, that is 106 milligrams per hectare, in South Vietnam.[63]

The ecological recovery of the areas designated as having been partially damaged is estimated to take from one to several decades, although in the special case of the mangrove habitat this period is expected to be more than a century. The ecological impact of 10 million large bomb craters made by air attack can be considered permanent.[64]

5.2. Ecological Consequences of the Iran-Iraq War

During Iraq's war against Iran, each side attacked the other's oil installations. Iraqi forces, aided by the use of SCUD missiles, attacked Iran's oil pipelines, storage facilities, refineries, tankers, wells and offshore platforms.[65] Iraq's attack on the marine installation at Nowruz resulted in oil spillage of 2,000 to 5,000 barrels per day into the Persian Gulf in November 1983. Experts predicted complete devastation of the ecosystem of the Gulf.[66] The result of the release from oil wells was the discharge

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[63]SIPRI, *supra*, note 60 at pp.92-93.

[64]*Ibid.* at 199-200.

[65]See Joyner, *supra* note 2 at 33.

[66]S.N. Simonds, "Conventional Warfare and Environmental Protection: A Proposal for International Legal Reform" (1992) 29, Stanford J. Int'l. L. 165 at p. 203.

of 1.5 million barrels of oil between 1983 and 1985.[67]

5.3. Eco-Warfare in the Persian Gulf War

The environment was again devastated by Iraq in the recent Persian Gulf War. This important event persuaded the international community to attempt to find an emergency solution to international environmental crises.[68] It was considered by some commentators "... the most momentous and destructive war in modern history."[69] Iraq's intentional acts included spilling several million barrels of oil into the Persian Gulf, destroying completely Kuwait's oil fields by setting fire to more than 500 of its 950 oil wells, and pouring the crude oil cargo of five tankers into the Gulf which caused extensive and harmful damage to the local and regional environment.

In January 1991, an estimated 2 to 10.5 million barrels of oil were released from the Mina Al-Ahmadi Sea Island terminal into the Gulf.[70] The Gulf received an estimated 6 to 8 million barrels of oil in a period of a few days. Until late April 1991, an additional 3,000 barrels of oil continued to flow from the damaged tankers and broken pipelines.[71] This made the Gulf pollution the worst in history. The major

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[67]A.Meshal, "The Oil-Spill in the Gulf and Its Impact on the Marine Environment", in Schiefer, *supra*, note 53 at 107.

[68]For example UNEP requested all governments to take immediate action for air and marine pollution. Skrotzky, N., *Guerres: crimes ecologique*, Paris; editions Sang de la terre, 1991 at 37.

[69]W.M.Arkin, D.Durrant & M.Cherni; *On Impact: Modern Warfare and the Environment. A Case Study of the Gulf War*, Greenpeace, 1991, at 5. "Some observers wrote that the Gulf war was the first conflict in which 'ecoterrorism' played a major role in the belligerent's battle plan and that, even though combat lasted 42 days, it might be the most ecologically destructive conflict in the history of war." See P. Fauteux, "The Use of the Environment as an Instrument of War in Occupied Kuwait" in Schiefer, *supra*, note 53 at 37.

[70]Simonds *supra*, note 66 at 204-205.

[71]Meshal, *supra*, note 67 at 107-111.

environmental effects of these fires and oil spills were extensive air and water pollution.[72] Thousands of migrating birds, as well as turtles, whales, dolphins and the shrimp bed of the Persian Gulf were the immediate victims of this pollution. Lakes of oil resulting from these spills destroyed plants, insects and small mammals. These vast oil lakes may remain toxic for many generations.[73] The air pollution was so severe that it disrupted weather patterns. Black rain was reported in Iran, Turkey and the Himalayas, and black snow in Kashmir. Acid rain reached Bulgaria and Afghanistan some 1,200 kilometers away.[74]

The environmental damage caused by Iraq's action forced governments and other groups to consider the adequacy of existing international law to protect the environment in war time. This thesis is intended to contribute to the resulting debate.

6. Purpose and Content of This Study

This thesis will analyze the law of war regarding environmental protection and will also study international environmental law that aims to develop a system of global protection of the earth's environment. The subject is particularly challenging because it spans the fields of the international law of war as well as international environmental law. International rules related to the protection of the environment in time of war are rare and those that do exist are vague and can have different interpretations. Principle 21 of the Stockholm Declaration, for example, could be

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[72] Skrotzky, *supra,* note 68.

[73]D.B.Russell, The Kuwait Oil Fires and Their Environmental Effects, in Schiefer, *supra*, note 53 at 90.

[74]Lijnzaad, L., "Protection of the Environment in Times of Armed Conflict: The Iraq-Kuwait", 1993, XL; NILR, 169 at 170-171; A. Roberts, "Environmental Destruction in 1991 Gulf War" (Nov.-Dec. 1992) IRRC, 538 at 543.

useful in protecting the environment in time of war, but not all States have accepted its application. As we will see, Articles 35 and 55 of the 1977 *Geneva Protocol I* are considered the most important provisions of humanitarian law for the protection of the environment. However, their vagueness, similar to that of Article 1 of the 1977 *Enmod Convention*, gives too much discretion to the decision-maker.

War is a deep-rooted habit of humanity, but its impact on human life and the environment has been greatly amplified by the increased destructiveness of modern technology. Nuclear world war, for example, now constitutes a great threat to man and his environment. Questions one may ask include: What are the basic objectives formulated in the international agreements and instruments concerning the protection of the environment in time of war and how do these objectives relate to the effective protection of the environment? To what extent have these basic objectives been met? As we look to the future we are confronted with various unanswered questions such as: what will we see by the turn of the century? How long will the legal system be effective in protecting the environment in time of conflict?

The study will analyze *ius in bello,* the law governing how to avoid unnecessary destruction in warfare, but not *ius ad bellum*, a State's right to engage in an armed conflict. It will analyze the most serious forms of environmental destruction from a legal point of view. We suggest that environmental modification for hostile purposes can be deemed illegal under implicit treaty provisions, international custom, general principles, judicial decisions and United Nations declarations. Unfortunately, international law does not afford a well-tested body of principles designed to protect the environment in times of war. Therefore, this thesis can only be the first step in a long journey, but a step that is essential for a deeper understanding of the issue.

In our method used to reach the final conclusion, we will study decisions of international courts and tribunals, international custom and other law-determining agencies of international law such as State practice or the writing of commentators. The aim has not been to provide an exhaustive list of cases, but rather to provide a commentary that reflects the issue of environmental protection. It takes the form of an article-by-article commentary on provisions of international conventions related to the degradation of the environment in time of war, describing the *travaux préparatoires* when needed and the relevant case practices.

We will attempt to find subjects related to each chapter and to incorporate these new ideas into the existing plan, and try to prove and strengthen the conclusion. Possibly, some of the information gathered in this work and the suggestions advanced can contribute to the protection of the environment for future generations.

6.1. Part One

The study includes two parts. The first part begins with general observations of instruments that address the degradation of the environment by military activities. After a brief description of some related international conventions, we will consider recent initiatives, such as national and international meetings of experts, and efforts, such as government proposals devoted to solving the problem of degradation of the environment by armed forces. We will examine the role of the ICRC in reforming the law of war and its instructions for implementation of the law in military manuals. The final Declaration of the Rio Conference marking the twentieth anniversary of the Stockholm Declaration outlines the rights and responsibilities that all nations have in the areas of sustainable development. Some principles of the Rio declaration are examined in this chapter (Part I Chapter 1).

Conventional rules of war regarding protection against wilful and wanton destruction of the environment have developed over time. The laws of belligerency (*jus in bello*) include the rules relating to the commencement, execution and termination of armed conflicts. The rules relating to the execution of armed conflicts are divided broadly into Hague law and Geneva law. Some provisions of the framework of the Hague and Geneva laws, although initially meant to regulate the means and methods of warfare and deal with the wounded, sick and shipwrecked as well as prisoners of war, then extended to provide civilian protection in the aftermath of World War II, have some relevance with regard to wanton depradation of the human environment. To what extent have the Hague and Geneva laws contributed to the protection of the environment? In other words, what provisions of international humanitarian law can be regarded as applicable to environmental protection? Chapter II of this thesis is dedicated to some of these conventions which address the degradation of the environment by military activities. The study analyzes the extent to which the 1907 Hague Regulations on the Law of Land Warfare, the 1923 *Hague Rules of Aerial Warfare*, the 1949 *Geneva Convention IV* and the 1977 *Geneva Protocol I* protect the environment in time of armed conflict. We will argue that the main object of the *Hague Regulations* and the *Geneva Convention* is to protect civilians from arbitrary action on the part of an enemy and that they only indirectly protect the environment.

In the 1970s, much attention was focused on environmental forces used for military purposes. The interest in these new methods of warfare arose, in part, from the massive U.S. employment of herbicides and heavy land-clearing tractors during the war in Indochina. Concern about the consequences of environmental modification on the global ecology sparked interest in the important issue of implementation of a convention to prevent this danger and led to the conclusion of the 1977 *Convention*

on the Prohibition of Military or Any Hostile Use of Environmental Modification Technique under the auspices of the United Nations in 1975-76. Chapter III discusses the provisions of the *Enmod Convention*. This Convention protects the environment from being used as a weapon of war or from long-term damage in the course of or as a result of armed conflict. As we will see, this Convention prohibits only the hostile use of environmental modification techniques but not the development of techniques for such use. The Convention does not make clear what exactly has been prohibited and which techniques may cause damage, destruction or injury to the environment. Furthermore, unacceptable damage to the environment was not clearly defined by the Convention. We suggest that this Convention be amended in order to include preventive measures on the destruction of the environment.

Mankind is now confronted with a crisis of survival because of the development of nuclear weapons and other weapons of mass destruction. The employment of these weapons poses serious environmental risks. Chemical antiplant agents and biological warfare can, for example, damage plants that might conceal enemy forces or interfere with water movement. The level of damage to the global environment in a nuclear war can be even more severe because of the dangers resulting from the dispersion of radioactive materials in the environment. Chapter IV of Part One deals with the prohibition of conventional weapons and weapons of mass destruction. The 1980 *Inhumane Weapons Convention* is discussed in this Chapter. This Convention focuses on conventional weapons and prohibits making forests or other kinds of plant cover the object of attack by incendiary weapons. International conventions regarding the effects of weapons of mass destruction, *i.e.* chemical, biological and nuclear weapons, on the environment and international agreements concerning these weapons are considered in this chapter. We analyze the main provisions of these conventions related to the environmental protection in time of war.

We will see that the 1993 *Chemical Weapons Convention* provides significant protection against the effects of chemical weapons on the environment. The examination of existing law regarding nuclear weapons shows that the nuclear agreements need to be strengthened with regard to environmental damage resulting from the use of nuclear weapons in time of war.

Rules of customary international law related to humanitarian law can be found in the 1907 *Hague Convention* and 1949 *Geneva Conventions*. The International Military Tribunal at Nuremberg declared that rules laid down in the 1907 *Hague Convention IV* were recognized by all civilized nations and were regarded as being declaratory of the laws and customs of war. The protection of the environment falls within the general protection of civilian population and property. Therefore, it is essential to discuss the customary law of war, which was recognized as important in the development of the law of war, to find out to what extent customary international law can be considered applicable to the protection of the environment. Chapter V is dedicated to the analysis of the evolution of cultural norms relating to war and the environment. Special attention will be given to the important principles of customary international law. Five important rules of customary international law, namely, the principles of military necessity, humanity, discrimination, unnecessary suffering and proportionality which indirectly protect the environment against non-legitimate military attacks will be considered. Then we will discuss whether legal protection of the environment against the effects of military activities can be derived from customary international law of armed conflict. We will argue that even though customary rules do not clearly extend their scope to the protection of the environment, a customary rule for its protection has evolved since the 1970s. This conclusion derives from various international treaties, the UN General Assembly resolution, the works and opinions of the International Law Commission, judicial decisions, and the

cultural and religious values which underlie various analyses of environmental problems.

6.2. Part Two

How is international law affected by war? Some writers describe the causes of war as either just or unjust but international law has not defined the lawful causes of war. Although in general, the League Covenant and United Nations banned resort to war, it is still considered a lawful instrument of national policy in some exceptional cases such as self-defense or the defense of others.[75] War and all forms of conflict, whether lawful or not, cause some problems between belligerents, and therefore affect their international obligations. But many international treaties, resolutions and principles regulating State conduct during peace-time are also applicable during war.[76] It also does not affect rules between belligerents and third parties. But war affects political treaties, such as treaties of mutual friendship, alliance, disarmament, non-aggression etc.[77] among belligerents. It will become necessary, in the second Part, to study the international law of State responsibility under which States have the obligation not to damage the environment of other States or territories beyond the limits of their national jurisdiction.

Part Two of the thesis analyses State responsibility for environmental matters. Since general principles are basic to the legal system and apply to the specialized laws

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[75]See *UN Charter*, *supra*, note 50, Art. 51. Krzysztof Skubiszewski, "Peace and War", in *Encyclopedia of Public International Law*, vol.4 (North Holland: Published under the Auspices of the Max Planck Institute, 1982) at 74-78.

[76]Lord McNair, *The Law of Treaties* (Oxford: Clarendon Press, 1986) at 697; Ingrid Detter Delupis, *The Law of War* (New York : Cambridge University Press, 1987) 301; Simonds, *supra* note 66 at 189.

[77]McNair, *supra*, note *76* at 703.

e.g. law of war, we will approach the subject of State responsibility, in Chapter I, by looking at the historical development of State responsibility since Grotius. Two schools of thought concerning subjective and objective responsibility will be discussed. We focus on the modern concept of liability regarding liability for created risk and discuss cases in which the responsibility of the State for a breach of international obligations is strict or absolute. We will emphasize that although strict responsibility has not been strongly accepted, it enjoys some support among State practices for activities causing environmental damage. This Chapter will then examine briefly the International Law Commission's discussion on the 'Liability for Activities not Prohibited by International Law' and 'International Crimes of States'. We will discuss some ILC Draft Articles, *inter alia*, Article 19 in which an international crime committed by a State is said to result from a serious breach of an international obligation of essential importance for the safeguarding and preservation of the human environment. We will conclude that, according to the aforementioned general rules of international law of State responsibility, a State would be held responsible for any damage it or its agents caused.

Chapter 2 of Part Two is devoted to the international regulation of State responsibility for environmental harm. International conventions, some international related cases and the Stockholm Declaration are discussed in this Chapter. We determine which peacetime treaties apply during war. We categorize them as those that have either no provision on responsibility, including those whose rules are very general, and those that contain precise rules on responsibility for environmental damage. Certain decisions of the courts and tribunals, *e.g.* the *Corfu Chanal* case and the *Trail Smelter* case which may be taken as a guide in international environmental law are discussed in this chapter. Principle 21 of the Stockholm declaration mentions two important principles: first, that of State sovereignty and second, that of the

prohibition against causing damage to the environment.

Following this general discussion on State responsibility in the first chapter and the responsibility of the State for environmental damage in the second chapter, we turn to a consideration of international law related to both environmental law and the law of war to determine which provisions are related directly to environmental protection during war. Chapter 3 of the second part gives a thorough accounting of the development of international law for protection of the environment. It focuses on the responsibility for environmental damage in time of armed conflict. We will discuss whether the law related to State responsibility protects the environment in time of war. Chapter 3 also examines whether the responsibility of States for harm caused to the environment in time of war is strict, absolute, or whether the victim has to prove that the belligerent State has committed an illegal act. Finally we will analyze the international treaties, international judicial and State practices for State responsibility of the aggregate of its officials, including its armed forces. We will see that if a government bears wide and unlimited responsibility for the acts of all its officials, it will be responsible for their acts causing environmental damage.

6.3. Conclusion

Materials gathered for examination in the thesis are intended to make the legal obstacles to the protection of the environment easier to understand. Attention is given to some of the major changes that are expected in the future.

The conclusion will attempt to contribute to the current evaluation of international law regarding environmental damage in time of war and to suggest ways in which the relevant law might be improved. We will determine that some of the treaties and principles discussed in this study are ambiguous and do not cover the full

range of environmental issues, a conclusion made clear from a study of Iraq's environmental damage during the Persian Gulf war. We have to find a way to avoid repetition of such activities. This goal could be accomplished by amending some of the existing conventions and enacting a new convention to cover aspects of the environment not already protected.

Part One: Instruments Addressing Degradation of the Environment by Military Activities

Chapter I: Historical Background

Le premier chapitre débute par une observation générale sur les différents instruments qui se rapportent à la dégradation de l'environnement par les activités militaires. Après une brève description de quelques conventions, nous étudierons les différentes analyses et conclusions issues des réunions d'experts dans ce domaine ainsi que les principales propositions gouvernementales qui ont été formulées pour résoudre le problème de la dégradation de l'environnement lors de conflits armés. Nous examinerons le rôle joué par le CICR pour réformer le droit de la guerre afin d'implanter des règles de droit qui protège mieux l'environnement dans les manuels militaires.

1. Introduction

As technology develops, it presents the potential for new forms of damage to the environment. Weapons that cause damage to the environment in peace time are strongly condemned. By reviewing the context of both the laws of war and environmental law, one may conclude that States damaging the environment during war violate some regional and international legal responsibilities. The law of environmental protection in time of war does not have as long a history or as much global acceptance as the law of armed conflict. It could be argued that the interests of environmental protection would be better served were they to be located within the principles established for international armed conflict[78], which have greater legal weight and are a restatement of both international custom and State practice.[79]

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[78]T.Meron, "The *Geneva Convention* as Customary Law" (1987) 81 AJIL at p. 348.

[79]See Joyner, *supra*, note 2 at 51-53.

2. International Law Related to Environmental Protection before 1969

In ancient times, invading armies used to destroy all enemy property they were not able to use.[80] Nowadays, international law prohibits all useless and wanton destruction of enemy property, be it public or private.[81] To strengthen a defensive position, belligerents may destroy enemy property according to their discretion but this must be imperatively demanded by the necessities of war.

All destruction of, and damage to, historical monuments, works of art and science, and institutions dedicated to religion, charity and education are prohibited.[82] Belligerents must safeguard the capital of properties such as public buildings, real estate, forests, and agricultural estates belonging to the hostile States, and situated in the occupied country.[83]

The experience gained during the First and Second World Wars led to the understanding that the spoliation, pillage and destruction of property in occupied territories for purposes of strengthening the occupying power are considered barbarian and thus illegal.

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[80]According to Grotius, destruction of graves, churches and as such is not prohibited by the Law of Nations although he strongly advised that they should be spared. See H. Lauterpacht, *International Law*, vol. II, 6th ed. (London: Longmans, Green, 1944) at 322.

[81]Article 23 (g) of the Hague Regulations, 1907 *Hague Convention IV Respecting the Laws and Customs of War on Land*. 100 BFSP (1906-1907) 338-59 (Fr.); UKTS 9 (1910), Cd. 5030 (Eng. Fr.); CXII UKPP (1910) 59 (Eng. Fr.); 2 AJIL (1908) Supplement 90-117 (Eng. Fr.); 205 CTS (1907) 227-98 (Fr.). In force from Jan. 26, 1910.

[82]Article 56 of the Hague Regulations, *supra*, note 81.

[83]See Article 55 of the Hague Regulations, *supra*, note 81.

The First Hague Peace Conference[84] convened at the urging of Czar Nicholas II of Russia in 1899 produced three conventions and three declarations aimed at limiting the use of armaments. The Hague Conventions changed the nature of warfare in order to limit effects like those of the Napoleonic Wars. These instruments included a ban on launching projectiles or explosives from the air, a ban on the use of projectiles containing asphyxiating or deleterious gases, and a prohibition on bullets that expand or flatten in the body.[85] The second of these conventions, *Hague Convention II with Respect to the Laws and Customs of War on Land*, was the first

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[84]1907 *Hague Convention IX Concerning Bambardment by Naval Forces in Time of War*; 100 BFSP (1906-1907) 401-15 (Fr.); UKTS 13 (1910), Cd; 5117 (Eng. Fr.); CXII UKPP (1910) 173 (Eng. Fr.); 2 AJIL (1908) Supplement 146-53 (Eng. Fr.); 205 CTS (1907) 345-59 (Fr.). In force from Jan. 26, 1910 (hereinafter *Hague Convention IX)*. Total number of parties: 37; Parties: Austria-Hungary, Belgium, Bolivia, Brazil, Byelorussian SSR, China, Colombia, Cuba, Denmark, El Salvador, Ethiopia, Fiji, Finland, France, Germany, German Democratic Republic, Great Britain, Guatemala, Japan, Liberia, Luxembourg, Mexico, Netherlands, Nicaragua, Norway, Poland, Panama, Portugal, Romania, Russia, Siam, South Africa, Spain, Sweden, Switzerland, USA, USSR. Source: *supra*, note 36.

Signatories: Argentina, Bulgaria, Chile, Colombia, Dominican Republic, Ecuador, Greece, Italy, Montenegro, Paraguay, Persia, Peru, Serbia, Turkey, Uruguay, Venezuela.

1923 *Hague Rules of Aerial Warfare*: 17 AJIL (1923) Supplement 245-60; UK Misc. 14 (1924), Cmd. 2201 (Eng.); XXVII UKPP (1924) 1017 (Eng.); 32 AJIL (1938) Supplement 12-56 (Eng.).

1899 *Hague Convention II Respecting the Laws and Customs of War on Land*, BFSP, vol. 91, 1898- 1899, at 988-1002 (Fr.); GBTS, 1901, No. 11, cd. 800; AJIL, vol 1, 1907 suppl., pp. 129-153(Eng.) Total number of parties: 37.

Parties: Austria, Austri-Hungary, Belgium, Bolivia, Brazil, Byelorussian SSR, China, Cuba, Denmark, Dominican Republic, El Salvador, Ethiopia, Fiji, Finland, France, Germany, German Democratic Repoblic, Great Britain, Guatemala, Haiti, Liberia, Luxembourg, Mexico, Netherlands, Nicaragua, Norway, Panama, Peru, Poland, Portugal, Romania, Russia, South Africa, Sweden, Switzerland, United States of America, USSR.

Signatories: Argentina, Bulgaria, Chile, Colombia, Ecuador, Greece, Italy, Japan, Montenegro, Paraguay, Persia, Peru, Siam, Turkey, Uruguay, Venezuela, Serbia, Persia. Source: *supra*, note 36.

[85]See Final Act of the International Peace Conference, July 29, 1899, reprinted in 1 AJIL 103 (Supp. 1907); Declaration Concerning Asphyxiating Gases, July 29, 1899, reprinted in 1 AJIL 157 (Supp. 1907).

successful effort to codify existing customary laws of war.[86]

The Second Hague Peace Conference of 1907, convened on the initiative of Theodore Roosevelt, resulted in the adoption of thirteen conventions. These conventions prohibited, *inter alia*, the bombardment by land forces of undefended targets. The *Hague Convention IV Respecting the Laws and Customs of War on Land* which issued from this conference is environmentally relevant today. Most of this Convention is now considered customary international law. Article 23(g) of this Convention is considered a very important provision concerning environmental damage. It codifies the military necessity principle by forbidding States "to destroy or seize the enemy's property, unless such destruction or seizure be imperatively demanded by the necessities of war".[87]

At the meeting of the Institute of International Law held in Cambridge in 1895, a committee was appointed to examine whether undefended enemy coastal targets could be bombarded by naval forces. The First Hague Peace Conference did not reach any agreement on this matter. At the Second Hague Peace Conference, the 1907 *Hague Convention Concerning Bombardment by Naval Forces in Time of War* was drawn up.[88] This Convention prohibited naval bombardment of undefended ports, towns, villages, dwelling or buildings.[89]

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[86]See Roberts, *supra*, note 36 at 3.

[87]See the 1997 *Hague Convention IV*, supra, note 81.

[88]The 1907 *Hague Convention Concerning Bombardment by Naval Forces in Time of War*, *supra*, note 84.

[89]See Roberts, *supra*, note 36 at 93.

Aircraft were employed during the First World War to bomb enemy troops and were also used on an unprecedented scale during the Second World War. Rules concerning aerial warfare are rare. Except for certain provisions of international agreements such as the four *Geneva Conventions*, the 1977 *Geneva Protocol I* and the 1981 *Inhumane Weapons Convention*, there is no formally binding agreement addressing air warfare. The 1899 *Hague Declaration I* prohibited the launching of projectiles and explosives from balloons and other methods of a similar nature.[90] This Declaration was replaced by the 1907 *Hague Declaration XIV* which prohibited the discharge of projectiles and explosives from balloons.[91] The question of air warfare was discussed at the meeting of the Institute of International Law in 1911. It recommended that air warfare must not endanger the civilian population.

States represented at the 1921-22 Washington Conference appointed a commission of jurists representing the US, the British empire, France, Italy and Japan to study two questions such as (a) "do existing rules of international law adequately cover new methods of attack or defense resulting from the introduction or development, since the Hague Conference of 1907, of new agencies of warfare? And (b) if not so, what changes in the existing rules ought to be adopted in consequence thereof as a part of the law of nations?"[92] The resolution provided that the commission should limit itself to the preparation of "rules relating to aerial warfare, and to rules relating to the use of radio in time of war."[93] The commission adopted a general report

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[90]See Roberts, *supra*, note 36 at 121.

[91]See Roberts, *supra*, note 36 at 121. The 1907 Hague Declaration XIV is of minor significance since many important States including France, Germany, Italy, Japan and Russia never signed or acceded to it.

[92]17 AJIL (1923) Supplement 245-60.

[93]*Ibid.*

on the revision of the rules of warfare for the control of radio in time of war (part I of its report) and a set of rules for aerial warfare (part II).[94] Article 22 of these rules provides that "[a]erial bombardment for the purpose of terrorizing the civilian population, of destroying or damaging private property not of military character, or of injuring non-combatants is prohibited."[95]

The four Geneva Conventions have established the most universally accepted law of war. A series of conventions on the wounded and sick began in 1864[96] and continued in 1868[97], 1906[98] and 1929[99]. Where Hague law governs methods and means of warfare, Geneva law, often called 'humanitarian law', protects individuals and objects from the effects of war. Following World War II, violations of the law highlighted the need for more specific provisions concerning monitoring the observance of the law of war. The need to revise and extend the law of war in order to protect victims of armed conflict led to the adoption of four Geneva Conventions signed in 1949 by sixty-four States. These Conventions deal with (I) wounded and sick of armed forces in the field; (II) wounded, sick and ship-wrecked of armed forces at sea; (III) prisoners of war; and (IV) civilians. The 1949 *Geneva Convention IV Relative to the Protection of Civilian Persons in Time of War* is environmentally relevant. Regarding environmental destruction, Article 53 of this Convention provides

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[94]See Roberts, *supra*, note 36 at 121-2.

[95]*Ibid.*

[96]The 1864 *Geneva Convention on Wounded and Sick*. See Roberts, *supra*, note 36 at 169.

[97]The 1868 *St. Petersburg declaration on Wounded and Sick*. See Roberts, *supra*, note 36 at 193.

[98]The 1906 *Geneva Convention on Wounded and Sick*. See Roberts, *supra*, note 36 at 170.

[99]The 1929 *Geneva Convention on Wounded and Sick*. See Roberts, *supra*, note 36 at 170.

that "[a]ny 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, or to social or cooperative organizations, is prohibited, except where such destruction is rendered absolutely necessary by military operations."[100]

3. The Stockholm Declaration

Principles related to the environment are contained in different international texts. The Stockholm Declaration of the United Nations Conference on the Human Environment, adopted at Stockholm on June 5 to 16, 1972[101], is the first attempt by the international community to regulate environmental issues.[102] The question of convening an international conference on the environment was raised by the Economic and Social Council at its forty-fifth Session. It recommended that the UNGA convene a UN Conference on the problems of the human environment. Following this, the UNGA requested the Secretary General to submit to the Assembly a report of the main problems which the UN Conference should consider upon which it would circulate a draft declaration on the human environment. The Preparatory

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[100]1949 Geneva Convention IV, *supra*, note 31.

[101]Representatives of 113 States invited in accordance with General Assembly Resolution 2850 took part in the Conference. The major items on the agenda were:

Declaration on the Human Environment;
Planning and management of human settlement for environmental quality (subject area II);
Environmental aspects of natural resources management (subject area II);
Identification and control of pollution of broad international significance (subject area III);
Educational, informational, social and cultural aspects of environmental issues (subject area IV);
Development and environment (subject area V);
International organizational implications of action proposals (subject area VI);
Adoption of plan of action. See UN Doc. A/CONF. 48/14 REW. 1, Chapter VIII, pp. 43-44.

[102]See M.R.Molitor, *International Environmental Law, Primary Materials* (Deventer; Boston: Kluwer Law and Taxation Publishers, 1991) at p.77.

Committee, established under General Assembly Resolution 2581, held four sessions[103] and discussed the draft declaration. The General Assembly, in its 26th session, affirmed, *inter alia,* "that the action plan and action proposals to be submitted to the Conference should respect fully the sovereign rights of each country."[104]

Principle 21 of the Declaration states:

> "States have, in accordance with the Charter of the United Nations and the principles of international law, the sovereign right to exploit their own resources pursuant to their own environment policies, and 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 national States or of areas beyond the limits of national Jurisdiction."

Since Principle 21 is not restricted to any time or place, States have obligations towards the international community to apply this rule everywhere[105] they exercise control, in their land, their territorial sea, on the continental shelf, on the high seas, in outer space, and even where they are at war with other States. Principle 21 has been recognized as a rule of customary international law. It has been reaffirmed in several declarations adopted by the UN as well as by other international

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[103]See A/conf.48/pc.6, A/conf.48/pc.9 and Corr.1, A/conf. 48/pc. 13 and Corr.1, and A/conf. 48/pc.17.

[104]See A/conf.48/14/Rev.1, Report of the United Nations Conference on the Human Environment, Stockholm, 5-16 June 1972 at 37-39.

[105]The Mexican representative to the Intergovernmental Working Group on the Declaration objected to the draft proposed by the Group. Mexico's view was that "it was the responsibility of all States to avoid activities within their jurisdiction or control which might cause damage to the environment beyond their national frontiers and to repair any damage caused." See Sohn, L.B. "The Stockholm Declaration on the Human Environment" (1973) Vol.14, Harv. Int'l. L.J. 423 at 501.

organizations and regional agreements.[106] For example Article 194(2) of the UNCLOS[107] states that:

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[106]See Molitor, M.R.*International Environmental Law, Primary Materials* (Deventer; Boston: Kluwer Law and Taxation Publishers, 1991) at p.77. The *Convention on Long-Range Transboundary Air Pollution* of 1979 in its preamble considers the Stockholm Declaration. It states that Principle 21 of the Declaration expresses the common conviction that States must act in accordance with the *UN Charter* and the principles of international law. *Ibid.* at 285.

[107]*UN Convention on the Law of the Sea* (Montego Bay) UN Doc. A/Conf.62/122 (1982); Misc. 11 (1983) Cmd.8941; 21 ILM (1982) 1261. (Hereafter UNCLOS).
Concluded at Montego Bay, Jamaica, on December 10, 1982
Entry into force: 16 November 1994, in accordance with Article 308 (1).
Registration: November 16, 1994.
Status: Parties: 120 as of August 25, 1997 .
Note: The Convention was adopted by the Third United Nations Conference on the Law of the Sea and opened for signature, together with the Final Act of the Conference, at Montego Bay, Jamaica, on 10 December 1982. The Conference was convened pursuant to resolution 3067 (XXVIII)1 adopted by the General Assembly on November 16, 1973.

Parties: Algeria, Angola, Antigua and Barbuda, Argentina, Australia, Austria, Bahamas, Bahrain, Barbados, Belize, Bolivia, Bosnia and Herzegovina, Botswana, Brazil, Bulgaria, Cameroon, Cape Verde, Chile, China, Comoros, Cook Islands, Costa Rica, Côte d'Ivoire, Croatia, Cuba, Cyprus, Czech Republic, Djibouti, Dominica, Egypt, European Community, Fiji, Finland, France, Gambia, Georgia, Germany, Ghana, Greece, Grenada, Guinea, Guinea-Bissau, Guyana, Haiti, Honduras, Iceland, India, Indonesia, Iraq, Ireland, Italy, Jamaica, Japan, Jordan, Kenya, Kuwait, Lebanon, Mali, Malta, Marshall Islands, Mauritania, Mauritius, Mexico, Micronesia (Federated States of), Monaco, Mongolia, Myanmar, Namibia, Nauru, Netherlands, New Zealand, Nigeria, Norway, Oman, Panama, Paraguay, Philippines, Republic of Korea, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Samoa, Sao Tome and Principe, Saudi Arabia, Senegal, Seychelles, Sierra Leone, Singapore, Slovakia, Slovenia, Somalia, Sri Lanka, Sudan, Thailand, the former Yugoslav Republic of Macedonia, Togo, Tonga, Trinidad and Tobago, Tunisia, Uganda, United Republic of Tanzania, Uruguay, Viet Nam, Yemen, Yugoslavia, Zaire, Zambia, Zimbabwe, Brunei Darussalam, Democratic Republic of the Congo, Equatorial Guinea, Guatemala, Malaysia, Mozambique, Pakistan, Palau, Papua New Guinea, Russian Federation, Solomon Islands, Spain, Sweden, United Kingdom, Zambia.
Available: [http://www.un.org/Depts/los/stat2los.txt. It is necessary to add that most provisions of the 1982 *United Nations Convention on the Law of the Sea* are restatements or codifications of existing conventional and customary international law and of State practice. Up to now States have proved this conclusion by their unilateral actions to extend their jurisdiction over areas of the sea. States have recognized that although there is no general acceptance, most provisions of the *Convention* are in force in so far as they restate the principle of customary international law. See M.Milde, "*UN Convention on the Law of the Sea*, Possible Implication for International Air Law", (1983)Vol. VIII, Ann. Air & Sp. L. at PP. 168 and 179.

> "States shall take all necessary measures to ensure that activities under their jurisdiction or control are so conducted as not to cause damage by pollution to other States and their environment, and that pollution arising from incidents or activities under their jurisdiction or control does not spread beyond the area where they exercise sovereign rights in accordance with this Convention."

Principle 22 of the Declaration states: "States shall co-operate to develop further the international law regarding liability and compensation for the victims of pollution and other environmental damage caused by activities within the jurisdiction or control of such State to areas beyond their jurisdiction."[108] Principle 22 does not limit damages to those caused by pollution; the inclusion of "other environmental damage" extends its scope to the damage caused by other illegal acts such as environmental modification during armed conflicts. The *Enmod Convention*[109] referred to this principle in its preamble. This reference reflects, at least, that the declaration is applicable to the Convention. However, the Stockholm Declaration's principles on environmental damage are obscurely presented and many questions remain unanswered since no definition is given for "damage to the environment". For example, they may not extend to cover immeasurable harm caused by even lawful activities.[110]

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[108]See *supra*, note 5.

[109]See *supra*, note 17.

[110]See the 1971 *Agreement Concerning Frontier Rivers between Finland and Sweden*, 825 UNTS 191, 282: "where the construction would result in a substantial deterioration in the living conditions of the population or cause a permanent change in natural conditions such as might entail substantially diminished comfort for people living in the vicinity or a significant nature conservancy loss or where significant public interests would be otherwise prejudiced, the construction shall be permitted only if it is of particular importance for the economy or for the locality or from some other public standpoint". *Ibid.* Chapter III Article 3(2).

4. Post-Stockholm Activities (1977-1992)

In 1965, the 21st Conference of the Red Cross asked the ICRC to work on proposals for updating the law of war. The ICRC convened the Diplomatic Conference on the Reaffirmation and Development of International Humanitarian Law Applicable in Armed Conflicts. The Conference met over four occasions to draft two Protocols Additional to the Geneva Conventions of 1949. On June 8, 1977, the Conference formally adopted the two *Protocols Additional to the Geneva Conventions* of August 12, 1949.[111] These two conventions were opened for signature in Berne on December 12, 1977. The *1977 Geneva Protocol I*[112] was designed to protect victims of international armed conflict, while *Protocol II* addressed noninternational armed conflict. *Protocol I* was the first instrument intended to provide direct protection for the environment in time of armed conflict. Articles 35(3) and 55 of this protocol are designed to safeguard the environment in an international armed conflict.

The 1977 *Geneva Protocol I*[113], which relates to the protection of victims of international armed conflicts, has been influenced by human rights law. Its preamble refers to the necessity to reaffirm and develop provisions protecting the victims of armed conflicts and to supplement measures intended to reinforce their application. *Protocol I* also includes a fundamental consensus regarding environmental protection against military activities.

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[111]These two *Protocols* constitute a further step in the developments and in the attempts to update the law of Geneva. The law of Geneva originated on Aug. 22, 1864 when the first Convention for the protection of the wounded was adopted. This treaty has been revised and amended from time to time in order to remedy deficiencies and to close loopholes. See M. Bothe, & K.J. Partsch, *New Rules for Victims of Armed Conflicts, Commentary on the Two 1977 Protocols Additional to the Geneva Conventions of 1949* (The Hague: Nijhoff Publishers, 1982) at pp. 1-7.

[112]*The 1977 Geneva Protocols I and II, supra*, note 23.

[113]*The 1977 Geneva Protocols I and II, supra*, note 23.

Article 35 of the 1977 *Geneva Protocol I*[114], which developed rules governing the use of force and made significant advances for the protection of the human environment[115], sets out necessary limitations on the methods or means of warfare. It prohibits the parties from employing weapons to cause superfluous injury. Article 35(3) of the Protocol prohibits the use of "methods or means of warfare which are intended, or may be expected, to cause widespread, long-term and severe damage to the natural environment."[116] Article 55 of the *Geneva Protocol I*[117]states: "Care shall be taken in warfare to protect the natural environment against widespread, long-term and severe damage. [...]" Article 55's emphasis on the natural environment is taken into account as part of the protection of the health or survival of the population. Since this article protects the entire civilian population, it obliges States to protect even their

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[114]*Supra*, note 23.Article 35 - Basic rules:
"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."

[115]See Roberts, *supra*, note 36 at 388. Since *The 1977 Geneva Protocol I* prohibits environmental damage even if it is a military objective. It makes significant advances in protecting the human environment during warfare. The Protocol prohibits actions which forseeably damage the environment. See Simonds, *supra* 66 at 172-173

[116]Article 35(3) of *The 1977 Geneva Protocol I. Supra*, note 23.

[117]*Supra*, note 23. Article 55 - Protection of the Natural Environment
"1. Care shall be taken in warfare to protect the natural environment against widespread, long-term and severe damage. This protection includes a prohibition of the use of methods or means of warfare which are intended or may be expected to cause such damage to the natural environment and thereby to prejudice the health or survival of the population.

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

own environment.[118]

In July 1972, newspapers reported that the U.S. had been attempting to manipulate the weather in Indo-China in order to flood land routes from North Vietnam. The United States Senate passed a resolution in 1973 stating that the United States should seek the agreement of other governments to a proposed convention prohibiting the use of environment as a weapon of war. As a result of the negotiations that followed, the *Convention on the Prohibition of Military or Any Other Hostile Use of Environmental Modification Techniques* was signed on May 18, 1977. This Convention prohibits the deliberate manipulation of the processes of nature for military purposes.[119]

The General Conference of the IAEA has issued a series of resolutions condemning the destruction of installations containing dangerous forces, such as attacks on nuclear power plants[120] or dams whose destruction could cause wide-spread damage.[121]

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[118]See Simonds, *supra*, note 66 at 181.

[119]See *Enmod Convention*, *supra*, note 17.

[120]See *e.g.* IAEA General Conference Resolutions GC (XXVII)/RES/407 of OCT. 14, 1983, GC (XXVIII)/RES/425 of Sep. 28, 1984, GC (XXIX)/ RES/444 of Sept. 27, 1985, GC (XXXI) of Sept. 25, 1987, GC (XXXIV)/RES/533 of Sept. 21, 1990 cited in Simonds , *supra*, note 66 at 179.

[121]See, Simonds, *supra*, note, 66 at 180.

5. ILC Work

5.1. Draft Articles on State Responsibility

The International Law Commission has made contributions to the development of international law for environmental protection in time of war. The ILC in its Draft Articles states that an international crime may result, *inter alia*, from "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 the seas."[122]

5.2. The ILC Draft Code of Crimes Against the Peace and Security of Mankind

The ILC in the *Draft Code of Crimes Against the Peace and Security of Mankind* envisages the conviction and sentencing of "[a]n individual who wilfully causes or orders the causing of widespread, long-term and severe damage to the natural environment...".[123]

5.3. The Law of Non-navigational Uses of International Watercourses

The ILC considered the subject of the non-navigational uses of international watercourses and prepared a complete set of Draft Articles. In 1994, the Commission submitted the draft to the General Assembly and recommended that a convention on the subject be elaborated on the basis of the Commission's Draft Articles.

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[122]See Report of the ILC on the work of its forty-eigth session, May 6 - July 26, 1996, General Assembly Official Records - fifty-first session, supplement No. 10 (A/51/10). Article 19 para. 3(d) of the ILC Draft Articles on State Responsibility, Part I, Report of the ILC on the work of its 32ed Session, 5 May- 25 July 1980 UN Doc. A/35/10: YILC (1980 II, Part 2). See Weiler J.H.H. *International Crimes of State, A Critical Analysis of the ILC's Draft Article 19 of State Responsibility* (Berlin, New York: Walter de Gruyter, 1989) at 357.

[123]Report of the International Law Commission on the work of its 43th session, Official Records of the General Assembly, 46th Session, Suppl. No. 10 (A/46/10) at 250.

On December 9, 1994, the General Assembly convened the Working Group of the Whole of the Sixth Committee for the Elaboration of a *Convention on the Law of the Non-navigational Uses of International Watercourses.*[124] At the close of the meeting on April 4, 1997, the Working Group recommended to the General Assembly the adoption of a Convention, which includes 37 articles and an annex. On May21, 1997, the UN General Assembly approved the *Convention on the Law of the Non-navigational Uses of International Watercourses.*[125] This Convention shall be open for signature by all States at United Nations Headquarters in New York.

The Convention referred in its Preamble to Article 13, paragraph 1(a), of the *UN Charter*, which provides that the General Assembly shall initiate studies and make recommendations for the purpose of "promoting international co-operation in the political field and encouraging the progressive development of international law and its codification."[126] It was further stated in the Preamble that the successful progressive development and codification of rules of international law regarding non-navigational uses of international watercourses would assist in promoting and implementing the purposes and principles set forth in Articles 1[127] and 2[128] of the

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[124]UNGA resolution 49/52 of December 9, 1994.

[125]The *Convention on the Law of the Non-navigational Uses of International Watercourses*, UN documents: A/51/869; G.A. res. 51/229.

[126]See Article 13 of the *UN Charter*. See *Charter of the United Nations* (San Francisco), 1 UNTS xvi; UKTS 67 (1946); AJIL. Suppl. (1945) 190. In force October 24 1945, (hereinafter *UN Charter*).

[127]Article I of the *UN Charter* states:
The Purposes of the United Nations are:
1. To maintain international peace and security, and to that end: to take effective collective measures for the prevention and removal of threats to the peace, and for the suppression of acts of aggression or other breaches of the peace, and to bring about by peaceful means, and in conformity with the principles of justice and international law, adjustment or settlement of international disputes or situations which might lead to a breach of the peace;

Charter.

According to the Convention, "watercourse States shall in their respective territories utilize an international watercourse in an equitable and reasonable manner"[129]. Watercourse States, in utilizing an international watercourse in their

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2. To develop friendly relations among nations based on respect for the principle of equal rights and self-determination of peoples, and to take other appropriate measures to strengthen universal peace;
3. To achieve international co-operation in solving international problems of an economic, social, cultural, or humanitarian character, and in promoting and encouraging respect for human rights and for fundamental freedoms for all without distinction as to race, sex, language, or religion; and
4. To be a centre for harmonizing the actions of nations in the attainment of these common ends.

[128]Article 2 of the *UN Charter*: The Organization and its Members, in pursuit of the Purposes stated in Article 1, shall act in accordance with the following Principles.
1. The Organization is based on the principle of the sovereign equality of all its Members.

2. All Members, in order to ensure to all of them the rights and benefits resulting from membership, shall fulfill in good faith the obligations assumed by them in accordance with the present Charter.
3. All Members shall settle their international disputes by peaceful means in such a manner that international peace and security, and justice, are not endangered.
4. All Members shall refrain in their international relations from the threat or use of force against the territorial integrity or political independence of any State, or in any other manner inconsistent with the Purposes of the United Nations.
5. All Members shall give the United Nations every assistance in any action it takes in accordance with the present Charter, and shall refrain from giving assistance to any State against which the United Nations is taking preventive or enforcement action.
6. The Organization shall ensure that States which are not Members of the United Nations act in accordance with these Principles so far as may be necessary for the maintenance of international peace and security.
7. Nothing contained in the present Charter shall authorize the United Nations to intervene in matters which are essentially within the domestic jurisdiction of any state or shall require the Members to submit such matters to settlement under the present Charter; but this principle shall not prejudice the application of enforcement measures under Chapter VII.

[129]Article 5 of the Convention. *Supra*, note 125. It reads: "1. Watercourse States shall in their respective territories utilize an international watercourse in an equitable and reasonable manner. In particular, an international watercourse shall be used and developed by watercourse States with a view to attaining optimal and sustainable utilization thereof and benefits therefrom, taking into account the interests of the watercourse States concerned, consistent with adequate protection of the watercourse.

territories, are under the obligation not to cause significant harm to other watercourse States; if significant harm nevertheless occurs, the Convention provides that the State whose use caused the harm will take appropriate measures to eliminate or mitigate such harm and, where appropriate, to discuss the question of compensation.[130]

The ILC in Article 29 of the law of *Non-navigational Uses of International Watercourses* stated that "[i]nternational watercourses and related installations, facilities and other works shall enjoy the protection accorded by the principles and rules of international law applicable in international and internal armed conflicts and shall not be used in violation of those principles and rules."[131]

6. Government Proposals

Strong political co-operation on a global level is essential to achieve a proposal to protect the environment. Two government initiatives, namely Jordanian and German, proposed putting the issue of environmental protection on the agenda of the 46th UN General Assembly in order to give this issue further attention within the UN System.

In June 1991, the German and Soviet environment ministers concluded an agreement in which they proposed that the UN Conference on Environment and Development (UNCED) include discussion of a *Fifth Geneva Convention* at their

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2. Watercourse States shall participate in the use, development and protection of an international watercourse in an equitable and reasonable manner. Such participation includes both the right to utilize the watercourse and the duty to cooperate in the protection and development thereof, as provided in the present Convention."

[130]See Article 7 of the Convention. *Supra*, note 125.

[131]*Ibid.*

meeting in Rio de Janeiro in June 1992.

6.1. The Jordanian Proposal[132]

Following the environmental destruction by Iraq in the Persian Gulf, Jordan proposed that the General Assembly include a new item entitled "Exploitation of the environment as a weapon in times of armed conflict and taking of practical measures to prevent such exploitation."[133] In the explanatory memorandum, the Government of Jordan stated that:

> "the existing 1977 *United Nations Convention on the Prohibition of Military or Any Other Hostile Use of Environmental Modification Techniques*[134] was revealed as being painfully inadequate during the Gulf conflict. We find that the terms of the existing convention are so broad and vague as to be virtually impossible to enforce. We also find no provision for a mechanism capable of the investigation and settlement of any future disputes under the *Convention*. Furthermore, the *Convention* does not provide for advanced environmental scientific data to be made available to all States at the initial stages of crisis prevention.
>
> We therefore propose that the General Assembly establish a committee to examine the above-mentioned problems, the committee to submit to the General Assembly, if possible by the forty-seventh session in 1992, proposals for an efficient mechanism to combat the exploitation of the environment in times of armed conflict. We believe that this may lead to the drafting of a new treaty and we trust that any such treaty would give all humanity the confidence to face a more peaceful future. Pending the finalization of any such treaty, we would suggest that all nations should be invited to make unilateral decisions

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[132]The Jordanian Higher Council for Science and Technology played a part in the preparation of this proposal and prepared a list of possible co-sponsors. These States were: Brazil, Canada, Czechoslavahia, Indonesia, Jamaica, Japan, Kenya, Malaysia, Mexico, the Netherlands, New Zealand, Nigeria, Sweden, Tanzania, Trinidad, Turkey and Zambia. Syria and Kuwait have welcomed the initiative. See Plant, *supra*, note 16 at 27 and 171.

[133]See UN Doc. A/46/141; See also A.O. Adede, *International Environmental Law Digest* (NY: Elsevier Science Publishers 1993) at 72.

[134]*Supra*, note 17.

along the lines of the treaty."[135]

The Legal Committee of the General Assembly took up the item for discussion.[136] It took place in the background of two initiatives. First, UNEP convened the first UN Inter-Agency Consultations in Geneva in February 1991 to take a comprehensive and coordinated approach to the damage to the environment caused by Iraq.[137] Secondly, the Security Council passed Resolution 687 in April 1991 which, *inter alia*, reaffirmed that Iraq "is liable under international law for any direct loss or damage, including environmental damage and the depletion of natural resources as a result of its unlawful invasion and occupation of Kuwait."[138]

6.2. The German Statement

In September 1991, the Federal Ministry of the Environment, Nature Protection and Nuclear Safety of Germany presented a statement to the UNCED PrepCom.[139] and announced that it was preparing an initiative for the 46th General Assembly to bring the issue of environmental problems clearly into focus in the UN.[140] The statement notes that Soviet and German ministers for the environment agreed that the matter should be addressed at the international level and that UNCED should also deal with it. The Statement asserts that:

> [...] As the protection of the environment is of outstanding importance for the earth's ecological balance, we hold the view that massive damage to the

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[135]See UN Doc. A/46/141; See adede, *supra*, note 133 at 72.

[136]A/C.6/46/SR.18 and 19.

[137]See Adede, *supra*, note 133 at 73.

[138]See Para. 16 of Security Council resolution 687 (1991).

[139] See Plant, *supra*, note 16 at 4-5.

[140]For the text see Plant, *supra* 16 at 266.

> environment which may lastingly impair the basis of life on earth must be prevented by all appropriate political and legal means. We are convinced that any wilfully caused massive ecological damage which cannot be justified under international law has to be banned at the international level. The environment must not be used as a weapon or taken hostage, for whatever purpose. This applies not only to times of war, but also to times of peace. [...].[141]

7. ICRC Discussion

The ICRC played an important role in reforming the law of war to incorporate regulations on protecting the natural environment.[142] The ICRC views the environment within the context of human life and activity, not as a separate entity.[143]It recognizes that the protection of the environment is in part an educational problem. Therefore they have engaged in preventive measures and attempt to educate the public on environmental hazards.

On Dec. 9, 1991, on the recommendation of the Sixth (Legal) Committee, the General Assembly in its decision 46/417, under the item "[e]xploitation of the environment as a weapon in time of armed conflict and taking of practical measures to prevent such exploitation"[144], requested the ICRC to discuss the question of protection of the environment in times of armed conflict at the 26th International Conference of the Red Cross and the Red Crescent. The ICRC decided to request the

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[141]Statement by Ansgar O. Vogel, Federal Ministry for the Environment, Nature Protection and Nuclear Safety of Germany at the 3rd Session of the UNCED PrepCom, Geneva, 12 August - 4 September 1991: Plenary item 2 (d), reprinted in Plant *supra*, note 16 at 266.

[142]See International Council of Environmental Law , *24/1, Environmental Policy and Law* (Lausanne: Elsevier Sequooia S.A. 1994).

[143]See Gasser, "Round Table Session", in Plant, *supra*, note 16 at 111.

[144]General Assembly Decision no.46/417 reprinted in Environmental Policy and Law, *supra*, note 142 at 25.

Secretary-General to report to the General Assembly in 1992 on activities undertaken in the framework of the ICRC with regard to that issue, and to include in the provisional agenda for 1992 the item entitled "[p]rotection of the environment in times of armed conflict."[145]

The ICRC convened a meeting of experts from April 27 to April 29, 1992 in Geneva to define the content of existing law, identify problems in its implementation and recommend further action. The experts encouraged ICRC to carry on its work of clarifying and developing rules to protect the natural environment in times of war. The ICRC set up a program to prepare a handbook of model guidance for military manuals.[146] In its Preliminary Remarks, the ICRC outlined the sources of these guidelines and their objectives. It states that the guidelines are taken from international legal provisions and from State practice in order to compel armed forces to implement the international law relating to the protection of the environment against the effects of military operations. The ICRC proposed that States include those guidelines in their military manuals and instructions, and disseminate them in their respective countries. Some of the important instructions included in the ICRC Guidelines for military manuals are as follows:

-The general principles of international law applicable in war time, such as the principles of distinction and proportionality, apply to the protection of the environment.

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[145]*Ibid.*

[146]This was as a result of the adoption of GA Res. A/47/37 which invited the ICRC to continue its work on the question and prepare a handbook of model guidelines for military manuals and present it to the forty-eighth session of the General Assembly. See Environmental Policy and Law, *supra*, note 142 at 25.

-International environmental treaties and relevant customary rules should continue to apply between parties to the armed conflict. Furthermore, the existence of armed conflict must not affect the obligations relating to the protection of the environment of the parties to the conflict towards States not party to the conflict and areas beyond the limits of their jurisdiction.

-Rules which protect the environment in international armed conflict should apply between parties to a non-international armed conflict.

-The general prohibition on the destruction of civilian property also protects the environment unless such destruction is justified by military necessity.

-Military commanders are required to prevent and, where necessary, to suppress and to report to competent authorities breaches of the rules protecting the environment. In serious cases, offenders shall be brought to justice.[147]

8. Rio Conference

8.1. Background to the Rio Conference

From June 3-14, 1992, the twentieth anniversary of the First Conference on the Human Environment in Stockholm, more than 30,000 participants from 170 countries including more than 100 heads of State or government met in Rio de Janeiro for the United Nations Conference on Environment and Development.[148] It had its

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[147] *Ibid.*

[148] Rio Declaration , *supra*, note 37. In 1989 the UN General Assembly voted to convene a Conference on Environment and Development (UNCED) to be held in Rio de Janeiro in June 1992 with the highest possible level of participation. UN General Assembly Resolution convening the UN Conference on Environment and Development (UNCED), G.A. Res. 44/228 adopted on Dec. 22, 1989, UN Doc. A/Res/44/228, reprinted in (1990) 20 Environmental Policy and Law (no. 1/2) 39. It was the largest gathering of heads of State in history that led up to an unprecedented meeting, the Earth Summit. The Preparatory Committee had formulated the major tenets of a coordinated global approach to the problems of the Earth. These ideas developed to become the important agreement of the Earth Summit, Agenda 21. Agenda 21 proposes an array of actions which are intended to be respected by every person of the world. The UNCED Resolution

background in the Stockholm Conference in which the question arose whether environmental protection and economic development were compatible or not.[149] The Rio Conference may be thought of as another important step in the evolution of international environmental law. It was convened to harmonize and crystallize the divergent legal strategies for the protection and development of the environment followed by States by that time.[150] The Preparatory Committee of the Conference

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established the Preparatory Committee which met on five occasions prior to Rio. The Preparatory Committee in its first session held in spring of 1990 in New York established three working groups. Working Group III was assigned to deal with legal, institutional and related matters. Working group III was to: "(i) Prepare an annotated list of existing international agreements and international legal instruments in the environmental field, describing their purpose and scope, evaluating their effectiveness, and examining possible areas for the further development of international law, in the light of need to integrate environment, especially taking into account the special needs and concerns of the developing countries; (ii) Examine the feasibility of elaborating principles on general rights and obligations of States and regional economic integration organizations, as appropriate, in the field of environment and development, and consider the feasibility of incorporating such principles in an appropriate instrument/ charter/ statement/ declaration, taking due account of the conclusion of all the regional preparatory conferences; (iii) Consider the legal and institutional issues referresd to it by Working Group II and the plenary of the Preparatory Committee, including the legal and institutional aspects of cross-sectoral issues dealt with by the Preparatory Committee that have been identified in relevant General Assembly resolution; (iv) Review ways and means of strengthening the cooperation and coordination between the United Nations system and other intergovernmental and non-governmental, regional and global institutions in the field of environment and development; (v) Review the role and functioning of the United Nations system in the field of environment and development and make recommendations on ways and means of further enhancing coordination and cooperation on environment and development issues in the United Nations system; (vi)Examine and consider strengthening institutional arrangements required for the effective implementation of the conclusions of the United Nations Conference on Environment and Development in the United Nations System"; See UN Doc. A/46/48, vol. I decision 2/3; Daniel Sitarz, Agenda 21: The Earth Summit Strategy to Save Our Planet (Earthpress, Boulder, 1993) at 1-26; A.O. Adede, *supra*, note 133at 378-383; P.H. Sand, "UNCED and the Development of International Environmental Law", in *Yearbook of International Environmental Law*, vol. 3 (Graham & Trotman, Martinus Nijhoff, 1992) at 3.

[149]*Ibid.* The interrelation of development and the environment was also considered at the Stockholm Conference. See in particular Principle 8 of the Stockholm Declaration. *Supra*, note 5.

[150]See Haas, P.M. & Levy, M.A., "Appraising the Earth Summit: How Should We Judge UNCED's Success?" 1992, 34 Environment no. 8 at 9. Susskind considered the agreement reached at Rio to be unsuccessful since "no ironclad commitment were made to reverse or repair environmental deterioration." She said that "Rio did not produce response to many of the serious

aimed at producing a number of principles in the form of a declaration comparable to the Stockholm Principles. They unanimously decided that the final document should have the following characteristics: (a) it should contain principles which are concise, (b) it should be clearly integrated with Agenda 21; (c) its text should be appealing and inspiring, with a view to enhancing public awareness of environment and development issues; (d) its language and style, while ensuring legal precision of commitment, should be easily understood by the general public; (e) it should be a document which is built, in a forward-looking manner, on existing principles contained in documents such as the 1972 Declaration of the United Nations Conference on Human Environment.[151]

8.2. Rio Declaration

The Rio Declaration on Environment and Development is one of the several instruments which the participants in the Earth Summit[152] adopted. It is a set of 27 principles which outline the rights and responsibilities that all nations have in the area of sustainable development. It was finalized at the Preparatory Committee before the Conference began and was not reopened during the Rio Conference.

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environmental threats we now face." See Lawrence E. Susskind, *Environmental Diplomacy, Negotiating More Effective Global Agreements* (New York: Oxford University Press, 1994) at 40-42.

[151]See Sitarz, *supra*, note 148.

[152]Agenda 21 has been said to be "the operational arm of the Rio Conference". Agenda 21 was the largest document to emerge from UNCED. It does not represent a legal text of binding legal norms and its ultimate impact on the process of harmonizing and crystallizing these norms remains to be determined by the manner in which States put its objectives into practice. See Meakin, S. "The Rio Earth Summit: Summary of the United Nations Conference on the Environment and Development" (Ottawa: Research Branch, Library of Parliament Background Paper BP-317E 1992) at 16; Timothy C. Faries, *The International Law of the Environment: An Examination of Its Evolution to the Rio Conference and Beyond* (LL.M Thesis, McGill University, 1993) at 117-127.

The drafters of the Declaration encouraged "[w]orking towards international agreements which respect the interest of all and protect the integrity of the global environmental and developmental system."[153] Principle 1 of the Declaration clearly links human rights to environmental protection. It presents human rights as an essential goal and environmental protection as an important means to achieve "freedom, equality and adequate conditions of life". As the following examples in this section illustrate, as compared to the Stockholm Declaration, the Rio Declaration contains some new elements. The second principle of the Rio Declaration is an updated version of Principle 21 of the Stockholm Declaration. It reads: "States have, in accordance with the Charter of the United Nations and the principles of international law, the sovereign right to exploit their own resources pursuant to their own environmental and developmental policies, and the responsibility to ensure that activities within their jurisdiction or control do not damage the environment of other States or of areas beyond the limits of national jurisdiction."[154]

Principle 13, comparable to Principle 22 of the Stockholm Declaration, represents a new provision that significantly distinguishes the Rio Declaration from the Stockholm Declaration. It obliges States to develop national law regarding liability and compensation for the victims of environmental damage. In its second part, it obliges States to develop further international law regarding liability and compensation for adverse effects of environmental damage and to do so in an expeditious and more determined manner.

Some of these new concepts in the Rio Declaration include, for example; the

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[153]See Preamble to the Rio Declaration, *supra*, note 37.

[154]*Supra*, note 5.

concept of "common but differentiated responsibilities" in Principle 7[155]; a statement of the precautionary approach[156] in Principle 15; reference to the "polluter-pays principle"[157] in Principle 16 and reference to the assertion of an obligation to undertake environmental impact assessment[158] in Principle 17.

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[155]Principle 7: "States shall cooperate in a spirit of global partnership to conserve, protect and restore the health and integrity of the Earth's ecosystem. In view of the different contributions to global environmental degradation, States have commom but difefrentiated responsibilities. The developed countries acknowledge the responsibility that they bear in the international pursuit of sustainable development in view of the pressures their societies place on the global environment and of the technologies and financial resources they command." See *supra*, note 37.

[156]Precautionary principle: "A presumption of environmental risk. The Precautionary principle is an expression of environmental sanctity which requires prevention and production of environmental impact even in the absence of scientific or legal proof of adverse effect or risk of harm. It places the onus of establishing the lack of environmental risk upon those who advocate development. In cases
where scientific uncertainty exists as to whether an activity or substance could have an adverse effect,
the principle requires that it should be considered to be as hazardous as it could possibly be." See pardy, *supra*, note 16 at 189. Principle 15 of Rio Declaration: "In order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation." See *supra*, note 37.

[157]Polluter-pays principle: "A principle of liability that, whenever possible, the actor that causes pollution damage should pay for restoration, compensation and future prevention." see pardy, *supra*, note 16 at 187. Principle 16 of Rio Declaration: "National authorities should endeavour to promote the internationalization of environmental costs and the use of economic instruments, taking into account the approach that the polluter should, in principle, bear the cost of pollution, with due regard to the public interest and without distorting international trade and investment." See *supra*, note 37.

[158]Environmental assessment: "(1) a statutory procedure to evaluate the potential environmental impact of a proposed activity, to decide whether the activity will be permitted and, if so, to determine whether any conditions are to be imposed to mitigate the anticipated effects; (2) a study of potential environmental effects undertaken prior to the formal statutory process; (3) a report of statement indicating the results of such a study, which is commonly submitted by proponent." see Pardy, *supra*, note 16. Principle 17 of Rio Declaration: "Environmental impact assessment, as a national instrument, shall be undertaken for proposed activities that are likely to have a significant adverse impact on the environment and are subject to a decision of a competent nationl authority." See *supra*, note 37.

The declaration addresses the problem concerning the protection of the environment in times of armed conflict. Principle 24 states: "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 Declaration emphasizes in principle 25 that "[p]eace, development and environmental protection are interdependent and indivisible."

9. Post-Rio Activities

The struggle to solve the problem of degradation of the environment by military and other related activities has begun both at the national and at the international levels. The subject was also discussed at the regional meeting of Latin American Red Cross Societies in Costa Rica in July 1991 and at the meeting of the Council of Europe Foreign Office Legal Advisers in August 1991. It has also been discussed in inter-governmental fora in NATO, UN, OECD and the European Community. Other private expert groups have also tried to clarify the issues and find ways to prevent transformation of the environment from having harmful effects on the physical or mental health of people. Some significant international meetings in which the important issues of environmental protection and the law of war have been debated are: the Conference of Experts on the Use of the Environment as a Tool of Environmental Warfare, Ottawa, July 10-12, 1991[159]; London Conference on "A *Fifth Geneva Convention on the Protection of the Environment in Times of Armed Conflict*", June 3, 1991[160]. Also, at the invitation of the International Council of

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[159]See Jason Reiskind, "The Ottawa Conference of Experts on the Use of the Environment as a Tool of Conventional Warfare, A Synopsis", in Schiefer, *supra*, note 53 at 159.

[160]See for example London Conference on "A 'fifth Geneva Convention' on the Protection of the Environment in times of Armed Conflict" in Plant, *supra*, note 16.

Environmental Law, a group of fifteen legal experts met in Munich from December 13 to 15, 1991 for the Consultation on the Law Concerning the Protection of the Environment in times of Armed Conflict.[161].

The purpose of the London Conference was to consider the adequacy of existing law and to consider the merits of a new Geneva-Style Convention, somewhat along the lines of the existing 1949 *Geneva Convention*. Some participants at the London Conference put forward views concerning possible legislative change; others restricted their views to examining means of improving adherence to existing law.[162]

The aim of the Ottawa Conference was to clarify existing international law concerning the use of the environment as a weapon of war and to find ways of strengthening its effectiveness and implementation to ensure that acts such as the environmental destruction committed in the Gulf War would be clearly prohibited.[163] Different suggestions for the improvement of environmental law in times of armed conflict (such as the creation of a 'Green-Cross-type' organization for the purpose of applying the Convention and safeguarding the environment[164] and providing for the special protection of environmentally sensitive areas) were made.[165]

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[161]P. Fauteux, "The Munich Consultation", in Schiefer, *supra*, note 53.

[162]See Pland, *supra*, note 16 at 161-163.

[163]See Plant, *supra*, note 16 at 163-166.

[164]A similar suggestion made at the London Conference proposed the *'Fifth Geneva' Convention on the Protection of the Environment in Time of Armed Conflict*, printed in Plant, *supra*, note 16 at 37-62. Article 5 A(a) of this proposed Convention requires "Parties to a conflict to accept a new organization (to be called the 'Green Cross/Crescent/Lion/Star?) for the purpose of applying the Convention."

[165]See Plant, *supra*, note 16 at 166-167.

Chemical and biological weapons are destructive technology, and pose risks to humans, animals and the environment. The 1993 *Chemical Weapons Convention*[166] bans the development, production, acquisition, stockpiling, retention and direct or indirect transfer of chemical weapons. This Convention also prohibits the use of or preparing for the use of these weapons. It prohibits the assistance, encouragement, or

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[166]The 1993 *Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on Their Destruction* (hereafter the 1993 *Chemical Weapons Convention*). Text available from the UN Office of Disarmament Affairs (Doc. 93-05070); 32 ILM 800.

Opened for signature at Paris on 13 January 1993

Key allies have deposited instruments of ratification, including 10 of 16 NATO members (Canada, Denmark, France, Germany, Greece, Italy, the Netherlands, Norway, Spain, and the United Kingdom).see Chemical Weapons Convention signatories/ratifiers, Current as of: November 1, 1996, available: [http://www.acda.gov/factshee/wmd/cw/cwcsig.htm].

Total: Signatories = 160; Ratifiers = 65, current as of: November 1, 1996

Ratifiers: Albania (5/11/94), Greece (12/22/94),Algeria (8/14/95), Papua New Guinea (4/17/96), Argentina (10/02/95), Paraguay (12/1/94), Armenia (1/27/95), Peru (7/20/95), Australia (5/6/94), Austria (8/17/95), Poland (2/15/95), Portugal (9/10/96), Hungary (10/31/96), Romania (2/15/95), Belarus (7/11/96), India (9/3/96), Ireland (6/24/96), Saudi Arabia (8/9/96), Brazil (3/13/96), Italy (12/8/95), Seychelles (4/7/93), Bulgaria (8/10/94), Japan (9/15/95), Slovak Republic (10/27/95), South Africa (9/13/95), Cameroon (9/16/96), Spain (8/3/94), Canada (9/26/95), Sri Lanka (8/19/94), Latvia (7/23/96), Lesotho (12/7/94), Chile (Ratified 7/12/96), Sweden (Ratified 6/17/93), Switzerland (3/10/95), Tajikistan (1/11/95), Cook Islands (7/15/94), Costa Rica (5/31/96), Maldives (5/31/94), Cote d'Ivoire (12/18/95), Croatia (5/23/95), Turkmenistan (9/29/94), Czech Republic (3/6/96), Mauritius (2/9/93), Denmark (Ratified 7/12/95), Mexico (8/29/94), United Kingdom (5/13/96), Moldova (Rep of)(7/8/96), Monaco (6/1/95), Uruguay (10/6/94), Ecuador (9/6/95), Mongolia (1/17/95), Uzbekistan (7/23/96), El Salvador (10/30/95), Morocco (12/28/95), Namibia (11/27/95), Ethiopia (5/13/96), Fiji (1/20/93), Netherlands (6/30/95), Finland (2/7/95), New Zealand (7/15/96), France (3/2/95), Georgia (11/27/95), Norway (4/7/94), Germany (8/12/94), Oman (2/8/95).

Signatories: Panama (6/16/93), Guyana (10/6/93), Bahamas (3/2/94), Qatar (2/1/93), Bahrain (2/24/93), Rwanda (5/17/93), Kuwait (1/27/93), Kyrgyzstan (2/22/93), Laos (P.D.R.) (5/12/93), St. Kitts & Nevis (3/16/94), Lesotho (12/7/94), St. Lucia (3/29/93), Chad (10/11/94), St. Vincent and The Grenadines (9/20/93), Liechtenstein (7/21/93), Swaziland (9/23/93), Tanzania (2/25/94), United Arab Emirates (2/2/93), Djibouti (9/28/93), Dominica (8/2/93), Yemen (2/8/93), Nepal (1/21/93), Nicaragua (3/9/93). See Randall Forsberg & Driscoll W., *Non-proliferation Primer, Preventing the Spread of Nuclear, Chemical, and Biological Weapons* (Cambridge: The MIT Press, 1995) at 12-15; Thomas Bernauer, "Towards a Comprehensive Chemical Warfare Control Regime: Some Thoughts on the 'Why' and 'How'", in UNIDIR Newsletter, No. 20, Dec. 1992 at p. 5.

inducement of anyone to engage in activities prohibited by the Convention.

Nuclear weapons are the most destructive technology ever developed. The International Court of Justice issued an important opinion on July 8, 1996. The Court declared the threat and use of nuclear weapons to be generally contrary to international law.[167]

On September 10, 1996 the UN General Assembly approved the *Comprehensive Nuclear-Test Ban Treaty* by a 153 to 3 vote.[168] The Treaty prohibits any weapons test explosion or any other nuclear explosion, at any place under jurisdiction or control of State parties.

10. Conclusion

The law of environmental protection is very closely linked to the law of armed conflict. The law of armed conflict, which is rich in both detail and history, supports the conclusion that it has considerable authority for the protection of the environment. Widespread, long-term and severe damage to the environment violates, at least, the 1977 *Geneva Protocol I.*

Environmental protection must be given more consideration by governments and military planners. The need for this development was sharply underlined by the environmental devastation of the 1991 Persian Gulf War. The Jordanian and German

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[167]See International Court of Justice, Advisory Opinion, 35 ILM 809. Full text of the "Legality of the Threat or Use of Nuclear Weapons", July 8, 1996, World Court directory, available: [http://www.igc.apc.org/disarm /icjtext.html].

[168]United Nations General Assembly Distr. General A/50/1027, August 26, 1996, Text available: http://www.un.org/Depts/dpa/cda/ctbt/20fa.htm.

governments proposed that UNGA pay more attention to environmental protection.

The ICRC, because of its historical role as the supporter of international humanitarian law, is involved in the effort to protect the human environment. Its struggle takes place at the national level through the National Red Cross and Red Crescent Societies, or at the international level, through the league of the Red Cross and Red Crescent Societies.

The ICRC should examine the existing law and attempt to strengthen current legal protection of the environment during warfare.

After a historical overview and a brief description of some related international treaties and other activities that address the degradation of the environment during armed conflict, we will analyse the related documents on the laws of war in Chapter 2 to determine to what extent these conventions protect the environment in time of war.

Chapter II: The Hague and Geneva Conventions

L'histoire nous révèle la présence de certains règlements conventionnels de guerre concernant la protection contre toute destruction délibérée et massive. Le droit de belligérance comprend des règlements relatifs au commencement, au déroulement et la conclusion des conflits armés. Les règlements relatifs au déroulement des conflits armés sont divisés entre les conventions de la Haye et les conventions de Genève. Certaines dispositions des conventions de la Haye et de Genève, bien qu'initialement instaurées pour régler les moyens et les méthodes de guerre et permettre une prise en charge des blessés, des naufragés et des prisonniers de guerre, ont une certaine incidence relativement à la destruction massive de l'environnement de l'homme. Dans quelle mesure les conventions de la Haye et de Genève ont-elles contribué à la protection de l'environnement? Le chapitre II de la thèse sera consacré à l'étude des conventions qui traitent de la dégradation de l'environnement engendrée par des activités militaires. L'étude tentera de déterminer d'où la protection de l'environnement tire son origine: des règlements de la Haye de 1907 sur le droit de la guerre, de la convention IV de Genève de 1949 et du Protocole I additionnel à la convention Genève de 1949. Nous tenterons de démonter que l'objectif visé par les conventions de la Haye et de Genève est d'offrir une protection aux civils à l'encontre d'actes arbitraires de la part de l'ennemi; il ne vise que très indirectement l'environnement.

1. Introduction

The multilateral treaties on humanitarian law in the context of armed conflict were born out of the Hague Conferences in 1899 and 1907 and resulted in a series of conventions. Some of these instruments have a few provisions on the limitation of environmental modification for military purposes. Regarding international conflict, these conventions protect only the enemy's territory and its inhabitants; they do not provide any protection of the belligerent's own territory if belligerents want to damage

their own environment in order to have effects on enemy's troops or population.

Having made a preliminary observation of instruments and activities concerning degradation of the environment by military activities in the first chapter, we will examine, in this chapter, protection against environmental destruction by the traditional law of war (section 2) and protection against environmental destruction by the modern law of war (section 3) . Some international agreements discussed in this chapter deal with the actions of armed forces by placing some restrictions on the methods of warfare in order to limit unnecessary suffering.

2. Protection Against Environmental Destruction by the Traditional Law of War

2.1. Laws and Customs of War on Land: The 1907 Hague Convention IV

The First Hague Conference, held in 1899, led to the creation of three conventions, including the *1899 Hague Convention II Respecting the Laws and Customs of War on Land.*[169] This Convention was the first successful effort by the international community to codify a comprehensive regime which governs the laws of land warfare.

The Second Hague Peace Conference, held in 1907, led to thirteen conventions and one declaration including the *1907 Hague Convention IV Respecting the Law and Customs of War on Land.*[170] Parties to this Convention intended to diminish the evils of war. The provisions of the Convention serve as a general rule of conduct for the belligerents in their mutual relations and in their relations with civilians.[171] This

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[169]1899 *Hague Convention II*, *supra*, note 84.

[170]*Supra*, note 81.

[171]*Ibid.* Preamble to the *Convention*.

Convention was intended to replace the *1899 Hague Convention II.* Most articles of the Regulations annexed to the *1899 Hague Convention II* and the *1907 Hague Convention IV* are identical.

Regulations Annexed to the *1907 Hague Convention IV*, which protect civilian property[172], provide indirect environmental protection from warfare. Article 22 states: "the right of the parties to a conflict to adopt means of injuring the enemy is not unlimited." This article reaffirms the law already in force.[173] The Regulation limits the means of injuring the enemy[174] whatever the war is considered to be. Lawful or not, general or local, be it a war of aggression or self-defense, the parties to a conflict are not free to chose any methods or any means of warfare to damage the enemy.

The most important Hague IV provision applicable to environmental damage is Article 23(g). It prohibits the contracting Powers from destroying the enemy's property unless such destruction is imperatively demanded by the necessities of war.[175] One further issue bearing on environmental damage revolves around the definition of

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[172]See for example Article 46 of the 1907 *Hague Convention IV*, *Supra*, note 81.

[173]This law had its basis in the Grotius' *do iure beli ac pacis* which was published in 1625. It was never actually contested. ICRC reaffirmed this principle in its Resolution XXV in 1965. It was taken up by UNGA in a slightly different form. (Resolution 2444 XXIII, Jan. 13, 1969). Article 35(1) of the 1977 the *Geneva Protocol I* repeats this article. See C. Pilloud et al., *Commentary on the Additional Protocols of 8 June 1977 to the Geneva Convention of 12 August 1949*, International Committee of the Red Cross (Geneva: Martinus Nijhoff Publishers, 1987) (hereinafter Commentary to the Additional Protocols).

[174]Article 22 of the 1907 *Hague Regulation IV. Supra*, note 81. General Assembly Resolution 2444 (XXIII) is recognized by the U.S. as a statement of customary international law. The U.S. government described this paragraph as a restatement of Article 22 of the 1907 *Hague Regulations*. See Meron, *supra*, note 78 at 69-70. See General Assembly Resolution 2444 (XXIII).

[175]*Ibid.* Article 23(g). It reads: it is especially forbidden "To destroy or seize the enemy's property, unless such destruction or seizure be imperatively demanded by the necessities of war."

'property'. Some authors believe that this article should apply to tangible property such as land, crops, or water supplies. The UN War Crimes Commission cited Article 23(g) of the 1907 *Hague Convention IV* in its charges against ten German administrators of Polish forests for the unnecessary destruction of timber resources.[176]

The Convention also prohibits the use of arms, projectiles, or material which may be expected to cause unnecessary suffering[177]. It forbids the attack or bombardment of towns, villages, dwellings or buildings which are undefended.[178] The Convention states that occupiers must not destroy or damage intentionally common property, works of arts or science and historical monuments.[179]

Another key 1907 *Hague Convention IV* provision relevant to environmental protection is Article 55. The safeguarding of belligerent property interests in Article 55 includes an element of environmental protection. It states that: "The occupying State shall be regarded only as administrator and usufructuary of public building, real estate, forests, and agricultural estates belonging to the hostile State, and situated in the occupied country. It must safeguard the capital of these properties, and administer them in accordance with the rules of usufruct."[180] "Usufruct" means "the right of one state to enjoy all the advantages derivable from the use of property which belongs to

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[176]A. Leibler "Deliberate Wartime Environmental Damage: New Challenges for International Law"23 Cal. W. Int'l L.J. 67 69-70; Schmitt, *supra*, note 33 at 64. (citing UN War Crimes Commission, Case No. 7150-469 (1948)).

[177]See *supra*, note 81, Article 23(e) . It reads: it is especially forbidden "[T]o employ arms, projectiles, or material calculated to cause unnecessary suffering."

[178]*Ibid.* Article 25.

[179]*Ibid.* Article 23(g).

[180]See *supra*, note 81; Roberts, *supra*, note 36 at 57.

another state."[181] As an usufructuary, the occupying power has the right to enjoy public property but may not permanently alter or destroy the property. By its own terms, the protection in this article is limited to abuse or destruction of the four categories of property delineated.

The US Armed forces manual states that the Regulation Respecting the Laws and Customs of War on Land annexed to the *Hague Convention IV* has been held to be declaratory of the customary law of war.[182] There are duties, other than the above examined obligations, which are to be respected by parties to the armed conflict. They are referred to in the so-called "Martens Clause" in the preamble to the *1907 Hague Convention IV*. Even in the absence of any treaty clause, inhabitants and combatants remain under the protection and rules of the principles of international law derived from customary law, from principles of humanity and from the dictates of public conscience. The validity of this clause in the context of the protection of the natural environment in wartime is indisputable.[183] The problem is that it is not often easy to extract specific prohibitions from moral law and the dictates of the public conscience.

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[181]See James P. Terry, "The Environment and the Laws of War: The Impact of Desert Storm", (Winter 1992) 15 Naval War C. Rev. 61at 66 .

[182]US Dep't of the Army, the Law of Land Warfare 6 (Field Manual No.27-10, 1956; Meron, *supra*, note 78 at 38.

[183]See Environmental Policy and Law 24/1, *supra*, note 142 (1994). The history of crimes against humanity began with the Martens Clause. It was named after the Russian delegate to the first Hague Conferences. Fedor Fedorovitch Martens was an expert on international law and a representative to the Hague conferences on the law of war. He drafted the so-called Martens Clause which was incorporated into the 1907 *Hague Convention IV*. See Matthew Lippman "Crimes Against Humanity" (Spring, 1997) 17 B.C. Third World L.J. 171 at 173. The clause highlights the legal and moral bases of humanitarian obligations by "making reference not only to law, but to pre-juridical principles [and] to the sentiments of humanity."Beth Van Schaack "The Crime of Political Genocide: Repairing the Genocide Convention's Blind Spot" (May, 1997) 106 Yale L.J. 2259 at 2285.

The other relevant sections of the 1907 *Hague Convention IV* are Article 23(a)[184], which prohibits the use of poisonous weapons and Article 23(b)[185], which prevents the unnecessary suffering of civilians and combatants. Article 23(a) refers more to the protection of combatants than to the environment itself. As a result, this provision suggests that protecting the environment is incidental to the minimizing of human casualties.

One commentator stated in 1992 that had the 1949 *Hague Convention IV* principles "been observed by Iraq, there would have been no significant violation of the Kuwaiti environment."[186] The Convention's deficiency is that, in the first place, it contains a military necessity exception[187]. Secondly, it does not protect the whole environment but only that part which constitutes public property.

2.2. Protection of the Environment from Naval Forces in Time of War: The 1907 Hague Convention IX

In 1896, the Institute of International law adopted a body of rules declaring that the law of bombardment in naval warfare should be applied to land warfare. These rules were placed before States for their consideration. At the Second Hague Peace Conference, the *1907 Hague Convention IX Concerning Bombardment by Naval*

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[184]Article 23(a) of the 1907 *Hague Convention IV*. It states: it is especially forbidden "To employ poison or poisoned weapons".

[185]Article 23(b) of the 1907 *Hague Convention IV*. It states: it is especially forbidden " to kill or wound treacherously individuals belonging to the hostile nation or army."

[186]Terry, *supra*, note 181 at 63. (Discussing that the existing law would have protected the environment in the 1991 Gulf War if the Iraqis had adhered to it).

[187]*Supra*, note 81 Article 23(g).

Forces in Time of War[188] was concluded. Concerning the application of this Convention, it is important to determine whether or not a target represents a military objective.[189] This Convention contains provisions for indirect environmental protection; Article 1 forbids naval forces to bombard undefended ports, towns, villages, dwellings, or buildings. This Convention's major weakness is that it does not prohibit collateral damage. It also prohibits only the destruction of objects on land. It does not provide any protection of the air or objects at sea.

In the application of the Convention, the list of military targets provided in the Convention can not be exhaustive.[190] Thus, certain other targets which belligerents consider to be capable of use for military purposes may be subject to bombardment by naval forces. Article 2 of the Convention absolves the commander of a naval force of responsibility for any unavoidable damage which may be caused by bombardment in case where towns are a legitimate target. Article 2 states that:

> "Military works, military or naval establishments, depots of arms or war matériel[sic], workshops or plant which could be utilized for the needs of the hostile fleet or army, and the ships of war in the harbour, are not, however, included in this prohibition. The commander of a naval force may destroy them with artillery, after a summons followed by a reasonable time of waiting, if all other means are impossible, and when the local authorities have not themselves destroyed them within the time fixed.
> He incurs no responsibility for any unavoidable damage which may be caused by a bombardment under such circumstances.
> If for military reasons immediate action is necessary, and no delay can be allowed the enemy, it is understood that the prohibition to bombard the undefended town holds good, as in the case given in paragraph 1, and that the commander shall take all due measures in order that the town may suffer as

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[188]See *supra*, note 84.

[189]Roberts, *supra*, note 36 at 93.

[190]Roberts, *supra*, note 36 at 93.

little harm as possible."[191]

2.3. Protection of Civilian Populations and Their Property: The 1949 Geneva Convention IV[192]

The *Hague Conventions* cover the conduct of hostilities and, therefore, the principles embodied in them were clearly insufficient to protect civilian populations. The experience of the First and Second World Wars, which had exceptionally damaging effects on civilian populations, confirmed that civilians could no longer be regarded as being outside hostilities and that it was necessary to revise and extend the laws of war.[193] The 1929 Geneva Diplomatic Conference recommended that a study be made in order to conclude a convention on the protection of civilians.

On August 12, 1949, a diplomatic Conference in Geneva approved the text of four conventions including *Geneva Convention IV* relative to the Protection of Civilian Persons in Time of War. The central concern of all four 1949 *Geneva Conventions* is the protection of victims of war.

The 1949 *Geneva Convention IV* is the first international agreement which addresses the treatment of the civilian population in time of war. The Convention does not introduce new ideas to international law but rather builds rules on the pre-existing codified provisions.

With regard to environmental destruction, Article 53 is the highlight of the

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[191]Articles 2 and 3 of the 1907 *Hague Convention IX*, *supra* note 84.

[192]See supra, note 31.

[193]Roberts, *supra*, note 36 at 169-170.

1949 *Geneva Convention IV*. Though many objects are granted protection, such protection is limited to occupied territory. It was felt unnecessary to extend protection beyond occupied territories since Article 23(g) of the 1907 *Hague Convention IV* sufficiently covered that point.[194] Article 53 of the 1949 *Geneva Convention* IV prohibits an occupying Power from destroying "real or personal property belonging individually or collectively to private persons, or to the State."[195] This article is indirectly concerned with acts which may harm the environment.

The view generally accepted by writers and specifically mentioned in Article 2 of the UNCLOS[196] is that the sovereignty of a coastal State "extends to the airspace over the territorial sea as well as to its bed and subsoil." Article 56 of the *UNCLOC* declares that a coastal State has sovereignty rights and jurisdiction over the natural resources of the EEZ "for the purpose of exploring and exploiting, conserving and managing the natural resources."[197] Article 77 of the *UNCLOC* extends coastal States' jurisdiction over the continental shelf. Thus, although there is no explicit provision in the *Geneva Convention IV* to protect the marine environment in time of war, Article 53 of the *Geneva Convention* would apply to the protection of internal waters and territorial sea[198] and perhaps the EEZ and the continental shelf in occupied or enemy territory since States have sovereignty rights over their natural resources. Article 53 of the *Geneva Convention* states: "Any destruction by the Occupying Power of real

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[194]Schmitt, *supra*, note 33 at 66.

[195]Article 53 of the 1949 *Geneva Convention IV*, *supra*, note 31 ; Roberts, *supra*, note 36 at 270-271.

[196]UNCLOS, *supra*, note 107.

[197]*Ibid*.

[198]See *Geneva Convention IV*, Article 53, *supra*, note 31.

or personal property belonging individually or collectively to private persons, or to the State, or to other public authorities, or to social or cooperative organizations, is prohibited, except where such destruction is rendered absolutely necessary by military operations." Although 'absolutely' would seem to indicate a high standard of protection, it is still subject to interpretation. As Jean Pictet has noted "[i]t is therefore to be feared that bad faith in the application of the reservation may render the proposed safeguards valueless; for unscrupulous recourse to the clause concerning military necessity would allow the Occupying Power to circumvent the prohibition set forth in the Convention."[199]

Finally, Article 147 of the 1949 *Geneva Convention IV* gives additional protection since it defines extensive, unlawful, and wanton destruction of property as a grave breach of the Convention's provisions.

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[199]See Jean S. Pictet ed., International Commission of the Red Cross, Commentary: Geneva Convention Relative to the Protection of Civilian Persons in Time of War 302 (1958) cited in Schmitt, *supra*, note 33 at 67.

3. Protection Against Environmental Destruction by the Modern Law of War

3.1. Introduction

After the adoption of the four *1949 Geneva Conventions*, events in warfare demonstrated the need to reaffirm and develop humanitarian law applicable to armed conflict and to provide further protection to victims.

In 1969, the 21st International Conference of the Red Cross requested the ICRC to propose supplementary rules of humanitarian law to reaffirm and expand the 1949 *Geneva Conventions* and to invite government experts to consider them. In 1971 and 1972, a conference of government experts met in Geneva and considered two draft protocols prepared by the ICRC.

In 1974, the Swiss government convened in Geneva the Diplomatic Conference on the Reaffirmation and Development of International Humanitarian Law Applicable in Armed Conflicts. The conference held four sessions from 1974 to 1977. It adopted two protocols; the first concerns victims of international armed conflicts and the second relates to the protection of victims of non-international armed conflicts which were opened for signature on Dec. 12, 1977.[200]

Certain innovations were embodied in the 1977 *Geneva Protocol I*[201] whose important developments include, *inter alia*, provisions regarding the protection of the environment.

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[200]See Roberts, *supra*, note 36 at 387.

[201]See Bothe *supra*, note 111 at 344.

During the process of the preparation of the Protocols by the ICRC, no proposal had been made to include protection of the environment as a part of the Protocols.[202] Such proposals first emerged at the experts' conference organized by the ICRC in 1972[203] and the Red Cross International Conference convened in Teheran in 1973.[204] At the Second Conference of Government Experts, some delegations submitted several proposals in the context of the Basic Rules for the prohibition of using methods and means of warfare which may destroy the natural human environmental condition.[205] After the first session of the Diplomatic Conference, some countries, such as the German Democratic Republic, proposed amendments to draft Article 33 (now 35) including a prohibition against "means and methods which destroy natural human environmental conditions."[206]

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[202]*Ibid.*

[203]In 1972, the following statement was proposed by Red Cross Expert Conference in Vienna: "Sont interdites les attaques de nature à mettre en danger la propriété et l'équilibre de l'environnement naturel." See Herczegh G. "La protection de l'environnement naturel et le droit humanitaire" in C.Swinarski, *Etudes et essais sur le droit international humanitaire et sur les principes de la Croix Rouge*, en l'honneur de J. Pictet (Geneva: Nijhoff, 1984) at pp. 726-727.

[204]See Momtaz, *supra*, note 52 at 209.

[205]Herczegh mentioned some of these proposals: "Il est interdit d'employer des armes, des projectiles, ainsi que d'autres moyens et méthodes, qui altèrent l'équilibre des facteurs naturels régissant la vie et le milieu."
"Il est interdit d'employer des moyens et des méthodes qui détruisent les conditions naturelles de l'environnement humain."
"Sont interdites les attaques qui par leur nature sont susceptible de porter atteinte à la propriété et à l'équilibre naturel de l'environnement d'une nation." See Herczegh *supra*, note 203 at 726.

[206]See III Official Records of the Diplomatic Conference on the Reaffirmation and Development of International Humanitarian Law Applicable in Armed Conflict, Geneva 1974-77 (Bern: Federal Political Department, 1978) (hereinafter Official Records). at 155, 160. Australia, Czechoslovakia, Hungary, Vietnam, Uganda submitted several proposals and emphasized the importance of protecting the natural environment.

3.2. Scope of the Protection of the Environment

The 1977 *Geneva Protocol* I made significant advances concerning the protection of the human environment. Proposals for the ICRC draft Article 35 called for a new paragraph regarding the prohibition of environmental disruption by means or methods of warfare. The issue of environmental protection was first considered in connection with Article 48 bis (now Article 55)[207]. The Protocol reflects two fundamental levels of consensus on environmental protection. It protects the environment itself[208] and takes, as well, the environment into account in order to protect the human population.[209] The concept of the natural environment should not only consist of the objects indispensable to the survival of the civilian population mentioned in Article 54[210] of the *Protocol I*, but also includes all other elements of the environment such as forests, fauna and flora.

Within the Working Group of Committee III, there were two views about the basic reason for the protection of the environment: "Some delegates were of the view that the protection of the environment in time of war is an end in itself, while others considered that the protection of the environment has as its purpose the continued survival of health of the civilian population."[211]

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[207]*Ibid.* at 268.

[208]Article 35 of *The 1977 Geneva Protocol I, supra*, note 23.

[209]Article 55 of *The 1977 Geneva Protocol I, supra*, note 23.

[210]See *supra*, note 23, Article 54 .

[211]See CDDH/ III/ 275: XV, Official Reports *supra*, note 206 at 358-59.

3.2.1. Protection of the Environment

Articles 35 and 55 apply to the conduct of military operations during armed conflict. Article 35(3)[212], by setting out limitations on the methods or means of warfare, without taking into account the population of the States at war, protects the natural environment itself.[213] It prohibits the employment of "methods or means of warfare[214] which are intended or may be expected to cause widespread, long-term and severe damage to the natural environment." The conference tried to broaden the scope of the article as originally proposed. For example, the phrase "methods and means of combat" was believed to have too narrow a scope and so it was broadened to "methods and means of warfare" in order to have wider application.[215] This prohibition is further extended to include even incidental effects.[216]

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[212]Article 35(3) was adopted by the Committee in its 38th meeting on April 10, 1975 by a vote of 57 to 4 with 3 abstentions.

[213]It seems that *Protocol I* was not intended to apply to chemical, biological, and nuclear warfare. The U.S. delegation in the 57th Plenary meeting stated that nuclear weapons were the subject of separate agreements and their use in warfare was governed by the present principles of international law. He added that in his government's opinion, the Protocol was not intended to have any effects on, and did not regulate or prohibit the use of nuclear weapons. See 7 official records, *supra*, note 206 at 295.

[214]Arrassen defines the 'means of warfare' as "instruments d'attaque et de défense [...] c'est-à-dire les armes." There is no legal definition for 'arm'. He states that "l'on peut toutefois, considérer comme telle, au sens technique, toute chose, toute matière ou substance tous objets voire même des phénomènes de nature physique, chimique ou biologique employés pour porter atteinte à la vie ou à l'intégrité physique, à la santé ou, d'une façon générale, à l'état physiologique ou psychologique des personnes ou à l'intégrité physique des biens de l'ennemi." See Arrassen, M. *Conduite des hostilités droit des conflits armés et désarmement*, 1986, Bruxelles, Bruylant, aux pp. 231-232. Rousseau defines 'means of warfare' as "les armes utilisées" and methods of warfare as "l'utilisation qui en est faite" See C. Rousseau, Le droit des conflits armés, Paris, Editions A. Pédone, 1983 p. 81.

[215]See Bothe, *supra*, note 111 at 193.

[216]See Commentary to Additional Protocols, *supra*, note 173 at 410.

The same standard or criteria with the same wording as found in Article 35(3) was also approved[217] for Article 55 of *the 1977 Geneva Protocol I* with the addition of material concerning the survival and health of the civilian population living in a particular wartime environment.[218] Article 55 states that "[c]are shall be taken in warfare to protect the natural environment against widespread, long-term and severe damage." The question arises whether these two articles are identical and could be combined. The working group considered this question and decided that these two provisions do not duplicate each other. The group "Biotope" gave the following answer to this question in its report. "An effort was made to incorporate Article 33 [now Article 35] within Article 48 bis [now Article 55]. The group reached the conclusion, however that the two Articles should remain separate for the reason that whereas Article 48 bis [now 55] relates to the protection of the civilian population Article 33 [now 35] relates to the prohibition of unnecessary injury."[219]

3.2.2. Protection of the Population

Article 55 prohibits the use of methods or means of warfare which may damage the environment and "thereby [...] prejudice the health or survival of the population." Emphasis of the last part of Article 55(1) on "the health or survival of civilian population", as well as its placement in Part IV (civilian population) of the *1977 Geneva Protocol I* shows that this article protects the natural environment because it is essential to the health or survival of the population. We can rely upon the

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[217]It was approved by International Committee of the Red Cross which held 28 meetings from Feb. 5 to April 14, 1975 (CDDH/ III/ SR.13 to 40).

[218]Bothe states: "Article 55 reinforces the implication of art. 35 that care must be taken to avoid collateral catastrophic effects on the natural environment resulting from such methods or means of warfare employed for purposes other than causing such effects on the environment." See Bothe, *supra*, note 111 at 345.

[219]See Commentary to the Additional Protocols, *supra*, note 173 at 414.

advice in the ICRC Commentary that the natural environment should be understood in the widest sense to cover not merely objects indispensable to the survival of the civilian population (mentioned in Article 54) but also to include forests and other vegetation mentioned in *Protocol III* to the *1980 Inhumane Weapons Convention* as well as "fauna, flora and other biological or climatic elements."[220]

One may consider Articles 59 and 60 of the *1977 Geneva Protocol I* an important point in the protection of ecologically sensitive areas. Article 59(2) permits a party to a conflict to declare as a non-defended locality any inhabited place which is open for occupation by an adverse party. Parties to the conflict are prohibited from attacking non-defended localities[221] and zones to which the parties have agreed to confer the status of demilitarized zone.[222] The broad definition of attack in Article 49 of the *1977 Geneva Protocol I,* which extends its application to all attacks in any territory, may protect the environment when combined with other provisions of the *Protocol.*[223] Protection of the whole population would oblige States to protect the enemy's and even their own environment during international conflict. In this article, the word "population" is used without the adjective "civilian" because damage to the environment can be long-lasting; therefore, the question of future survival applies to

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[220]See Commentary to the Additional Protocols, *supra*, note 173 at 662. Greepeace considers human beings to be an integral part of the environment. See J. Leggett, "The Environmental Impact of War: a Scientific Analysis and Greenpeace's Reaction", in Plant, *supra*, note 16 at 77.

[221]Article 59(1) of the *1977 Geneva Protocol I*, *supra*, note 23. It states: "It is prohibited for the Parties to the conflict to attack, by any means whatsoever, non-defended localities."

[222]Article 60(1) of the *1977 Geneva Protocol I*, *supra*, note 23. It states: " It is prohibited for the Parties to the conflict to extend their military operations to zones on which they have conferred by agreement the status of demilitarized zone, if such extension is contrary to the terms of this agreement."

[223]See Plant, *supra*, note 16 at 26.

the population in general, regardless of their combatant status. It applies to offensive as well as to defensive actions, without regard to geographical boundaries. The term "health" used in a broad sense in connection with "survival of the population" refers to activities which are expected to prejudice the continued survival of the population over the long term or lead to major health problems such as birth defects. The Prohibition in Article 49 does not apply to temporary or short-term effects on the population.[224]

Some provisions of the *1977 Geneva Protocol I* protect the environment indirectly. They prohibit parties to the Convention from attacking or destroying militarily useless objects such as agricultural land, crops, drinking water installations and supplies, and irrigation works that are essential to the survival of the civilian population.[225] The indirect protection of the environment in Article 54 includes even the belligerent's own territory. Destruction of these objects within the State's own territory are permitted only in the defence of national territory against invasion where required by "imperative military necessity".[226]

Article 56 of the *1977 Geneva Protocol I* prohibits States from attacking works

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[224]15 Official Records, *supra*, note 206 at 281.

[225]Article 54(2) of the 1977 *Geneva Protocol I*. It states: "It is prohibited to attack, destroy, remove or render useless objects indispensable to the survival of the civilian population, such as food-stuffs, agricultural areas for the production of food-stuffs, crops, livestock, drinking water installations and supplies and irrigation works, for the specific purpose of denying them for their sustenance value to the civilian population or to the adverse Party, whatever the motive, whether in order to starve out civilians, to cause them to move away, or for any other motive."

[226]See Article 54(5) of the 1977 *Geneva Protocol I*. It states: "In recognition of the vital requirements of any Party to the conflict in the defense of its national territory against invasion, derogation from the prohibitions contained in paragraph 2 may be made by a Party to the conflict within such territory under its own control where required by imperative military necessity." Destruction of these objects may destroy the environment.

or installations containing dangerous forces, such as dams, dykes and nuclear electrical generating stations, if such an attack is likely to cause the release of those forces and consequent severe losses among the civilian population. Attacks of this kind are prohibited by the *1977 Geneva Protocol I* even if they are directed at military targets. As we saw in Iraq's attack on Kuwait's oil wells, oil installations can pose a hazard to the environment. They are not included in Article 56 of the the 1977 Geneva Protocol among installations that may not be made the object of attack. Oil installations should be protected from any attack.

Paragraph 3 of Article 85 of the 1977 Geneva Protocol deals with breaches related to the conduct of hostilities: hostile acts directed against civilian population or objects, or the effects of which exceed their legitimate objectives, and also the perfidious use of protective signs and signals. It reads:

> "[...] the following acts shall be regarded as grave breaches of this Protocol, when committed wilfully, in violation of the relevant provisions of this Protocol, and causing death or serious injury to body or health:
> (a) making the civilian population or individual civilians the object of attack;
> (b) launching an indiscriminate attack affecting the civilian population or civilian objects in the knowledge that such attack will cause excessive loss of life, injury to civilians or damage to civilian objects, as defined in Article 57, paragraph 2 (a)(iii);
> (c) launching an attack against works or installations containing dangerous forces in the knowledge that such attack will cause excessive loss of life, injury to civilians or damage to civilian objects, as defined in Article 57, paragraph 2 (a)(iii);
> (d) making non-defended localities and demilitarized zones the object of attack;
> (e) making a person the object of attack in the knowledge that he is hors de combat"

It would be appropriate if the Protocol added a new grave breach to the existing list. Ecocide should be establised as a crime under international law.

The 1977 *Geneva Protocol I* prohibits spreading terror among civilian populations.[227] Environmental destruction could be considered a way of spreading terror in time of war.

3.3. Reprisals Against the Environment

At the Diplomatic Conference of 1974 to 1977, the differing views on reprisals proved impossible to reconcile. Some believed that reprisals were a necessary means of compelling the other party to respect its own obligations. Others argued that reprisals open the door to the worst abuses of law. Despite these different views, there was no reservation with respect to any of the individual provisions prohibiting reprisals.[228]

Article 55(2) of the 1977 *Geneva Protocol I* specifies that attacks against the natural environment made by way of reprisals are prohibited. Reprisals are defined as "measures taken by one State against another for the purpose of putting an end to breaches of the law of which it is the victim or to obtain reparation for them."[229] In the context of armed conflict it is considered to be an action taken by a belligerent to

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[227]Article 51(2) of the 1977 *Geneva Protocol I, supra*, note 23. It states: "The civilian population as such, as well as individual civilians, shall not be the object of attack. Acts or threats of violence the primary purpose of which is to spread terror among the civilian population are prohibited."

[228]H.P.Gasser "Some Legal Issues Concerning Ratification of the 1977 Geneva Protocols", in M.A. *Meyer, Armed Conflict and the New Law: Aspects of the 1977 Geneva Protocols and the 1981 Inhumane Weapons Convention* (London: British Institute of International Law, 1989) 81 at p. 92. The Italian Government's declaration of reservation, which accompanied its ratification of *Protocol* I, seems to touch on the reprisal issue. It reads: "Italy will react to serious and systematic violations by an enemy of the obligations imposed by additional *Protocol I* and in particular its Articles 51 and 52 with all means admissible under international law in order to prevent any further violation." *Ibid.* at 93.

[229]See Commentary to the Additional Protocols, *supra*, note 173 at 982.

prohibit another party from wrongful conduct. The ICRC[230] proposed that restrictions on reprisals imposed by requirements of humanity, including provisions prohibiting attacks against civilians, or objects indispensable to the survival of civilians, should be reaffirmed.[231]

3.4. The 1977 Geneva Protocol I as Customary International Law

Some provisions of the *1977 Geneva Protocol I*[232] are declaratory of customary

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[230]The ICRC mentioned three restrictions, namely subsidiarily, proportionality and humanity, formulated during the *travaux préparatoires*. "Subsidiarily: reprisals may only be taken in the case of imperative necessity when all other means have proved ineffective and after a specific, formal and prior warning has been given that such measures would be taken if the breach did not cease or if it recommended, and the warning remained ineffective; such a decision can only be taken by the highest authorities of the Party to the conflict; the reprisals will end as soon as they have achieved their purpose, *i.e.*, the cessation of the breach which provoked them;
Proportionality: in deciding upon the way in which reprisals will be applied and upon their extent the utmost restraint must be exercised consistent with the purpose they are to serve, namely, to lead the adversary to respect the law; the degree of severity of the reprisals shall in no case exceed that of the breach committed by the enemy;
humanity: in all cases Parties to the conflict must respect the laws of humanity and the dictates of the public conscience". See Commentary to Protocols, *supra*, note 173 at 987.

[231]Various attempts, up to 1971, had been undertaken to deal with reprisals in international law in time of war. See in particular the UN General Assembly Resolution 2675 (XXV) which confirms the prohibition of reprisals against the civilian population. The text of the resolution reprinted in the Commentary to Protocols, *supra*, note 173 at 588. The Peace Conferences held before 1929 did not consider directly the question of reprisals but the idea was that they should be prohibited. The diplomatic Conference of 1929 supported the total prohibition of reprisals against prisoners of war. This idea was extended to cover all persons and objects protected under the four *1949 Geneva Conventions*. See Commentary to Protocols, *supra*, note 173 at 982-985.
The 1954 *UNESCO Convention* prohibits any measures of reprisals against cultural property. *Supra*, note 26.

[232]A limited number of States have ratified this protocol. The U.S., Great Britain, France and Japan are not parties to the protocol. It is Article 1.4, among others, which caused the largest problem for most parties. This article extends the concept to international armed conflicts waged against colonial domination, alien occupation and racist regimes. The US government emphasized that this article does not reflect customary international law. See Meron, Theodor Meron, *Human Rights and Humanitarian Norms as Customary Law* (Oxford: Clarendon Press, 1989) at 66; Simonds, *supra*, note 66 at 176-177.

international law while others, as the U.S. government has stated[233], are new developments. For example, paragraphs 1 and 2 of Article 35, adopted in a new language, reaffirm the well established 1899 and 1907 *Hague Regulations*[234] which have passed into customary international law.[235]

Some parts of the *1977 Geneva Protocol I* were singled out for severe criticism. The U.S. has recognized certain provisions of the Protocol to be customary international law but has held that those Articles, *inter alia*, 35(3) and 55, which are related to the protection of the environment, are undesirable and ambiguous and thus not appropriate for maturation into international customary law.[236] Most of the provisions of the 1977 *Geneva Protocol I* are considered a broad interpretation of the principles of General Assembly Resolution 2444 (XXIII). The Resolution states the following principles:

"a) That the right of the parties to a conflict to adopt means of injuring the enemy is not unlimited;

b) That it is prohibited to launch attacks against the civilian population as such;

c) That distinction must be made at all times between persons taking part in the hostilities and members of the civilian population to the effect that the latter be spared

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[233]The US methodology used to reach this conclusion focussed on, *inter alia*, examination of combat practice, identical or similar rules in US military manuals, and in international agreements. *Ibid*.

[234]Article 22 of 1907 *Hague Regulation* states: "The right of belligerent to adopt means of injuring the enemy is not unlimited." See *supra*, note 81.

[235]See Bothe, *supra*, note 111 at 193-194.

[236]See Simonds, *supra*, note 66 at 177; Theodor Meron, *supra*, note 232 at 62-71. "Article 35 reaffirms two basic principles which underlay customary international humanitarian law (para. 1 and 2), and declares a new principle (para. 3)... ." See Bothe, *supra*, note 111 at 193.

as much as possible..."[237] The U.S. government accepted paragraph (a) and (b) as derivations of the customary international law of armed conflict.[238]

4. Conclusion

The Hague law which seeks to limit the means and methods of warfare by restricting weapon types and usage and the Geneva law which focuses on the protection of combatants and non-combatants incorporate many of the customary sources of international law.

The 1907 *Hague Convention IV* mentions three principles that protect property in time of armed conflict: prohibiting the destruction of enemy property unless it is a military necessity;[239] forbidding pillaging;[240] and requiring occupying powers to safeguard the occupied State's properties and to administer them as usufructuary.[241]

The 1907 *Hague Convention IV*, for which party status is relatively unimportant because most of the treaty is now considered customary international law and governs the conduct of land warfare, is environmentally relevant today. This Convention prohibits belligerents from destroying public property or attacking towns, villages or dwellings which are undefended. Neither the 1907 *Hague Convention IV* nor its annexed regulations explicitly address damage to the environment as a factor

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[237]General Assembly Resolution 2444 (XXIII); Meron, *supra*, note 232 at 69-70.

[238]Paragraph (a) of the GA Resolution 2444 (XXIII) has been described as a restatement of Article 22 of 1949 Hague Regulations which has been known as declaratory of the customary law of war. See Bothe, *supra*, note 111 at 193.

[239]1907 *Hague Convention IV*, *supra*, note 81 Art. 23(g).

[240]*Ibid.* Arts. 28 and 47.

[241]*Ibid.* Art. 55.

to be considered legal in a determination of the means or methods to be used by a belligerent to injure its enemy. This Convention does not protect the whole environment. Furthermore, it contains a military necessity exception.

Article 1 of the 1907 *Hague Convention IX Concerning Bombardment by Naval Forces in Time of War* prohibits naval bombardment of undefended public places. The Convention's deficiency is that, first, it does not prohibit collateral damage and second, it does not protect the air and the sea during international armed conflict.

The 1949 *Geneva Convention IV* concerning the protection of civilians provides for the protection of property within a scope similar to that of the 1907 *Hague Convention IV*. Protection of the environment as such is not also an issue in the 1949 Geneva Convention IV. Article 53 is an applicable article in the 1949 *Geneva Convention IV* for the protection of the environment. Although this article does not mention the protection of the environment explicitly, it offers concrete protection to the environment since it prohibits the destruction of property. This article has been placed in Part III of the Convention regarding the Status and Treatment of Protected Persons. One may argue that this does not apply to the protection of the environment for its own value. These provisions reflect an overly anthropocentric viewpoint of environmental protection. Another deficiency of this Convention is similar to that found in the 1907 *Hague Convention IV* namely its inclusion of similar language on the principle of military necessity. This seems to provides an adequate justification for the suspension of the prohibitions in Article 53.

The 1977 *Geneva Protocol I* addresses international armed conflict. It is an interesting document in that it combines elements of both Hague and Geneva law.

Articles 35(3) and 55 of that Protocol represented the furthest steps taken so far toward protection of the environment in an international armed conflict. The two provisions are complementary: The former, based on Hague law provides for limits on methods and means of warfare, while the latter, based on Geneva law, provides for the protection of civilians and civilian objects. However, examination of Articles 35(3) and 55 of the 1977 *Geneva Protocol I* reveals some problems.

First, Articles 35(3) and 55 prohibit methods or means of warfare which are intended, or may be expected to cause, widespread, long-term and severe damage to the natural environment. Amending "and" to "or" would lower the damage threshold approach, and so the presence of any one of the criteria of "widespread, long-lasting or severe effects" would be considered a violation of the 1977 *Geneva Protocol I.*

Second, the terms "widespread, long-term, and severe" in Articles 35(3) and 55 are vague. There was wide support among States for a provision setting out specific requirements or prohibitions to be included to protect the natural environment[242], but they could not successfully negotiate what specific duration of damage would be considered "long-term", nor how large an affected area would have to be so that it might be considered "widespread". They also could not agree on how to judge the severity of the damage to the civilian population which might be involved. Some representatives referred to twenty or thirty years as being a minimum. The Working Group of the Diplomatic Conference on the Reaffirmation and Development of International Humanitarian Law Applicable in Armed Conflict referred the entire question of protection of the environment to an informal Working

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[242]See 15 Official Records, *supra*, note 206 at 280.

Group entitled Biotope Group.[243] Delegates from ten countries and representative of the ICRC and of the United Nations Environmental Program participated in the work of the proposals of the Biotope Group. Some delegates of the Working Group believed that environmental protection in time of war is an end in itself, while others were of the view that environmental protection has as its aim the continued survival or health of the civilian population.[244] The Biotope Group in its report on the scope of Article 35 states that "[a]cts of warfare which cause short-term damage to the natural environment are not intended to be prohibited by the article and the period might be perhaps for ten years or more."[245] The Rapporteur stated in his report that some representatives considered the time or duration required to be measured in decades. Others referred to twenty to thirty years as a minimum.

Third, the Protocol does not protect the sea or atmosphere above the land unless their destruction affects the land below. This is an important deficiency of existing law. Thus, it is necessary to conclude a new convention on the law of the sea and air warfare.

Fourth, Articles 35 and 55 of the Protocol should contain a section in which all States party be requested to notify the UN Security Council[246] or "International

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[243]The report of the Biotope group appears in document CDDH/III/GT/35.

[244]Article 35(3) reflects the first of these two ideas and Article 55 the second. See 7 Official Records, *supra*, note 206 at 358-359.

[245]See Official Records, *supra 206* at 269.

[246]The Security Council may consider these matters according to the chapter VII of *the UN Charter* entitled "Action with Respect to Threats to the Peace, and Acts of Aggression." See *UN Charter supra*, note 126.

Fact-finding Commission"[247] of all information they may have of any State violating or planning to employ methods of warfare to violate the provisions of those articles. This section would encourage States to attempt to prevent environmental destruction during armed conflict.

Finally, in the absence of a satisfactory definition of the "natural environment", Articles 35 and 55 of this Convention seem to be very vague. During the discussion in the Diplomatic Conference in Geneva, some countries proposed different structures for these articles. Some, for example, referred to the stability of the ecosystem[248] and others to the ecological balance of the human environment.[249] The ICRC considered it best to avoid introducing the concept of the environment. The text simply refers to "widespread, long-term and severe damage to the environment".[250]

In this Chapter, we have discussed the extent to which *Hague* and *Geneva*

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[247]The International Fact-finding Commission, pursuant to Article 90 of the Protocol, may be less useful than the Security Council since a lengthy process is necessary for its establishment, (Article 90(a) and 90(b)). Furthermore, the Commission may be unable to act if the parties do not accept the competence of the commission to enquire into any facts alleged to be a grave breach or serious violation of the *Convention*. (Article 90.2.a and 90.2.c of the 1977 *Geneva Protocol I*). There is doubt whether such a fact-finding commission can operate in a rapid escalation scenario such as the recent Gulf disaster. *Supra*, note 23.

[248]Ecology and Ecosystem: "Ecology is the study of relationship among organisms, among species, and between organisms and their non-living environment. It is the study of ecosystem, which are the fundamental units of ecology. An ecosystem is a community of organisms and their physical environment interacting as an ecological unit." See Pardy, *supra*, note 16 at 86.

[249]For example, Arab Republic of Egypt, Australia, Czechoslovakia, Finland, German Democratic Republic, Hungary, Norway, Sudan, and Yugoslavia. (CDDH/ III/ 222 at p.156). The representative of Hungary stated that in his opinion the article clearly prohibited all forms of ecological warfare. CDDH/ SR.42, Annex at p. 228.

[250]This result was close to the proposals of the U.S. and the former USSR. See Commentary to the Additional Protocols, *supra*, note 173 at 413.

Conventions contributed to the protection of the environment. These conventions protect the environment against destruction that can be imposed upon it by any weapon. We will analyze, in Chapter III, the *Enmod Convention* which focuses on environmental forces used for military purposes.

Chapter III.The Prohibition Against Using the Environment as an Instrument of War

Durant les années 1970, une attention plus particulière est portée à l'endroit des forces environnementales utilisées dans un but militaire. L'intérêt de ces nouvelles méthodes résultent partiellement de l'emploi massif d'herbicides de la part des Etats-Unis et de la dévastation des terres pendant la guerre du Vietnam. Les préoccupations concernant les conséquences des modifications de l'environnement sur l'écologie globale ont en effet déclenché un intérêt particulier pour l'élaboration d'une convention susceptible d'empêcher la réalisation d'un tel danger. Il en résulta la *Convention sur l'interdiction d'utiliser des techniques de modification de l'environnement à des fins militaires ou toutes autres fins hostiles*. Le chapitre III traite des dispositions de cette convention. Cette convention prohibe l'utilisation de l'environnement comme une méthode de guerre et condamne les dommages durables qui pourront lui être infligés au cours ou en conséquences des conflits armés. Comme nous le verrons plus loin, cette convention interdit seulement l'utilisation hostile de techniques de modification mais ne s'étend pas au développement de ces techniques. La convention n'est pas claire sur ce qui est formellement interdit par rapport aux techniques susceptibles de causer des dommages ou de détruire l'environnement. De plus, la convention ne définit pas ce qui constitue un dommage inacceptable pour l'environnement. Nous pensons que cette convention devrait être modifiée afin d'inclure des mesures préventives concernant les atteintes à l'environnement.

1. Introduction

Most Conventions cover only the peaceful uses of the human environment; the impact of man's hostile activities on the environment are not regulated. It should be noted that the future of mankind depends very much on the establishment of precise regulations of environmental law in wartime since the worst of all environmental

damage occurs during wartime. Damage to the environment causes many more problems in an increasingly over-populated world. Ignoring this problem jeopardizes the future of the human race.

In recent years, some conventions have attempted to protect the earth's environment in times of war.

The law of armed conflict contains few rules dealing with the environment. As we discussed in chapter II, the most important are those included in the 1977 *Geneva Protocol 1.* As distinct from the 1977 *Geneva Protocol 1* aimed at protecting the environment against damage that could be inflicted upon it by any weapon, the *Enmod Convention* [251] deals with the changes in the environment brought about by human manipulation of natural processes. This Convention will be discussed in this chapter.

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[251]See *supra*, note 17. *Convention on the Prohibition of Military or any Other Hostile Use of Environmental Modification Techniques*, adopted by the General Assembly of the United Nations on December 10, 1976
Entry into force: October 5, 1978, in accordance with Article IX (3).
Registration: October 5, 1978, No. 17119.
Text: United Nations, Treaty Series, vol. 1108, p. 151 and depositary notification C.N.263.1978,
Status: Signatories: 48. Parties: 64.
Parties: Afghanistan, Algeria, Antigua and Barbuda, Argentina, Australia, Austria, Bangladesh, Belarus, Belgium, Benin, Brazil, Bulgaria, Canada, Cape Verde, Chile, Costa Rica, Cuba, Cyprus, Czech Republic, Denmark, Dominica, Egypt, Finland, Germany, Ghana, Greece, Guatemala, Hungary, India, Ireland, Italy, Japan, Kuwait, Lao People's Democratic Republic, Malawi, Mauritius, Mongolia, Netherlands, New Zealand, Niger, Norway, Pakistan, Papua New Guinea, Poland, Republic of Korea, Romania, Russian Federation, Saint Lucia, Sao Tome and Principe, Slovakia, Solomon Islands, Spain, Sri Lanka, Sweden, Switzerland, Tunisia, Ukraine, United Kingdom, United States of America, Uruguay, Uzbekistan, Viet Nam, Yemen.
Signatories: Bolivia, Ethiopia, Holy See, Iceland, Iran (Islamic Republic of), Iraq, Lebanon, Liberia, Luxembourg, Morocco, Nicaragua, Portugal, Sierra Leone, Syrian Arab Republic, Turkey, Uganda, Zaire. UN Treaty Data Base, general table of contents, available: [http://www.un.org/Depts/Treaty /bible/Front_E/toc GEN.html].

The *Enmod Convention* is an important step forward[252] in the field of arms control since it prohibits the use of specific techniques of warfare. It is an achievement to be added to other arms control agreements, such as the *Sea-Bed Arms Control Treaty* [253], the *Treaty of Tlatelolco*[254], and the *Test Ban Treaty*[255]. The *Enmod Convention* is the result of three rounds of bilateral consultations between the U.S. and the USSR. and was finally negotiated under UN auspices in 1975-76. The object of the Convention was to decrease the danger of environmental warfare.

In weighing the merits of the Convention, two factors must be considered: first, its technical and political feasibility; and second, the level of acceptable risk and the acceptability of restrictions which the Convention, as an arms control agreement, involves.

2. The Background of the *Enmod Convention*

The Convention on the Prohibition of Military or any other Hostile Use of Environment Modification Techniques, the so-called *Enmod Convention*, was drafted during the Vietnam War when concern was expressed about the use of environmental modification techniques as weapons of war. The Convention arose from concern

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[252]Most believe that this Convention can be a starting point and that a new effort should be made to develop a better and more realistic convention which would apply in any circumstances; see: United States Senate, *Environmental Modification Treaty, Hearings Before the Committee of Foreign Relations*, 95th Congress, October 3, 1978 (Washington: U.S. Government Printing Office, 1978).

[253]1971 *Treaty on the Prohibition on the Emplacement of Nuclear Weapons and Other Weapons of Mass Destruction on the Sea-Bed and Ocean Floor and the Subsoil Thereof* (Sea-Bed Arms Control Treaty) 23 UST 701; (1971), 10 ILM 146.

[254]1967 *Treaty for the Prohibition of Nuclear Weapons in Latin America* (Tlatelolco Treaty) UNTS, vol. 634, p. 281.

[255]See *supra*, note 4.

about the consequences of modification of the environment for both military[256] and non-military[257] purposes.

2.1. Non-military Background

There has been significant progress during the past fifty years in the development of weather modification into a useable technology. There was particular concern about the quality of the environment during the 1960s and 1970s which led to discussions about weather modification projects, especially in North America and the U.S.S.R. For example, Canada and the U.S. organized review committees to consider the legal, scientific, and economic aspects of weather modification and to plan joint or co-ordinated research. One result of the bilateral meetings of these countries was the signature in 1975 of the "Canada-U.S. Memorandum of Understanding on Notification and Construction Regarding Weather Modification Activities".[258] According to the Memorandum, the authorities of each country have to notify the other party in advance of any activities which take place within 200 miles of the Canada-U.S. border and which may modify the weather of the other country.[259]

In 1965, a special Commission on Weather Modification recommended to the National Science Foundation that it use weather modification technology for peaceful purposes only.[260]

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[256]Roots, *supra*, note 53 at p.13

[257]See Fauteux, *supra*, note 69.

[258]See Roots, *supra* note 53 at 16.

[259]*Ibid.*

[260]United States Senate, *Prohibiting Military Weather Modification*, Hearing Before the Subcommittee on Oceans and International Environment of the Committee on foreign Relations, Committee on Foreign Relations; Subcommittee on Oceans and International Environment, 92ed

In 1972, the issue was raised in the U.S. Senate by the National Academy of Science. The Senate recognized the problem and asked the Nixon Administration to sponsor a U.N. resolution "dedicating all weather modification efforts to peaceful purposes and establishing, preferably within the framework of international non-governmental scientific organizations, an advisory mechanism for consideration of weather modification problems of potential international concern."[261]

2.2. Military Background

The history of war from its earliest time abounds with illustrations of how environmental modification has been carried out for hostile purposes. Environmental modification is, indeed, a weapon which may lead to disaster. It has the potential to cause unpredictable destruction, in particular where subsistence agriculture is practiced. There is no doubt that the use of environmental modification as a weapon is non-peaceful and should be prohibited. It has been reported that, in the mid 1960s, the US Central Intelligence Agency tried to stop North Vietnamese truck movements by "making rain" over the Ho Chi Minh trail of southern Laos.[262] The U.S. bombings, during the second Indochina War of 1961-1975, were extraordinarily extensive. The strategy involved intensive rural area bombing, chemical and mechanical forest destruction and considerable, intentional disruption of both the natural and human ecologies.[263] The U.S. also seeded clouds over North Vietnam, South Vietnam and

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Congress, 2ed Session (Washington: U.S. Government Printing Office, 1972) Res. 281.pp.1-16.

[261]See *supra*, note 260.

[262]J.W.Samuels, "International Control of Weather Modification Activities: Peril or Policy?" in A. Ludwik Teclaff and A.E. Utton, eds. *International Environmental Law* (New York: Praeger, 1974) at p.199.

[263]*Ibid.* at 18; World Armament and Disarmament, SIPRI Yearbook 1976 pp.51 and 52.

Laos for military purposes.[264] Although some members of the Johnson Administration were skeptical of the success of such activities, it is evident that the military made serious attempts to modify the environment.[265]

Disruptions such as this played an important role in the discussions in the 1970s to prohibit hostile use of the environment. At the time the *Enmod Convention* was discussed in the UN General Assembly, there were no international agreements to outlaw such warfare and too little had been done in preparation for the international legal complications which weather modification technology would introduce. These shortcomings probably encouraged representatives in the UN General Assembly, when taking note of the draft of the international convention submitted to the General Assembly by the Soviet Union, to include an item entitled "Prohibition of action to influence the environment and climate for military and other hostile purposes, which are incompatible with the maintenance of international security, human well-being and health"[266] on the agenda of its thirtieth session .

3. Discussion of the Draft Convention

In July 1973, the U.S. Senate became aware of the serious implication of environmental modification, and asked the U.S. Government to conclude a treaty providing for "the complete cessation of any research, experimentation, and use of any environmental or geophysical modification activity as a weapon of war."[267] One

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[264]See *supra*, note 260.

[265]*Ibid.* at 14.

[266]UN General Assembly, the plenary Meeting, Doc. A/AC. 187/29 May 5, 1977, 2309 Disarmament Resolution at p. 162.

[267]SIPRI Yearbook, *supra*, note 263.

year later, the governments of the U.S. and the U.S.S.R. issued in a joint statement, that they would consider the environmental matter bilaterally. In September 1974, the Soviet Union proposed a convention to the U.N. General Assembly to prohibit any action to modify the environment "for military and other purposes incompatible with the maintenance of international security, human well-being and health."[268] The proposed convention would prohibit all military activities using any number of methods of deliberately influencing the environment, such as weather modification and the disturbance of the land's surface to cause erosion. These and several other potentially destructive techniques were enumerated on a list and included with the Convention.

In August 1975 a bilateral meeting between the United States and the Soviet Union led to the submission of a similar draft convention, less ambitious than the Soviet proposal of 1974[269], to prohibit or control deliberate modification of the environment for military or any other purposes. Canada also established a scientific group chaired by Fred Roots to study the problem and to identify types of international environmental modification which might be useful for military purposes at the present and in the future. Canada introduced its assessment of 19 possible techniques at the Geneva Conference of the Committee on Disarmament (CCD). The Canadian analysis was examined by the government of the Netherlands. It was felt that a reduced and concise text would be more useful; the Swedish delegation to the CCD summarized the Canadian list of possible techniques in five points. "(a) steering storms; (b) causing avalanches and landslides; (c) modifying permafrost areas (d)

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[268] *Ibid.*

[269] *Ibid.*

diverting and polluting rivers and destroying dams; and (e) making rain or snow."[270] Multilateral negotiations were conducted at the Conference of the Committee on Disarmament and a revised text of the draft Convention was transmitted to the UN General Assembly[271]. The *Enmod Convention* was the result of these agreements. The UN General Assembly adopted the Convention developed by the CCD and presented it for signature on May 18, 1977. It was signed by 34 States on the same day and was entered into force on October 5, 1978. The UN Secretary General was designated the depository for the Convention.[272]

The Convention consists of ten articles and an annex. Articles I, II, III and VIII are amplified in "Understandings", which form part of the "*travaux préparatoires*", worked out at the CCD.[273] These "understandings" are very important for interpreting the provisions of the Convention.

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[270]See A.S. Krass, "The *Environmental Modification Convention* of 1977: The Question of Verification", in A.H.Westing, ed. *Environmental Warfare, A Technical, Legal and Policy Appraisal* (London: Taylor & Francis, 1984) 65-76 at 69.

[271]Fauteux, *supra*, note 69 at 35.

[272]See *supra* note 17 at 24.

[273]See Appendix III for the text of the Convention.

4. Analysis of the Provisions of the Convention

4.1. Destruction, Damage or Injury to the Environment

What measures of legal liability may a State incur in international law by using techniques to change the environment of others in an armed conflict? Articles I[274] and II[275], which are the principal operative provisions, are qualified by the following limitations. According to Article I of the Convention, State Parties undertake "not to engage in military or any hostile use of environmental modification techniques having widespread, long-lasting or severe effects [...]." The prohibition of environmental modification techniques under Article I of the Convention, applies 1) when a State engages in military activities during armed conflict, and 2) when a State uses environmental modification techniques for hostile purposes during peacetime.

The term "hostile" defined in the Convention is open to interpretation. The first part of Article II states that hostile use of such techniques are banned only if they cause "widespread, long-lasting or severe effects" on the environment.[276] The presence of only one of these criteria is deemed to legally constitute a violation of the provisions of the Convention. In addition, the problem of determining what constitutes an important effect on the environment cannot be solved by the simple use

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[274]Article I: "1. Each State Party to this Convention undertakes [sic] not to engage in military or any other hostile use of environmental modification techniques having widespread, long-lasting or sever 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." See *supra*, note 17.

[275]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 dynamic, composition or structure of the Earth, including its biota, lithosphere and hydrosphere and atmosphere, or of outer space." See *supra*, note 17.

[276]Similar terms were used in the 1977 *Geneva Protocol I*. These two documents, as we will see, pursue different purposes.

of labels. One must keep in mind two questions: first, what amount of damage must be done to be considered hostile and therefore illegal, and second, what level of damage is necessary in order to interpret 'long-lasting'? The Convention, itself defines neither "destruction, damage or injury" nor "widespread, long-lasting or severe effects." This clarification was left to the Committee on Disarmament, which established the threshold as follows: a) widespread[277]: encompassing an area on the scale of several hundred square kilometers; b) long lasting: lasting for a period of months, or approximately one season; and c) severe: involving serious or significant disruption or harm to human life, natural and economic resources or other assets. Imprecise definitions such as these may cause many problems and controversies among States as it is difficult to place blame on a State or prove that it has damaged the environment. Defining "widespread" as an area of several hundred square kilometers, may not cover small entities such as the islands of the Caribbean.[278] Thus, because of its threshold provisions, the *Enmod Convention* is limited to large operations.

The two following requirements must be met simultaneously for an operation to be considered hostile: a) the use of the technique must be hostile; and b) it must lead to the destruction, damage or injury of the environment at or above the established threshold. It seems that environmental modification techniques are permitted which facilitate the effectiveness of other weapons, *e.g.* the dissemination of fog to conceal troop movements, if the environmental modification technique itself

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[277]This damage, destruction or injury can result from either a single event or from a series of operations.

[278]As the representatives of Trinidad and Tobago noted. See H. Goldblat, "The *Environmental Modification Convention* of 1977: An Analysis", in A.H. Westing,ed. *Environmental Warfare, A Technical, Legal and Policy Appraisal*, SIPRI (England: Taylor & Francis 1984) .

causes no damage.[279] By taking into account these two requirements, one must keep in mind two questions: why non-hostile use of modification techniques which may damage other States are permissible, and why any hostile modification of the environment whose effects are below the set threshold of widespread, long-lasting or severe should be tolerated. The latter requirement contradicts the primary goal of the Convention which is to prohibit the use of any environmental modification techniques for military purposes. Peacetime threats of secret operations[280] which cause environmental modifications can pose a serious problem since it is often difficult to name the manipulating State or prove that its covert operations are covered by Article II of the Convention.

One exception may be allowed if the use of these techniques could be justified according to the provisions of the *UN Charter* dealing with the "[...] threat or use of force against the territorial integrity or political independence of any State[...]"[281] In

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[279]*Ibid.*

[280]For example, a State can release disease to destroy the crops of another State or secretly dissipate clouds over that State to prevent natural rainfall, thereby turning the enemy State into a desert. See *supra* note 278 at 65-76.

[281]Article 2(4) of the *UN Charter*. *Supra*, note 126. One can not simply rely on self defense to cause damage. The *Charter of the United Nations* is an international convention which upholds as an important principle the restriction of the use of force by its members. The *UN Charter* provides that "[a]ll Members shall refrain in their international relations from the threat or use of force against the territorial integrity or political independence of any State, or in any other manner inconsistent with the purposes of the United Nations"(*UN Charter* Art.2 para.4) See *supra*, note 126. However, at Article 51, the *Charter* states that the remaining provision of the *Charter*, including Article 2 para.4, will not diminish the inherent right of self-defense against armed attack. It reads as follows; "Nothing in the present *Charter* shall impair the inherent right of individual or collective self-defense if an armed attack occurs against a member of the United Nations, until the Security Council has taken the measures necessary to maintain international peace and security. Measures taken by Members in the exercise of this right of self-defense shall be immediately reported to the Security Council and shall not in any way affect the authority and responsibility of the Security Council under the present *Charter* to take at any time such action as it deems necessary in order to maintain or resort international peace and security". See UN Charter *supra*,

such a situation, the use of modification techniques would have to occur within the State's own territory in order to prevent a foreign invasion. A recent example is the environmental destruction and deliberate spilling of oil into the Persian Gulf by Iraq following its invasion of Kuwait. On January 16, 1991, UN coalition air forces attacked Iraqi military targets in Kuwait and Iraq.[282] The Coalition forces considered their military actions permissible collective self-defense, based on the necessity to force Iraq to withdraw from Kuwait. Schachter's opinion is worth noting: "The enormous devastation that did result from the massive aerial attacks suggests that the legal standards of distinction and proportionality did not have much practical

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note 126. See also Q.Wright, "The Cuban Quarantine", [1963 57] AJIL at 546-560.

Similar to international conventions on the subject, customary international law provides that a nation's use of self-defense is limited by the requirements of "necessity" and "proportionality". This means that there must exist an actual taking over of the right of the defender and a failure on the part of the infringing state to cease its offensive actions.

There are some similarities in this respect between the norms set forth in the *UN Charter* and those contained in customary law. A great majority of international lawyers holds that Article 2, paragraph 4 on the threat or use of force, with other provisions of the *UN Charter*, is a declaratory statement of customary law. This problem was dealt with by the ICJ in the *Nicaragua* case (1986 ICJ 70 para.1). The Court stated that the principle of the non-use of force expressed in Article 2 paragraph 4 is both a principle of customary international law and a fundamental principle of the *Charter*. (See J.Mrazek, "prohibition of the Use and Threat of Force; Self-Defense and Self-Help in International Law", [Annual 1989 V.27] Can.Y.B.Int'l.L. 81 at pp.81-111.)

Measures taken in self-defense should not go beyond the scope of the aggression, *i.e.* there must be some "proportionality" in the victim's purpose. (O.Schachter, "In Defense of International Rules on The Use of Force"; [1986 Vol.53] U. CHI. L. REV. 113 note 94 at 132.) One could also construe the principle of self-defense as only being available to a nation until the Council has taken appropriate measures to maintain international peace and security. (Note that according to Article 51 of the *UN Charter*, self-defense measures have to be reported immediately to the Council, which reserves its rights to take any action to preserve international peace and security.)

[282]Andrew Rosenthal, US and Allies Open Air War on Iraq; Bomb Baghdad and Kuwaiti Targets; "No Choice" But Force, Bush Declares, N.Y. Times, Jan. 17, 1991, at A 1.

effect."[283] Iraq might have argued that spilling oil into the Gulf and burning the oil fields were legitimate military tactics and therefore acceptable as a military necessity: "To attach military purpose to the oil spill appears to be less than of 'imperative' necessity and would therefore fail to fulfill the requirements for permissible environmental destruction set out in Protocol I."[284]

Many legal problems caused by environmental modification arise when a high threshold has been established. The definition "widespread, long-lasting or severe" damage permits small-scale or gradual changes to the environment, changes which may be used to augment the effects of other weapons. In addition, unless a high threshold is very clearly defined, States party to the Convention may not react to borderline modification activities.

4.2. Environmental Modification Techniques

4.2.1. Prohibition of Environmental Modification Techniques

Substantial progress has been made within environmental science. Although this science has been developed for peaceful purposes, man's ability to manipulate the environment in tactical military operations has clearly been used for warfare. These operations can be used as either tactical or strategic weapons. An example is geophysical warfare, in which environmental instabilities are caused to store energy in some parts of the earth. Developments in this field can lead to weapons systems that would use the environment in unexpected ways; such weapons would violate existing laws against environmental modification.

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[283]O.Schachter, "United Nations Law in the Gulf Conflict" (July 1991) vol. 85, no.3, AJIL, 452 at 466.

[284]Joyner *supra*, note 2 at 55.

According to the Convention, environmental modification techniques include any technique for changing, through deliberate manipulation of natural processes, the dynamics, composition or structure of the Earth, including its biota, lithosphere, hydrosphere and atmosphere, as well as outer space.[285] The "Understanding" related to the article provides illustrative examples which include: earthquakes[286]; tsunamis[287]; disturbance of the ecological balance; changes in weather[288], climate patterns[289], and ocean current; changes in the state of the ozone layer; and changes in the state of the ionosphere. The "Understanding" recognizes that the list is not exhaustive and that other phenomena could be included if the criteria defining hostility and destruction and damage or injury to the environment are met. As all the phenomena listed are likely to result in widespread, long-lasting or severe destruction, damage or injury, they are appropriately prohibited, but only if caused by hostile use of environmental modification techniques. The threshold mentioned in Article II is contrary to the USSR proposal of 1974, which prohibited the use of any means of influencing the environment "for military and other purposes incompatible with the maintenance of

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[285]Article II of the *Enmod Convention*. *Supra*, note 17.

[286]There are different ways in which earthquakes are caused including causing a strong explosion to shake the ground or bombing in water. See *supra*, note 263 at p. 80

[287]Tsunamis, extremely violent tidal waves, are a result of severe underwater disturbances, such as earthquakes or nuclear explosions. See *supra*, note 263 at p. 80

[288] It is obvious that man can change regional weather patterns through a number of his activities. Deliberate or accidental modification of weather, *e.g.* rain and snow modification, fog modification, hail modification, lightning, or modification of severe storms, is caused by changing the character of the earth's surface. It is possible to use those changes as direct weapons: snowfall can hinder the movements of trucks and supplies and cause great difficulties in communication in combat areas; a controlled hurricane can be used against a country which has a large coastline. See *supra* note 263 at 72-84.

[289]Although it is not possible to modify the climate in a large area, it can be used to destroy the enemy's agricultural pattern. Climate modification can be effected by changing the radiative and thermal capacity of the atmosphere. See *supra*, note 263 at 72-84.

international security, human well-being and health."[290]

Other phenomena enumerated by the U.S., include volcanic eruptions, sea-level changes, tectonic plate movements, lightning, hail, and changes in the energy balance of the planet. The U.S. representative to the CCD also stated that if the use of herbicides[291] as an instrument for changing the ecological balance causes widespread, long-lasting or severe effects, this use too should be prohibited.

4.2.2. Peaceful Application of Environmental Modification Techniques

A number of environmental modification techniques have peaceful applications. Modern society is dependent on man's ability to carry out essential changes to the natural environment. Indeed, man needs to ameliorate his living conditions by, for example, clearing forested land and converting rural landscapes into the compact urban places necessary for many industrial processes.

Artificial environmental effects were initially developed for peaceful purposes. Generating fog can limit frost damage to crops; rain-making can relieve droughts; initiating weak earthquakes may reduce the threat of more destructive ones. The *Enmod Convention* respects these techniques and includes a provision stating that the use of environmental modification techniques for peaceful purposes shall not be hindered by the provisions of the Convention. Such use will, however, be subject without prejudice to the "generally recognized principles and applicable rules of

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[290]See *supra*, note 266.

[291]A huge herbicidal programme at a profligate level was used by the US during the second Indochina conflict. It is obvious that the spraying of mangroves by the U.S. had a drastic impact on the semi-aquatic, tropical estuarine ecosystem and its ramifications were long-term and widespread. See Westing, *supra*, note 59 at pp.23-40.

international law" concerning such use.[292] The "understanding related to Article III" points out that the *Convention* does not deal with the question of whether or not the peaceful use of environmental modification techniques is in accordance with the "generally recognized principles and applicable rules of international law."

5. Critical Aspects of the *Enmod Convention*

5.1. The Review Conferences

5.1.1. First Review Conference

On Dec. 13, 1982, the General Assembly[293] noted that the Secretary General, as depository of the Convention and according to Article VIII, intended to convene the Review Conference at the earliest practicable time after Oct. 5, 1983, when the instrument would have been in force for five years. The Preparatory Committee met at Geneva from April 30 to May 2, 1983 and set the conference's date and venue, and recommended a provisional agenda for it. The Review Conference held at Geneva from Sept. 10 to 20, 1984 was attended by 35 of the 45 State parties at that time. The Review Conference in its Final Declaration[294] stated that the Convention's entry into force since 1978 had demonstrated its effectiveness.[295] The Conference was convinced that the provisions of paragraph 1 of Article I would remain effective in preventing the dangers of military or any other hostile use of environmental modification techniques. It was of the opinion that the definition of the term "environmental modification techniques" in Article II, taken together with the understandings relating to Articles I and II, is adequate to fulfil the purposes of the Convention. It noted with

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[292]See *supra*, note 263. Article III paragraph I of the *Enmod Convention*. *Supra*, note 17.

[293]UNGA: 37/ 99 I, reprinted in the United Nations Yearbook , Vol. 36, 1982 at 121.

[294]A/ C.1/39/5. UNGA Resolution 39/ 151 A.

[295]*Ibid.*

satisfaction that no State party to the Convention had found it necessary to invoke the provisions of Article V dealing with international complaints and verification procedures. It decided that a Second Review Conference might be held at Geneva at the request of a majority of State parties not earlier than 1989. If no such meeting were held before 1994, the Depository would be requested to solicit the views of all States Party on its convening.[296] The UN General Assembly, in its decision of December 17, 1984, following the recommendation of the First Committee, and noting the positive assessment by the Review Conference of the Parties to the *Enmod Convention* of the effectiveness of the Convention, called upon all States to prohibit military or any hostile use of environmental modification techniques and reiterated its hope for the widest possible adherence to the *Enmod Convention*.[297]

5.1.2. Second Review Conference [298]

On Dec. 6, 1991, the General Assembly, on the recommendation of the First Committee,[299] requested the Secretary General to hold consultations with the parties to the *Enmod Convention* with regard to questions relating to the Second Review Conference and its preparation. The States Party to the Convention held a Second Review Conference from Sept. 14 to 21, 1992 in Geneva with a view mostly to examine the effectiveness of the provisions of paragraph 1 of Article I in eliminating the dangers of military or any other hostile use of environmental modification techniques. On Sept. 18, 1992, the Conference adopted by consensus its Final

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[296]Article VIII of the Final Declaration of the First Review Conference. See also Yearbook of the United Nations, Vol. 38, 1984, at 73-74.

[297]UNGA Resolution 39/ 151 A.

[298]The Second Review Conference reprinted in Adede, *supra*, note 133.

[299]UNGA Res. 46/ 36 A: See Yearbook of the United Nations 1991, Vol. 45 at 33.

Document which contained a Final Declaration. The conference after studying Article I of the Convention reached the conclusion that:

> "[...] the obligations assumed under Article I have been faithfully observed by the States Parties. The Conference is convinced that the continued observance of this Article is essential to the objective, which all States Parties share, of preventing military or any other hostile use of environmental modification techniques.
> Having re-examined the provisions of paragraph 1 of Article I, taking into account the relevant Understandings, the Conference reaffirms that they have been effective in preventing military or any other hostile use of any environmental modification technique between States Parties and, having regard to the different views expressed in the course of the debate on this Article on the question of scope, affirms the need to keep its provisions under continuing review and examination in order to ensure their global effectiveness.
>
> The Conference believes that all research and development on environmental modification techniques as well as their use should be dedicated solely to peaceful ends."[300]

5.2. Proposed Amendments to the Convention

The amendment of a treaty depends on the consent of the parties. Most treaties, in their rules and constitutions, provide the process of amendment.[301] A treaty may be amended by agreement between parties.[302] According to the *Enmod Convention*, a

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[300]*Enmod*/ Conf./ II/ 12.

[301]For example *UN Charter*, Articles 108 and 109. *Supra*, note 126.

[302]Article 39 of the *Vienna Convention*. The *Vienna Convention* partly codifies the relevant rules of customary international law and constitutes the important rules for any discussion of the characteristics of treaties (*Vienna Convention on the Law of Treaties*, 63 AJIL (1969), 875; 8 ILM (1969), 679). Vienna Convention on the Law of Treaties, Concluded at Vienna on May 23, 1969. Entry into force: January 27, 1980, in accordance with Article 84 (1).
Registration: 27 January 1980, No. 18232.
Text: United Nations, Treaty Series, vol. 1155, p. 331. Status: Signatories: 47. Parties: 79.
Note: The Convention was adopted on May 22, 1969 and opened for signature on May 23, 1969 by the United Nations Conference on the Law of Treaties. The Conference was convened pursuant to General Assembly resolutions 2166 (XXI)1 of December 5, 1966 and 2287 (XXII)2 of

proposal for its amendment may be submitted to the United Nations by any State party and the amended agreement is binding on all State parties who have accepted it.[303] Under Article 40(5) of the *Vienna Convention on the Law of Treaties*, a State, which becomes a party to the treaty after its amendment, will be considered a party to the amended treaty unless a different intention is expressed.

Reviewing the *Enmod Convention* reveals that it is necessary to re-evaluate and verify the Convention with respect to the damage threshold and other specific provisions. Verification issues with respect to arms control have been prominent in public opinion,[304] and the review of the *Enmod Convention* should attract great attention, since more sophisticated techniques of controlling the environment for effective military purposes are developing.

December 6, 1967. The Conference held two sessions, both at the Neue Hofburg in Vienna, the first session from 26 March to 24 May 1968 and the second from 9 April to 22 May 1969. In addition to the Convention, the Conference adopted the Final Act and certain declarations and resolutions, which are annexed to that Act. By unanimous decision of the Conference, the original of the Final Act was deposited in the archives of the Federal Ministry for Foreign Affairs of Austria. The text of the Final Act is included in document A/CONF39/11/Add.2.
Parties: Algeria, Argentina, Australia, Austria, Barbados, Belarus, Belgium, Bosnia and Herzegovina, Bulgaria, Cameroon, Canada, Central African Republic, Chile, Colombia, Congo, Croatia, Cyprus, Czech Republic, Denmark, Egypt, Estonia, Finland, Georgia, Germany, Greece, Haiti, Holy See , Honduras, Hungary, Italy, Jamaica, Japan, Kazakstan, Kuwait, Latvia, Lesotho, Liberia, Liechtenstein, Lithuania, Malawi, Malaysia, Mauritius, Mexico, Mongolia, Morocco, Nauru, Netherlands, New Zealand, Niger, Nigeria, Oman, Panama, Paraguay, Philippines, Poland, Republic of Korea, Republic of Moldova, Russian Federation, Rwanda, Senegal, Slovakia, Slovenia, Solomon Islands, Spain, Sudan, Suriname, Sweden, Switzerland, Syrian Arab Republic, Tajikistan, Togo, Tunisia, Turkmenistan, Ukraine, United Kingdom, United Republic of Tanzania, Uruguay, Uzbekistan, Yugoslavia, Zaire.
Signatories: Afghanistan, Bolivia, Brazil, Cambodia, China, Costa Rica, Côte d'Ivoire, Ecuador, El Salvador, Ethiopia, Ghana, Guatemala, Guyana, Iran (Islamic Republic of), Kenya, Luxembourg, Madagascar, Nepal, Pakistan, Peru, Trinidad and Tobago, United States of America, Zambia. Source: UN Treaty Data Base, general table of contents, available: [http://www.un.org/Depts/Treaty/bible/ Front_ E/tocGEN.html].

[303]Article VI of the *Enmod Convention*. *Supra*, note 17.

[304]See Krass, *supra* note 270 at p.66.

5.2.1. Dispute Settlement[305]

5.2.1.1. Consultation

It is not always possible for an affected country to determine whether damage to its environment is the result of deliberate human intervention or the result of a natural act. Since the only difference between hostile and non-hostile modification of the environment is "intent" it is difficult for a State to determine whether the damage caused by another State was through hostile or non-hostile intent, and whether the damage has caused widespread, long-lasting or severe effects. The States party to the *Enmod Convention* have undertaken to consult one another and to cooperate in solving these and other problems relating to the objectives and application of the Convention.[306] Consultation and co-operation through international procedures within the framework of the UN and in accordance with its Charter have also been suggested.[307] The obligations under the *UN Charter* are limited to any dispute of which "the continuance ... is likely to endanger the maintenance of international peace and security."[308]The *UN Charter* states that the parties shall, first of all, seek a solution by negotiation, enquiry, mediation, conciliation or any other means of their choice.[309] Dispute settlement by negotiations or through third-party mediation are not the only ways of resolving international conflicts but they can facilitate the process

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[305]There were different opinions within the ICJ and PCIJ on the concept of "legal dispute" in several cases such as the *South West Africa* cases (ICJ Reports (1950) 128) and the *Nuclear Test* case. (ICJ Rep. 1974, pp 253, 457). PCIJ mentioned the definition of a dispute in the *Mavrommatis* case (1924 PCIJ, ser.A, no. 2, p11) as "a disagreement on a point of law or fact, a conflict of legal views or of interest between two persons". See Brownlie ,I. *Principles of Public International Law*, 4th. ed. (Oxford: Clarendon Press 1990) at 479.

[306]Article V paragraph 1 of the *Enmod Convention*. *Supra*, note 17.

[307]*Ibid*.

[308]Article 33(1) of The *UN Charter*. *Supra*, note 126.

[309]*Ibid*.

of finding a solution to the dispute.[310]The Convention states that these consultations can also be carried out by appropriate international procedures as well as by a Consultation Committee of Experts. The former may include the services of appropriate international organizations[311] such as the United Nations Environmental Programme.

The Convention provides for a consultative mechanism to assist in solving any problems with respect to the application of the Convention's provisions. It states that any party to the Convention that believes another party has breached its obligations under the Convention can request the depository to convene a Consultative Committee of the Experts[312]. All parties have the right to appoint an expert to this committee.

The presence of any one of the criteria of "widespread, long-lasting or severe effects" could be considered a violation of the *Enmod Convention*. Neither the Convention nor the "Understanding" related to Article I gives a clear definition of them. The term "severe" has been defined as "involving serious or significant disruption or harm to human life, nature and economic resources or other assets." The Convention does not give a specific threshold in this definition and the expression "serious or significant disruption" cannot forestall any the problems that may arise

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[310]L.B.Sohn, "The Future of Dispute Settlement" in R.St.J.Macdonald & D.Johnston, eds., *The Structure and Process of International law Essays in Legal Philosophy, Doctrine and Theory* (Hague: Martinus Nijhoff; Hingham, 1983) at 1121-46.

[311]International organizations, as an important subject of international law and a major component in the conduct of international relations, have an important role in finding a solution satisfactory to the disputants.

[312]The representative of the Netherlands at the CCD proposed that the consultative body be a standing organ not a committee constituted *ad hoc*. The experts should have the right to make an inquiry into relevant facts, as well as to consider proposals to ameliorate the maintenance of the Convention. See *supra*, note 278 at 60

between State parties. Thus it is the responsibility of the Consultative Committee of Experts to establish a possible relationship between the damage done and the degree of its disruption to human life and the environment. The decision on this criterion will be made in the UN Security Council. The functions and rules of procedure of the committee are set out in the annex to the Convention. This committee is intended to provide service as an independent fact-finding group in the hope that its findings will clarify the situation and help to resolve contentious issues. Its report is not binding or determinative[313] but, as the committee has to transmit to the depository a summary of its findings of fact (Article V Paragraph 2 of the *Enmod Convention*), the process of inquiry is an opportunity to verify the particulars of each case before it becomes a serious political problem. Furthermore, it is a flexible addition to the battery of means used to resolve international disputes and it may encourage parties to make use of it. The Consultative Committee of Experts has the responsibility to monitor the process of gathering information and analyzing the provisions of the Convention. However, the Convention does not state how the inspection can be carried out since the instruments, such as satellites and radars, are under the control of sovereign States and the Consultative Committee does not have easy access to such devices. The problem has been well stated by Dore (1982, page 25):

> "Because only the two major powers possess the technology for meaningful verification, and since only these two powers claim to perceive the sort of worldwide interests which might lead to the emplacement of weapons of mass destruction on the seabed, the process of consultation envisaged by Article III [of the 1971 Seabed Treaty] is reduced to consultation between a less-developed party and one superpower in opposition to the other superpower."[314]

The role of the Committee, which is set out in the Annex to the Convention,

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[313]See *supra* note 278.

[314]I.I. Dore, "International law and Preservation of the Ocean Space and Outer Space as Zones of Peace: Progress and Problems" 1982, Cornell International Law Journal, Ithaca, N.Y., 15 quoted in J. Goldblat, *supra*, note 278 at 71.

is restricted to fact-finding and to providing information concerning problems raised by the parties. Protection provided by such monitoring may be carried out by remote sensing agents which are not easily available to the experts of the committee. One solution is to modify the Convention and give this function to an international scientific group capable of analyzing possible violations.

Investigation of events is an important part of a peaceful settlement. To this end, "the Commission of inquiry" was created by the *Hague Conventions* for the Pacific Settlement of International Dispute. This approach has also been used by other organizations[315] such as the ICAO[316] Council which ordered investigations into the airline disasters, flights KAL OO7[317] and IR655 incidents.[318]

5.2.1.2. Complaints with the Security Council

Since the above mentioned means of dispute settlement has no binding force on either party, the *Enmod Convention* recommends another way of resolving international disputes peacefully. It states that the Parties may[319] lodge a complaint

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[315]J.G. Castel et al., *International Law Chifely as Interpreted and Applied in Canada*, 4th ed. (Canada: Emond Montgomery Publications, 1987) at 262.

[316]Under Article 55(e) of the *Chicago Convention*, 1944, "the Council may investigate, at the request of any contracting State, any situation which may appear to present avoidable obstacles to the development of international air navigation, and after such investigation issue such reports as may appear to it desirable." In discharging this permissive function, the Council may take into account not only juridical factors in the situation, but may also consider and base its report on economic, technical, and other factors which are deemed equitable and convenient. See *Chicago Convention on International Civil Aviation* (1944) 15 UNTS 295.

[317]DOC; 9680-C/1014 Extraordinary Session of the ICAO Council, Aug.20, 1973 and 80th Session Oct. 1 & Dec.13, 1973, Montreal.

[318]DOC; C-Min 14.7.88 Extraordinary Session of the ICAO Council.

[319]Some treaties provide for judicial settlement by international courts and tribunals. They result in binding decisions. Under general international law there is no obligation for States to submit to

with the Security Council of the United Nations and claim that another State party to the Convention is acting in breach of obligations derived from the provisions of the *Convention*.[320]

The *UN Charter* provides a non-exclusive list of peaceful processes, including inquiry, arbitration and judicial settlement[321]. The powers of the Security Council to investigate any dispute or any situation which may give rise to international friction[322] and to recommend any appropriate procedures or methods of adjustment for the settlement of dispute between States[323] may be added to this list. The role of the UN Security Council under Chapter VI of the Charter is to assist parties in the resolution of their conflict. Where the parties to a dispute cannot resolve their conflict by the various methods under Article 33, they should refer it to the Security Council by Article 37. According to Article 37, the Council, where it is convinced that the continuance of the dispute is likely to endanger international peace and security, may decide whether to take action under Article 36 or to recommend such terms of settlement as it may consider appropriate.

The UN Security Council would act in accordance with the provisions of the *UN Charter* on the basis of the complaint received from the State.[324] According to the *UN Charter*, "The Security Council shall determine the existence of any threat to the

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judicial settlement.

[320]Article V paragraph 3 of the *Enmod Convention*. *Supra*, note 17.

[321]Article 33 of the *UN Charter*. *Supra*, note 126.

[322]*Ibid*, Article 34 of the *UN Charter*.

[323]*Ibid*, Article 36 of the *UN Charter*.

[324]Article V paragraph 4 of the *Enmod Convention*. *Supra*, note 17.

peace, breach of the peace, or act of aggression and shall make recommendations or decide what measures shall be taken in accordance with Article 41 and 42 to maintain or restore international security."[325]

The dispute settlement provision in the Convention is weak since it has been left to the UN Security Council whose decisions are subject to veto. One suggestion may be to limit the veto power of permanent members of the Security Council to matters of less importance to mankind. The Security Council is a political organ and States must go through a political process to lodge a complaint with it. When the Security Council is unwilling, because of political pressure, to characterize a problem as one that constitutes a threat to peace and security, lodging such a complaint with the Security Council can be difficult for some countries.

5.2.2. Environmental Modification Techniques

Environmental modification techniques, although not yet clearly identified, should be unanimously banned. The *Enmod Convention* makes clear neither what exactly has been prohibited by the Convention nor which techniques cause damage, destruction or injury to the environment. It refers to "techniques" as "any technique" and leaves its definition to other treaties or scientific recognition. It is clear from the provisions of the Convention that it does not prohibit, at least, the use of most of the environmental modification techniques which were used by the US during the Vietnam War.[326]

The Convention limits the hostile use of techniques which manipulate the

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[325]Article 39 of the *UN Charter*. *supra*, note 126.

[326]See *supra*, note 252 at 38.

natural processes of the earth. However, it does not contain any prohibition on the development, or possession, or testing of such techniques in the future, a prohibition which would be important for attempts to protect the environment. This is a serious omission: under the treaty, the preparation for hostile use of techniques harmful to the environment should be banned indefinitely or permitted for peaceful purposes only. The Convention, furthermore, does not explicitly prohibit the development and possession of other techniques which do not yet exist but may be developed in the future.

5.2.3. Unacceptable Damage to the Environment in Wartime

'Unacceptable damage' to the environment in wartime must be clearly defined.[327] The more general and vague the legal regulations, the more dependent they are on subjective modes of interpretation. Defining the threshold as "widespread, long-lasting or severe" damage to the environment permits gradual or limited-scale influencing of the environment which can also cause significant problems[328]. Problems of definition should be resolved by banning all military or hostile uses of such techniques or by changing the threshold level as mentioned in the understanding

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[327]Kalshoven observes that "as warfare cannot fail to damage the natural environment, it thus becomes important to know when damage must be deemed to be 'wide-spread, long-term, and severe'." See Kalshoven, "Reaffirmation and Development of International Humanitarian Law Applicable in Armed Conflicts: The Diplomatic Conference, Geneva, 1974-1977", 9 NYIL 1978, 130.

[328]Bothe states: "As to the specific provisions protecting the environment, they prohibit causing 'long-term', 'severe' and 'widespread' damage. Looking at the suggested definitions of these terms in the 'travaux préparatoires', and at the similar provision in *Enmod*, what do they envisage? The Vietnamese jungle, because that was the example that was in everyone's minds at the time. Now we are talking about oil-spills. Do the indications and numbers of square kilometers which figure in the understanding relating to the *Enmod Convention* apply to oil-spills in the desert as they apply to them in the Vietnamese jungle? Their application would not make any sense. As all of us know, an oil-spill in the Gulf is not the same, for example, as an oil-spill in Antarctic waters. The environmental impact of an oil-spill of the same size is different from one location to another." See M. Bothe, Round Table Sessions, at Plant, *supra, note 16* at 81.

attached to Article II of the *Enmod Convention*. In addition the Convention should apply to any hostile use of the environment, even at low levels of damage which affect areas of only a few square feet.[329] The former U.S.S.R., as one of the two sponsors of the Convention, proposed that it should cover deliberate changes, *inter alia*, "that would result in any distinct upset in the ecological balance".[330] The removal of the set threshold would strengthen the Convention and increase public support.[331]

Some environmental modification techniques are used in such a way that the injured State is unaware of deliberate changes in its environment. Arrangements should be made to allow the Consultative Committee to monitor the earth's environment and to offer the world community an opportunity to condemn activities which are unnecessarily harmful or destructive. An appropriate international authority should be empowered to prohibit the continuing of activities calculated to modify the natural environment of another States.

There is no explanation in the Convention as to why it should not protect all areas from hostile environmental modification activities. To replace "areas" with "states" gives rise to the question of the rights of small nations with respect to "widespread" criteria, and how one can restrain environmental destruction of the living spaces of minorities within a country such as the Kurds in Iraq.

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[329]There are other possible ways to verify the set threshold in Article II of the Convention. For instance, it is possible to add an accurate and explicit list of prohibited environmental modification techniques or leave them totally unspecified. In the former proposal, problems will arise when the environment is destroyed by techniques which are not on the list. The latter will cause difficulties since it leaves the judgement of the identification and verification of the provisions of the Convention to the Consultative committee; this is beyond the Committee's mandate.

[330]See Roots *supra*, note 53 at p.18.

[331]See Goldblat, *supra*, note 278 at p.63.

6. Conclusion

The laws of environmental protection, especially in wartime, constitute a new body of law that has recently emerged. The *Enmod Convention* was drafted in the 1970s, but the world of the 1990s is different. As today's means and aims of war are different and technology is growing rapidly, the use of the environment as a weapon can be dangerous to all mankind unless significant steps are taken to solve this problem.

The *Enmod Convention* neither defines "unacceptable damage" to the environment nor does it specify which techniques may cause damage to the environment. It does not make clear what exactly has been prohibited by the Convention. Furthermore, it does not prohibit the development, possession, or testing of such techniques in the future. Argentina in the First Review Conference stated that the Convention would be fully operational only if its scope were expanded. It regretted that the Review Conference did not revise Article I of the *Enmod Convention*. Mexico, which voted against the 1976 Assembly resolution - referring the *Enmod Convention* to States for their consideration, signature, and ratification - stated that it found Article I of the Convention unacceptable because it was "tantamount to legitimizing the use of environmental modification techniques so long as they had no widespread, long-lasting or severe effects."[332] Other comments from countries (*e.g.* Argentina, Mexico, former Yugoslavia, Pakistan, Romania and Egypt) indicated at the CCD and before UNGA their willingness to accept a comprehensive

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[332]See Yearbook of the United Nations 1984 Vol.38 at 74. Fauteux in his commentary to *Enmod Convention* states that "many commentators are of the opinion that the *Convention* serves no purpose and that the super-Powers offered it as a sop to the rest of the planet to give the illusion that they were dealing seriously with arms control when they were in fact doing nothing of the kind. That is a feeling that we are not far from sharing ...". See P. Fauteux, "The Gulf War, The *Enmod Convention* and the Review Conference", in UNIDIR Newsletter, no. 18, July 1992, pp.6-12.

prohibition of all environmental modification techniques. It can be concluded that the *Enmod Convention* requires major amendments in order to be useful in the protection of the environment and in order to prohibit the development, production, and possession of technology with applications harmful to the environment. It is clearly an inadequate arms control treaty.

The interpretation of treaties is one of the problems that courts commonly face. To do so they take into account the words used[333], the intentions of the parties adopting the agreement and the objects and aims of its provisions. The *raison d'être* of the *Enmod Convention* differs from that of the 1977 *Geneva Protocol I*. These two documents have different purposes and reveal different realities. First, the *Enmod Convention* forbids the use of the environment as a weapon or means to manipulate natural processes of the environment during hostilities and even in the absence of any overt conflict while the *Geneva Protocol I*, though applying to armed conflict, aims to protect the natural environment against damage which could be caused by any means whatsoever.[334] Second, the *Enmod Convention* prohibits destruction, damage or injury to other States who are party to the Convention[335], but the *Geneva Protocol I* prohibits any methods or means of warfare that damage the natural environment. Third, according to the *Enmod Convention*, environmental modification meeting only one of three criteria -- *i.e.* if causing widespread, long-lasting or severe effects -- as the means of destruction, damage or injury is enough to be deemed outlawed. On the other hand, the 1977 *Geneva Protocol I*, which refers to the destruction of the natural

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[333]See Article 31 (1) of the *Vienna Convention*. *Supra*, note 302.

[334]The U.S. representative to CCD objected to the question raised with regard to the possible duplication of these two instruments. See Commentary to the Additional Protocols, *supra*, note 173 at 415.

[335]See Article I of the *Enmod Convention*. *Supra*, note 17.

environment by methods or means of warfare, implies that the presence of all three of the criteria (widespread, long-term, and severe) is necessary to consider this prohibition applicable. Fourth, the terms "widespread, long-term and severe" do not have the same meaning in these instruments. For the *Enmod Convention*, the term "long-lasting" was defined as lasting for a period of months or of approximately a season,[336] while the definition of "long-lasting" in the the 1977 *Geneva Protocol I* is not clear; the Biotope group interpreted it to be ten years or more.[337]

The primary concern of the *Enmod Convention*, as its title indicates, is for the use of technologically sophisticated techniques to effect climatic and geophysical modification. This Convention, as discussed in this Chapter, is not intended to regulate other weapons which may affect the environment. So long as destructive weapons exist, the environment will not be fully protected. The mere existence of massive stockpiles of weapons can provoke military commanders to use them. The most important norms of armed control contributing to the protection of the environment will be discussed in Chapter IV.

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[336]See the understanding related to Article I of the *Enmod Convention*. *Supra*, note 17. The drafters of the *Enmod Convention* and the 1977 *Geneva Protocol I* did not intend to extend automatically the definition of the terms "widespread, long-lasting or severe" so as to apply to both. For example the Mexican representative stated that "his delegation's support for paragraph 3 of Article 33 [35] could in no way be construed as a change in its Government's attitude to the convention entitled 'Convention on the prohibition of military or any other hostile use of environmental modification techniques' in which the words 'widespread, long-lasting or severe effect' appeared. Those words had not the same scope as they had in the context of the Protocol". The Argentina representative stated: "The Argentine delegation interprets the provision which has now been approved as in no way connected with the work of the Conference of the Committee on Disarmament, which culminated in the convention on the prohibition of military or any other hostile use of environmental modification techniques in respect of which the Argentine government has made its position clear at the appropriate time." See Commentary to Protocols, *supra*, note 173 at 419. The Italian representative said that the interpretation of those adjectives should in no circumstances be based on other legal instruments dealing with questions relating to the environmental protection. See CDDH/ SR. 42 Para. 21.

[337]See XV Official Records, *supra*, note 206 at 269.

Chapter IV. Prohibition of Conventional Weapons and Weapons of Mass Destruction

Le genre humain est maintenant confronté à une crise de survie à cause du développement des armes nucléaires et autres armes de destruction de masse. L'emploi de ces armes peut poser un risque sérieux pour l'environnement. L'utilisation d'agents chimiques et la guerre biologique peuvent, par exemple, endommager la végétation dont se servent les forces ennemies pour se cacher ou pour contrecarrer le mouvement de l'eau. Le niveau des dommages à l'environnement global dans une guerre nucléaire peut être même plus sévère à cause de la présence de matériel radioactif dispersé dans l'environnement. L'analyse légale concernant les armes nucléaires montre que les accords nucléaires ont besoin d'être renforcés relativement au dommage résultant de l'utilisation des armes nucléaires en temps de guerre. Le chapitre IV de la premier partie s'intéressera à la prohibition d'utilisation des armes conventionnelles et des armes de destruction de masse. La *Convention sur l'interdiction ou la limitation de l'emploi de certaines armes classiques qui peuvent être considérées comme produisant des effets traumatiques excessifs ou comme frappant sans discrimination* sera abordée dans ce chapitre. Cette convention porte sur les armes conventionnelles et sur la prohibition de leur utilisation en tant qu'armes incendiaires contre les forêts ou autres sortes de plantes.
Les conventions internationales concernant les effets des armes de destruction de masse sur l'environnement seront également étudiées dans ce chapitre. Nous analyserons les dispositions importantes de ces conventions relatives à notre sujet. Nous verrons que la *Convention 1993 sur l'interdiction de la mise au point, de la fabrication, du stockage et de l'emploi des armes chimiques et sur leur destruction* fournit une protection importante contre les effets des armes chimiques sur l'environnement.

1. Introduction

The *Enmod Convention*, as discussed in chapter III, limits its scope to the prohibition of the use of environmental modification techniques as weapons of war. It does not intend to regulate other methods or means of warfare even though they

might adversely affect the environment. A major treaty whose intention is to mitigate the adverse impact of military activities on the environment in time of war is the 1981 *Inhumane Weapons Convention*. This Convention is discussed in this chapter. The use of nuclear weapons, chemical weapons and biological method of warfare pose risk not only to humans and animals, but to plants. This chapter will also consider international norms regarding the effects of weapons of mass destruction on the environment.

What differentiates conventional weapons from weapons of mass destruction is the large scale effects and relative lethal nature of the latter. A single weapon of mass destruction can cause damage and injuries on a scale equivalent to that caused by thousands of conventional weapons. A given number of nuclear weapons can be a million times more powerful than the same amount of conventional weapons.[338]

2. 1980 *Inhumane Weapons Convention*

2.1. Introduction

The 1972 Conference of Government Experts, which met in Geneva to prepare for the two 1977 *Geneva Protocols*, there was a strong tendency to include in what would become the *Geneva Protocol I*[339] some provisions prohibiting or restricting certain conventional weapons considered to cause unnecessary suffering or to have indiscriminate effects. The ICRC explained its unwillingness to include this kind of prohibition within the 1977 *Geneva Protocol I* and instead recommended providing for it in a separate instrument.[340] The Diplomatic Conference on the Reaffirmation and

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[338]Forsberg *supra* note 166 at 68

[339]See *supra*, note 23.

[340]See Bothe, *supra*, note 111 at 197-98.

Development of International Humanitarian Law Applicable in Armed Conflict, convened by the Swiss government, held four sessions in Geneva from 1974 to 1977.[341] This work led to the establishment of a separate conference with the purpose of reaching agreements on prohibitions or restrictions on the use of specific conventional weapons. On Sept. 10, 1979, the UN Conference on Prohibition or Restrictions of Use of Certain Conventional Weapons Which May be Deemed to be Excessively Injurious or to Have Indiscriminate Effects was convened in Geneva. It was the first major international Conference to prohibit or restrict the use of certain conventional weapons since the Hague Peace Conferences at the turn of the century. Its work was based on the principle, introduced in the St-Petersburg Declaration[342] of 1868, that the only legitimate object during war is to direct weapons at the military forces of the enemy and not at civilian populations.[343] It was agreed to hold a second session in September 1980. On Oct. 10, 1980, the UN Conference adopted the *Convention on Prohibitions or Restrictions of the Use of Certain Conventional Weapons Which may be Deemed to be Exclusively Injurious or to Have Indiscriminate Effects*.[344]

The Convention is derived from two fundamental customary principles of the law of war, namely that "the right of belligerents to adopt means of warfare is not

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[341]See Roberts, *supra*, note 36 at 467.

[342]The 1868 St. Petersburg Declaration, which was signed by 17 States including Russia, Germany, Switzerland, France, Great Britain, and Persia (now Iran) has been regarded as the first major international agreement to prohibit the use of a particular weapon in warfare. See Roberts, *supra*, note 36 at 31.

[343]Nicholas Sims, "The Prohibition of Inhumane and Indiscrimination Weapons", in SIPRI Yearbook of World Armament and Disarmament (London: Taylor & Francis, 1979) at 453.

[344]The *Inhumane Weapons Convention* was open for signature by States for a period of twelve months from April 10, 1981. (See Article 3). *Supra*, note 24; Roberts, *supra*, note 36 at 467.

unlimited" and that "the use of weapons, projectiles or material calculated to cause unnecessary suffering is prohibited."[345] The Convention repeats in its preamble Article 35(3) of the 1977 *Geneva Protocol I* which prohibits States from damaging the natural environment. The *Inhumane Weapons Convention* is a step forward in the progress of humanitarian law of war, especially in its focus on the methods and means of warfare rather than the protection of certain persons, places or objects. It links humanitarian law and the law of restriction on the use of certain conventional weapons.[346] The use of mines, booby traps and similar devices against the civilian population is prohibited in all circumstances. This Convention applies only to international armed conflict.[347]

The Convention has the format of an umbrella treaty, under which specific agreements can be included in the form of protocols. A proposal for an umbrella treaty or framework convention was first put forward by Mexico as the instrument under which specific agreements should be included and was replaced by a more detailed proposal by the UK and the Netherlands. Three protocols have been agreed upon. [348] *Protocol I* prohibits the use of weapons whose primary effects are injury by fragments not detectable by x-rays; *Protocol II* prohibits or restricts the use on land mines, booby traps and similar devices; *Protocol III* refers to incendiary weapons. *Protocol I* is far from the scope of our study since it relates to weapons which affect

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[345]These principles are codified by the Regulations annexed to the *1907 Hague Convention IV*. See 1907 Hague Convention IV, *supra*, note 81; *Supra*, note, 343 at 468.

[346]See J. Goldblat, "The Convention on 'Inhumane Weapons'" (Jan. 1983) *The Bulletin of the Atomic Scientists*,24. at 25.

[347]See Article 1 of the *Inhumane Weapons Convention*. *Supra*, note 24.

[348]Marlvern Lumsden, "The Prohibition of Inhumane and Indiscrimination Weapons", in *SIPRI Yearbook of World Armament and Disarmament* (London: Taylor & Francis, 1979) at 453.

the human body.

2.2. Protocol II: Mines and Booby Traps

Several provisions of the Convention directly or indirectly protect the natural environment. Some provisions protect that part of the environment which is considered to be civilian objects. It states that the indiscriminate use of mines, booby traps and other devices is prohibited. Indiscriminate use means any placement of such weapons that may be expected to, *inter alia*, damage civilian objects.[349] Article 6(2) of *Protocol II* prohibits the use of any booby trap which is designed to cause superfluous injury or unnecessary suffering in any circumstances.

2.3. Protocol III: Incendiary Weapons

Protocol III deals with any weapons or munitions that are primarily designed to set fire to objects or to cause burn injuries through the action of flame, heat, or a combination thereof, produced by a chemical reaction of a substance delivered on the target. *Protocol III* prohibits, in all circumstances, making civilian property the object of attack by incendiary weapons.[350] The Protocol prohibits States engaged in international conflict from using incendiary weapons on forests or other kinds of plant cover on enemy territory. Unfortunately, the Protocol contains a military necessity exception. It allows States to use incendiary weapons against the forests or other kinds of plant cover when they are used to cover, conceal or camouflage combatants or other military objectives or are used as military objectives.[351] Incendiary weapons are narrowly defined in *Protocol III*. It excludes munitions which may have incidental

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[349]See Article 3(3) of *Protocol II* of the *Inhumane Weapons Convention, supra,* note 24.

[350]See Article 2(1) of *Protocol III. Ibid.* Goldblat, *supra*, note 346 at 25.

[351]See Article 2(4) of *Protocol III. Supra*, note 24.

incendiary effects such as illumination, tracers and more significantly, munitions designed to combine penetration, blast or fragmentation effects with additional incendiary effects such as armour-piercing projectiles and similar combined-effect weapons designed primarily to set fire to vehicles, military installations and the like rather than specifically designed to cause burn injury to persons.[352] Another deficiency of the Protocol is that it does not provide any sanctions against States that damage the environment.

3. Weapons of Mass Destruction

Nuclear, chemical, and biological weapons are collectively called "weapons of mass destruction". Their effects on humans and the environment, and their relative lethalities establish them as being far different from conventional weapons.[353] Most States of the world are trying to develop weapons of mass destruction. This development can pose high risks of their deployment in war time.

3.1. Chemical and Biological Weapons

Chemical weapons affect the skin, eyes, lungs, blood, and other organs. Concentrations of only a few milligrams of chemical agents can be lethal when vaporized and inhaled.

Biological agents are poisons that injure microorganisms, such as bacteria, rickettsiae, and viruses. Ten grams of anthrax spores (a form of disease including bacteria) can cause the same number of casualties as a ton of nerve agent. Biological weapons can be very dangerous against population centers and can be as lethal as

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[352] *Ibid.* See *Protocol III* , Article 1. *Supra*, note 24.

[353] See Forsberg, *supra*, note 166 at 11-37.

nuclear weapons of similar size.[354] Since these weapons strike the whole population immediately, and affect vital services, both public and private, they can be used as the first stage of a long-range attack by other weapons.[355]

Chemical and bacteriological weapons have been used in some military operations during armed conflicts. For example, In 1935-36, Italy used gas during its invasion of Ethiopia. Between 1937 and 1945, Japan used gas in China.[356] A United Nations Commission has confirmed that gas and other chemical agents were used by Iraq in its war against Iran in 1983 and 1984.[357]

3.1.1. Effects of Chemical and Biological Weapons on the Environment

The employment of chemical and biological weapons pose clear environmental risks. Chemical antiplant agents are used to destroy or damage plants that might conceal enemy forces. Biological warfare can destroy an enemy's food crops. Bacteria attack plants and interfere with water movement.[358] Potential biological anti-crop agents produce disease in the host plants so that the grain yield is reduced to the extent that there is not enough to harvest. Some spore-forming microorganisms, in particular, anthrax bacteria, can survive in the environment for a long time and, thus, pose a threat to public health.

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[354]Forsberg, *supra* note 166 at 12-15.

[355]*Ibid.*

[356] A.V.W. Thomas & A.J.Thomas, *Legal Limits on the Use of Chemical and Biological Weapons* (Dallas: Southern Methodist University Press, 1970) at 27-28: Graham H. Cooper, "The Chemical Weapons Convention Verification Regime", *Newsletter*, No. 20, Dec. 1992 at 8.

[357]The Times (London) Mar. 28, 1984.

[358]Thomas, *supra*, note 356 at 24-25.

In 1979, anthrax spores were accidentally released from a biological weapon research facility in Sverdlovsk in the former Soviet Union, causing a deadly epidemic.[359] The real cause of this accident is not clear since no international inspections were undertaken at that time. In 1981, Vietnam, as the U.S. claimed, deployed yellow rain in its war against Cambodia. During World War I, poison gases were used by both sides. In 1915, the French used tear gas against German troops and Germany released chlorine gas against French troops along the Western Front.[360]

3.1.2. Agreements Concerning Chemical and Biological Weapons

The First Peace Conference of 1899 convened by Tsar Nicholas II of Russia with the primary objective of limiting armaments, adopted, *inter alia*, *Hague Declaration 2 on Asphyxiating Gases*[361]. The declaration prohibited the use of projectiles whose sole object is the diffusion of asphyxiating or deleterious gases.

Various peace treaties reiterated the prohibition embodied in the 1899 Declaration. For example, the 1919 *Treaty of Versailles*[362] prohibited the

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[359]Forsberg, *supra* note 166 at 23.

[360]Dianne DeMille, *The Control of Chemical and Biological Weapons (CBW): Strengthening In-ternational Verification and Compliance, Summary of a Conference held in Toronto on April 4-5, 1989, July 1990* (Ottawa: Canadian Institute for International Peace and Security, 1990) at 7-9.

[361]1899 *Hague Declaration 2 Concerning Asphyxiating Gases*. See J.B. Scott (ed.), The Hague Conventions and Declarations of 1899 and 1907 3rd edn. (New York: Oxford University Press, 1918) pp. 225-6; 26 Martens NRG, 2ème sér. (1899) 998-1002 (Fr. Ger.); 91 BFSP (1898-1899) 1014-16 (Fr.); UNTS 32 (1907), Cd. 3751 (Eng. Fr.); CXXV UKPP (1908) 898-900 (Eng. Fr.); 1 AJIL (1907) Supplement 157-9 (Eng. Fr.); 187 CTS (1898-1899 435-5 (Fr.).

[362]Allemagne, The *Treaty of Peace Between the Allied and Associated Powers and Germany: The Protocol Annexed Thereto*. This is the agreement respecting the military occupation of the territories of the Rhine, and the treaty between France and Great Britain respecting assistance to France in the event of unprovoked aggression by Germany; signed at Versailles, June, 28, 1919 (London: ill., Cartes, 1919) at 81.

manufacture, use, and importation of asphyxiating, poisonous or other gases and all analogous liquids, materials or devices in Germany.[363] In 1922, the U.S. sponsored the conference leading to the *Washington Naval Treaty*.[364] The conference attempted to generalize the prohibition of chemical weapons. Article V of the Treaty states that chemical weapons have been "justly condemned by the general opinion of the civilized world" and that the prohibition of such weapons should be "universally accepted as a part of international law."[365]

Subsequent negotiations to prohibit the use of asphyxiating, poisonous or other gases during war led to the conclusion of the 1925 *Geneva Protocol*[366]. The Protocol was adopted by the International Conference on the Control of the International Trade in Arms, Munitions, and Implements of War, which was convened by the Council of the League of Nations and met in Geneva in May and June 1925.[367] The Protocol prohibited the war-time use of asphyxiating, poisonous or other gases, and of bacteriological methods of warfare. The Protocol is a weak legal regime since it has not prohibited the development, production and stockpiling of the weapons mentioned in its articles. Nor does it define precisely the class of weapons that it prohibits.[368]

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[363]*Ibid.*

[364]4 Naval War College, *International Law Documents* 1921, "Conference on the Limitation of Armament" (1923) at 352.

[365]*Ibid.*

[366]The 1925 *Geneva Protocol for the Prohibition of the Use in War of Asphyxiating Poisonous or Other Gases, and of Bacteriological Methods of Warfare* (hereafter 1925 *Geneva Protocol*), in force from 8, 1928; XCIV (1929) 65-74; 126 BFSP (1927) 324-5; UKTS 24 (1930), Cmd. 3604; XXXII UKPP (1929-1930) 293; 25 AJIL (1931) Supplement 94-6. See Roberts , *supra*, note 36 at 137-138.

[367]Roberts, *supra*, note 36 at 137.

[368]The ban in the 1925 *Geneva Protocol* has been said to apply to the employment in war of all methods of chemical warfare including "projectiles or apparatus of any sort, aerial bombardment,

This failure allowed the United States, which used chemical agents in the form of riot control agents, defoliant and herbicides in southern Asia, to stress that the Protocol did not affect the use of herbicides and tear-gas.[369] The U.S. argued that riot control agents, defoliants and herbicides were non-lethal in their effects.[370] Furthermore, the Protocol does not have any verification or enforcement provision.

The UN General Assembly has adopted several resolutions on the matter. It interpreted the 1925 *Geneva Protocol* by declaring that it prohibits the use in international armed conflict of: "a. Any chemical agents of warfare -- chemical substances, whether gaseous, liquid or solid-- which might be employed because of their direct toxic effects on man, animals or plants; b. Any biological agents of warfare -- living organisms, whatever their nature, or infective material derived from them -- which are intended to cause disease or death in man, animals or plants, and which depend for their effects on their ability to multiply in the person, animal or plant attacked."[371]

Proposals for separate consideration of biological weapons control were

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land or aerial dissemination, emission of clouds of fogs, mines, etc., as well as all other techniques imaginable by which these substances could be placed in contact with enemy personnel." See H. Meyrowitz, "Les armes Psychochimiques et le droit international", 10 Annuaire Français de Doit International, 81, at 93 (1964) translated by Thomas, *supra*, note 356 at 74.

[369]See R.G. Tarasofsky, "Legal Protection of the Environment During International Armed Conflict", (1993) vol. XXIV NYIL at 56; Roberts, *supra*, note 36 at 137 et seq.

[370]Although the U.S. had not at that time ratified the 1925 *Geneva Protocol*, it had generally subscribed to its provisions by accepting the prohibition of the first use of chemical and biological weapons. See Peter Gizewski, *Biological Weapons Control*, Issue Brief No. 5 (Ottawa: Canadian Center for Arms Control and Disarmament, 1987) at 11.

[371]The use of chemical agents in Vietnam by the U.S. was criticized broadly by NATO allies and the UN General Assembly. This criticism resulted in the adoption of the UNGA Resolution. UNGA Resolution 2603 A (XXIV) of Dec. 16, 1969, supp. (no. 30) at 16, UN Doc. a/7630 (1970).

submitted by the British and supported by the U.S. and other States. On Aug. 5, 1971, two identical drafts of a *Biological Weapons Convention* were submitted to the Conference of the Committee on Disarmament (CCD) by the U.S. and the East European States.[372]

On Sept. 28, 1971, a revised draft convention was submitted at the UN, taking into account the proposed amendments given by non-aligned members. On April 10, 1972, the General Assembly opened the *Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxic Weapons and on Their Destruction*[373] for signature in London, Moscow and Washington. The Convention prevents the possible use of biological agents by prohibiting the development, production, stockpiling and acquisition of microbial or other biological agents or delivery system for such agents that have no justifiable peaceful purposes.[374] Each State party to the Convention undertakes to destroy all such agents in its possession[375] or under its jurisdiction or control, and observe all

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[372]See Forsberg, *supra*, note 166 at 69; Gizewski, *supra*, note 370 at 11-13.

[373]The 1972 *Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on Their Destruction* (hereinafter the 1972 *Biological Weapons Convention*). Entered into force in 1975. 1971 UN Yearbook 118; 26 UST 583. As of Jan. 1, 1995, 134 nations were parties to the Convention. See Forsberg, *supra* note 166 at 69; Peter Gizewski, *supra*, note 370 at 11-13.

[374]*Idid.* Article I of the *Biological Weapons Convention.* It reads: "Each State Party to this convention undertakes never in any circumstance to develop, produce, stockpile or otherwise acquire or retain:
(1) Microbial or other biological agents, or toxins whatever their origin or method of production, of types and in quantities that have no justification for prophylactic, protective or other peaceful purposes;
(2) Weapons, equipment or means of delivery designed to use such agents or toxins for hostile purposes or in armed conflict."

[375]*Ibid.* Article II of the *Biological Convention.* It reads:
"Each State Party to this *Convention* undertakes to destroy, or to divert to peaceful purposes, as soon as possible but not later than nine months after the entry into force of the *Convention*, all

necessary safety precautions to protect the population and the environment. Parties undertake, as well, not to transfer any such agents to anyone else.[376] The Convention's usefulness is overshadowed by an insufficient verification procedure. The Convention requires only that member States are to "consult one another and to cooperate in solving any problems which may arise in relation to the objective of"[377] the Convention. States believing that "any other State party is acting in breach of the provisions of the Convention may lodge a complaint with the UN Security Council."[378] Verification has been left to the UN Security Council[379] whose decisions are subject to veto by permanent members of the Security Council. Some States (Sweden, Turkey, Pakistan) expressed reservations about the treaty's verification procedures. They requested guarantees against the possible use of a veto.[380] The right to veto gives States a wide measure of discretion in deciding which agents are permitted by the Convention for peaceful purpose.[381]

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agents, toxins, weapons, equipment and means of delivery specified in Article I of the *Convention*, which are in its possession or under its jurisdiction or control. In implementing the provisions of this article all necessary safety precautions shall be observed to protect populations and the environment."

[376]*Ibid.* Article III of the 1972 *Biological Weapons Convention*: "Each State Party of this Convention undertakes not to transfer to any recipient whatsoever, directly or indirectly, and not in any way to assist, encourage, or induce any State, group of States or international organizations to manufacture or otherwise acquire any of the agents, toxins, weapons, equipment or means of delivery specified in Article I of the Convention."

[377]*Ibid.* Article V of the 1972 *Biological Weapons Convention.*

[378]*Ibid.* Article VI of the 1972 *Biological Weapons Convention.*

[379]*Ibid.* Article VI of the 1972 *Biological Weapons Convention.*

[380]Gizewski, *supra*, note 370 at 13

[381]See Tarasofsky *supra* note 369 at 56; J. Goldblat & T. Bernauer, "The Review of Biological Weapons Convention: Issues and Proposals" (1991) UNIDIR, Research Paper no.9 at 5-10.

The First[382] and The Second [383]Review Conferences which were held from March 3-21, 1980, reviewed the provisions of the Convention and decided that Article I has proved "sufficiently comprehensive" to include recent scientific and technological developments related to the *Biological Weapons Convention.*[384]

Another relevant legal regime for the prohibition of chemical weapons is the 1993 *Chemical Weapons Convention.*[385]

This Convention is the most significant international agreement banning the use of chemical weapons. Its basic obligation is to oversee an absolute prohibition against the development, production, possession, transfer, and use of chemical weapons.[386] It requires State parties to destroy chemical weapons they already have in their possession,[387] as well as any chemical weapons production facilities they own

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[382]Goldblat, *supra*, note 381 at 15.

[383]*Ibid.* at 17; Sims, *supra*, note 343.

[384]Goldblat, *supra*, note 381 at 17.

[385]*Chemical Weapons Convention*, *supra*, note 166.

[386]Article I(1) of the *Chemical Weapons Convention*. *supra*, note 166. It reads:
"Each State Party to this *Convention* undertakes never under any circumstances:
(a) To develop, produce, otherwise acquire, stockpile or retain chemical weapons, or transfer, directly or indirectly, chemical weapons to anyone;
(b) To use chemical weapons;
(c) To engage in any military preparations to use chemical weapons;
(d) To assist, encourage or induce, in any way, anyone to engage in any activity prohibited to a State Party under this Convention."

[387]*supra*, note 166. Article I(2) of the 1993 *Chemical Weapons Convention*. It reads: "Each State Party undertakes to destroy chemical weapons it owns or possesses, or that are located in any place under its jurisdiction or control, in accordance with the provisions of this Convention."

or hold under their jurisdiction.[388]

The Convention's other obligation is to prohibit the use of riot control agents as a method of warfare.[389] The Convention establishes a new international institution -- the Organization for the Prohibition of Chemical Weapons -- to ensure the implementation of its provisions.[390] The parties are required to submit routine declarations to the organization, including the precise locations of chemical weapons they own or hold under their jurisdiction or control.[391] The organization will have the

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[388]*supra*, note 166. Article I(4) of the 1993 *Chemical Weapons Convention*. It reads: "Each State Party undertakes to destroy any chemical weapons production facilities it owns or possesses, or that are located in any place under its jurisdiction or control, in accordance with the provisions of this Convention."

[389]*supra*, note 166. Article I(5) of the 1993 *Chemical Weapons Convention*. Article II(7) of the *Convention* defines "Riot Control Agent" as "[a]ny chemical not listed in a Schedule, which can produce rapidly in humans sensory irritation or disabling physical effects which disappear within a short time following termination of exposure."

[390]*supra*, note 166. Article VIII of the *Chemical Weapons Convention*. On August 17, 1997 the New York Times reported that three months after a ban on the use or production of chemical weapons, India and some other nations, which had denied having such arms, declared having such arms or the ability to make them. Most of these countries kept secret their declarations to the organization monitoring the treaty. The Organization for the Prohibition of Chemical Weapons began visiting Indian chemical weapons sites this month. The U.S. and Russia were the only countries to have publicly confessed to having stockpiles of chemical weapons. The U.S. government suspected that Ethiopia, Iran, Syria, Israel, Egypt, Libya, Pakistan, Myanmar, Vietnam, China, and North and South Korea have or produce such weapons. CNN Report: "India, other countries admit to having chemical weapons" August 17, 1997, available: [http://www.cnn.com/WORLD/9708/17/ chemical.weapons. ap/index.html].

In May 6, 1997, U.N. Secretary-General opened the first conference of the new Organization for the Prohibition of Chemical Weapons a week after coming into force of the Convention banning development, production, stockpiling and use of chemical weapons. Representatives of 160 countries gathered in the Hague to decide strategies for enforcing a global ban on chemical weapons. Eighty-eight countries, including the U.S., have ratified the treaty and another 77 countries have signed the treaty but not yet ratified it. Both Russia and the United States have pledged to destroy their stocks of chemical weapons.CNN Report, "Conference looks for ways to enforce chemical weapons ban" May 6, 1997. Available: [http://www.cnn.com/WORLD/9705/06/chemical/index.html].

[391]*supra*, note 166. Article III of the 1993 *Chemical Weapons Convention*.

right to conduct "challenge inspections" at any site, government or private, suspected of illegal activity.[392] The conference, as an organ of the organization[393], has the power to take measures to ensure compliance with the Convention and to redress and remedy any situation which contravenes the provisions of the Convention.[394] The Convention provides significant protection to the environment. Each State party to the Convention is required to assign the highest priority to ensuring the safety of people and to protecting the environment during implementation of its obligations under the Convention including the transportation, storage, and destruction of chemical weapons.[395]

3.2. Nuclear Weapons

The life-threatening danger of radioactive contamination and the spread of toxic substances derived from nuclear weapons makes the nuclear issue an important one in the eyes of the public.[396]

The first noticeable effect of the explosion of a nuclear weapon is a blinding

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[392]*Ibid.* Article IX.

[393]*Ibid.* Article VIII(4).

[394]*Ibid.* Article XII(1).

[395]*Ibid.* Articles IV(10) and VII(3) of the 1993 *Chemical Weapons Convention*. Article IV(10) states: "Each State Party, during transportation, sampling, storage and destruction of chemical weapons, shall assign the highest priority to ensuring the safety of people and to protecting the environment. Each State Party shall transport, sample, store and destroy chemical weapons in accordance with its national standards for safety and emissions." Article VII(3) reads: "Each State Party, during the implementation of its obligations under this Convention, shall assign the highest priority to ensuring the safety of people and to protecting the environment, and shall cooperate as appropriate with other State Parties in this regard."

[396]M. Finger, *Unintended Consequences of the Cold War: Global Environmental Degradation and the Military, New Views of International Security* (Syracuse: Program on the Analysis and Resolution of Conflicts, Maxwell School of Citizenship and Public Affairs, Syracuse University, Occasional Paper Series, No. 10, July 1991) at 8-10.

flash of intense white light. It is strong enough to temporarily blind observers many kilometers distant from the explosion. Then, "the blast wave arrives as a sudden and shattering blow immediately followed by a hurricane-force wind outwards from the explosion."[397] All buildings around the explosion are totally destroyed. Immediate fatalities and widespread destruction are the result of the exploding weapon which starts to emit an intense burst of neutrons and gamma rays. All human beings in the vicinity will be killed by heat or blast.

3.2.1. Nuclear Weapons and the Environment

The Second World War was the first war in which a nuclear weapon was used. The Japanese had been at war since 1937. They justified their wars both as self-defence and as fulfilling a mission of liberating Asia from western countries. In 1942 the Japanese occupied a large territory in Asia. In response to these Japanese advances, the American prepared a counter-offensive effort directed at the Japanese heartland. In July 1944, they placed bombers within range of Tokyo. On August 6, 1945, the atom bomb was used for the first time. In this attack most of the city of Hiroshima was destroyed. More than 70,000 people were killed immediately. Another 70,000 people were stricken with radiation sickness. The mushroom cloud rose 60,000 feet into the sky. Almost nothing in the city was left intact.[398]

As the 1986 Chernobyl reactor accident in the Soviet Union has shown, nuclear energy poses serious risks to the health of all living things and the environment.

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[397]"Effects of Nuclear Weapons" from UN Center for Disarmament, Fact Sheet No. 17 (1981), reprinted in M.Kindred et al. *International Law Chiefly as Interpreted and Applied in Canada*, 4th ed. (Canada: Emond Montgomery Publications,1987) at 878-880.

[398]See J.A.S. Grenville, *A History of the World in the Twentieth Century* (Cambridge: Belknap Press of Harvard University, 1994) at 280-292.

Nuclear war destroys what society depends upon in common, *i.e.* it is a threat to all the inhabitants of earth because it erodes the biosphere, the very life-support upon which we all depend. In catastrophic cases, the level of damage to the global environment may be severe.[399]

A war involving only a small part of the world's nuclear arsenal would plunge the entire Earth into a catastrophe of stupendous proportion.[400] Atmospheric debris would block out the sun, causing a climatic catastrophe spreading sub-zero temperatures and almost complete darkness over most parts of the Southern and Northern Hemisphere for a period of several months.[401]

Nuclear power used in space activities also poses a major environmental threat.

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[399]*Supra*, note 397 at 879.

[400]The ICJ, in its advisory opinion on the legality of nuclear weapons on July 8, 1996, took into account certain unique characteristics of nuclear weapons and stated that:
"The Court has noted the definitions of nuclear weapons contained in various treaties and accords. It also notes that nuclear weapons are explosive devices whose energy results from the fusion or fission of the atom. By its very nature, that process, in nuclear weapons as they exist today, releases not only immense quantities of heat and energy, but also powerful and prolonged radiation. According to the material before the Court, the first two causes of damage are vastly more powerful than the damage caused by other weapons, while the phenomenon of radiation is said to be peculiar to nuclear weapons. These characteristics render the nuclear weapon potentially catastrophic. The destructive power of nuclear weapons cannot be contained in either space or time. They have the potential to destroy all civilization and the entire ecosystem of the planet.

The radiation released by a nuclear explosion would affect health, agriculture, natural resources and demography over a very wide area. Further, the use of nuclear weapons would be a serious danger to future generations. Ionizing radiation has the potential to damage the future environment, food and marine ecosystem, and to cause genetic defects and illness in future generations." See, International Court of Justice, Advisory Opinion, Legality of the Threat or Use of Nuclear Weapons, July 8, 1996, World Court directory, available: [http://www.igc.apc.org/disarm/icjtext.html].

[401]N. Singh, "The Environmental Law of War and the Future of Mankind" in René-Jean Dupuy, *The Future of the International Law of the Environment* (Dordrecht: Martinus Nijhoff Publishers, 1984) 416 at 420; J.H. Adams, *An Environmental Agenda for the Future* (Washington: Island Press, 1985) at 25.

Environmental destruction in the upper atmosphere or outer space caused by radiological material released by malfunctioning nuclear-powered satellites has become the subject of discussion in various forums. In the event of malfunctioning, nuclear-powered satellites will re-enter the atmosphere and create radiological hazards as they disperse radioactive materials in the environment.[402]

3.2.2. The Control of Nuclear Risks in International Conventions

There is no general international agreement addressing the protection of the environment during armed nuclear conflicts. International policy on nuclear energy encourages and facilitates the spread of nuclear energy for peaceful uses.[403] Users of nuclear-powered merchant ships[404], and satellites [405] are encouraged to comply with internationally agreed standards of safety and radiation protection. International agreements prohibit States from dumping radioactive waste at sea or discharging it into the marine environment through land-based or airborne sources. They also

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[402]H. Qizhi, 1992 "Space Law and the Environment", in N. Jasentuliyana, *Space Law, Development and Space* (Published by International Institute of Space Law, Westpont, 1992) 159, 162-163.

[403]The IAEA was created to encourage and facilitate the spread of nuclear power. IAEA Statute, Article III, amended (1961) 471 UNTS 334; Kiss, *supra*, note 1 at 67-68. In 1977, the UNGA proclaimed the right of all States to use nuclear energy and to have access to the technology. UNGA Res. 32/50 (1977) and UNGA Res. 36/78 (1981); See P.W. Birnie& A.E. Boyle, *International Law and the Environment*, 2ed (Great Britain: Biddles, Guildfold & King's Lynn, 1993) at 345-46.

[404]The 1962 *Convention on the Liability of Operators of Nuclear Ships* (1963, 57 AJIL, 268) contains provisions for a regime of strict liability of the operators of nuclear ships. Art. 23 of UNCLOS states: "Foreign nuclear-powered ships carrying nuclear or other inherently dangerous or noxious substances shall, when exercising the right of innocent passage through the territorial sea, carry documents and observe special precautionary measures established for such ships by international agreements." See *UNCLOS*, *supra*, note 107.

[405]See Article IV of the 1967 *Treaty on Principles Governing the Activities of States in the Exploration and the Use of Outer Space*, *supra*, note 4.

prohibit weapons test explosions in the atmosphere and outer space.

A nuclear-free zone was established for Latin America by the 1967 *Treaty for the Prohibition of Nuclear Weapons in Latin America (Tlatelolco Treaty)*[406]. A UN resolution[407] described the treaty as being "of historical significance in the efforts to prevent the proliferation of nuclear weapons and to promote international peace and security."[408] The zone that the treaty sets up includes all of Latin America as well as vast areas of the Atlantic and Pacific Oceans. The treaty contains a preamble, 31 articles, and two additional protocols. The nuclear powers promised in *Additional Protocol II* to respect "the status of denuclearization of Latin America" and not to use or to threaten to use nuclear weapons against the parties to the treaty.[409]

Some international treaties concern only the stationing of nuclear weapons. The *1970 Sea-Bed Arms Control Treaty*[410] applies to areas outside a twelve-mile belt from the coast line. It prohibits the emplanting or emplacement of nuclear weapons on the sea-bed beyond this 12 miles limit, as well as launching installations or any other facilities specifically designed for storing, testing or using such weapons.[411]

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[406]UNGA Res. adopted during its 22nd session on Dec. 5, 1967 by 82 votes to nil and with 28 abstentions; Keesing's Research Report, *Disarmament; Negotiations and Treaties* 1946-1971 (New York: Charles Scribner's, 1972) at 332. See *supra*, note 254.

[407]*Ibid.* at 332.

[408]Ibid. at 344.

[409]*Ibid.* at 334.

[410]Sea-Bed Arms Control Treaty, *supra*, note 253.

[411]Article I of *Sea-Bed Arms Control Treaty, supra*, note 253.

The 1967 *Outer Space Treaty* [412] and the 1979 *Moon Treaty* [413] prohibit State parties from placing in orbit around the earth any objects carrying nuclear weapons, and also from installing such weapons on celestial bodies, or stationing them in outer space. The 1963 *Limited Test Ban Treaty* [414] prohibits nuclear weapons test explosions in the atmosphere, outer space, and under water. The 1972 *London Convention*[415] prohibits the dumping of high-level radio-active wastes or other high-level radio-active matter, on public health, biological or other grounds. These prohibitions indicate the growing strength of the international trend to ban such activities on environmental grounds.[416]

Three of the world nuclear powers and many other States acknowledged "the devastation that would be visited upon all mankind by a nuclear war" and decided to take further measures to ban the spread of nuclear weapons.[417] The 1968 *Nuclear Non-Proliferation Treaty*[418] is a multilateral attempt to prevent the proliferation of nuclear weapons and emphasizes the need to end the nuclear arms race and to undertake effective measures in the direction of nuclear disarmament. It prohibits the possession

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[412]*supra*, note 4.

[413]*Agreement Governing the Activities of States on the Moon and Other Celestial Bodies* (Moon Treaty); UN Doc. A/34/664; (1979), 18 ILM 1434, in force 1984.

[414]*Limited Nuclear Test Ban Treaty, supra*, note 4.

[415]*Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter.* (Hereinafter *London Convention*), UKTS 43 (1976); ILM (1972), 1294; In force August 30, 1975. Amended 1978, in force March 11, 1979; amended 1980, in force March 11, 1981; amended 1989, not in force.

[416]Birnie, *supra* 403 at 347.

[417]Birnie, *supra*, note 403 at 346.

[418]The 1968 *Treaty on the Non-Proliferation of Nuclear Weapons*; 729 UNTS 161; (1968), 7 ILM 811.

or construction of nuclear weapons.[419] According to Article II of the treaty, all non-nuclear weapon States party to this treaty are obliged not to possess or construct such weapons.[420] Each nuclear-weapon State party also undertakes not to transfer such weapons to any non-nuclear-weapon State.[421] All the nuclear powers parties to the treaty pledge unilaterally not to use nuclear weapons against non-nuclear-weapon States.[422]

The Conference on Disarmament (CD) began its substantive negotiations on a comprehensive nuclear-test ban treaty in January 1994 within the framework of an *Ad Hoc* Committee established for that purpose. The final draft of the Treaty was presented by the Chairman of the *Ad Hoc* Committee, Ambassador Jaap Ramaker of the Netherlands, to the CD in June 1996.[423] On September 10, 1996, the General Assembly adopted a draft resolution, initiated by Australia and sponsored by 126 States, by a vote of 158 in favor[424], 3 against (Bhutan, India, Libya), with 5

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[419]*Ibid.*

[420]*Ibid.*

[421]*Ibid.* Article I of the *Nuclear Non-Proliferation* Treaty; Krateros Ioannou, "Non-Proliferation Treaty", in vol. 4, *Encyclopedia of Public International Law* (North Holland: Published under the Auspices of the Max Planck Institute, 1982) at 282.

[422]See appreciation made by the Security Council at its 3514th meeting in Res. 984 (1995), April 11, 1995; Dietrich Rauschning, "Nuclear Warfare and Weapons", in Encyclopedia, *supra*, note 421 vol.4 at 45-46.

[423]The US Department of Energy, Comprehensive Test Ban Treaty, Research & Development Program, CTBT R&D Home Page, "Comprehensive Nuclear-Test-Ban Treaty" (CTBT) November 1, 1996 available: [http://www.un.org/Depts/dpa/cda/ctbt/ctbt.htm]. See *supra*, note 4.

[424]The following States voted in favor: Afghanistan, Albania, Algeria, Andorra, Angola, Antigua and Barbuda, Argentina, Armenia, Australia, Austria, Azerbaijan, Bahamas, Bahrain, Bangladesh, Barbados, Belarus, Belgium, Belize, Benin, Bolivia, Bosnia and Herzegovina, Botswana, Brazil, Brunei, Bulgaria, Burkina Faso, Burma, Cambodia, Cameroon, Canada, Cape

abstentions (Cuba, Lebanon, Mauritius, Syria, Tanzania).

On September 24, 1996 States signed the *Comprehensive Nuclear-Test-Ban Treaty* (CTBT)[425] that outlaws all nuclear tests, including underground blasts. This agreement, if broadly ratified, is a promising step towards providing extensive protection from the use of nuclear weapons.[426] The Convention's basic obligation is an absolute prohibition against the carrying out of any nuclear weapon test explosion or any other nuclear explosion, and the prohibition and prevention of any such nuclear explosion at any place under the jurisdiction or control of State parties. Each State party undertakes, furthermore, to refrain from causing, encouraging, or in any way

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Verde, Central African Republic,, Chile, China, Colombia, Congo, Costa Rica, Cote d'Ivoire, Croatia, Cyprus, Czech Republic, Denmark, Djibouti, Dominica, Ecuador, Egypt, El Salvador, Equatorial Guinea, Estonia, Ethiopia, Fiji, Finland, France, Gabon, Georgia, Germany, Ghana, Greece, Grenada, Guatemala, Guinea-Bissau, Guyana, Haiti, Holy See, Honduras, Hungary, Iceland, Indonesia, Iran, Ireland, Israel, Italy, Jamaica, Japan, Jordan, Kazakhstan, Kenya, Kuwait, Kyrgyzstan, Laos, Liberia, Liechtenstein, Lithuania, Luxembourg, Macedonia, Madagascar, Malawi, Malaysia, Maldives, Malta, Marshall Islands, Mauritania, Mexico, Micronesia (Federated States of), Moldova, Monaco, Mongolia, Morocco, Mozambique, Namibia, Nepal, Netherlands, New Zealand, Nicaragua, Nigeria, Norway, Oman, Pakistan, Palau, Panama, Papua New Guinea, Paraguay, Peru, Phillipines, Poland, Portugal, Qatar, Romania, Russia, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, San Marino, Saudi Arabia, Senegal, Sierra Leone, Singapore, Slovakia, Slovenia, Solomon Islands, South Africa, South Korea, Spain, Sri Lanka, Sudan, Suriname, Swaziland, Switzerland, Syria, Tajikistan, Thailand, Trinidad and Tobago, Togo, Tunisia, Turkey, Turkmenistan, Uganda, Ukraine, United Arab Emirates, United Kingdom, United States, Uruguay, Uzbekistan, Vanuatu, Venezuela, Vietnam, Western Samoa, Yemen, Zaire, Zimbabwe. The following States did not vote: Burundi, Chad, Comoros, Dominican Republic, Eritrea, Gambia, Guinea, Iraq, Latvia, Lesotho, Mali, Niger, North Korea, Rwanda, Sao Tome and Principe, Seychelles, Somalia, Tanzania, Yugoslavia, Zambia. The total number of Signatories: 129 as of October, 24, 1996.
The total number of Ratifications: 1 as of October 11, 1996.

[425]UN General Assembly. *Supra*, note 168.

[426]The U.N. Secretary-General, Boutros Boutros-Ghali, stated that "This treaty should reinforce international resolve to achieve a world free of the nuclear arms race, a world free of all nuclear weapons". Major nuclear powers sign test ban treaty, CNN Interactive, World News Story Page, September 24, 1996 Web posted at: 11:00 a.m. Available [http:// www.cnn.com/WORLD /9609 /24/nuclear. treaty/index.html].

participating in the carrying out of any nuclear weapon test explosion or any other nuclear explosion.[427] The State parties establishes the Comprehensive Nuclear Test-Ban Treaty Organization to achieve the object and purpose of the Convention.[428] It will be established upon entry into force of the Treaty. The Organization is a central feature of this Convention and will have its headquarters in Vienna. The organs of the Organization are: the Conference of the State parties, the Executive Council and the Technical Secretariat.[429]

The Conference of the State parties, one of the Organization's organs, will be composed of all State parties.[430] The Conference will be the principal organ of the Organization. It will consider any question, matter or issue within the scope of the Convention, including those relating to the powers and functions of the Executive Council and the Technical Secretariat, in accordance with the Convention. It may make recommendations and take decisions on any question, matter or issue within the scope of the Convention. The Conference is responsible for the implementation, and the review of compliance with the Convention, and acts in order to promote its object and purpose.[431] The Executive Council will consist of 51 members.[432] The Executive Council will:

"(a) Promote effective implementation of, and compliance with, this Treaty;

(b) Supervise the activities of the Technical Secretariat;

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[427]*Supra*, note 168. Article I (1) and 1(2) of the Convention.

[428]Ibid. Article II (1) of the Convention.

[429]Ibid. Article II (4) of the Convention.

[430]Ibid. Article II (12) of the Convention.

[431]Ibid. Article II (24 and 2(25) of the Convention.

[432]Ibid. Article II (27) of the convention.

(c) Make recommendations as necessary to the Conference for consideration of further proposals for promoting the object and purpose of this Treaty"[433]

In order to verify compliance with the Convention, a verification regime with the following elements will be established:

"(a) An International Monitoring System;
(b) Consultation and clarification;
(c) On-site inspections; and
(d) Confidence-building measures
At entry into force of this Treaty, the verification regime shall be capable of meeting the verification requirements of this Treaty".[434]

Any State party will have the right to request an on-site inspection in the territory of any State party.[435] The Executive Council will take a decision on the on-site inspection request no later than 96 hours after receipt of the request from the requesting State party.[436]

The Conference will take measures needed in order to ensure compliance with the Convention. "In cases where a State party has been requested by the Conference or the Executive Council to redress a situation raising problems with regard to its compliance and fails to fulfil the request within the specified time", the Conference may, *inter alia*, "decide to restrict or suspend the State Party from the exercise of its rights and privileges under this Treaty until the Conference decides otherwise."[437] The

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[433]Ibid. Article II (38) of the Convention.

[434]Ibid. Article IV (1) of the Convention.

[435]Ibid. Article IV (34) of the Convention.

[436]Ibid. Article IV (46) of the Convention.

[437]Ibid. Article V (2) of the Convention.

Conference may recommend to State parties collective measures which are in conformity with international law[438] or it may bring the issue to the attention of the United Nations.[439]

The Conference and the Executive Council are separately empowered, subject to authorization from the General Assembly of the United Nations, to request the ICJ to give an advisory opinion on any legal question coming within the scope of the activities of the Organization. An agreement between the Organization and the United Nations shall be concluded for this purpose in accordance with Article II, paragraph 38 (h).[440]

Any State party may propose amendments to the Convention, the Protocol, or the Annexes to the Protocol at any time after the entry into force of this Treaty.[441] The Convention will be of unlimited duration.[442] Its articles and annexes are not subject to reservation.[443]

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[438]Ibid. Article V (3) of the Convention.

[439]Ibid. Article V (4) of the Convention. Article 38, sections (h) and (i), states that the Executive Council shall: "(h) Conclude, subject to prior approval of the Conference, agreements or arrangements with States Parties, other States and international organizations on behalf of the Organization and supervise their implementation, with the exception of agreements or arrangements referred to in sub-paragraph (i);
(i) Approve and supervise the operation of agreements or arrangements relating to the implementation of verification activities with States Parties and other States."

[440]*Ibid.* Article VI (5) of the Convention.

[441]*Ibid.* Article VII (1) of the Convention.

[442]*Ibid.* Article IX (1) of the Convention.

[443]*Ibid.* Article XV of the Convention.

Most member States of the CD expressed their readiness to support the draft Treaty. India, whose signature is necessary to entry into force of the Treaty[444], stated that it could not go along with a consensus on the draft text. India stated that it will never sign "this unequal treaty, not now and not later", and pointed out that the main reasons for its decision were related to its strong misgivings about the provision on the entry into force of the Convention which is considered unprecedented in multilateral practice and contrary to customary international law. The Convention, furthermore, does not include a commitment by the nuclear-weapon States to eliminate nuclear weapons within a time-bound framework.[445]

3.2.3. The Legal Limits on the Use of Nuclear Weapons

The growing and unavoidable risk of nuclear weapons has stimulated the international community's interest in stronger international control of safety matters.[446]

In spite of the absence of any international agreements to control the environmental hazard of nuclear technology, it is evident that States have an

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[444]According to Article XIV of the Convention, it will enter into force after the following 44 States listed in Annex 2 to the Treaty have ratified it. These States are: Algeria, Argentina, Australia, Austria, Bangladesh, Belgium, Brazil, Bulgaria, Canada, Chile, China, Colombia, Democratic People's Republic of Korea, Egypt, Finland, France, Germany, Hungary, India, Indonesia, Iran (Islamic Republic of), Israel, Italy, Japan, Mexico, Netherlands, Norway, Pakistan, Peru, Poland, Romania, Republic of Korea, Russian Federation, Slovakia, South Africa, Spain, Sweden, Switzerland, Turkey, Ukraine, United Kingdom of Great Britain and Northern Ireland, United States of America, Viet Nam, Zaire. See *supra*, note 168.

[445]*Supra*, note 168.

[446]See IAEA General Conference, Special Session, 1986, IAEA/GC (SPL.1)/4 and GC/SPL.1) 15/Rev.1 at, 25 ILM. (1986), 1387 ff. The European Council described nuclear energy as 'potentially dangerous' and recommended a moratorium to develop new protectional facilities; Parliamentary Assembly Rec. 1068 (1988); See also Birnie *supra* 403 at 345-348.

obligation to prevent radioactive injury to the global environment.[447]

The legality or illegality of the use of nuclear weapons must be examined or the basis of rules of conventional, customary, and legal principles underlying the international law of war. Some writers[448], basing their view on the distinctive character of nuclear weapons and humanitarian considerations, believe that the use of nuclear weapons is forbidden in international law. This idea is promoted by the Lawyers' Committee on Nuclear Policy, a U.S.-based group of jurists. In their 'Statement on the Illegality of Nuclear Weapons' in 1984, they summarized the laws of war in six basic rules:

Rule 1 - "It is prohibited to use weapons or tactics that cause unnecessary or aggravated devastation or suffering" (based on the *Declaration of St. Petersburg*[449] and the 1907 *Hague Conventions*[450]);

Rule 2 - "It is prohibited to use weapons or tactics that cause indiscriminate harm as between combatants, military and civil personnel" (*Declaration of St. Petersburg* and the 1949 *Geneva Conventions*[451]);

Rule 3 - "It is prohibited to use weapons or tactics which violate the neutral jurisdiction of non-participating states" (The 1907 *Hague Conventions*);

Rule 4 - "It is prohibited to use asphyxiating, poisonous or other gas ... including

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[447]Birnie, *supra* 403 at 358. B.Weston, "Nuclear Weapons Versus International Law: A Contextual Reassessment" (1983) 28 McGill L.J. 542.

[448]Tarasofsky ,*supra*, note 369 at 58-61; Leslie Green, "International Humanitarian Law and the Law of Armed Conflict: Its Relevance to the Nuclear Challenge", in M. Cohen & M.E. Gauin eds. *Lawyers and the Nuclear Debate* (Ottawa: University of Ottawa Press) at 91.

[449]*Infra*, note 505.

[450]See *supra*, note 81.

[451]See supra, note 31.

bacteriological methods of warfare" (The 1925 *Geneva Protocol*);

Rule 5 - "It is prohibited to use weapons or tactics that cause widespread, long-term and severe damage to the natural environment" (1977 *Geneva Protocol I*[452]);

Rule 6 - "It is prohibited to effect reprisals that are disproportionate to their antecedent provocation or to legitimate military objectives ..." (based on general principles of international law on Articles 20, 51, 53 and 55 of the *UN Charter*[453]).

The Statement concluded that:

> "On the basis of these fundamental principles, the United Nations has repeatedly condemned the use of nuclear weapons as an 'international crime'. For example, on November 24, 1961, the General Assembly declared in Resolution 1653 (XVI) that 'any state using nuclear or thermonuclear weapons is to be considered as violating the *Charter of the United Nations*, as acting contrary to the law of humanity, and as committing a crime against mankind and civilization.' In Resolution 33/71-B of December 14, 1978 and Resolution 35/152-D of December 12, 1980, the General Assembly again declared that 'the use of nuclear weapons would be a violation of the *Charter of the United Nations* and a crime against humanity.' These Resolutions represent an emerging global consensus that the use of nuclear weapons would be fundamentally at odds with the humanitarian principles at the heart of the international law of armed conflict.
>
> This global consensus is reinforced by analysis of the potential use of nuclear weapons in the specific contexts or 'scenarios' contemplated by modern nuclear strategies. It is clear, for example, that a nuclear war of 'assured destruction' involving the targeting of cities would make a mockery of the principles of 'proportionality' (Rule 6) and target discrimination (Rules 2 and 3). Given scientific predictions that such a war would cause the death of between 300 million and half the world's people, as well as triggering a disastrous 'nuclear winter', unparalleled violation of the prohibitions against gratuitous forms of warfare (Rule 1), poison gases (Rule 4), and environmental modification (Rule 5) would be certain. Indeed, it would seen senseless to speak in terms of balancing 'military necessity' against these principles of

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[452]See *supra*, note 23.

[453]See *supra*, note 126.

> humanity when the resulting war would be so catastrophic that it would negate any recognizable notions of 'victory'. Nuclear war involving the targeting of cities would amount to more than a violation of the traditional laws of war; it would likely constitute genocide, a crime against humanity solemnly prohibited by the Nuremberg Judgements and the Genocide Treaty.
> The use of nuclear weapons against the industrial, military or command and communications installations of an adversary would be similarly unlawful. Although on first consideration such a 'limited nuclear war' would seem more consistent with the requirements of target discrimination and proportionality, the fact that the majority of these so-called 'military targets' are located in or near urban population centers would make observance of the laws of war almost certainly impossible. [...]
> Finally, even the 'defensive' use of highly discriminate and accurate 'smart' nuclear weapons to respond to a massive conventional attack in a 'battlefield' situation, would be inconsistent with the law. Since, by their very nature these flexible nuclear weapons and strategies are designed for deliberate escalation of hostilities for purposes of inflicting unacceptable harm on the adversary, they are in direct conflict with the prohibition against disproportionate response (Rule 6). [...]
> Based on this analysis, we conclude that in any of the contexts envisaged by current policies, the use of nuclear weapons would be illegal. We must, therefore, unequivocally condemn nuclear warfare."[454]

The three first-mentioned rules of the Lawyers' Committee on Nuclear Policy are of special relevance regarding the effects of nuclear weapons. They can be considered to have obtained customary character and are the basic rules of international humanitarian law. The principles of humanitarian law have to be respected in all circumstances and in any armed conflict.[455] International humanitarian

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[454]Reprinted in Kindred *supra* note 397 at 881-882

[455]Mohr remarks that "[T]hese basic contents and constructions of international humanitarian law have been fully endorsed by *Protocol I*, which proclaims as its aim 'to reaffirm and develop the provisions protecting the victims of armed conflict, and which must be fully applied in all circumstances to all persons who are protected [...] without any adverse distinction based on the nature or the origin of the armed conflict'" (Preamble). See Manfred Mohr, "International Humanitarian Law and the Law of the Armed Conflict: Its Relevance to the Nuclear Challenge" in M. Cohen and M.E. Gouin, *Lawyers and the Nuclear Debate* (Ottawa: University of Ottawa

law observes and regulates the consequences and effects of the use of weapons or means of warfare on the human population but does not prohibit the use of weapons or means of warfare as such. This conclusion applies to all types of weapons including nuclear weapons which endanger the existence of human civilization.[456] It also means that humanitarian laws in force are applicable in all wartime situations whether conventional or nuclear war.[457]

On July 8, 1996 the International Court of Justice issued one of the most significant decisions in its history. The World Court declared the threat and use of nuclear weapons to be generally contrary to international law.[458]

Press, 1988) 81. For an opposite view see Tarasofsky *supra* note 369 at 59. He based his argument on the U.S. and U.K. practices on the signature of *Protocol I* and stated that "nuclear weapons were specifically excluded from the ambit of Additional *Protocol I*, despite the *prima facie* applicability of several of its provisions". See Tarasofsky, *supra* note 369 at 59.

[456]Manfred Mohr, *supra*, note 455 at 83-90.

[457]It can be stated that the use of nuclear weapons constitutes a breach of several rules and principles of conventional and customary international law. Any of these breaches in itself might be sufficient to assert that the use or threat of use of nuclear weapons is not legal. See Tibor Toth, "No First Use of Nuclear Weapons, Some Legal Aspects" in Albert Meynier, *Nuclear Weapons and International Law* (Geneva: GIPRI, 1985) 13 at 18. Rauschning holds an oposite view. He states: "Already from the view point of methodology, it would be very difficult to establish that a rule of customary international law prohibiting in general the use of nuclear weapons has developed. [...][G]eneral statements of a number of non-nuclear-weapon States can not create a rule of international law without the concurring opinion and practice of the nuclear-weapons States." See Rauschning, *supra*, note 422 at 46.

[458]The World Health Organization, an agency of the U.N., and the United Nations General Assembly requested advisory opinions of the International Court of Justice (ICJ) on the legality of the use of nuclear weapons under international law. The question upon which the advisory opinion of the Court has been requested is set forth in UN General Assembly resolution 49/75 K adopted on December 15, 1994. The General Assembly, recalling its resolutions 1653 (XVI) of November 24, 1961, 33/71 B of December 14, 1978, 34/83 G of December 11, 1979, 35/152 D of December 12, 1980, 36/92 1 of December 9, 1981, 45/59 B of December 4, 1990 and 46/37 D of December 6, 1991, in which it declared that the use of nuclear weapons would be a violation of the Charter and a crime against humanity, requested the ICJ urgently to render its advisory opinion on the following question: "Is the threat or use of nuclear weapons in any circumstance permitted under

By Order of the Court, June 20, 1995 was set as the deadline for receipt of written statements from interested States entitled to appear before it and the United Nations.[459] Forty-five nations, including the United States, the United Kingdom, Egypt, France, Russia, Australia, New Zealand, Zimbabwe and Japan, presented written or oral testimony to the Court.[460] In both their written and oral statements, some States argued that "any use of nuclear weapons would be unlawful by reference to existing norms relating to the safeguarding and protection of the environment. [...]"[461]

The Court recognizes that the use of nuclear weapons could constitute a catastrophe for the environment. States have the general obligation to ensure that activities within their jurisdiction and control respect the environment of other States or of areas beyond national control.[462]

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international law?" See *supra*, note 167.

[459]ICJ Advisory Opinion on the Legality of the Threat or Use of Nuclear Weapons, *supra*, note 167 at para. 4.

[460]Nuclear Weapons Illegal!, World Court Issues Landmark Opinion, Disarmament Links, available: [http://www.igc.apc.org/disarm/worldct.html].

Canada was active during the past two years in laying the political and technical foundation in support of a treaty ending nuclear testing. The Canadian Foreign Affairs Minister stated that this treaty is the best compromise that can bring about a permanent end to nuclear testing. He expressed Canada's hope that, in spite of an impasse at the Conference on Disarmament in Geneva, the Comprehensive Test Ban Treaty (CTBT) will come into force. He stated that "While consensus could not be reached in Geneva, arduous negotiations over the past two years have produced a draft treaty. Canada is working with a wide range of countries to ensure that this draft will be sent to the United Nations General Assembly and opened for signature in September." See Canada Hopes for Resolution of Comprehensive Test Ban Treaty Impasse, Department of Foreign Affairs and International Trade, August 22, 1996 No. 146, available: [http://www. dfait-maeci.gc.ca/english/ news/press_ 1/96_ press/ 96_ 146E. HTM].

[461]ICJ Advisory Opinion on the Legality of the Threat or Use of Nuclear Weapons, *supra*, note 167 at para. 27.

[462]*Ibid.* at para. 29.

However, the Court stated that the matter is not whether the treaties relating to environmental protection are or are not applicable during military conflict, but rather whether the obligations stemming from these treaties were intended to be obligations of total restraint during an armed conflict.[463]

The Court, by quotting Principle 24 of the Rio Declaration[464], pointed out that States must take environmental considerations into account when assessing what is necessary and proportionate in the pursuit of legitimate military objectives.[465]

The Court noted that Articles 35(3), and 55 of the 1977 *Geneva Protocol I*[466] provide additional protection for the environment. These provisions are powerful constraints for all the States which have subscribed to them: a general obligation to protect the natural environment against widespread, long-term and severe environmental damage; the prohibition of methods and means of warfare which are intended, or may be expected, to cause such damage; and the prohibition of attacks against the natural environment by way of reprisals.[467]

The Court noted General Assembly Resolution 47/37 of November 25, 1992

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[463]*Ibid.* at para. 30.

[464]Principle 24 of the Rio Declaration, which provides that: "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." See Rio Declaration, *supra*, note 37.

[465]ICJ Advisory Opinion on the Legality of the Threat or Use of Nuclear Weapons, *supra*, note 167 at para. 30.

[466]*Supra*, note 23.

[467]ICJ Advisory Opinion on the Legality of the Threat or Use of Nuclear Weapons, *supra*, note 167 at para. 31.

on the 'Protection of the Environment in Times of Armed Conflict' which states that "destruction of the environment, not justified by military necessity and carried out wantonly, is clearly contrary to existing international law". The General Assembly in this resolution appealed to all States to become parties to the relevant international conventions.

The Court found that "while the existing international law relating to the protection and safeguarding of the environment does not specifically prohibit the use of nuclear weapons, it indicates important environmental factors that are properly to be taken into account in the context of the implementation of the principles and rules of the law applicable in armed conflict."[468]

The Court concluded that the most directly relevant applicable law governing the question of the legality of the threat or use of nuclear weapons was that "relating to the use of force enshrined in the United Nations Charter and the law applicable in armed conflict which regulates the conduct of hostilities, together with any specific treaties on nuclear weapons that the Court might determine to be relevant."[469]

The Court began its analysis of the illegality or legality of the threat or use of nuclear weapons with Article 2, paragraph 4 of the *UN Charter*, which requires all member States of the United Nations to refrain from the threat or use of force against the territorial integrity or political independence of any State.[470] This prohibition is to

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[468] *Ibid.* at para. 33.

[469] *Ibid.* at Para. 34.

[470] *UN Charter*, Art. 4 para. 2. *Supra*, note 126.

be considered in the light of other relevant provisions of the Charter,[471] notably those recognizing the inherent right of individual or collective self-defense of a State if an armed attack occurs,[472] and the right of the Security Council to take military enforcement measures.[473] The Court noted its decision in the case concerning military and paramilitary activities in and against Nicaragua *(Nicaragua v. United States of America)*[474] that there is a well-established rule in customary international law that the use of force under the law of self-defense, in order to be lawful, must be proportionate to the armed attack.[475] Any use is unlawful if it fails to meet the requirements of "individual or collective self-defense" under Article 51 of the *UN Charter*. Even then, the rules governing armed conflict, especially humanitarian laws and principles, cast doubt over whether a nuclear attack could ever be legally justified.[476]

The Court agreed unanimously that nuclear weapons, like any weapons, are subject to the law of armed conflict protecting civilians, combatants, the environment and neutral nations from the effects of warfare, and are also subject to the *UN Charter* prohibitions of the threat or use of force except in self-defense. However, the Court found that in conventional and customary international law, there is neither a comprehensive prohibition nor any specific authorization of the threat or use of

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[471]ICJ Advisory Opinion on the Legality of the Threat or Use of Nuclear Weapons, *supra*, note 167 at 38.

[472]*UN Charter*, Art. 51. *Supra*, note 126.

[473]*UN Charter*, Art. 42. *Supra*, note 126.

[474]ICJ Reports 1986, p. 94, para. 176.

[475]ICJ Advisory Opinion on the Legality of the Threat or Use of Nuclear Weapons, *supra*, note 167 at 41.

[476]Roger K. Smith, "World Court Rules Against Nuclear Weapons", Disarmament Links, available: [http://www.igc.apc.org/disarm/icjstory.html].

nuclear weapons.[477]

Finally the Court stated unanimously that "there exists an obligation to pursue in good faith and to bring to a conclusion negotiations leading to nuclear disarmament in all its aspects under strict and effective international control."[478] Paragraph 99 of the Court's advisory opinion clarifies this statement. It quotes Article VI of the *Nuclear Non-Proliferation Treaty*[479] and states that "the legal import of that obligation [to pursue negotiations in good faith] goes beyond that of a mere obligation of conduct; the obligation involved here is an obligation to achieve a precise result -- nuclear disarmament in all its aspects -- by adopting a particular course of conduct, namely the pursuit of negotiations on the matter in good faith."[480]

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[477]ICJ Advisory Opinion on the Legality of the Threat or Use of Nuclear Weapons, *supra*, note 167 at 105.

[478]*Supra*, note 167.

[479]*Supra*, note 418.

[480]*Supra*, note 167. paragraph 98. Commander Robert Green, Royal Navy (ret.) , of World Court Project UK, said: "With this remarkable decision, I could never have used a nuclear weapon legally. This places a duty on the military to review their whole attitude toward nuclear weapons, which are now effectively in the same category as chemical and biological weapons". See Press Release from World Court Project, World Court Declares Nuclear Weapons Threat and Use Illegal, Disarmament Links, available: [http://www. igc.apc.org/disarm/press.html].

4. Conclusion

From the discussion on the use of chemical and biological weapons in warfare, the conclusion can be drawn that there was a clear and concrete tendency among States to outlaw weapons of mass destruction after the First World War. Many States believed that these methods of warfare were contrary to the laws of humanity and therefore should be prohibited by the rules and principles of international law. States sought not only to establish a simple prohibition against the use of these weapons in war, but to limit preparation for their future use.

Since the use of certain conventional weapons is specifically prohibited by international law because of their inherent characteristics, it is the very characteristics of the consequences of weapons of mass destruction specially nuclear weapons which provide the basis for the inherent illegality of their use. These inherent characteristics relate to their severe effect on human health and the environment. It is because of both these effects that the use of nuclear weapons violates the most fundamental rules of international law.The use of a nuclear weapon in time of war which affects a great number of non-combatants will have indiscriminate effects, even if the action is intended to be limited only to military targets. International law prohibits the use of weapons which: render death inevitable; cause unnecessary suffering; have indiscriminate effects; and violate the principles of proportionality and humanity.The use of nuclear weapons violates rules of the international law of armed conflict as a result of their qualitative effects. This means that their use violates, directly or indirectly, those rules of the international law of armed conflict which prohibit the use of weapons that cause incidental loss of civilian life.

It is apparent that despite the great efforts to develop international law in this subject, the *status quo* was insufficient to outlaw these lethal weapons outright.

Fortunately, the 1993 *Chemical Weapons Convention* is a comprehensive convention on the use of chemical and biological agents in war. It provides significant protection against the effects of these lethal agents to the environment.The Convention entered into force on April 29, 1997, 180 days after the 65th ratification. The CWC was originally signed by 130 countries in Paris on Jan. 12, 1993.

The threat of the use of nuclear weapons is unlawful if it is accompanied by a threat prohibited by international law. A State which threatens the use of nuclear weapons would threaten international peace and security. It would violate the general rules of international law, such as the obligation to fulfil in good faith its obligations under the *United Nations Charter*. This principle is elaborated in the General Assembly's Declaration of Principles Governing Friendly Relations between States[481]. In the *Nuclear Tests* case (Australia v. France), The ICJ stated that "One of the basic principles governing the creation and performance of legal obligations, whatever their source, is the principle of good faith. Trust and confidence are inherent in international co-operation, in particular in an age when this co-operation in many fields is becoming increasingly essential."[482] Article VI of the *Treaty on the Non-Proliferation of Nuclear Weapons*[483] recognized an obligation to negotiate nuclear disarmament in good faith. It stated that "[e]ach of the Parties to the Treaty

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[481]G.A.Res. 2625 (XXV), 24 Oct. 1970, Principles 7.

[482]Judgment of December 20, 1974, ICJ Reports 1974, p. 268, para. 46.This basic principle is set forth in Article 2, paragraph 2, of the *UN Charter*. (*Supra*, note 126) It was reflected in the Declaration on Friendly Relations between States (resolution 2625 (XXV) of October 24, 1970) and in the Final Act of the Helsinki Conference of August 01, 1975. It is also embodied in Article 26 of the Vienna Convention on the Law of Treaties of May 23, 1969, according to which "[e]very treaty in force is binding upon the parties to it and must be performed by them in good faith". *Supra*, note 302.

[483] See *supra*, note 418.

undertakes to pursue negotiations in good faith on effective measures relating to cessation of the nuclear arms race at an early date and to nuclear disarmament, and on a treaty on general and complete disarmament under strict and effective international control."[484]

In the case of nuclear weapons[485], conventional law, despite the existing regulations to minimize nuclear risks and to prevent injury to other States, is not sufficient to minimize the environmental risk posed by the military use of nuclear weapons. Their use falls outside the regulation of civil uses of nuclear energy.

There is no general global convention in force dealing with environmental damage by nuclear weapons in wartime. The nuclear agreements need a more realistic approach to environmental damages resulting from utilisation of nuclear weapons in wartime.[486]

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[484] See *supra*, note 418.

[485]Falk commented that "a beneficial international law regime for nuclear weapons would have to rest on the following considerations:
(a). public support for the idea that any actual use of nuclear weapons would violate the international law of war and would constitute a crime against humanity;
(b). Public support for the rule that a first use of nuclear weapons, even in a defensive mode in response to or in reasonable anticipation of a prior armed attack, would violate international law and would constitute a crime against humanity;
(c). It follows from (b) that weapons systems (even at the research and development stage), strategic doctrines, and diplomatic threats that have first-strike characteristics are *per se* illegal, and that those political leaders, engineers, scientists, and defense workers knowingly associated with such 'first-strike' roles are engaged in a continuing criminal enterprise;
(d). a definite consensus that second or retaliatory uses of nuclear weapons against cities and primarily civilian targets violate international law and constitute a crime against humanity." See Richard Falk, "Toward a legal regime for Nuclear Weapons", 1983, vol.28, McGill L. J., 519 at 537.

[486]There is no State practice to ban limited manufacturing and possession of nuclear weapons by anyone with the capacity to do so. See Tarasofsky, *supra* note 369 at 59.

It is time for all governments to take seriously the necessity of achieving a world free of nuclear weapons. The desirability of this goal has long been formally agreed to in Article VI of the *Non-Proliferation Treaty* and in the preambles of a number of other treaties limiting nuclear weaponry. The nuclear-weapon States, in particular, have been reluctant to participate in the development of a comprehensive framework in order to pursue this goal effectively. Should the 1996 *Comprehensive Test Ban Treaty* be widely subscribed to, it will provide significant protection to the environment. Unfortunately, a statement arising from the attachment of a clause that makes the Treaty's entry into force conditional on its having gained the signatures of 44 specific countries may prevent it from entering into force. We believe that the best way to enforce this treaty would be to remove the problematic entry into force clause.

The examination of existing law shows that effective protection of the environment requires more detailed specific legal rules. This indicates the need for further progressive development of international law relating to the environment mainly on a treaty basis, since existing treaty law regarding environmental protection is inadequate.[487]

Treaties are clear evidence of the will of States to demonstrate their intention to impose the rule of international law. Chapters 1 to 4 were dedicated mostly to international conventions related to humanitarian, disarmament and environmental law. It will be necessary to refer, in Chapter 5, to the ways in which international custom may influence the protection of the environment in wartime.

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[487] *Ibid.*

Chapter V. The Principles of Customary International Law

Les normes coutumières de droit international relativement au droit humanitaire se trouvent dans les Conventions de la Haye de 1907 concernant les lois et coutumes de la guerre sur terre et de Genève de 1949 relative à la protection des personnes civiles en temps de guerre. Le Tribunal militaire international de Nuremberg a déclaré que les règles présentes dans le Convention IV de la Haye concernant les lois et coutumes de la guerre sur terre reconnues par toutes les nations civilisées devaient être considérées comme étant déclaratoires de droit coutumier. La protection de l'environnement s'aligne dans la perspective d'une protection générale de la population et des biens. Donc, il est essentiel de discuter du droit coutumier de la guerre, qui a été reconnu comme un élément important de développement du droit de la guerre. Le chapitre V sera consacré à l'analyse de l'évolution des normes culturelles relativement à la guerre et à l'environnement. Une attention spécifique sera accordée aux principes de droit international coutumier. Nous examinerons cinq importantes normes de droit international coutumier, soit les principes de nécessité militaire, d'humanité, de souffrance inutile et de proportionnalité qui protègent indirectement l'environnement contre une attaque militaire non-légitime. Puis nous tenterons de cerner si la protection légale d'environnement contre les effets provenant d'activités militaires peut dériver du droit international coutumier des conflits armés.

1. Principles Important for the Interpretation of Belligerent Conduct

1.1. Introduction

Treaties represent the first important material source of international law. In chapters I to IV we discussed the international conventions addressing degradation of the environment by military and related activities. Chapter V is dedicated to the principles of customary international law. The starting point for a discussion of the

source of international law is Article 38 of the ICJ Status. It provides that:

> 1. The Court, whose function is to decide in accordance with international law such disputes as are submitted to it, shall apply:
> a. international conventions, whether general or particular, establishing rules expressly recognized by the contesting States;
> b. international custom, as evidence of a general practice accepted as law;
> c. the general principles of law recognized by civilized nations;
> d. subject to the provisions of Article 59, judicial decisions and the teachings of the most highly qualified publicists of the various nations, as subsidiary means for the determination of rules of law. [...].

For centuries, the conduct of armed conflict has drawn the attention of scholars. Writers such as Grotius have devoted their studies to understanding armed hostilities in terms of international relations.[488]

As agreements of rules related to war were codified, customary principles were recognized to be of great importance in the development of the law of war. The provisions of the Hague Regulations have contributed to the formation of customary law. The 1907 *Hague Convention IV*[489] expressly stated in its preamble that the Convention was an attempt to "revise the general laws and customs of war."[490] The best known of the Second World War trials were held before the International Military Tribunals at Nuremberg and Tokyo.[491] The Nuremberg Tribunal was assigned

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[488]According to Grotius "one of the three following cases is requisite to justify any one in destroy-ing what BELONGS to another: there must be either such a necessity ... or there must be some debt, arising from the non-performance of an engagement ... or there must have been some aggression, for which such destruction is only an adequate punishment." See Grotius, *The Rights of War and Peace*, A.C. Campbell (Washington: Walter Dunne Publisher, 1901) at 365.

[489]See *supra*, note, 81.

[490]The 1946 International Military Tribunal at Nuremberg repeated this statement in its judgment. See Roberts, *supra*, note 36 at 45 and 156.

[491]See Trail of German Major War Criminals: Proceedings of the International Military Tribunal Sitting at nuremberg, Part 22, HMSO, London, 1950, pp. 412-13 and 467; London

the task of trying the major German war criminals.

The defendants at Nuremberg who were charged with conventional war crimes argued that the Regulations annexed to the Convention did not bind Germany and did not govern their conduct during the Second World War since some of the parties to the conflict were not parties to the 1907 *Hague Convention IV*[492]. The International Military Tribunal rejected this defense and stated that:

> "The rules of land warfare expressed in the Convention undoubtedly represented an advance over existing international law at the time of their adoption. But the Convention expressly stated that it was an attempt to 'revise the general laws and customs of war', which it thus recognized to be then existing, but by 1939 these rules laid down in the Convention were recognized by all civilized nations, and were regarded as being declaratory of the laws and customs of war which were referred to in Article 6(b) of the Charter."[493]

The Nuremberg Tribunal focused its attention on, *inter alia*, the responsibility of individuals to observe international law and the concepts of 'war crimes', 'crimes against humanity' and 'crimes against peace'. The doctrine recognized at Nuremberg has become known as the 'Nuremberg Principles'. The UNGA gave these principles and the judgement of the Nuremberg Tribunal the status of customary norms of international law. It had entrusted to the ILC "the formulation of the principles of international law recognized in the *Charter of the Nuremberg Tribunal* and in the

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School of Economic and Political Science, Dept. Of International Studies, *Annual Digest and Reports of Public International Law Cases*, (London: Butterworth, London, 1951) pp. 204 and 212; Roberts *supra* note 36 at 153.

[492]*Supra*, note 81.

[493]Judgement of the International Military Tribunal for the Trial of German Major War Criminals, Nuremberg (1946), Cmd. 6964, p. 39.

judgement of the tribunal."[494] The sixth of these principles enumerates war crimes punishable under international law. Paragraph (b) of this list includes "wanton destruction of cities, town or devastation not justified by military necessity."[495] The ILC, in its comments, states that war crimes defined in Article 6(b) of the principles were already recognized as war crimes under international law.[496] In the view of the Tribunal, the charter "is the expression of international law existing at the time of its creation; and to that extent is itself a contribution to international law."[497]

International treaties never cover all relevant questions concerning the conduct of armed forces in hostilities; in these circumstances, customary law supplements codified norms. This notion was clearly enunciated in the so-called Martens Clause in the preamble to the 1907 *Hague Convention IV*:

> "Until a more complete code of the laws of war has been issued, the high contracting Parties deem it expedient to declare that, in cases not included in the Regulations adopted by them, the inhabitants and the belligerents remain under the protection and the rule of the principles of the law of nations, as they result from the usages established among civilized peoples, from the laws of humanity, and the dictates of the public conscience."[498]

Customary law of war does not directly protect the environment, but

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[494]UNGA Resolution 177 II of Nov. 21, 1947.

[495]See Roberts, *supra*, note 36 at 155.

[496]Fauteux, *supra*, note 69 at 58.

[497]See G. Schwarzenberger, *International Law*, iii, 3rd edn. (London: Sterens & Sons Limited, 1957) at 483. The Nuremberg Tribunal was justified by treating its rules as having been "recognized by all civilized nations." *Ibid.* vol. II at 484.

[498]See Roberts, *supra*, note 36 at 45; The same principle was revised in the 1907 *Hague Convention IV, (supra* note 81), in the four 1949 *Geneva Conventions,* the 1977 *Geneva Protocol I and II (supra*, note 23) and in the Preamble to the 1981 *UN Inhumane Weapons Convention (supra,* note 24).

environmental protection falls within the general protection of the civilian population and property.[499]

The foundational customary principle of the law of war, codified in the 1907 *Hague Convention IV* and elsewhere, is that the right of belligerents to adopt means of injuring the enemy is not unlimited. From this principle arise a number of subsidiary principles that underlie much of the remainder of the law of war. They are usually grouped into five broad categories: military necessity, humanity, discrimination, unnecessary suffering and proportionality. This chapter examines what is actually meant by these principles and how they might link constraints on the use of military force to a respect for nature. Thus, we will first discuss these customary principles and then we will examine whether there exists a customary international law for the protection of the environment in time of war.

1.2. The Principles of Military Necessity and Humanity

The first principle prohibits belligerents from employing weapons or tactics that impose superfluous suffering on their victims. It permits the belligerents to use the amount and type of force necessary to overcome the enemy at the earliest possible time while using the least resources.[500] The second principle provides that no

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[499]See Tarasofsky, *supra*, note 369 at 22.

[500]The Spanish Treaty Claims Commission accepted the plea of military necessity in the *West India Oil Company* case (U.S. v. Spain), in which oil was thrown into the sea during the bombardment of Manzanillo by the American fleet. The Commission disallowed the claim for the oil thrown into the sea. It was argued that it was necessary in order to save the city from a great conflagration. See Whiteman, *Damages in International Law*, vol. II (US:Government Printing Office, 1943) at 944.

In the Hostage Trial (1948, Friedman at 1333), the tribunal accepted a plea of military necessity from Lothger Rendulic, a German Commander, charged with "wanton destruction of cities, towns, or villages", because he believed that the devastation was necessary to render the land useless to an anticipated Russian invasion. See Simonds, *supra* 66 at 169. It was stated in this case that "[t]he destruction of property to be lawful must be imperatively demanded by the necessities of war.

belligerent is justified in using any kind or degree of force that is inherently cruel.[501] In general, a belligerent party cannot defend itself for acts forbidden by the customary and conventional law of war by simply referring to military necessity since these laws were developed taking into account the concept of military necessity.[502] The Franco-Venezuelan Mixed Claims Commission in the *Brun* case (1905) gave the following definition of military necessity:

> "Military necessity, as understood by modern civilized nations, consists in the necessity of those measures which are indispensable for securing the ends of the war, and which are lawful according to the modern law and usages of war. [...] Military necessity admits of all direct destruction of life or limb of armed enemies, and of other persons whose destruction is incidentally unavoidable in the armed contests of the war."[503]

The British-United States Claims Arbitral Tribunal (1910) defined military necessity as "... an act which is made necessary by the defense or attack and assumes

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Destruction as an end in itself is a violation of international law. There must be some reasonable connection between the destruction of property and the overcoming of the enemy forces. [...] It does not admit the wanton devastation of a district or the willful infliction of suffering upon its inhabitants for the sake of suffering alone." See L. Friedman, *The Law of War, A Documentary*, vol.II (NY, Random House, 1972) at 1319.

[501]See Roberts, *supra*, note 36 at 5. The Greeks and Romans respected humanitarian principles which then became fundamental rules of war. After the taking of Athens by Lysander, "the government of Thebes issued a decree providing that every city and every house in Boeotia should be open to those Athenians [fugitives] who required shelter and that whoever did not offer assistance to an Athenian exile against anyone who tried to force him away should be fined a talent." See Coleman Phillipson, *The International Law and Custom of Greece and Rom*, vol.I (NY: Arno Press, 1979, at 353.

[502]In 1926, A Claim on behalf of William Hardman a British subject, whose personal property was destroyed by US troops, was presented to the Anglo-American Claims Tribunal. The British Government admitted that necessary war losses do not give rise to a legal right of compensation but argued that the destruction of this property was not a necessity of war, but a measure taken for the combat and health of the troops, for which compensation should be made. See Whiteman *supra*, note 500, vol. II at 1434.

[503]Franco-Venezuelan Mixed Claims Commission (1902) in *Brun* case (1905). Ralston's Report, 5 at p. 27, quoted in B. Cheng, *General Principles of Law as Applied by International Courts and Tribunals* (Cambridge, Eng.: Grotius Publications, 1987) at p. 65.

the character of *vis major*."[504]

The 1868 *St. Petersburg Declaration Renouncing the Use in Time of War, of Explosive Projectiles under 400 grammes weight* focuses on a common goal of military operations: to weaken the enemy's armed forces. It limits the tactics and methods of warfare by indicating that there are "technical limits at which the necessities of war ought to yield to the requirements of humanity."[505] It restricts the claim of military necessity by renouncing the use of explosive projectiles less than 400 grams in weight. The St. Petersburg Declaration was considered by the principal European powers to be a binding international agreement, even though it is called a Declaration.[506]

Because of humanitarian concerns, the mode of conduct in warfare should be in accordance with the rules and customs of warfare[507]. It seems that the principle of military necessity has not been restricted to the destruction only of enemy property;

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[504]See *Hardman* case (1913) Brit.-U.S.Cl.Arb., quoted in Cheng, *supra*, note 503 at 65.

[505]See St. Petersbourg Declaration in LXIV UKPP (1869) 659; 58 BFSP (1867-1868) 16-17; 1 AJIL (1907) suppl. 95-6; 138 CTS (1868-69) 297-99. Roberts, *supra*, note 36 at 31.

[506]Fauteux, *supra*, note 69 at 56. Igor P. Blishchenko; "Les principes du droit international humanitaire" in C.Swinarski, ed. *Etudes et essais sur le droit international humanitaire et sur les principes de la Croix-Rouge*, en l'honneur de J. Pictet, Geneva; Nijhoff, 1984, 291 at 298. "Parmi les principes d'humanité du droit international humanitaire applicable lors des conflits armés, le principe dit "principe de la nécessité militaire" occupe une place importante.

Dans la doctrine occidentale, ce principe est reconnu comme le principe fondamental de ce système juridique et est utilisé, en pratique, pour justifier les actes de guerre commis par les Etats impérialistes.

Ce principe est l'objet d'une longue lutte et de divergences engendrées par les formulations différentes contenues dans certains textes internationaux. Ainsi, la Déclaration de St.-Pétersbourg de 1868 proclame qu'il faut réduire "autant que possible" les calamités de la guerre, et que les nécessités de la guerre" doivent céder le pas aux exigences de l'humanité". *Ibid.*

[507]See Cheng, *supra*, note 503 at 63.

breaches of this standard in relation to useless environmental destruction entail State responsibility.[508]

The principle of military necessity is similar to that found in Article 23(g) of the 1907 *Regulation Respecting the Law and Custom of War on Land*[509] which considers it unlawful "to seize the enemy's property, unless such destruction or seizure be imperatively demanded by the necessities of war ..."[510]

1.3. The Principle of Discrimination

It is a basic rule of warfare that a distinction shall be drawn between military personnel and those *hors de combat* and that no weapons or tactics may be employed in warfare which are incapable of discriminating between combatants and non-combatants.[511] The principle of discrimination purports that parties to an armed conflict shall always distinguish between the civilian populations and combatants and between civilian objects and military objectives. Attacking civilian population and civilian objects is forbidden. This rule has been accepted as customary international law and has been embodied in the Hague Regulations[512] and the Geneva law[513].

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[508]See Tarasofsky, *supra*, note 369 at 24-26. The US Military Tribunal states that "[t]here must be some reasonable connection between the destruction of property and the overcoming of the enemy forces." See Tarasofsky, *supra*, note 369 at 25. Cheng states that "while it is left to the State conducting military operations to determine what are military necessities, international tribunals are entitled to intervene in cases of manifest abuse of this discretion, causing wanton destruction or injury." See Cheng, *supra*, note 503 at 133.

[509]See *supra*, note 81.

[510]See Roberts, *supra*, note 36 at 53.

[511]See Tarasofsky, *supra*, note 369 at 26.

[512]See *supra*, note 81.

[513]See *supra*, note 31.

When it is probable that an attack against military objectives will cause massive damage to civilian life and property greater than the expected direct military advantage, the attack is forbidden.[514]

This principle "prohibits the use of weapons the destructive effect of which is so great that it cannot be limited to specific military objectives or is otherwise uncontrollable."[515]

1.4. The Principle of Unnecessary Suffering

The main criterion in this article is 'unnecessary'. Suffering is unnecessary if it is not justifiable by military necessity. Effective weapons are usually cruel. If these weapons are employed to destroy human life or its environment, they are considered as falling under this prohibition.[516] The principle of unnecessary suffering was embodied in Article 23(e) of the Regulations annexed to 1907 *Hague Convention IV*[517] which prohibits the employment of "arms, projectiles, or material calculated to cause unnecessary suffering."[518] The 1868 *St.Petersburg Declaration Renouncing the Use, in Time of War, of Explosive Projectiles Under 400 grams Weight*[519] is considered the first major inter-governmental attempt to codify a fundamental customary law of war. It is regarded as expressing the customary principle prohibiting the use of means of warfare causing unnecessary suffering. The Declaration limits the

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[514]See Rauschning, *supra*, note, 422 at 49.

[515]See Simonds, *supra*, note 66 at 169.

[516]See Rauschning, *supra*, note 422 at 48.

[517]See *supra*, note 81.

[518]See *supra*, note 81.

[519]See *supra*, note 505.

tactics and methods of warfare. It explicitly adopted the view that "the only legitimate object which States should endeavor to accomplish during war is to weaken the military forces of the enemy."[520]

The 1899 *Hague Declaration 2 concerning Asphyxiating Gases*[521] and the 1925 *Geneva Protocol for the Prohibition of the Use in War of Asphyxiating, Poisonous or Other Gases, and of Bacteriological Methods of Warfare*[522], were derived from the general principles of customary international law. They prohibit the use of poison and other materials causing unnecessary suffering.

The principle of unnecessary suffering was affirmed in Article 35(2) of the 1977 *Geneva Protocol I*[523] and in the preamble to the 1981 *UN Inhumane Weapons Convention*[524].

Although extensively cited in international agreements, the principle of unnecessary suffering does not deal comprehensively with the protection of the environment in wartime. Customary law has done little to distinguish between 'necessary' and 'unnecessary' suffering.[525]

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[520]See *supra*, note 505; Roberts, *supra*, note 36 at 30-31.

[521]See the 1899 *Hague Declaration II*, *supra*, note 361.

[522]See, the 1925 *Geneva Protocol*, *supra*, note 366.

[523]See *supra*, note 23.

[524]See *supra*, note 24.

[525]This was expressed in the 1974 Lucerne Conference of Government Experts on the Use of Certain Conventional Weapons, quoted by Tarasofsky, *supra*, note 369 at 28. See Roberts, *supra*, note 36 at 137.

1.5. The Principle of Proportionality

The principle of proportionality [526], which regulates the type and degree of harm inflicted on a target, requires that no weapon or tactic may be employed in war that causes death, injury and destruction disproportionate to the value of the lawful military objectives being sought.[527] The rule of proportionality is included in Article 57 of the 1977 *Geneva Protocol I*[528]. This article deals with "precautions in attack" and indicates that the principle is adopted for the purpose of "constant care to spare the civilian population, civilians and civilian objects".[529]

The provision requires a party to "refrain from deciding to launch any attack which may be expected to cause incidental loss of civilian life, injury to civilians, damage to civilian objects, or a combination thereof, which would be excessive in relation to the concrete and direct military advantage anticipated."[530]

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[526]Some authors believe that the principle of proportionality cannot protect the environment. In Tarasofsky's view, for example, since the precise content of proportionality is undefined, and determining the value of the environment and measuring it against the military value of a target is considered too subjective, it is difficult to consider the principle of proportionality as protecting the environment from damage in wartime. See Tarasofsky, *supra*, note 369 at 29-30

[527]See Falk, "Environmental Warfare and Ecocide-Facts, Appraisal, and Proposals" in *Prohibiting Military Weather Modification*, Hearing before the Subcommittee on Ocean and International Environment, 92ed Congress, 2ed session (Washington: Government Printing Office, 1972) at 138. This view was taken by the United States. The General Council of the Department of Defense wrote to Senator Kennedy that "the loss of life and damage to property must not be out of proportion to the military advantage to be gained." See Arthur W. Rovine, "Contemporary Practice of the United States Relating to International Law" (1973) vol. 67 AJIL, 118 at 124.

[528]See *supra*, note 23.

[529]The 1977 *Geneva Protocol I, supra*, note 23 Art. 57(2) para. a(iii).

[530]The 1977 *Geneva Protocol I,* Article 57(2) para. a(iii) *supra*, note 23; See Hans Blix, Means and Methods of Combat, in UNESCO, *International Dimensions of Humanitarian Law* (Geneva: Henry Dunant Institute 1988) 135 at 148.

Proportionality can protect the environment indirectly since it takes into account the damage to civilians and their property.

Reprisals must be in proportion to the wrong done. This rule was affirmed in the *Naulilaa* case[531] between Portugal and Germany. The tribunal held that the reprisals resorted to in that case by Germany were excessive and therefore illegal, since there was obvious lack of proportion between the shooting of some German soldiers near the border and the invasion of Portuguese territory by Germany.[532]

2. Protection of the Environment as Customary International Law

2.1. Introduction

The July 1992 Conference of Experts on the Use of the Environment as a Tool of Conventional Warfare highlighted that "the customary laws of war in reflecting the dictates of public conscience now include a requirement to avoid unnecessary damage to the environment."[533] Since customary principles have little substantive details, such an affirmative answer to the questions of whether legal protection of the environment can be derived from international customary principles, and whether the 'dictates of public conscience' can be so clear remains questionable. We hold that although customary international law lacks the specificity required to fully protect the environment, a customary rule of protecting the environment has already, at least since the 1970s, evolved.

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[531]*Naulilaa* case (1928) 2 RIAA 1012.

[532]McNair and Lauterpatcht, vol 4, *Annual Digest of Public International Law* (London: Butterworths, 1927-1928) case no. 360 at p.527.

[533]Lijnzaad, *supra*, note 74 at 184; Reiskind, *supra*, note 159 at 159.

What elements are necessary to establish customary international law and how can State practice create a customary rule of international law? Generally speaking, customary rules crystallize from, *inter alia*, bilateral and multilateral treaties, international organs, State laws and judicial decisions. International custom is a dynamic source of law. It is difficult to prove the existence of a custom. The doctrinal view is that the process of forming customary norms of international law consists of two elements: the first element is the co-ordination of the wills of States with regard to the rule of conduct - the formation of usage, and the second element, which constitutes *opinio juris*, is the co-ordination of the wills of States with regard to the recognition of usage as a norm of international law.[534]

These two elements are accepted overwhelmingly by most writers and international tribunals and courts. Article 38 (1)(b) of the statute of the ICJ provides little support for the meaning which is most often attributed to the *opinio juris*. Those who believe that usage must be coupled with *opinio juris*, state that the practice has to be applied in the conviction that it is legally binding. When a practice, as Arbour points out, has been applied only in the conviction that it is binding morally, a norm of *courtoisie internationale* may have come into being, but not a norm of customary international law.[535] The ICJ in its decision in the *Continental Shelf* case[536] stated: "Not only must the acts concerned amount to a settled practice, but they must also be such, or be carried out in such a way, as to

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[534]See D'Amato, A.A. *The Concept of Custom in International Law* (Ithaca: Cornell University Press, 1971); McNair, *supra*, note 76. ; Arbour describes these two elements as material and psychological. See Arbour, M., *Droit international Public*, 3e eds. Cowansville, Editions Y. Blais, 1997 at 52-60.

[535]*Ibid.* at 57.

[536]*Continental Shelf* case (1969 ICJ, Rep. 3).

be evidence of a belief that this practice is rendered obligatory by the existence of a rule of law requiring it."[537]

2.2. State Practice

What kind of acts or kinds of behavior constitute relevant State practice? Activities of all State organs including those by legal officers, legislative institutions, courts, diplomatic agents and political leaders, which relate to the international field or represent the State in international relations, can form the basis of customary law.[538] Behavior of a State can be found its historical records, official manuals on legal questions, diplomatic exchanges, decisions of its national courts, comments made on draft produced by the international Law Commission, activities and pronouncements in international organizations, and so on.[539] Some authors state that all organs and agencies of a State, whether national or international and even acts of individuals or other private law entities, as far as their conduct is supported or tolerated by States, can contribute to State practice in the process creating of customary law.[540] The ICJ in *Nettebohm case*[541] stated that "[i]nternational practice provides many examples of acts performed by States in the exercise of their domestic jurisdiction which do not necessarily or automatically have international effects [...]."[542]

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[537]*Ibid.* at para. 77.

[538]Shaw, N. *International Law*, 2nd Ed. (Cambridge: Grotius, 1986) at 68.

[539]*Ibid.* at 69.

[540]See Dixon, M. *Textbook on International Law*, 2nd. ed. (London: Blackstone Press, 1993) at 25.

[541]ICJ Reports, 1955, 4.

[542]ICJ Reports, 1955, 4 at 21.

An early expression of political concern related to the protection of the environment may be found in the British House of Commons during the 1899-1901 Boer War. The field officers in this war were instructed not to cause permanent damage to the environment.[543]

In the post-Second world war *Hostage Trial* (1948)[544], the defendants from German armed forces were charged with responsibility for, *inter alia*, wanton destruction of entire villages, towns, and cities and the commission of other acts of devastation not justified by military necessity in the occupied territories of Greece, Yugoslavia, Albania and Norway. These acts were considered to have been committed willfully and unlawfully, and constituted a violation of international conventions and the laws and customs of war.

In the *William Means* case[545], trees were destroyed by the US Army in order to defend its position more effectively. It was contended that the grove was of great value, as it added to the beauty of the landscape. The Commission established by France and the United States made an award of 1,500 dollars to the victim.

2.3. Opinio juris

Another concern of the International Court in the *Continental Shelf* case[546] was the sense of *opinio juris* to be manifested by those States that conform to the rule of

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[543]Roots, *supra*, note 53 at 14.

[544]See opinion and judgement of the Military Tribunal at Nuremberg in US v Vilhelm List et al. Friedman, *supra*, note 500 at 1303- 1343.

[545]Whiteman, *supra*, note 500 at 1457. See also the *Anzures Land Company* case (Great Britain v. Mexico), *Ibid.* at 1458.

[546]*Continental Shelf* case (1969 ICJ, Rep. 3).

the treaty. It means that a customary rule is recognized as an obligation required by law or by the so-called *opinio juris*.The ICJ in its decision in the *Continental Shelf* case[547] stated:

> "The need for such a belief, *i.e.*, the existence of a subjective element, is implicit in the very notion of the *opinio juris sive necessitatis*. The States concerned must therefore feel that they are conforming to what amounts to a leal obligation. The frequency, or even habitual character of the acts is not in itself enough. There are many international acts, *e.g.*, in the field of ceremonial and protocol, which are performed almost invariably, but which are motivated only by considerations of courtesy, convenience or tradition, and not by any sense of legal duty."[548]

Panna states that there are different kinds of evidence of necessary State practice and *opinio juris* such as treaties, resolutions of international organizations, judicial decisions, State legislation, diplomatic deliberation and the like.[549] But State practice must be accompanied by a belief that the practice is obligatory - the feeling on the part of the States that they act from obligation - and not from convenience or habit.[550] This is the factor which renders State practice part of the rules of international law rather than merely convenient or habitual. The Court in the *Continental Shelf* case[551] stated that:

> "In so far as this contention is based on the view that Article 6 of the Convention has had the influence, and has produced the effect, described, it clearly involves treating that Article as a norm-creating provision which has constituted the foundation of, or has generated a rule which, while only

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[547]*Ibid.*

[548]*Ibid.* at para. 77.

[549]L. R. Penna, "Customary International Law and Protocol I: An Analysis of Some Provisions", in C. Swinarski, ed., *Etudes et essais sur le droit international humanitaire et sur les principes de la Croix Rouge, en l'honneur de J. Pictet* (Geneva: Nijhoff, 1984) 200, at 207.

[550]Dixon, *supra*, note 540 at 28.

[551]*Continental Shelf* case (1969 ICJ, Rep. 3).

> conventional or contractual in its origin, has since passed into the general *corpus* of international law, and is now accepted as such by the *opinio juris*, so as to have become binding even for countries which have never, and do not, become parties to the Convention. There is no doubt that this process is a perfectly possible one and does from time to time occur: it constitutes indeed one of the recognized method by which new rules of customary international law may be formed. At the same time this result is not lightly to be regarded as having been attained."[552]

In Nicaragua v. U.S.A., a majority of the Court found that State practice and *opinio juris*[553] are necessary to support the conclusion that the USA acted against the Republic of Nicaragua, "in breach of its obligation under customary international law not to intervene in the affairs of another State".[554] The Court noted its statement in the *Continental Shelf* case (Libya v. Malta)[555] which stated that "it is of course axiomatic that the material of customary international law is to be looked for primarily in the actual practice and *opinio juris* of States".[556]

Some authors take a position against one or the other of these elements. Kopelmanas denies the necessity of *opinio juris*. He states that "the formation of custom does not depend on the presence in the minds of the parties of an *opinio juris*."[557] Guggenheim has held that the condition of *opinio juris sive necessitatis* is

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[552]*Ibid.* para. 71.

[553](1986) ICJ Report, para. 183 p. 97.

[554](1986) ICJ Report, at p. 146.

[555](1985) ICJ Report.

[556](1985) ICJ Report, para. 27. pp. 29-30.

[557]Lazare Kopelmanas, "Custom as a Means of the Creation of International Law" (1937) XVIII, BYIL 127 at 151.

superfluous.[558] In the *Fisheries Jurisdiction* case [559], Judge Castro, in his separate opinion, stated that "practice (usages) is not the foundation of customary law, but that it is the sign by which the existence of a custom may be known."[560] Judge Tanaka in his dissenting opinion in the *Continental Self* case asserted:

> "The attitude which one takes vis-à-vis customary international law has been influenced by one's view on international law or legal philosophy in general. Those who belong to the school of positivism and voluntarism wish to seek the explanation of the binding power of international law in the sovereign will of States, and consequently, their attitude in recognizing the evidence of customary law is rigid and formalistic. On the other hand, those who advocate the objective existence of law apart from the will of States, are inclined to take a more liberal and elastic attitude in recognizing the formation of a customary law attributing more importance to the evaluation of law than to the process of its formation. I wish to share the latter view. The reason for that is derived from the essence of law, namely that law, being an objective order vis-à-vis those who are subject to it, and governing above them, does not constitute their 'auto-limitation' even in the case of international law, in which the sovereign will of States plays an extremely important role."[561]

2.4. Treaties and Customary Law

Treaties may lead to the development of new customary international law because States' practices result from them. Treaties are significant in determining the state of customary international law and thus engender customary law for non-parties. This posibility is considered by Article 38 of the *Vienna Convention on the Law of Treaties*. It states: "Nothing in articles 34 to 37 precludes a rule set forth in a treaty

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[558]Guggenheim states: "selon l'opinion dominante, cette 'opinio juris sive necessitatis' serait l'élément spécifique de la coutume, l'élément qui permet de distinguer la coutume obligatoire de l'usage simplement facultatif," see Paul Guggenheim, *Traité de droit international public*, tome I, Gèneve, 1967 à la p. 103.

[559]ICJ Reports, 1974, p. 3.

[560]ICJ Reports, 1974, p.100.

[561]*Continental Shelf* case (1969 ICJ, Rep. 3) at 178

from becoming binding upon a third State as a customary rule of international law, recognized as such."[562] D'Amato states:

> "Not only do [treaties] carve out law for the immediate parties, but they also have a profound impact upon general customary law for non parties. For a treaty arguably is a clear record of a binding international commitment that constitutes the 'practice of states' and hence is as much a record of customary behavior as any other state act or restraint. International tribunals have clearly recognized this effect of treaties upon customary law, and historically treaties have a decisive impact upon the content of international law."[563]

How can a treaty be transformed into customary international law binding on a non-party and what are the essential conditions to be satisfied? Such a transformation depends on the generality of the norm in the treaty, the number of States ratifying it, and the importance of the States that have ratified the treaty. The type of treaty, whether a treaty-contract or law-making treaty, is important in contributing to the formation and initiating of customary law. The treaty-contract is a narrow subject agreement between a limited number of States. This type of treaty does not create new law but can be evidence of *opinio juris* for the initiation of customary international law.[564] Law-making treaties, "are those agreements whereby States elaborate their perception of international law upon any given topic or establish new rules which are to guide them for the future in their international conduct."[565]. These treaties are usually widely-ratified multilateral instruments and are created through conferences attended by a large number of States. Example of such treaties

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[562]Vienna Convention, *supra*, note 302.M. Dixon, *supra*, note 540 at. p. 30.

[563]See d'Amato, *supra*, note 534 at p. 104; L. R. Penna, *supra*, note 549 at pp. 201-202. The relationship between treaty rules and customary law examined in the *North Sea Continental Shelf* case (1969 ICJ, Rep. 3).

[564]Shaw, *supra*, note 538 at 80-81.

[565]Shaw, *supra*, note 538 at 79.

are the *UNCLOS*[566] and the *genocide Convention.*[567] A portion of this Convention codified customary international law, and its other portion created new international law.[568]

The *North Sea Continental Shelf* case[569] arose out of a dispute between the Federal Republic of Germany, on the one hand, and its two neighbors, the Netherlands and Denmark, on the other, concerning the delimitation of the lateral boundaries of the continental shelf between Germany and its two neighbors. The Netherlands and Denmark contended that the boundaries between their respective areas of the continental shelf in the North Sea and the area claimed by the Federal Republic of Germany should be determined by the application of the principle of equidistance set forth in Article 6(1) of the 1958 *Geneva Convention on the Continental Shelf*[570], which, by January 1, 1969, had been ratified or acceded to by 39 States, but to which Germany was not a party. The Federal Republic of Germany denied this and proposed "the doctrine of the just and equitable share". Article 6(1) of the Convention reads as follows:

> "Where the same continental shelf is adjacent to the territories of two or more States whose coasts are opposite each other, the boundary of the continental shelf appertaining to such States shall be determined by agreement between them. In the absence of agreement, and unless another boundary lines is justified by special circumstances, the boundary is the median line, every point

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[566]*Supra*, note 107.

[567]*Convention on Prevention and Punishment of Genocide,* Dec. 9, 1948, 78 UNTS 277 (entered into force Jan. 12, 1951).

[568]See Michel Virally, "The Sources of International Law", in *Manual of Public International Law* 116, at 196 (Toronto: Macmillan, 1968) at 196.

[569]*Continental Shelf* case (1969 ICJ, Rep. 3).

[570]15 U.S.T. 471, 499 UNTS 311.

of which is equidistant from the nearest points of the baselines from which the breath of the territorial Sea of each State is measured ."[571]

The court, by a vote of 11 to 6 rejected the West German proposal. After rejecting also the Danish and Dutch argument that Article 6(2) stated or crystallized customary international law at the time of its adoption, the Court stated that a treaty provision can develop into a rule of customary international law. The norm-creating character of a treaty was the one of the requirements laid down by the court.[572] The Court used treaty law as an indication of State practice and found that not enough States had acceded to the 1958 *Geneva Convention on the Continental Shelf*.[573]

2.5. The Concept of Time in Establishing Customary Law

Treaties that contain generalizable rules can engender customary international law for non-parties.[574] The period of time that a treaty is in force is not an important factor and does not stand in the way of the creation of a new rule of customary law. In some circumstances only a very short time may be required for the formation of customary international law. Baxter states that "[t]he time factor as a separate element

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[571] *Ibid*

[572] *Continental Shelf* case (1969 ICJ, Rep. 3) para. 71.

[573] 1969 ICJ Reports at 71.The Court stated that:
"In so far as this contention is based on the view that Article 6 of the Convention has had the influence, and has produced the effect, described, it clearly involves treating that Article as a norm-creating provision which has constituted the foundation of, or has generated a rule which, while only conventional or contractual in its origin, has since passed into the general *corpus* of international law, and is now accepted as such by the *opinio juris*, so as to have become binding ever for countries which have never, and do not, become parties to the Convention. There is no doubt that this process is a perfectly possible one and does from time to time occur: it constitutes indeed one of the recognized method by which new rules of customary international law may be formed. At the same time this result is not lightly to be regarded as having been attained."

[574] In the *Anglo-Norvegian Fisheries* case (1951 ICJ Rep. 116).

in the proof of custom now seems irrelevant. The new customary rule will be established as soon as it acquires the necessary degree of acceptance."[575] The Court in the *Continental Shelf* case stated that:

> "With respect to the other elements usually regarded as necessary before a conventional rule can be considered to have become a general rule of international law, it might be that, even without the passage of any considerable period of time, a very widespread and representative participation in the convention might suffice of itself, provided it included that of States whose interests were specially affected.[...]"[576]

In the same case Judge Laches referred to "the freedom of movement into outer space" as an example of a customary rule which had been "established within a remarkably short period of time."[577]

2.6. Resolutions of the UN General Assembly and Customary International Law

Resolutions relating to legal questions in the United Nations General Assembly can be included among the numerous material sources of customary law if the context in which they are adopted and the voting record indicate widespread support of the member States.[578] The ICJ in its advisory opinions on the *Legality of the Use by a State of Nuclear Weapons in an Armed Conflict* stated that "General Assembly resolutions, even if they are not binding, may sometimes have normative value. They can, in certain circumstances, provide evidence important for establishing the

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[575]Recueil des cours, 129 (1970) 25 p. 67.

[576]*Continental Shelf* case (1969 ICJ, Rep. 3) para. 73.

[577]*Ibid.* at p. 230.

[578]See Brownlie, *supra*, note 305 at 5.

existence of a rule or the emergence of an opinio juris."[579]

There has been some debate[580] about whether or not General Assembly resolutions constitute sufficient State practice and *opinio juris* to create a customary legal norm. Commentators vary as to how much weight should be given to the UN General Assembly resolutions as compared to State practice and *opinio juris*. Some writers emphasize the will of the international community as the fundamental law-creating power.[581] Falk states that "there is discernible a trend from consent to consensus as the basis of international legal obligations."[582] The increasing number of States participating in international activities has led to the need for international legal control for the effective functioning of international society. Since membership of the UN comprises most States of the world, it is hardly conceivable that resolutions enacted by such an international organ could be without value for international law. Its resolutions may be said to be representative of world opinion.

A contrary argument is that General Assembly resolutions are mere recommendations and nothing more. It states that, except for certain internal and administrative matters,[583] the General Assembly has the power to make

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[579]*Supra*, note 167.

[580] See, *e.g.*, Sir Ian Sinclair, "The Significance of the Friendly Relations Declaration", in *The United Nations and the Principles of International Law: Essays in Memory of Michael Akehurst* 8-20 (Vaughan Lowe & Colin Warbrick eds., 1994) (presenting a variety of views about whether resolutions can legitimately constitute State practice or *opinio juris*, or both).

[581]See Richard A.Falk "On the Quasi-Legislative Competence of the General Assembly" (1966) 60 AJIL 782 at 784.

[582]*Ibid.* at 785.

[583]See Blaine Sloan, "General Assembly Resolutions Revisited (40 Years Later) (1987) 58 BYIL 39, 52-61.

recommendations.[584] An opposing argument, as Sloan points out, is that the General Assembly has, since its inception, been passing resolutions that are declaratory and interpretative of existing law.[585] He states that "[t]here is a popular misconception that the Assembly can only make recommendations."[586] He argues that because of their form and intent, the General Assembly's declaratory resolutions cannot be dismissed as mere recommendations.[587] He quotes from Sir Francis Vallat, a former member of the International Law Commission, who has pointed out that more than twenty-five of the one hundred and eleven articles of the Charter "at least to some extent, confer powers of decision as distinct from recommendation, on the General Assembly."[588]

Apart from its decisions related to the budget or to the internal operations of the UN organization, there is another type of resolution which has developed through practice. This is the declaratory resolution. Sloan states:

> "Nothing in the Charter authorized [the adoption of such resolutions], but from its very first session the General Assembly exercised a right to adopt declarations and has continued to exercise this right without objection. This declaratory function of the Assembly, if not inherent, has been established

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[584]See *UN Charter*, *supra*, note 126. Art. 14. It states:
"Subject to the provisions of Article 12, the General Assembly may recommend measures for the peaceful adjustment of any situation, regardless of origin, which it deems likely to impair the general welfare or friendly relations among nations, including situations resulting from a violation of the provisions of the present Charter setting forth the Purposes and Principles of the United Nations."

[585]Sloan, *supra* note 583, at 45-46.

[586]Blaine Sloan "The United Nations Charter as a Constitution" (1989) 1 Pace Y.B. Int'l L. 61 at 121-22.

[587]Sloan, *supra*, note 586 at 121-22.

[588]U.N. Conference on the Law of Treaties, Second Session Official Records, Vienna, 9 Apr.-22 May 1969, Summary Records of Plenary Meetings and Meetings of the Committee of the Whole, U.N. Doc. A/Conf.39/110Add.1, 59.

> through intepretative practice or amendment and is long beyond any reasonable challenge. [...] This practice has certainly gone more than half-way toward establishing a new source of law. There may even be indications in the treatment of certain Assembly resolutions that for this particular class of resolutions practice has approached even closer to that goal."[589]

He quotes also from Oscar Schachter who has pointed out that

> "[i]n the last few years, we have witnessed an increasing insistence on the authoritative character of General Assembly resolutions on intervention, self-determination, territorial occupation, human rights, sharing of resources and foreign investment. They purport to 'declare the law,' either in general terms or as applied to a particular case. Neither in form nor intent are they recommendatory. Surprising as it may seem, the authority of the General Assembly to adopt such declaratory resolutions was accepted from the very beginning."[590]

The arbitrator in the award of the international arbitration tribunal in the dispute between Texaco and Libya[591] emphasized that resolutions of the UN General Assembly reflecting applicable general customary law had been supported "by a great many States representing not only all geographical areas but also all economic systems" and that "it is impossible to deny that the United Nations' activities have had a significant influence on the content of contemporary international law."[592]

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[589]Sloan, *supra*, note 586 at 99-100. For example see Resolutions 1514(XV) and 1803(XVII). With respect to 1514(XV) on principles of self-determination see Western Sahara, (1975) ICJ Report at 31-33, and with respect to 1803(XVII) on permanent sovereignty over natural resources see Professor Rene-Jean Dupuy's award in *Texaco Overseas Petroleum v. Libyan Arab Republic*, 19 January 1977, 17 I.L.M. 24, 27-30 (1978).

[590]Sloan, *supra*, note 586 at 121-123.Schachter, The Crisis of Legitimation in the United Nations, 50 Nordisk Tidsskrift for International Ret: Acta Scandinavica Juris Gentium 3, 3-4 (Alf Ross Memorial Lecture 1981).

[591]*Texaco Overseas Petroleum v. Libyan Arab Republic*, January 19, 1977, 17 ILM. 24.

[592]Professor Rene-Jean Dupuy's award in *Texaco Overseas Petroleum v. Libyan Arab Republic*, January 19, 1977, 17 ILM. 24, at p. 28 (1978).

The UN General Assembly resolutions related to international law can be issued in two important ways. First, resolutions can contain statements of already existing law that, without reference to the resolution, are already binding and second, a resolution may represent either State practice and *opinio juris* or both.

Whether or not a UN General Assembly resolution can be considered an interpretation of existing law to create a customary legal norm depends on a number of factors such as the resolution's terms and intent, delegates' voting support, and State practice.[593]

Principle 21 of the declaration of the UN Conference on the Human Environment holds States responsible for the damage they may cause to the environment of other States or to areas beyond the limits of their national jurisdiction. This principle, as Falk states, may embody customary international law and thus express an obligation that applies during armed conflict for environmental destruction affecting non-belligerent States.[594]

The World Charter for Nature[595] adopted by the UN General Assembly, by a vote of 111 in favor, 18 abstentions and one against, has some moral and political strength.[596] Article 22 of the charter formulates an obligation to States providing that "[...] each State shall give effect to the provisions of the present charter through its

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[593]Sloan, *supra* note 586 at 138.

[594]See R.Falk, *Revitalizing International law* (Ames: Lowa State University Press, 1989) at 173

[595]See 22 ILM (1983) 455-60. The one negative vote cast against the World Charter for Nature was by United States. *Supra*, note 40.

[596]See Birnie, *supra*, note 403 at 432.

competent organs and in co-operation with other States." The first operative section of the charter is devoted to general principles. Paragraph 5 of the Charter states: "Nature shall be secured against degradation caused by warfare or other hostile activities." Williams has commented:

> "This Charter reinforces the concept of conservation of all areas of the earth and special protection to unique areas and samples of the different ecosystems and habitats of rare and endangered species. [...] This resolution reinforces the duty on states to strive for the objectives and requirements set out in the Charter on nature. In the mind of this writer the Charter and the resolution are policy goals for the future. They may have the cumulative effect with the other documents and cases of germinating at some stage a rule of customary international law."[597]

In 1980, the UN General Assembly in its "Resolution on the Historical Responsibility of States for the Protection of Nature for the Benefit of Present and Future Generations"[598], which was primarily concerned with nuclear weapons and other weapons of mass destruction, noted that the continuation of the arms race and the accumulation of toxic chemicals are adversely "affecting the human environment and damaging the vegetable and animal world." It called upon States to take necessary protective measures and to promote international cooperation to preserve nature.

In Resolution 687, the UN Security Council held Iraq liable for environmental damage and the depletion of natural resources suffered by foreign governments, nationals, and corporations.[599] Judge Weeramantry, in his dissenting opinion on the

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[597]S.A.Williams, "Public International Law Governing Transboundary Pollution" (1984) Int'l. Bus.Lawyer 243 at 248.

[598]Adopted on October 30, 1980, UN Doc. A/Res/35/8. See Margraw, International Environmental Law: Basic Instruments and References (Transnational Publishers, Inc.: USA) at 638-639.

[599]30 (1991) ILM, 847.

legality of the threat or use of nuclear weapons, stated that "Iraq's liability to which the Security Council referred in such unequivocal terms was clearly a liability arising under customary international law."

2.7. The International Law Commission and Customary International Law

The works and opinions of the International Law Commission play an important role in the creation of custom.[600] Through Article 24 of its statute of November 21, 1947, the ILC was directed to "[...] consider ways and means for making the evidence of customary international law more readily available [...] and [...] make report to the General Assembly on this matter."[601] The ILC's work suggests that the environment shall be protected from widespread, long-term, and severe damage.[602] Article 19(3) of its Draft Articles on State responsibility has proposed that "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"[603] should constitute an international crime.

The ILC Draft Code of Crimes Against the Peace and Security of Mankind, under the heading "War crimes" includes the crime of "[...]using methods or means

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[600]See Brownlie, *infra*, note 305. A number of writers have considered the ILC's reports as a source of international law. See I. Sinclair, *The International Law Commission*, (Grotius: Publications Limited, 1987) at pp. 5-125.

[601]See Briggs, H.W. *International Law Commission* (Ithaca: Cornell University Press, 1965) at 368. The Committee of Seventeen (established by the General Assembly in its very first session) recommended that the ILC be instructed to prepare a survey of the whole field of customary international law. See Sinclair, *Ibid.* at p.7.

[602]See ILC Draft Article, *supra*, note 122.

[603]*Ibid.*

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."[604]

2.8. Cultural and Religious Norms Relating to the Environment

Scientific, cultural, economic, and religious values underlie various analysis of environmental problems.[605] These values share in the State practice and shape the multitude of existing and proposed legal responses to the environmental problems. They are sometimes material sources of international law. We take religious concern for the protection of the environment as an example.

Religious norms obviously exert great influence on cultural norms relating to war and the environment. At least until the rise of modern technology, religion was the main conceptual tool for the interpretation of nature.[606] The observance of norms that apply to behavior in warfare depend a great deal on the nature of the belligerents' religious beliefs, and their cultural norms.[607] Wright stated that:

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[604]See Article 20(g) of Draft Code of Crimes Against the Peace and Security of Mankind, Report of the ILC on the work of its forty-eighth session May 6- July 26, 1996, General Assembly Official Records - Fifty-first Session Supplement No. 10 (A/51/10).

[605]"It also emerges very clearly from the socialist States' concept that the respect and protection of the human person are dependent upon the existence of material conditions which make life fit to be lived. That is why it is prohibited to attack or destroy not only objects indispensable to the survival of the civilian population but also civilian objects in general, cultural objects and - very important today - the natural environment, which must protected against widespread, long-term and severe damage prejudicial to the health or survival of the population." See Géza Herczegh, "The Concept of the Socialist States", in UNESCO, *International Dimensions of Humanitarian Law* (Geneva: Henry Dunant Institute 1988) 21 at 25.

[606]Jakowska, "Roman Catholic Teaching and Environmental Ethics in Latin America", in E.C. Hargrove, *Religion and Environmental Crisis* (Athens: the University of Georgia Press, 1986) 107 at 128.

[607]See G. Best, "The Historical Evolution of Cultural Norms Relating to War and the Environm-ent", in Westing, *Cultural Norms, War and the Environment* (SIPRI, Oxford University

"Each civilization is distinguished by a unique complex of fundamental values in which its members believe and which to some extent guides their choices. Usually this belief is manifested by the general acceptance of a religion, but sometimes the forms of the same religion conceal fundamental differences in the substance of the values it supports in different areas of its realm."[608]

The Islamic attitude toward the conception of the universe, nature, and natural resources is based on an very anthropocentric perspective and associated with humanitarian goals. Protection of the components of the environment is an integral part of the conservation of life itself, which is one of the main objectives of Islamic jurisprudence. The legal rule is that "what fulfills and satisfies necessities is itself a necessity."[609] The use of natural resources is the right and privilege of all people. The attitude of Islam to the environment is positive since it is based on construction, development, protection and prohibition from abuse and destruction.[610] Therefore, if Islam is eager to protect the environment for the benefit of present and future generations, it is equally eager to protect man and the environment against the harmful impacts of war. Islam forbids all kinds of damage which could include acts leading to environmental disruption. According to the Islamic view, man is ecologically dominant and is not permitted to misuse the environment. The Koran says that God created the earth and everything on its surface, and gave all peoples the right of

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Press, 1988) 18 at 22.

[608]Q. Wright, *Study of War: With a Commentary on War Since 1942*, 2ed ed. (Chicago: University of Chicago Press, 1965) at 108.

[609]Ba Kadar & Al Sabbagh, *Basic Papers on the Islamic Principles for the Conservation of the Na-tural Environment* (Siegburg: Daemisch Mohr Gmb, 1983) at 13-15.

[610]*Ibid.* at 16.

ownership of natural resources.[611] It states: "And the skies has He raised high, and has devised [for all things] a measure so that you might never transgress the measure [of what is right]. Weigh, therefore, [your needs] with equity, and cut not the measure short."[612] One of the Prophet's traditions says: "No damage or retaliation for such damage is allowed."[613] It also prohibits the production and marketing of all means which may be expected to damage the environment.[614] Islamic law on the bombardment of certain places and unnecessary destruction laid down different rules. The earliest Islamic leaders forbade destruction or damage of forests, fruit trees or vines. An important rule was upheld by Caliph Abu Baker, successor of the prophet Mohammed, prohibiting the destruction of any dwelling or the cutting down of any palm trees, fruit-bearing trees, or vines.[615]

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[611]Mohammad Asad, *The Message of the Koran, Dar Al-Andalus*, 1980, pp.8,64 and 385; (Koran 2:29,30,284 and 15:19,20).

[612]*Ibid.* at 824 (Koran 55:7,8,9). Zaidi in his article on the Islamic world view concludes that "these [governments developmental] programs need to be prepared and executed in such a way that the environmental quality of the areas involved is enriched rather than injured. As faithful adherents of Islam, they must work in accordance with the principles enunciated here, setting aside the idea of maximization of benefits without any regard for the maintenance of environmental balance." I.H.Zaidi, "On the Ethics of Mans Interaction with the Environment: An Islamic Approach", in E.C.Hargrove, *Religion and Environmental Crisis* (University of Georgia Press, 1986) 107 at 122.

[613]Ba kadar, *supra*, note 609 at 18.

[614]Ba Kadar, *supra*, note 609 at 19.

[615]S. Mahmassani, "International Law in the Light of Islamic Doctrine", in Recueil des cours, *Académie de Droit International*, I, tome 117 de la collection (Leyde: A.W.Sijthoff, 1966). Abu Baker ordered the following: "No détruisez pas les palmiers, no brûlez pas les habitations ni les champs de blé, ne coupez jamais les arbres fruitiers et ne tuez le bétail que lorsque vous serez contraints de la manger." Boisard states: "La tradition rapporte de nombreuses déclarations similaires du Prophète. Nous citons ici celle de son premier successeur, car elle résume tous les points essentiels des instructions antérieures de Mohammed." See M.A. Boisard, "De certaines règles islamiques concernant la conduite des hostilités et la protection de victimes des conflits armés, in *Annales d'Etudes Internationales*, vol. 8, Genève, 1977, 145 at 151.

The Israelites had some ecological awareness and realized their dependence upon the resources of the earth.[616] They used the waters, the trees, the soil and the seasons as spiritual symbols: " happy the man who [...] is like a tree that is planted by water streams, yielding its fruit in season, its leaves never fading."[617] According to the Jewish tradition, humans are to "be fruitful and multiply, and replenish the earth, and subdue it; and have dominion over the fish of the sea, and over the fowls of the air and over every living thing that moves upon the earth" (Genesis 1:28). The Jewish Torah also prohibits the destruction or damage of fruit trees in warfare: "when you besiege a city for a long time, making war against it in order to take it, you shall not destroy its trees by wielding an axe against them [...] only the trees which you know are not trees for food you may destroy and cut down [....]."[618]

It will be noted from these Old Testament passage that Christianity's roots are also in Judaism. The Christian religion is strongly pacifist in its origin and essence. Western culture's approach to nature has its roots in Christianity.[619] Preservation of the earth's resources has always been part of the philosophy of the Roman Catholic church. For example, Saint Francis, the Franciscans, and the Jesuits preached the respect of all God's creatures and had a great influence on the relationship of men to nature.[620] The church recently extended its concern to environmental crisis. Pope Paul

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[616]Psalm I, Jakowska, *supra*, note 606 at 129

[617]*Ibid.*

[618]Deuteronomy 20:19-20.

[619]For a discussion on the other religions and their effects on the cultural norms. See A.H. Westing, "Constraints on Military Disruption of the Biosphere: An Overview", in Westing, *Cultural Norms, War and the Environment*, SIPRI (Oxford University Press, 1988) at 11.

[620]Ayers R.H. "Christian Realism and Environmental Ethics", in E.C.Hargrove, *Religion and Environmental Crisis* (Athens: the University of Georgia Press, 1986) at 156; Jakowska, *supra*, note 606 at 130.

VI, on the occasion of the fifth World Environment Day, sent a message to the UN entitled "Preserving and Improving the Environment for the Benefit of Man". He stated that the environment is essentially good. According to him, "before man fell into sin, the world was a paradise: beautiful, intact, harmonious nature. But nature was unbalanced by man who rebelled against god."[621]

One feature seems apparent upon reading the foregoing survey of religious norms related to the protection of the environment. This is that religious dogma and religious practices associated with a society reflect the cultural norms of that society. All major religions of the world are concerned, at least in principle, about the impact of war on the environment.

2.9. Doctrinal View on the Protection of the Environment as Customary International Law

Scholars differ as to whether or not there exists a customary international law for the protection of the environment in time of war. They also differ on which principles of environmental law may now be regarded as customary international law and thus binding on all States. There is a wide range of international instruments which express the intention of nations to secure the environment from the destructive consequences of war. But there is significant support for the proposition that protection of the human environment in general is considered customary international law. Principle 21 of Stockholm Declaration dictates that States have a duty to prevent their actions from damaging other States. Sands, enumerating general principles and rules of international environmental law, states that only principle 21 of the Stockholm Declaration and the principle of good neighborliness and international co-

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[621]Jakowska, *supra*, note 606 at 134.

operation "are sufficiently substantive at this time to be capable of establishing the basis of an international cause of action; that is to say, to give rise to an international customary legal obligation the violation of which would give rise to a legal remedy."[622] Yuzon states that "State responsibility for environmental destruction, as Principle 21 dictates, constitutes customary international law."[623] Leibler, highlighting Principle 21[624] and the *Trail Smelter* case as the defining source for determining whether a State is responsible for an environmentally injurious act, states that the "*Trail Smelter* case[625] and the Stockholm Declaration which, together introduced the principle into customary international law, express the prohibition in broad terms and do not in any way preclude its application in the context of hostilities."[626] He explains that this is reinforced by Paragraph Five of the World Charter for Nature in which the UN General Assembly overwhelmingly resolved that "nature shall be secured against degradation caused by warfare or other hostile activities."[627] Ross asserted that intentional attacks on the environment during hostilities are discouraged, if not illegal, under international custom and law.[628] Okordudu-Fubara, discussing international and regional treaties on the conduct of war, has argued that where an agreement or

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[622]See Philippe Sands, *Principles of International Environmental Law I; Frameworks, Standards and Implementation* (Manchester: Manchester University Press, 1994) at 184.

[623] Ensign Florencio J. Yuzon, "Deliberate Environmental Modification Through the Use of Chemical and Biological Weapons: 'Greening' The International Laws of Armed Conflict to Establish an Environmentally Protective Regime" 1996, A.U.J.Int'l.L. and policy, 793 at 798.

[624]See Stockholm Declaration, *supra*, note 5.

[625] (1938) 941, RIAA III, 1905.

[626]See Leibler *supra*, note 176 at 70.

[627]See World Charter for Nature, *supra*, note 40 .

[628] Marc A. Ross, Environmental Warfare and the Persian Gulf War: Possible Remedies to Combat Intentional Destruction of the Environment, (Spring, 1992) 10 Dick. J. Int'l L at 525.

declaration is made by a considerable number of civilized nations and when all or most of the great Powers have deliberately agreed to certain rules of general application, those rules have very great weight even among States which have never expressly agreed to them and thus must be considered international customary law.[629] He concludes that "[t]he emerging international law of environmental warfare is perhaps more clearly traceable to customary international law now ensuing from treaties and agreements" and that "there is substantive proof to conclude that an international custom has grown sufficiently to confirm the emergence of an international law of environmental warfare."[630] Boyle states that the principles of "State responsibility for pollution damage in customary law are usually derived from the *Trail Smelter arbitration*,[631] the *Corfu Channel* case[632] and the *Lake Lanoux arbitration*."[633] States are thus under an obligation not to use or permit the use of their territory to cause loss or damage to another State. It has been assumed that this principle is applicable by extension to damage caused by marine pollution emanating from another State or from activities under another State's jurisdiction or control. States are also required to take all necessary measures to prevent, reduce and control pollution of the marine environment.[634] Judge Weeramantry, in his dissenting opinion on the legality of the threat or use of nuclear weapons, enumerates several principles of environmental law. He states that these principles do not depend for their validity

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[629]Margaret T. Okordudu-Fubara, "Oil in the Persian War: Legal Appraisal of an Environmental Warfare" (1991) 23 St. Mary's L.J. 123 at 189.

[630]*Ibid.* at 198.

[631](Spain v France) 12 UNRIAA 281 (1957).

[632](U.K. v. Albania 1949) ICJ. 4 .

[633]Alan E. Boyle, "Marine Pollution Under the Law of the Sea Convention" (April, 1985)79 AJIL 347 at 366.

[634]*Ibid.*

on treaty provisions: "They are part of customary international law. They are part of the *sine qua non* for human survival."[635]

The above discussion provides normative guidelines which help to discover some rules of customary international law in the 1977 *Geneva Protocol I*[636] and the 177 *Enmod Convention*[637] which have already been discussed. These rules carry forward the general directives on environmental protection during wartime. Article 35.3 of the 1977 *Geneva Protocol I*[638], for example, sets forth the following standard of law in time of war: "It is prohibited [...] to cause [...] damage to the natural environment." Sixty-seven or more nations (parties to the 1977 *Geneva Protocol I*[639]) have already agreed not to employ means of warfare that would have widespread, long-term and severe damage to the natural environment. Ninety-five States (parties to the 1972 *UNESCO Convention*[640]) have already agreed not take any deliberate measures which might damage the natural heritage. Sixty-four nations (parties to the *Enmod Convention*[641]) have to date agreed not to engage in military or any other hostile use of environmental modification techniques which might have significant effects on the environment of any other State parties. A number of other treaties, having a more human-centric perspective, serve to restrict military disruption of the environment by banning certain weapons or targets. These seem to be generalized

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[635](July 8, 1996) 35 ILM 809 at 906.

[636]*Supra*, note 23.

[637]*Supra*, note 17.

[638]*Supra*, note 23.

[639]*Supra*, note 23.

[640]*Supra*, note 26.

[641]*Supra*, note 17.

rules which can have the appearance of customary rules.

An international customary law of environmental warfare can no doubt be adduced from these instruments in order to support a legal assertion that the international community prohibits environmental warfare. We can conclude that there is a legal obligation on nations not to resort to environmental warfare, whether or not they are parties to these treaties or agreements. We hold that a customary international rule to protect the environment in war time has already evolved since the 1970s. This conclusion derives from recent environmental treaties such as the *Enmod Convention*[642] and the 1977 *GenevaProtocol I*[643], UN General Assembly resolutions (such as the Stockholm Declaration[644] and the World Charter for Nature[645]), judicial decisions, opinions of the ILC, State practices and cultural and religious values which emphasize the protection of the environment in armed conflict.

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[642]*Supra*, note 17.

[643]*Supra*, note 23.

[644]*Supra*, note 5.

[645]*Supra*, note 40.

3. Conclusion

An important principle codified in 1907 *Hague Convention IV*[646] and elsewhere is that the right of belligerents to adopt means of injuring the enemy is not unlimited. From this principle flow a number of subsidiary principles that underlie much of the remainder of the law of war. They are grouped into five broad categories: military necessity; humanity; discrimination; unnecessary suffering; and the principle of proportionality. The Hague Regulations and the *Geneva Convention IV*[647] implicitly protect the environment by prohibiting the useless destruction of property. These customary law rules are designed to prevent, *inter alia*, property damage during hostilities, and so provide solid grounds for protection of the environment, even if this is only an indirect protection. Some are of the opinion that the environment as such is part of the enemy's property; thus the illegitimacy of activities damaging to the environment must be judged in accordance with the already mentioned customary principles.[648] Proportionality can protect the environment indirectly since it takes into account the damage to civilians and their property. Article 53 of the 1949 *Geneva Convention IV*[649] prohibits an occupying Power from destroying "real or personal property belonging individually or collectively to private persons, or to the State."[650]

The concepts of military necessity and proportionality, for example, set limits on warfare: only those acts of war are permitted which are proportional to the lawful

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[646]*Supra*, note 81.

[647]*Supra*, note 31.

[648]Lijnzaad, *supra*, note 74 at 183.

[649]*Supra*, note 31.

[650]Article 53 of the 1949 *Geneva Convention IV*, *supra*, note 31 ; Roberts, *supra*, note 36 at 270-271.

objective of a military operation and are actually necessary to the achievement of that objective. These principles are part of customary international law and are therefore binding on all States. These fundamental rules are also relevant to the protection of the natural environment from acts of warfare.

These customary principles have played a key role in the development of the conventional sources that comprise the international laws of armed conflict. They exist in the form of declarations, conventions and protocols. The relevance of some of them to the subject at hand, such as the St. Petersburg Declaration on explosive projectiles, as Falk observes, is that, first, they restrict claims of military necessity by reference to a specific category of weaponry, and, second, the central notion that military operations must be relevant to a military purpose implies the 'illegality' of all modes of conduct that destroy enemy properties including, by implication, deliberate damage to resources and the environment.[651]

A weakness of customary international law is that the environment protection it provides falls within the general protection of the civilian population and of property. Thus the question may be asked whether blowing up an uninhabited area causing no immediate harm to humankind is permissible. If one believes that the non-human environment is intrinsically good and worth protecting in and of itself, it could be concluded that all environments, even uninhabited ones, must be protected from harm.[652]

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[651]See R. Falk, "The Environmental Law of War: An Introduction", in Plant, *supra*, note 16 at 83. Tarasofsky states that only wanton and useless destruction of the environment would be prohibited by this principle. See Tarasofsky, *supra*, note 369 at 26.

[652]The 1982 World Charter for Nature adopts in its preamble an intrinsically good norm related to living things, namely that "every form of life is unique, warranting respect regardless of its worth to man." (UNGA,1982). *Supra*, note 40.

To achieve the status of customary law, a norm must be evident in widespread State practice over time and the international community has to exhibit *opinio juris sive necessitatis*. It appears, from the ICJ's decision in the *North Sea Continental Shelf* case [653], that a treaty rule, to be considered customary international law, should be capable of imposing a direct obligation on all States party to the treaty.[654] Treaties that contain generalizable rules can have such an effect.[655] Various multilateral treaties such as the *Enmod Convention*[656], the 1981 *Inhumane Weapons Convention*[657], and the 1977 *Geneva Protocol* that are in force today contain provisions for the protection of the environment in armed conflict. These conventions are relevant to these assessments.

The first part of the study discussed international legal norms which address the degradation of the environment by military activities. Those norms which impose restrictions in time of war belong to the law of armed conflict (Chapters I to IV) and those which are meant to be observed chiefly in time of peace belong to the law of arms control (Chapter IV). The traditional law which governs the conduct of belligerents during war and protects the natural environment indirectly was discussed in Chapter V. The first part of the thesis discussed international legal norms which aim to protect the environment in time of war. Whenever a duty established by any

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[653] *Continental Shelf* case (1969 ICJ, Rep. 3) para. 71. The argument in this case was that the equidistance principle of demarcation was not a rule of customary law at the advent of the *Continental Shelf Convention*.

[654] See *Penna*, *supra*, note 549 at 204; A.A. D'Amato, *The Concept of Customary International Law* (Ithaca: Cornell University Press, 1971) p.104.

[655] See D'Amato, *Ibid.* at 105.

[656] *Supra*, note 17.

[657] *Supra*, note 24.

rule of international law has been breached, a new legal relationship comes into existence, entailing international responsibility. This relationship is established between the wrongdoer, who must respond by making adequate reparation, and the victim, who has a claim to reparation. Part two of the thesis is dedicated to State responsibility for environmental matters.

Part Two: Responsibility for Environmental Matters in International Law

Part Two: Responsibility for Environmental Matters in International Law

La deuxième partie de la thèse porte sur la responsabilité en matière d'environnement.
Comment la guerre affecte-t-elle le droit international général? La guerre et tous les autres types de conflits, légaux ou non, causent des problèmes certains entre belligérants et engendre des effets sur les obligations internationales des États. Un grand nombre de traités internationaux, résolutions et principes qui régissent un Etat pendant une période de paix sont aussi applicables pendant la guerre. Ceci n'affecte pas les règles entre belligérants et les tiers. Mais la guerre affecte les traités de nature politique entre belligérants, tels que les traités d'amitié mutuelle, d'alliance, de désarmement, de neutralité, de non-agression etc. Il est donc nécessaire d'étudier la responsabilité d'un État en droit international en regard de son obligation de ne pas endommager l'environnement d'autres Etats, au-delà des limites de sa juridiction nationale.

Introduction: General Issues of States Responsibility

The concept of State responsibility and its sources is one of the most complex subjects in the general theory of international law. A general question that one may ask is whether or not a State is responsible in international law for damages or injuries caused to another State and, if so, to what extent it incurs international responsibility for its actions. The word responsibility is used for the term "obligation". Usually an obligation arises from breach of a contract or when one violates the rules of law. It is the violation of an international obligation, *i.e.* any act on the part of a State that breaks a rule of international law, which constitutes an unlawful act and gives rise to international responsibility. The degree of responsibility for the violation of international law depends on what is in fact prohibited by the particular rule of

international law, the type of illegality, and the nature of the rules governing the incident.

There exists a basic rule that "every international wrongful act by a State gives rise to international responsibility."[1] Thus, the issue is the permissibility of an act and whether or not such action is prohibited by international law. If an act of a State causing damage to another State was committed willfully and maliciously, or in a grossly negligent manner, this would constitute intentional delinquency.[2]

This part will examine the character of the international responsibility of States relating to the prevention of injury to the environment. This part is not an appropriate place for a detailed discussion of all aspects of State responsibility. But it is necessary to dedicate the first Chapter to a general discussion on State responsibility because many international principles,[3] treaties[4] and resolutions do not limit their application to peace time. The *1972 Convention for the Protection of the World Cultural and*

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[1]Ago, acting as Rapporteur of the International Law Commission, formulated the "basic rule" under the rubric "the internationally wrongful act as a source of responsibility". See I. Brownlie, *System of the Law of Nations, State responsibility* (New York: Oxford University Press 1983) Part 1 at 23. In its judgement on the *Chorzow Factory* (PCIJ; German/Poland: jd. 1927 at 434) the court said: "It is a principle of international law, and even a general conception of law, that any breach of an engagement involves an obligation to make reparation".

[2]See L.Oppenheim; *International Law, A Treatise*; 7th ed. Vol.1 (London, Longmans, 1944) at p.311.

[3]Such as Stockholm Declaration on the Human Environment, UN. DOC. A/CONF.48/14, at 72 reprinted in 11 I.L.M. 1416 (1972) [hereinafter Stockholm Declaration].

[4]For example *Oslo Convention for the Prevention of Marine Pollution by Dumping From Ships and Aircraft*, 932 U.N.T.S. 3; U.K.T.S. 119 (1975) Cmd. 6228; 11 I.L.M. 262 (1972). The text reprinted in Rummel-Bulska, I. & O. Osafo *Selected Multilateral Treaties in the Field of the Environment*, vol. 2 (Cambridge: Grotius Limited, 1991) at 266.

Natural Heritage[5], for example, does not exclude military causes of damage to the natural heritage and may apply to wartime activities that damage the natural heritage.[6] In our discussion of international responsibility for environmental damage, we will endeavor to chose topics which could be applicable in armed conflict.

We will approach the subject by examining the historical development of State responsibility, the types of responsibility and the problems in enforcing State responsibility along with an analysis of the "*culpa, dolus*, and strict responsibility" as treated in different cases and conventions of international law. Chapter One will consider whether or not the principle of strict responsibility has obtained a place in international law.

Chapter Two will clarify the subject of State responsibility in international agreements, important principles of the Stockholm declaration, and will examine several international cases.

An examination of the rules of international law regarding the question of State responsibility for damage incurred by States' armed forces will be considered in the third Chapter. This Chapter will trace the provisions of the *Hague Conventions*, cases, and State practice related to the responsibility of the State for its armed forces.

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[5]1972 *Convention for the Protection of the World Cultural and Natural Heritage*. (Hereinafter *UNESCO Convention*) U.K.T.S. 2 (1985); 27 U.S.T. 37; 11 I.L.M. (1972), 1358.

[6]See S.N. Simonds, "Conventional Warfare and Environmental Protection: A Proposal for International Legal Reform" (1992) 29, Stanford J. Int'l. L. 165 at 197.

Chapter I. Historical Development: Types of Responsibility and the Problems in Enforcing State Responsibility

Nous étudierons d'abord, dans le premier chapitre, le développement historique de responsabilité depuis Grotius. Nous nous concentrerons sur le concept moderne de la responsabilité concernant la responsabilité pour risque et discuterons les cas dans lesquelles la responsabilité de l'État pour une violation d'obligation internationale est stricte ou absolue. Nous démontrerons que la responsabilité stricte n'est pas un concept unanimement accepté mais qu'il sert toutefois de support à la pratique de quelques États pour les activités qui causent des dommages environnementaux. Ce chapitre examinera brièvement les projets de la Commission de droit international concernant la responsabilité pour des activités qui ne sont pas interdites par le droit international et des crimes internationaux d'État. Nous discuterons de projet d'articles de la Commission, par exemple, de l'article 19 qui prévoit qu'un crime international d'État est le résultat de la violation sérieuse d'obligations internationales qui sont essentielles et importantes pour la sauvegarde et la préservation de l'environnement des humains. Nous terminerons ce chapitre en constatant que sur la base du droit général de la responsabilité, un État doit être trouvé responsable pour tous les dommages causés à un autre État.

1. Introduction: The Role of Fault in State Responsibility

When damage to the environment of a State occurs as a result of illegal activities, existing international law and custom can enforce responsibility on the actor. However, the determination of the violation of environmental law suffers from

several problems.[7] There is little specification of the concepts of "strict" and "fault" in international environmental law and it has failed to clarify whether liability is strict or whether fault must be proved. Furthermore, since governments are unwilling to be held responsible for their actions, certain difficulties in presenting a claim, which make the relevance of the concept more prospective than actual, must be overcome particularly with respect to environmental damage in wartime.

There have been two schools of thought on the basis of State responsibility[8]; both of them take 'an international wrongful act' as their starting-point. According to one of them, 'fault as culpa' is the central constituent of State responsibility (section 2 of this Chapter). The concept of fault in the conduct of the State is attributed to Grotius.[9] The Grotian view has been supported by certain eminent opinions such as

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[7]See Brownlie, I. *Principles of Public International Law*, 4th. ed. (Oxford: Clarendon 1990) at 512-15.

[8]According to the principle of objective responsibility (or the "risk" theory), a State is strictly responsible for its performance's lawfulness or unlawfulness while subjective responsibility maintains that intention (*dolus*) and negligence (*culpa*) are special elements that render a State responsible for its action. Arbour states: "Une analyse de la doctrine traditionnelle laisse voir que les auteurs de droit international se sont divisés en deux grandes écoles sur le fondement général ou coutumier de la responsabilité internationale. La première école [...] réserve a la notion de faute une place centrale dans la théorie de la responsabilité [...] La seconde école [...] fait découler la responsabilité de l'État du seul fait de la violation d'une obligation internationale [...]." See M. Arbour, *Droit international public*, 2e ed. (Cowansville: Editions Y. Blais, 1992) à la p. 278.

[9]Accioly states that "l'exigence de la faute est ancienne. On la trouve, comme on le sait, dans les maîtres primitifs du droit des gens, depuis Grotius." See H. Accioly, «principles généraux de la responsabilité internationale d'après la doctrine et la jurisprudence», i *Recueil des cours*, Leyde, A.W.Sijthoff, 1959, 353 à la p. 364. He considered fault similar to the notion of intention which operates in tort law. He says:"Il semble que la principale opposition à l'idée de faute, comme base de la responsabilité internationale, est surtout le résultat de sa confusion avec l'idée d'intention méchante. En vérité, il y a eu une sûre tendance dans le sens de la considérer comme le désir de produire un tort." *Ibid.* at 366.

those of Oppenheim, Fauchile, Lauterpacht, and Jiménez de Aréchaga[10] among others. Oppenheim states: "An act of a State injurious to another State is nevertheless not an international delinquency if committed neither wilfully and maliciously nor with culpable negligence."[11] Aréchaga states that liability without fault "only results from conventional law, [it] has no basis in customary law or general principles and, since it deals with exceptions rather than general rules, cannot be extended to fields not covered by the specific instruments."[12]

In contrast to this "fault theory" is the school of "causal liability" or "objective responsibility" (section 3). It provides that States are objectively responsible for the breach of an international obligation without regard to fault as an additional subjective factor.[13] According to "no-fault" theory, a breach of duty by result and establishment of causal connection are enough to hold States responsible.[14]

Section 4 of this Chapter examines the modern concept of liability, including a discussion of whether the responsibility of States is strict, absolute, or based on

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[10]See E. Jiménez de Aréchaga, "International Law in the Past Third of a Century", 159, i, *Recueil des cours* (Leyde; Pay-Bas: A.W. Sijthoff, 1978), 3 at 273.

[11]See Oppenheim, *supra*, note 2, Vol.I at 343.

[12]See *supra*, note 10 at 273.

[13]See Bedjaoui, M. "Responsibility of States, Fault and Strict Liability", in *Encyclopedia of Public International Law*, vol.10 (North Holland: Published under the Auspices of the Max Planck Institute, 1982) at 359-362.

[14]N.A.M.Green, referring to the decision of the court in the *Russian Indemnity* case (1912), stated: "'[A]ll liability whatever may be its origin is finally estimated in money terms and transferred into obligations to pay'. ... It is not possible for the Tribunal to perceive essential differences between various responsibilities. In particular it should be stressed that fault or culpa is not an essential ingredient in the notion of international responsibility". See N.A.M. Green, *International Law*, 3d ed. (London: pitman, 1987) at 241.

fault. Section 5 is dedicated to the ILC work on international liability for injurious consequences arising out of acts not prohibited by international law. Section 6 examines whether criminalizing environmental harmful conduct can be justified.

2. Subjective Responsibility[15]

According to the School of "subjective responsibility" or "liability for fault", the State's malicious intent (*dolus*) or culpable negligence (*culpa*) provides the proper basis of State responsibility in all cases.[16] There are some difficulties in the distinction between *culpa* (negligence, fault) and *dolus*[17] (intent) within the concept of wrongfulness. When the relation is close, the distinction of these two may play a significant role in a certain context.[18] In the view of some authors, the "fault as *culpa*" is very similar to the notion of "intention".[19] The term *culpa* (fault) is synonymous with "omission of duty"[20] and unlawful act[21] and means any deviation from prudence

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[15]Fault in the sense of a breach of obligation is equal to the objective element of State responsibility. See O. B. Smith, *State Responsibility and the Marine Environment, the Rules of Decision* (Oxford: Clarenton Press, 1988) at 15-21. Salvioli states that when there is an illegal act, there is fault. See Salvioli "Les Règles générales de la Paix" IV *Recueil des Cours* (Leyde; Pay-Bas: A.W. Sijthoff, 1933) 5 at 97 (1933).

[16]See Brownlie, *supra*, note 7 at p.438.

[17]The term dolus is used to describe any intentional act which causes harm. A State is responsible if its intentional action causes harm.

[18]Brownlie *supra*, note 7 at p. 440.

[19]For a precise discussion on the different theories of fault and intention see Accioly, *supra*, note 9 at 364-369. Accioly views the confusion of 'tort' with 'fault' as the source of opposition to the fault theory.

[20]See B. Cheng, *General Principles of Law as Applied by International Courts and Tribunals* (Cambridge, Eng.: Grotius Publications, 1987) at pp.218-225

[21]Brownlie, referring to the Franco-Italian Conciliation Commission stated that responsibility may be a result of *culpa* in the performance of lawful measures. In this claim, the Italian Government raised the question of the responsibility of the French Government for acts of administrators-sequestrator of the property of Rizzo (ILR 22 (1955), 317) and eleven other Italian

or duty. In this sense the elements of fault include the will, the act, and the unlawfulness of the act. In fact, fault is the origin of responsibility.[22] It has been brought up in the *Jamaica* Case (1798)[23] by the Mixed Claim Commission set up between Great Britain and the United States. The British ship Jamaica and her cargo were burnt and totally destroyed. The captured property was not anywhere near the United States. Two United States Commissioners examined the case and decided that the responsibility must be based on a fault imputable to the person charged. Commissioner Gore stated that: "Where there is no fault, no omission of duty, there can be nothing whereon to support a charge of responsibility or justify a complaint."[24]

As to the State's obligation to protect foreign interests and punish the offenders harming them, the Mexico-United States Claim Commission in the *Mecham* case[25] (1929) considered "negligence" as the failure to perform an obligation and stated: "Even though more efficacious measures might perhaps have been employed to apprehend the murderers of Mecham, that is not the question, but rather whether what was done shows such a degree of negligence, defective administration of justice, or bad faith, that the procedure falls below the standards of international law."[26] A

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nationals. See Brownlie, *supra*, note 7 at 441.

[22]Cheng, *supra*, note 20 at 225, The decision of the permanent Court of Arbitration shows that "[f]ault consists in the violation of an obligation, giving rise to responsibility". Such violation has been termed an "unlawful act".

[23]1978, 4 Int. Adj. M.S.P. 489, Jay Treaty (Article VII Arb. (1749), G.B/U.S.).

[24]See *Jamaica* case 1798, 4, Int. Adj, M.S. p.489 (Jay Treaty Art.VIII, Arb. 1794, G.B/U.S.) Arbitral awards; Moore, John Bassett, *International Adjudication- Ancient and Modern History and Documents, Together with Mediatorial Reports, Advisory Opinions. and the Decisions of Domestic Commissions on International Claims*, Modern Series IV (New York: Oxford University Press, 1931) 489 at 499.

[25]The *Mecham* case (1929) (US. v. Mex.) 4 RIAA, 440.

[26]*Ibid.* at 443.

person is said to be negligent if he acts without taking due care[27] or attention with respect to the harmful consequences of his actions.[28] In that sense, negligence can be considered as the failure to perform an obligation. As defined in *Hazzard v. Chase Nat. Bank of the City of New York*[29] "The term refers only to that legal delinquency which results whenever a man fails to exhibit the care which he ought to exhibit, whether slight, ordinary, or great."[30] Thus negligence means the failure to perform any legal duty. One is expected to take due care when there exists a foreseeable risk of harm. Foreseeability of risk is a necessary condition for blame and for the liability related to a certain action. Foreseeability consists in the natural and probable consequences of one's actions. An example of this is a case in which the harm caused arises from an intentional action, *i.e.* where the wrongdoer had the desire to cause certain consequences. Any negligent act may foreseeably cause harmful effects. Therefore, everyone has the duty to act according to the standard of care[31] so as to

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[27]Indeed the duty of protection goes as far as it can possibly be permitted as, for instance, mentioned by the Rapporteur in the *Spanish Zone of Morocco Claim* Rapport III (1923), 1924, 2 UNRIAA p.615, at 645. He stated: "It has finally been recognized that the State is obliged to exercise only that degree of vigilance which corresponds to the means at its disposal. To require that these means should always measure up to the circumstances would be to impose upon the State duties which it would often not be able to fulfil. Thus, the view that the vigilance required should correspond to the importance of the interests at stake has not been able to prevail."

The *Alabama* case is also important in that the Tribunal found that the British Government had failed to use diligence in performing its neutral obligations. The Alabama Award stated that "The 'due diligence'... ought to be exercised by neutral governments in exact proportion to the risk ..." See *Alabama* case (1872) U.K. & U.S. 1, Int.Arb. p495, Arbitral awards of 1827; Moore, John Bassett, *History and Digest of the International Arbitrations to Which the United States Has Been a Party*, vol.1 (Washington: Government Printing Office, 1898) 495-682.

[28]See J.C.Smith, *Liability in Negligence* (London: Carswell Legal Publication 1984) at p.2.

[29]159 Misc. 57, 287 N.Y.S. 541, 552.

[30]*Ibid*

[31]In the *Home Missionary Society* (1920 6 RIAA 42) case, the Tribunal provided that a State will not be held responsible for harm caused by rebel or by government forces countering rebel activity unless there is a failure to exercise due diligence; See Brownlie *supra*, note 1 at 172. There should not be international responsibility if it shows steady effort to refrain from wrongful act and

avoid causing harm.[32]

3. Objective Responsibility

The idea of 'causal liability' was first expressed in 1902 by Anzilotti and was echoed in the work of many of his fellowers such as Brownlie[33], Delbez, Guggenheim[34] Schwarzenberger[35], Eagleton[36], and Arbour[37]. In Anzilotti's opinion, "la théorie de la faute doit être ici mise absolument hors de cause."[38]

Arbour answers the question whether violation of an international norm is enough to hold a State responsible by stating: "Il est certain que l'on doive répondre

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breach of obligation. The same is true when the mere failure to comply with such obligations is the result of *"vis major"*, This has confirmed by the *Russian Indemnity* case (1912) H.C.R.P. 532 at p. 546 (transl.) (1912) PCA) which states: "The exception of *vis major*, invoked as the first line of defense, may be pleaded in public international law as well as in private law." In fact, in many situations no responsibility will arise because there will be no proof of a lack of due diligence.

[32]*Ibid.* at pp.130-135.

[33]Brownlie, *supra*, note 7 at 437.

[34]Paul Guggenheim, "Les principes de droit international public" vol. 80: I, *Recueil des Cours*, Leyde, A.W. Sijthoff, 1952, 5 at p. 147-148. He states that in most cases it seems to be impossible to "déterminer quelle était l'attitude psychologique de l'organe". See Guggenheim, *Traité de droit international public*, t. II, Geneva, Librairie de l'université Georg à la p. 51.

[35]See Bedjaoui, *supra*, note 13 at 359-362; G. Schwarzenberger, *International Law*, iii, 3rd edn. (London: Sterens & Sons Limited, 1957) ; Schwarzenberger, "Principles of International Law", vol. 87, I, *Recueil des Cours* (Leyde; Pay-Bas: A.W. Sijthoff, 1955) at pp. 350-353.

[36]Eagleton states: "It is not necessary to assume [...] that all acts occurring within a state are *prima facie* in consonance with the will of the State. Whether they are or not, the sole responsibility of the state is for such acts as international law regards as illegal and productive of responsibility." See C.Eagleton, *The Responsibility of States in International Law* (New York: New York University Press, 1928) at 213.

[37]See Arbour, *supra*, note 8.

[38]Anzilotti, "La responsabilité internationale des Etats à raison des dommages soufferts par des étrangers" 1906, RGDIP 5.

affirmativement à cette question ..."[39]

The General Claims Commission, set up by a convention between Mexico and the United States in 1923, made an important contribution in this respect in the well-known *Neer*[40] and *Claire*[41] claims. In the *Neer* claim, the General Claims Commission applied the objective test.

Under the no-fault theory, fault may also be taken into account in the assessment of the degree of liability and examination of the consequences of the wrongful act.

State responsibility has been the subject of extensive study by the ILC, and this body has increasingly endorsed the "no fault" theory. Quentin-Baxter states that the breach of an international obligation constitutes the basis of liability for risk: the "duty to avoid, minimize and provide reparation for transboundary losses or injuries".[42]

In 1953, the General Assembly requested the ILC to undertake the codification of the principles of international law concerning State responsibility[43]. The Commission, at its seventh session in 1955, decided to begin the study of State responsibility.

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[39]See Arbour *supra*, note 8 at 276.

[40]*Neer claim* 1926, 4 RIAA, p.60.

[41]*Claire claim* 1929, 5 RIAA, p.516.

[42]See Fourth Report to the ILC on International Liability for Injurious Consequences Arising out of Acts not Prohibited by International Law, UN Doc. A/CN.4/373, June 27, 1983.

[43]General Assembly resolution 799 (VIII) of December 7, 1953.

In 1975, the general plan adopted by the ILC for the Draft Articles on the topic of "State responsibility" decided to consider the structure of the Draft Articles as follows: Part One would deal with the origin of international responsibility; Part Two would deal with the content, forms and degrees of international responsibility; and Part Three would consider the question of the settlement of disputes[44].

In 1980, the ILC, at its thirty-second session, adopted on first reading Part One of the Draft Articles concerning "the origin of international responsibility".[45]

The Commission, from 1980 to 1986, received seven reports from its Special Rapporteur, Willem Riphagen, for Parts Two[46] and Three of the topic.[47]

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[44]ILC Yearbook, 1975, vol. II, pp. 55-59, doc. A/10010/Rev.1, paras. 38-51.

[45]ILC Yearbook, 1980, vol. II (Part Two), pp. 26-63, doc. A/35/10, chap. III.

[46]The ILC adopted in Part Two, Draft Articles 1 to 5(For the text of Articles 1 to 5 (para. 1), with commentaries, see ILC Yearbook 1985, vol. II (Part Two), pp. 24 et seq.) and Articles 6 (Cessation of wrongful conduct), 6 bis (Reparation), 7 (Restitution in kind), 8 (Compensation), 10 (Satisfaction), 10 bis (Guarantees of non-repetition), (For the text of Article 5, para. 2 and Articles 6, 6 bis, 7, 8, 10 and 10 bis, with commentaries, see Official Records of the General Assembly, Forty-eighth Session, Supplement No. 10 (A/48/10), pp. 132 et seq.) 11(Countermeasures) by an injured State), 13 (Proportionality) and 14 (Prohibited countermeasures). (For the text of Articles 11, 13 and 14, Supplement No. 10 A/49/10.) It had furthermore received from the Drafting Committee a text for Article 12 (Conditions relating to resort to countermeasures), on which it deferred action. (See *Ibid.*, para. 352.).

[47]At its forty-seventh session the Commission had also provisionally adopted for inclusion in Part Three, Article 1 (Negotiation), Article 2 (Good offices and mediation), Article 3 (Conciliation), Article 4 (Task of the Conciliation Commission), Article 5 (arbitration), Article 6 (Terms of reference of the Arbitral Tribunal), Article 7 (Validity of an arbitral award) and Annex, Article 1 (The Conciliation Commission) and Article 2 (The Arbitral Tribunal). For the seven reports of the Special Rapporteur, see ILC Yearbook 1980, vol. II (Part One), p. 107, doc. A/CN.4/330; ILC Yearbook 1981, vol. II (Part One), p. 79, doc. A/CN.4/334; ILC Yearbook 1982, vol. II (Part One), p. 22, doc. A/CN.4/354; ILC Yearbook 1983, vol. II (Part One), p. 3, doc. A/CN.4/366; and Add.1; ILC Yearbook 1984; vol. II (Part One), p. 1, doc. A/CN.4/380; ILC Yearbook 1985, vol. II (Part One), p. 3, doc. A/CN.4/389; and ILC Yearbook 1986, vol. II (Part One), p. 1, doc. A/CN.4/397; and Add.1.

In 1987, the ILC appointed Gaetano Arangio-Ruiz as Special Rapporteur. From 1988 to 1996, he presented eight reports to the ILC.[48] At its forty-eighth session, the ILC had before it the eighth report prepared by Arangio-Ruiz.[49] The report dealt with problems relating to the regime of internationally wrongful acts singled out as, *inter alia*, "International Crimes and International Delicts" based on Article 19 of Part One. The ILC considered the report at its 2436th meeting on June 5, 1996.

The Drafting Committee completed the first reading of Draft Articles of Parts Two and Three on State responsibility. The Commission considered the Report of the Drafting Committee at its 2452nd to 2459th meetings from July 3 to 12, 1996.[50]

On July 26, 1996 the ILC decided, in accordance with Articles 16 and 21 of its Statute, to transmit the draft Articles[51] through the UN Secretary-General to

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[48]For the eight reports of the Special Rapporteur, see ILC Yearbook 1986, vol. II (Part One), p. 6, doc. A/CN.4/416 and Add.1; ILC Yearbook 1990, vol. II (Part One), doc. A/CN.4/425 and Add.1; ILC Yearbook 1991, vol. II (Part One), doc. A/CN.4/440 and Add.1; doc. A/CN.4/444 and Add.1-3; doc. A/CN.4/453 and Add.1 and Corr.1, 2, 3 and Add.2 and 3; doc. A/CN.4/461 and Add.1 and 2; doc. A/CN.4/469 and Corr.1 (English only) and Add.1 and 2 and A/CN.4/476 and Corr.1 (English only) and Add.1. At its forty-first session (1989) the Commission referred to the Drafting Committee Draft Articles 6 and 7 of Chapter Two (legal consequences deriving from an international delict) of Part Two of the Draft Articles. At its forty-second session (1990) the Commission referred Draft Articles 8, 9 and 10 of Part Two to the Drafting Committee. At its forty-fourth session (1992) the Commission referred to the Drafting Committee Draft Articles 11 to 14 and 5 bis for inclusion in Part Two of the Draft Articles. At its forty-fifth session (1993) the Commission referred to the Drafting Committee Draft Articles 1 to 6 of Part Three and Annex thereto. At its forty-seventh session (1995) the Commission referred to the Drafting Committee Articles 15 to 20 of Part One dealing with the legal consequences of internationally wrongful acts characterized as crimes under Article 19 of Part One of the Draft Articles and new Draft Article 7 to be included in Part Three of the draft.

[49]Report of the ILC on the work of its forty-eighth session May 6 - July 26,1996, General Assembly Official Records - Fifty-first Session, Supplement No. 10 (A/51/10).

[50]See document A/CN.4/L.524.

[51]See *supra*, note 49.

Governments for comments and observations. The ILC requested the governments to submit their comments and observations to the UN Secretary-General by January 1, 1998.

In the words of Article 1 (Part I) of the ILC Draft Articles, "[e]very international wrongful act of a State entails the international responsibility of that State."[52] The ILC, in its Draft Article on the responsibility of State, does not refer to fault[53], but only refers to the question of identifying the State responsible for wrongful acts and breaches of international obligations. The commission's Draft Article 3 declares that a State has committed an international wrongful act when "(a) [its]conduct consisting of an action or omission is attributable to the State under international law; and (b) that conduct constitutes a breach of an international obligation of the State."

International responsibility can arise from either an action or an omission that causes a breach of an international obligation.[54] It may also result from the breach of an obligation derived from any source of international law.[55] The origin of an international wrongful act, whether customary, conventional or any other is irrelevant

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[52]See *infra*, note 53.

[53]Draft Articles on State Responsibility, Part I, in Report of the ILC on the work of its 32ed Session, 5 May- 25 July 1980 UN Doc. A/35/10: ILC Yearbook (1980 II, Part 2) p.30. Bedjaoui states that "[i]t is indeed the almost automatic practice of tribunals, once a breach of obligation has – without preliminary recourse to the concept of fault – been established and attributed to a State, to pass on to a second Stage at which they assertain whether and to what extent the relevant conduct of the State concerned was malicious or wilfully harmful." See Bedjaoui *supra*, note 13 at 359.

[54]*Ibid.* ILC Draft Articles, Article 3.

[55]Article 4 of the Draft Article makes clear that "an act of a State may only be characterized as internationally wrongful by international law. Such characterization cannot be affected by the characterization of the same act as lawful by internal law." See *supra*, note 53.

for the purpose of establishing State responsibility.[56]

In Part I of its Draft Articles, the ILC has exempted certain inevitable events as grounds for which wrongfulness may be established. The ILC reserved the duty to pay compensation for damage even when wrongfulness is precluded.[57] Article 35 of Part 1 provides that even though wrongfulness of a State's action may be precluded by virtue of consent, *force majeure* and fortuitous events,[58] distress[59] and a state of necessity, such preclusion "does not prejudge any question that may arise in regard to compensation for damage caused by that act."[60] Members of the ILC were of the opinion that compensation, however, ought to be paid.[61] Thus, the ILC, by citing these

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[56]Article 17 of ILC Draft Article states:
"1. An act of a State which constitutes a breach of an international obligation is an internationally wrongful act regardless of the origin, whether customary, conventional or other, of that obligation. 2. The origion of the international obligation breached by a State does not affect the international responsibility arising from the internationally wrongful act of that State." *Supra*, note 53.

[57]See Article 35 of Draft Articles. *Supra*, note 53.

[58]Article 31 of Draft Articles. *Supra*, note 53.

[59]Article 32 of Draft Articles. *Supra*, note 53.

[60]Article 33 of Draft Articles. *Supra*, note 53.

[61]Akehurst, M.B. "International Liability for Injurious Consequences Arising out of Acts Not Prohibited by International Law", vol XVI, NYIL (Natherland: Martinus Nijhoff, 1985) at p.12. Pinto states: "Draft Article 35, last in the series comprising part 1 of the Commission's work on State responsibility, then serves as a device which at once signals the end of the integrated sequence of provisions concerning acts which, evaluated in terms of their wrongfulness, give rise to responsibility, and at the same time transports us to the threshold of a new idea. [...] Thus, certain acts which cause damage, irrespective of their evaluation in terms of wrongfulness, might nevertheless be found to entail compensation, a remedy normally associated with responsibility. The duty to compensate would thus emanate from a source other than the particular breach of a legal obligation and arise through the application of different, though unspecified, legal principles." See M.C.W. Pinto,. "Reflection of International Liability for Injurious Consequences Arising out of Acts not Prohibited by International Law", vol XVI, NYIL (Netherland: Martinus Nijhoff, 1985) 17 at 20.

provisions, has adopted responsibility for results as the single form of responsibility. This confusing conclusion raises the question of the origin of the obligation to pay compensation. Zemanek states: "[...] the ILC had created a further obstacle: by adopting responsibility for result as the single form of responsibility for all unlawful acts, it had theoretically excluded circumstances precluding fault, since fault was not a condition of responsibility."[62]

Article 35 of the ILC Draft Articles does not mention that compensation should be paid in respect of reprisals (Article 30) or self-defense (Article 34). This seems to be a correct decision, as Akehurst stated, since it is a well-established rule of international law that there is no duty to pay compensation in respect of reprisals and acts of self-defense falling short of war.[63] This is correct when reprisal, as defined in *Naulilaa* case[64], "is an act of self-help by the injured State responding to an act contrary to international law by the offending state"[65], and only if it is a proportionate response to the prior illegality.[66] Otherwise, it is illegal *pro tanto* and gives rise to a duty to pay compensation.[67]

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[62]See K. Zemanek, "Causes and Forms of International Liability" in B. Cheng & E.D. Brown, eds., *Contemporary Problems of International Law: Essayes in Honour of Georg Schwarzenberger On his Eightieth Birthday* (Sydney: the Law Book Company, 1988) 319 at 329.

[63]Akehurst, *supra*, note 61 at 14.

[64]Naulilaa case, (1928) 2 RIAA 1012.

[65]*Ibid.*

[66]M. Dixon, *Textbook on International Law*, 2ed. ed. (London: Blackstone Press Limited, 1993) at. p. 30. at 259.

[67]Akehurst, *supra*, note 61 at 14.

4. The Modern Concept of Liability: Strict and Absolute Liability for Environmental Injury

One important contemporary development with regard to international State responsibility has been the acceptance of the principle of liability for the created risk. In the context of scientific and technological advances which have drawn humanity towards new activities, States tend to disregard the idea of fault as a basic factor of international wrongful action and do not seek to determine whether their act is in fact negligent.[68] This implies, in circumstances which have been previously defined by international conventions, that a State which causes damage to other States becomes liable for its actions. There is no need to prove that an act has been committed willfully and maliciously, or with culpable negligence or that it is contrary to a rule of international law. However, even if the action that causes damage is not illegal[69],

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[68]For this reason, important international agreements specify that civil liability for aviation hazards is not dependent on proof of fault or negligence. Carriers are liable unless liability is disproved on one of certain specified grounds by the carrier. The *Guatemala Protocol* contains some fundamental modifications to the Warsaw System. Its main feature is a shift of principle, in that the fault liability at present attaching to the carrier will be changed (Articles IV and V) into a risk liability: accordingly, the carrier will be liable also in cases where he bears no fault or blame. *Protocol to Amend the Convention for the Unification of Certain Rules Relating to International Carriage by Air signed at Warsaw* on Oct. 12, 1929 as amended by the *Protocol* done at the Hague on Sept. 28, 1955, signed at Guatemala on March 8, 1971; ICAO Doc. 8932/2; (1971) 10 ILM 613.

The 1952 *Rome Convention on Damage Caused by Foreign Aircraft to Third Parties on the Surface* embodies the principle of absolute liability (Article 2). This article attaches the liability to the operator of the aircraft within the meaning of the Convention. It also says, in para. 3, that the owner shall be presumed to be the operator unless he proves that some other person was in control. 1952 *Rome Convention*, 310 UNTS 181; ICAO Doc. 7634; [1952] JALC, 447.

[69]Arbour defines "responsibility for risk" as: "[...] il y a des cas [...] où un État peut encourir une responsabilité a la suite d'activités licites; c'est le problème typique de la responsabilité pour risque. Un traité international peut, par exemple, faire assumer aux États participants les risques éventuels d'une activité légitime." See Arbour, *supra*, note 8 at 280. In contrary, M.N.Shaw defines "risk" theory as "once an unlawful act has taken place[...] that state will be responsible in international law to the state suffering the damage irrespective of good or bad faith." See M.N.Shaw, *International Law*, 2nd Ed. (Cambridge: Grotius, 1986) p.409.

It seems that a basic element in the application of the risk theory is that the activities causing damage are dangerous, but not unlawful.

the victim does not have to tolerate the risk of damage resulting from it; a social responsibility is imposed upon the actor.[70] The modern form of liability for activities not prohibited by international law has been developed because of the necessity of reconciling States' freedom to act with the justified fear that the unrestrained exercise of technological and industrial power may destroy humanity.

International obligations impose their requirements on States in different ways. The question is not whether international law can or should recognize liability for environmental damage, but how far it recognizes such liability. In this sense, it must be determined whether the responsibility of States for the breach of an international obligation is strict or whether they have a chance to defend themselves. Environmental law, similar to other branches of law, is characterized by rights and duties. Fault or intention are elements which are usually discussed in international environmental law[71] as necessary tools used to impose liability on States.

The term liability in the context of strict liability should be compared to that of fault.[72] It may be said that a State can exonerate itself from strict liability by proving that damage caused to the environment of other States is, *e.g.*, justifiable

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[70]When speaking of objective or absolute responsibility, most writers refer to liability and not to wrongful action. See M.P. Mazzeschi, "Forms of International Responsibility for Environmental Harm", in F.Francioni & T. Scovazzi, *International Responsibility for Environmental Harm* (Graham & Trotman, 1991) at 17.

[71]See Kiss & Shelton, *International Environmental Law* (England: Transnational, 1991) at 350.

[72]Brownlie states that "[i]n truth the division between fault liability and strict liability is not as sharp as it is said to be in the textbooks of municipal law." See Brownlie, *supra* note 7 at 476. John Fleming states that strict liability is not always equivalent to liability without fault. See J. Fleming, *An Introduction to the Law of Torts* (Sydney: Law Book co. 1979) at pp. 158-59.

according to the provisions of the *UN Charter*[73], or that it can be exonerated for wrongful acts on the basis of *force majeure* or intervening acts of third persons. These exonerations distinguish strict liability from absolute liability.[74] When certain *force majeure* exceptions are permitted, the liability is strict, not absolute.

Many legal systems accept strict liability in certain cases.[75] In the common law system, strict responsibility for environmental damage has emerged as seen in *Rylands v Fletcher*[76], in which the defendants were held liable without proof of their fault for harm caused when water escaped from a reservoir on their land and caused damage to the other party. However, it was lawful for the defendants to build a reservoir on their land. Strict liability is also found in many cases in the civil law system, especially in those of ultra-hazardous activities.[77]

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[73]*Charter of the United Nations* (San Francisco), 1 UNTS xvi; UKTS 67 (1946); AJIL. Suppl. (1945) 190. In force October 24 1945.

[74]The regime of strict responsibility has been incorporated in several multilateral conventions treating issues of environmental injury. Goldlie has discussed the distinction between strict and absolute liability in the context of environmental damage. See L.F.E. Goldie, "Liability for Damage and the Progressive Development of International Law" (1965) 14 Int'l.L. & Com.L.Q. 1189 at 1201- 20.

[75]See J. Schneider, "State Responsibility for Environmental Protection and Preservation", in R. Falk & F. Kratochwil, eds. *International Law, A Contemporary Perspective* (Boulder: Westview Press, 1985) 602 at 618; A. Springer, The *International Law of Pollution* (Westport: Quorum Books, 1983) p.130; L.F.E. Goldie, "Concepts of Strict and Absolute Liability and the Ranking of Liability in Terms of Relative Exposure to Rick" (1985) Vol. XVI, NYIL, 175, p.247.

[76](1968) L.R.3 H.L. 330, McDougal, Lasswell and Valsic stated" "[A] liability approaching absolute for ultrahazardous activities is not a new concept and is now widely accepted in many mature systems of law. Its most authoritative base in Anglo-saxon law is commonly associated with the famous English case Rylands v Fletcher, and ordinarily generalized as holding that one who engages in an activity, or maintains a condition, involving an extraordinary degree of risk of harm to others is absolutely liable for the loss it causes." See M.S. McDougal & H.D. Lasswell, *Law and Public Order in Space* (New Haven; London: Yale University press, 1963) at 616.

[77]See Lawson & Markesinis, *Tortious Liability for Unintentional Harm in the Common Law and Civil Law*, i (Cambridge:Cambridge University Press, 1981) ch.4.

4.1. International Conventions

The theories of strict and absolute liability have evolved through international treaties incorporating relevant international doctrines. Some multilateral conventions[78] contain rules creating absolute or strict liability for operations which harm the environment. Article II of the *Convention of International Liability for Damage Caused by Space Objects*[79] states: "A launching State shall be absolutely liable to pay compensation for damage caused by its space object on the surface of the earth or to aircraft in flight." This is an example of *sine delicto*. It does not provide that States have duty not to cause damage, but they must pay for the damage which their space objects cause.[80] Absolute liability in this article is not equivalent to strict liability which is usually used to signify liability without fault. Article III of this Convention provides a form of fault responsibility for other kinds of damage.

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[78]See Schneider, *supra*, note 75 at 616-619. A number of international multilateral agreements, which discuss liability in the field of nuclear energy are: *Convention on Third Party Liability in the Field of Nuclear Energy*, Paris, July 29, 1960, (*Paris Convention*) in 8 Europe. Y.B. 202 (1960); U.K.T.S. 69 (1968), Cmd. 3755, 55 AJIL, 1082; *Convention on the Liability of Operators of Nuclear Ships*, Brussels, 25 May 1962, *(Brussels Convention on Nuclear Ships)* 57 AJIL 268, Art.2 (1963); *Convention Supplementary to the (OEEC) Paris Convention*, 1960, Brussels, January 31, 1963 in 2 ILM, 685 (1963); *International Convention on Civil Liability for Nuclear Damage*, Vienna, May 21 1963 (*Vienna Convention*) 2 ILM, 727, (1963); Misc. 9 (1964), 2333 Art.4. Goldie argues that: "The concept of absolute liability developed in the nuclear liability treaties, more effectively than any other concept presented so far, prevents the creator of a risk from passing that risk on to the public and thus expropriating wealth and security from other people." See L.F.E.Goldie, "International Principles of Responsibility for Pollution", (1970) 9 Col. J. Trans. L. p.283.

[79]*Convention on International Liability for Damage Caused by Space Objects*, GA Res.2777, UN GAOR, twenty-sixth Session, supp. No.29 at p. 25 (UN Doc. A/8528 (1971); 1975 Can.T.S. No. 7; 961 UNTS 187 (in force 1972).

[80]See Akehurst, *supra*, note 61 at 10.

4.2. The Case Law

There are only a few significant international cases which can be considered in a discussion of strict and absolute liability. These cases provide little support for strict liability. The Dogger Bank Dispute (1904)[81] is an example of strict liability in

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[81]In the Dogger Bank Incident, between Great Britain and Russia (1904), the Commission of Inquiry followed the rule that the existence of a mistake would not free the wrongdoer from liability.

On October 7, 1904, the second Russian squadron of the Pacific Fleet anchored with the purpose of coaling before continuing its voyage to the Far East. From the time of departure, precautions had been taken by vessels to be ready for possible attacks by Japanese torpedo boats, given that numerous reports had been received from the agents of the Imperial Government on the imminent threat of such attacks. In addition the Commander of the Pacific Fleet, Admiral Rojdestvensky, had been warned of the presence of suspicious vessels on the coast of Norway. The commander of a transport ship which was coming from the North informed him that he had spotted four torpedo boats carrying a single light on the previous night.

The last vessel of the fleet had been required to reduce its speed because of damage to its engines. It then suddenly met some unknown vessels and opened fire on them. Its commander reported to Admiral Rojdestvensky that his ship was being attacked on all sides by torpedo boats. This news and other information which he had heard caused the Commander-in-Chief to take even more care and to look out for an attack by torpedo boats.

According to British witnesses, the squadron was slowly advancing, following usual procedures and the ships' lights were working properly but the night was dark and foggy.

Suddenly the attention of the officer on watch on the bridge of one of the vessels was attracted by a green rocket which was sent up by the "admiral" of the fishing fleet. Almost immediately after this first alarm, the lookout men scanned the horizon with their night glasses, but they saw no light because a ship appeared to be bearing down upon them. Following that they recognized a torpedo boat proceeding at great speed. The Commander then ordered fire to be opened on this unknown vessel. At the same time, the lookout men noticed another suspicious vessel which presented the same features as did the object of their fire on starboard, so fire was also opened on this second object. The Commander-in-Chief, Admiral Rojdestvensky, indicated the objects against which the fire should be directed by throwing his searchlight upon them, but each vessel in the squadron also swept its own searchlights along the horizon to avoid being taken by surprise, leading to an erroneous conclusion. The Russian vessels did not realize that the unidentified boat they had encountered were in fact only a flotilla of British fishing vessels. The battleship fire lasted ten to twelve minutes, and as a result, two men were killed and six others wounded.

Russia, however claimed that Japanese torpedo boats had been seen surfacing in the area and that its actions had been provoked and it refused to punish the officers. (Note that in the Dogger Bank dispute an International Commission of Inquiry was appointed and charged both with fact-finding and determining where the responsibility for the incident lay, and what was the degree of fault of the wrongdoers. The Commission found that the Russian fleet's opening of fire had not been justified. It held the Russian Admiral responsible for what had happened). (U.K. v. USSR 1905), Finding Report Feb.26. 1905, The Hague Court Reports N.Y. Oxford University Press,

public international law[82]. The Commissioners unanimously recognized that the vessels of the Russian fishing fleet did not commit any hostile act. Furthermore, the majority of Commissioners were of the opinion that the opening of fire by Admiral Rojdestvensky was not justifiable. Therefore, they relied on objective international responsibility.

The *Gut Dam* Arbitration[83] between the United State and Canada is another clear example which illustrates State responsibility. The tribunal adopted a standard of strict liability when it determined that Canada was responsible for all damages resulting from flooding by the dam built between Adams Island in Canadian territory and Les Galops in the United States. The tribunal was not interested in discussing fault, negligence, or whether Canada had anticipated possible damages which may have resulted from flooding by the dam.[84]

Other important cases which point to the emergence of strict liability as a principle of public international law, in the view of some authors, [85] are: *Trail Smelter*

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pp. 403-410.

[82]See also the *Panay* case, U.S. v. Japan. On December 12, 1937 on the Yangtze River, the USS. Panay, river gunboat, and eleven American merchant vessels and craft, property of the Standard Vacuum Oil Company, were attacked by Japanese aircraft. The Japanese Foreign Office indicated that the attack was a mistake. In this case, the Japanese government indemnified all the losses and dealt appropriately with those responsible for the incident. See G.H. Hackworth, *Digest of International Law*, vol.V (United States: Government Printing Office, 1943) at 687.

[83]ILM 118, 133-42 (1969); 7 Can.Y.B.I.L. 316-18.

[84]See Schneider, *supra*, note 75 at 616-619.

[85]See Schneider, *supra*, note 75 at 616-625.

(1911)[86], *Corfu Channel* case (1949)[87], *Lac Lanoux* case (1957)[88], *Gut Dam* arbitration (1968)[89], *Juliana Ship* case,[90] *Mura River* case[91], and *Cherry Point* case[92]. The *Trail Smelter* and *Corfu Channel* cases are almost identical in that they uphold the duty of every State not to cause damage to the environment of another State. Wilfred Jenks[93] states that since the tribunal in the *Trail Smelter* case clearly implied that the liability arose from the inherently dangerous nature of the operations of the smelter, this is "a true case of liability for ultra-hazardous activities without proof of fault or negligence."[94] In the *Corfu Channel* case, it might be argued that Albania's responsibility to Great Britain arose, among other reasons, from its knowledge of a dangerous situation.[95] The responsibility of Albania was based on its unlawful omission. The Court, by examining whether the Albanian government was aware of

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[86](1931-41) 3 UN R.I.A.A. 1905.

[87](U.K. v. Albania 1949) ICJ 4 (merits).

[88](Spain v. France) 12 UNRIAA 281 (1957); (1959) 53 AJIL 156.

[89]See 8 ILM 118, 133-42 (1969); 7 Can.Y.B. Int'l. L. 316-18 (1969).

[90]See Handl, "State Liability for Accidental Transnational Environmental Damage by Private Persons" (1980) 74 AJIL 525 at 547.

[91]Misc. 159, 57,287 N.Y.S. 541, 552.

[92]See Handle, *supra*, note 90 at pp. 544-545.

[93]See Jenks, C.W. Ultra-hazardous Liabilities vol. 117: I, *Recueil des Cours*, (Leyde; Pay-Bas: A.W. Sijthoff, 1966) at p. 122.

[94]*Ibid.*

[95]See Goldie, *supra*, note 78 at 306. M.Kelson states "[i]f the state knows that an abnormally dangerous activity exists within its jurisdiction, it must prevent any harm resulting from that activity which would damage another State. If the State fails to prevent such harm, it is originally responsible, regardless of fault, for the damage suffered by other States." See J.M.Kelson, *State Responsibility and the Abnormally Dangerous Activity* (1972) 13 Harv. Int'l.L.J. 198 at 236-7. Some respected writers have viewed the *Corfu Channel* case as an acceptance of "*culpa* theory". See for example Oppenheim, *supra*, note 2 at 343.

the danger and whether it could have warned the British convoy, raised the question of whether Albania had caused the damage from lack of due diligence. Decisions of the Court in both the *Corfu Channel* and *Trail Smelter* cases raise different issues. Despite the opinion of some authors, they cannot be taken as proof of the acceptance of objective responsibility.

4.3. State Practice

It is evident that responsibility for environmental harm is now accepted in international customary law. At the same time, it appears that different forms of responsibility have been accepted in international practice, depending on the circumstances of a particular case. There are several examples of State responsibility establishing strict or absolute liability for environmental injury. For example, the 1972 *Liability Convention*[96] was directly relevant to Canada's claim in the Cosmos 954 incident. On January 24, 1978, debris from a Soviet spacecraft fell on Canadian soil. Most of the fragments were radioactive. The Canadian government informed the Soviet Union that it would submit a claim for damages, including environmental clean-up costs, caused by Cosmos 954. In its note, Canada invoked, *inter alia*, the 1972 *Liability Convention* to which both Canada and the U.S.S.R. were parties. The U.S.S.R.'s willingness to pay a part of Canada's claim was recognition of its absolute responsibility.[97]

An interesting example in State practice of strict responsibility for

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[96]The 1972 Convention on International Liability for Damage Caused by Space Objects, 10 ILM 965 (1971).

[97]18 ILM 899 (1979). See N.Mateesce Matte, *Space Activities and Emerging International Law* (Canada: McGill University, 1984) at 100-101; Finch & Moore, "The Cosmos 954 Incident and International Space Law" (1979) 65 Am. Bar. Ass'n. J. 56; Haanappel, "Some Observations on the Crash of Cosmos 954" (1978) 6 J. of Sp.L. 147; Smith, *supra,* note 15 at 116.

environmental injury is the Liberian tanker *Juliana Incident*.[98] In this case, there was no declaration of fault on the part of Liberia in the allegation of liability by the flag State, but the Liberian government offered 200 million yen in compensation.[99] There are different cases in State practice which confirm State responsibility for wrongful acts owing to lack of due diligence. The dispute between Australia and France over French nuclear tests in the Pacific[100] is an example of State responsibility for a wrongful act. The Australian government in paragraph 49 of its application before the ICJ claimed that "the interference with ships and aircraft on the high seas and in the subjacent airspace, and the pollution of the high seas by radioactive fall-out constitute infringements of the freedom of the high seas."[101] The Government of Australia did not seek an award for damages but the first element of its claim was that atmospheric nuclear testing was unlawful under a general rule of international law.[102]

An overall examination of judicial decisions and State practice concerning strict and absolute responsibility reveals a number of cases where a strict liability standard has been applied for transboundary damages. It demonstrates that States accept strict responsibility in certain cases but not all. The examples given in this section reflect this attitude in international law. For example, States that are party to the conventions mentioned in Subsection 4.1.2. have agreed to establish uniform rules of law governing responsibility for environmental damage. Commentators have also

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[98]See Handl, *supra*, note 90 at 530.

[99]For another examples in State practice on strict responsibility see Smith, *supra*, note 15 at 114-118.

[100]*Nuclear Test* case, ICJ Rep. 1974, pp.253-457.

[101] *Ibid.* ICJ Pleadings, *Nuclear Tests* case, (Australia v. France) p.43.

[102]*Ibid.*

argued that the principle of strict liability has no place in customary international law but applies only in circumstances which are clearly referred to in international agreements.[103] The ILC, which has made significant progress in its study of international liability, seems to have the same idea. Its Schematic Outline adopted a complex balancing test to determine when one State must compensate another for transborder harm. It, begins, however, by supposing that loss or injury alone holds States liable for their actions.[104] The ILC indicated that strict liability would be appropriate for certain activities which may cause serious transboundary damage. In fact, the ILC implied that the application of strict liability to dangerous activities is a development of current State practice, under which strict liability is sometimes accepted by the State itself or is imposed on the conductor of an activity.[105] The Schematic Outline contains a "compound 'primary' obligation" including four duties: to prevent, inform, negotiate and repair.[106] According to this the source State has to take "measures of prevention that as far as possible avoid a risk of loss or injury."[107] according to the final level of duty, if there is no conventional regime agreed upon and if damage occurs, the States involved must negotiate in good faith to determine their "rights and obligations", and reparations shall be made unless "it is established" that making reparation does not accord with their "shared expectations."[108] Margraw states that "the duty to make reparations [...] is not equivalent to a rule of strict

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[103]See Jillian Barron, "After Chernobyl: Liability for Nuclear Accidents Under International Law", (1987) 25 Colum. J. Transnat'l L. 647 at 660.

[104]See Schematic Outline, ILC Yearbook (1984); Barron, *supra*, note 103 at 659.

[105]Ibid. Quentin-Baxter, Fourth Report, A/CN.4/373, at 205.

[106]Schematic outline, ILC Yearbook (1984), II, 155. sec. 5, Art. 2.

[107]*Ibid.* sec. 2, Arts. 1, 3.

[108]*Ibid* sec. 4, Arts. 1, 2.

liability, but it approaches, and may be identical to, strict liability if the harm was unpredictable or if the harm was predictable and the source State ignored the first three duties completely."[109]

5. The ILC Work on International Liability for Injurious Consequences Arising Out of Acts Not Prohibited by International Law

5.1. Introduction

International environmental law was primarily organized to regulate some traditional activities that might cause problems to other States, such as the use and regulation of boundary waters that traverse the territories of several States, the exploration of land in border areas, and the transfrontier pollution of fresh water.

While the harm caused by these activities could be considerable, the classic responsibility perspective paid little attention to absolute liability for injuries sustained by innocent victims. Scientific and technological advances which might spell the ruin of mankind have obliged the international community to look for new ways to fill the gap. According to the newer concept of liability, loss or injury suffered as a result of ultra-hazardous activities is the central constituent of State responsibility. In this form of liability, due diligence does not provide any exemption from reparation for damage caused.[110]

Modern proposed forms of State responsibility are different from those which existed in the past. Jenks has proposed that the UN General Assembly adopt a 'Declaration of Legal Principles Governing Ultra-Hazardous Activities' in the same

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[109]See D. Barstow Margraw, "The Transboundary Harm: The International Law Commission's Study of International Liability" (1986) vol.80 AJIL, 305 at313.

[110]Bedjaoui, *supra*, note 13 at 360.

authoritative manner as the 'Declaration of Legal Principles Governing the Activities of States in the Exploration and Use of Outer Space', unanimously adopted by the UN General Assembly on Dec. 13, 1963.[111] The form of responsibility proposed is of conventional origin[112], in which liability results from the fact of injurious consequences without there being any need to qualify the act that gave rise to them.

Article 2 of the 1972 *Convention on International Liability for Damage Caused by Space Objects*[113] provides that "a launching State shall be liable to pay compensation for damage caused by its space object on the surface of the earth or to aircraft in flight."[114] Absolute liability was included in this Convention as it was in the 1967 *Outer Space Treaty.*[115] The practical reason for doing so was the difficulty of proving any negligence on the part of States or organizations launching objects into space.

The existence of ultra-hazardous though legal activities has led the drafters of international agreements to adopt solutions for compensating damage resulting from lawful activities. The ILC, in its work codifying the general rules of liability for acts

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[111]See Wilfred Jenks, *supra*, note 93 at 193-196.

[112]Bedjaoui, *supra*, note 13 at 360.

[113]1972 *Convention on International Liability for Damage Caused by Space Objects*, GA Res.2777, UN GAOR, 26th Session, supp. No.29 at p. 25 (UN Doc. A/8528 (1971); 1975 Can.T.S. No. 7; 961 UNTS 187 (in firce 1972.)

[114]*Ibid.*

[115]*Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies*, T.I.A.S. No. 6347; A.T.S. 24 (1967). 6 ILM 386. 610 U.N.T.S. 205; U.K.T.S. 10 (1968), Cmd. 3519; 18 U.S.T. 2410.

not prohibited by international law[116], followed the same idea.[117] It has developed a novel regime based not on the notion of fault or a wrongful act but on the requirements of compensation for harm as an equitable balance of interests that allows the ultra-hazardous activities to continue.[118] The ILC regime applies to hazardous activities as well as to the harmful transboundary environmental effects of lawful activities. Although Quentin Baxter suggested that the topic should "be limited to the field of the environment", different questions regarding the scope of the topic were discussed by the commission. For example: if States are liable for transboundary harm arising from private corporate activities, should the liability of States go beyond environmental matters to cover economic and monetary or even medical and biological research activities? Or should a State be liable if a corporation based in it exports dangerous materials to developing States (e.g. the Bhopal disaster in India in which thousands of people were killed and injured)?[119] Thus, a full analysis of ILC work on liability for lawful activities is beyond the scope of our study, but a brief survey and a few comments are in order.

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[116]The ILC worked on the topic of "International Liability for Injurious Consequences Arising out of Acts not Prohibited by International Law" (hereinafter the topic).

[117]See K. Zemanek, "Responsibility of State: General Principle", vol.10, *Encyclopedia of Public International Law* (North Holland: Published under the Auspices of the Max Planack Institute, 1982) 362 at366.

[118]See Quentin-Baxter, ILC Yearbook vol. II (1981), pt. 1 at 112-22.

[119]*Ibid.*

5.2. Historical Overview

In 1963, a report of the subcommittee recommended that the ILC's study shift from State responsibility for injuries to aliens to a review of the general rules of State responsibility.[120] The report in one of its footnotes stated: "the question of possible responsibility based on 'risk', in cases where a State's conduct does not constitute a breach of an international obligation, may be studied in this connection."[121] Roberto Ago, as special rapporteur, and his successor, Williem Riphagen, took the view that their mandate was to study the general rules of State responsibility rather than specifically liability for lawful activities.[122]

In 1977, the UN General Assembly invited the ILC to work on the topic of international liability for injurious consequences arising out of acts not otherwise prohibited by international law.[123]

In 1978, the Commission appointed Robert Quentin Quentin-Baxter as special

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[120]Report of the subcommittee on State responsibility to the ILC, UN Doc. A/CN.4/152 (1963); [1963] 2 ILC Yearbook 227,228; Margraw, *supra*, note 109 at 306.

[121]ILC Yearbook (1963), II at 228.no.3.

[122]"Second Report on State Responsibility" Yearbook ILC (1970), II, 178, para.6; (1973), I, 14, paras, 4,5; Christian Tomuschat, "International Liability for Injurious Consequences Arising out of Acts Not Prohibited by International Law: The Work of the International Law Commission", in F. Francioni & T. Scovazzi eds., *International Responsibility for Environmental Harm* (Great Britain: Graham & Trotman, 1993) 37 at 38. Judge E.Jiménez de Aréchaga stated that "the international law commission wisely decided not to codify the topic of state responsibility for unlawful acts and the rules concerning the liability for risks resulting from lawful activities simultaneously, for the reason that a joint examination of the two subjects could only make both of them more difficult to grasp." See E. Jiménez de Aréchaga, "International Law in the Past Third of a Century", vol. 159: I, *Recueil des Cours* (Leyde: Pay-Bas: A.W. Sijthoff, 1978) at 273.

[123]Resolution 32/151 of Doc. 19/1977, para. 7.; See Akehurst, *supra*, note 61 at 3.

rapporteur. He produced five reports the last in 1984.[124] The most important of these was the 'Schematic Outline' attached to the third report and re-submitted with proposed changes in the fourth report, which disclosed the direction in which the Special Rapporteur intended to lead the ILC.[125]

Quentin-Baxter summarized the aim of the 'Schematic Outline' as follows:

> "The first aim of the present topic is (1) to introduce States that foresee a problem of transboundary harm to make a regime consisting of a network of simple rules that yield reasonably clear answers; and those simple rules may be rules of specific prohibition, or rules of authorization subject to specific guarantees. (2) The second aim of the present topic is to provide a method of settlement that is reasonably fair, and that does not frighten States, when there is no applicable or agreed regime. That involves the possibility that liability will be apportioned -- or ... that the affected States must bear the whole burden of substantial physical transboundary harm -- if the applicable principles and factors modify, or cancel out, the presumption that the source State should repair transboundary harm."[126]

In 1985, Julio Barboza was appointed Special Rapporteur. He decided to pursue the topic by using the Schematic Outline as the most important material, subject to certain basic changes.[127] He revised the introductory articles proposed by

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[124]Quentin-Baxter's Preliminary Report on International Liability for Injurious Consequences Arising out of Acts Not Prohibited by International Law, UN Doc. A/CN./4/ 334 and Adds. 1-2 (1980); Second Report on International Liability for Injurious Consequences Arising out of Acts Not Prohibited by International Law, UN Doc. A/CN.4/346 and Adds. 1-2 (1981); Third Report on International Liability for Injurious Consequences Arising out of Acts Not Prohibited by International Law, UN Doc. A/CN.4/360 and Corr.1 (1982); Fourth Report on International Liability for Injurious Consequences Arising out of Acts Not Prohibited by International Law, UN Doc. A/CN.4/373 and Corr. 1 (1983); Fifth Report on International Liability for Injurious Consequences Arising out of Acts Not Prohibited by International Law, UN Doc. A/CN.4/383 and Add. 1 (1984).

[125]ILC Yearbook (1984), II, 155.

[126]Fourth Report, A/CN.4/373, para.69 quoted in Pinto, *supra*, note 61 at 35.

[127]See J.Barboza's Preliminary Report, ILC Yearbook (1985), II/1,100, para.14.

Quentin-Baxter adding a number of general principles to them.[128]

5.3. The Schematic Outline

The Schematic Outline defines its scope in section 1 as "[a]ctivities within the territory or control of a State which give rise or may give rise to loss or injury to persons or things within the territory or control of another State".[129] The topic covers all physical uses of territory which give rise to adverse physical transboundary effects in another State. Injury to a State's property is thus included but harm to *terra nullius* or harm done to an international organization is not.[130]

Use of 'territory or control' includes:

> "any activity which takes place within the substantial control of the State; and any activity conducted on ships or aircraft of the acting State, or by nationals of the acting States, and not within the territory or control of any other State, otherwise than by reason of the presence within that territory of a ship in course of innocent passage, or an aircraft in authorized overflight."[131]

Ago and Riphagen distinguished between a State's 'primary' obligations, described as "rules imposing on States, in one or another sector of inter-state relations, obligations the breach of which can be a source of responsibility" and 'secondary' obligations, defined as those which "purport to determine the legal consequences of failure to fulfil obligations established by the 'primary' rules."[132] Quentin-Baxter in

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[128]Barboza's Fourth Report, UN Doc. A/CN.4, 413, April 6, 1988, 8, para. 17.

[129]Third Report of June 23, 1982: UN Doc. A/CN.4/360 and corr.1; Reproduced in ILC Yearbook, 1982, vol.2 part 2 p.83 et seq.

[130]See Margraw, *supra*, note 109 at 311.

[131]The Schematic Outline, ILC Yearbook (1984), II, 155.

[132]Report of the ILC to the General Assembly, 31 UN GAOR supp. (No. 10) at 165, UN Doc. A/31/10 (1976); (1976)ILC Yearbook pt.2 at 1,71; Margraw, *supra*, note 109 at 306-307.

the Schematic Outline abandoned the dual obligation concept and tried to construct a single obligation concept as a 'compound primary obligation'. This consists of a series of four duties, namely, to prevent, to inform, to negotiate and to make reparation. The source State is required to take "measures of prevention that as far as possible avoid a risk of loss or injury."[133]

The second duty of the source State is to provide the affected state "all relevant and available information, including a specific indication of the kind and degree of loss or injury that it considers to be foreseeable."[134] The source State can withhold any relevant information for reasons of national or industrial security.[135] However, to the extent that a source State has failed to provide information that should be accessible to the affected State concerning the nature and effects of an activity, the affected State shall be allowed liberal recourse to fact and circumstantial evidence in order to determine whether the activity does or may give rise to loss or injury.[136]

The third stage of duty incumbent on the source State is its obligation to "enter into negotiations" at the request of any source or affected State in order to consider whether a conventional regime is necessary to deal with the situation.[137]

Failure to comply with these three duties, however, does not give rise to a right

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[133]The Schematic Outline, sec. 5, art. 2. ILC Yearbook (1984), II, 155.

[134]*Ibid.* sec.2, Article 1.

[135]*Ibid.* sec.2, Article 3.

[136]*Ibid.* sec.5, Article 4.

[137]*Ibid.* sec.3, Article 1(c).

of action.[138]

The fourth level of duty is that, if harm occurs, reparation shall be made by the acting State in respect of any such loss or injury unless it is established that the making of reparation is not "in accordance with the shared expectations of these states."[139]

6. Criminal Responsibility for Environmental Injury

The term "ecocide"[140] coined to describe the use of defoliants in Vietnam, is used to categorize the various forms of massive destruction of the environment in time of war. Although the term is new, the employment of means of destruction is as old as history itself. Teclaff contends that the term may justifiably be applied to peaceful activities that destroy the environment on a massive scale.[141] Many environmental treaties provide for penal sanctions against those who violate their provisions.

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[138]Margraw, *supra*, note 109 at 311-12.

[139]The Schematic Outline, sec.4, Article 2. ILC Yearbook (1984), II, 155.

[140]The term "ecocide" has already passed into general, non-military usage as suggested by the dictionary definition: "The destruction of large areas of the natural environment by such activity as nuclear warfare, over exploitation of resources or dumping of harmful chemicals." Random House Dictionary of the English Language (2d ed. 1987).

[141]See Ludwik A. Teclaff, "Beyond Restoration--the Case of Ecocide", (1994) 34 Nat. Resources J. 933 at 934; There are some situations for which States have agreed to take appropriate measures to prevent and punish acts harmful for the environment. This is the case in the vast majority of conventions covering trade in hazardous and other wastes, illegal fishing, marine pollution and trade in or possession of endangered species. Some of these conventions are: 1973 *MARPOL Convention*, Articles 4(2), 4(4), UN Legislative Series ST/LEG/SER.B/18, at 461; UKTS 27 (1983) Cmd. 8924; 12 ILM, 1319 (1973); 1972 London Dumping Convention, Article 6(2), 26 UST 2403, TIAS 8165. Amended Oct. 12, 1978, TIAS No. 8165, 18 ILM, 510 (1979); 1974 *Paris Convention for the Prevention of Marine Pollution from Land-Based Sources*, Article 12(1); 1982 UNCLOS, Articles 217(8), 230, *UN Convention on the Law of the Sea (Montego Bay)* UN Doc. A/Conf.62/122 (1982), Misc. 11 (1983) Cmd.8941; 21 ILM (1982) 1261. Concluded at Montego Bay, Jamaica, on December 10, 1982, entry into force: November 16, 1994, in accordance with Article 308 (1). Status: Signatories: 158. Parties: 106.

Proposals come from the halls of academia. Berat, for example contends that "it is through enforcement of such a crime that states and individuals will be able to ensure greater respect for the right to a healthy environment."[142] He calls this crime "Geocide" and states that a *per se* international crime of "geocide" is evolving.[143] Yuzon suggests that the language of "geocide" would have to expand upon the definition of genocide and borrow language from the 1948 *Convention on Prevention and Punishment of Genocide*.[144]

Criminalizing environmentally harmful conduct may be justified because many environmental problems affect common property such as the atmosphere, the oceans, and natural resources which are available for reasonable use by all States. The environment is not protected by private vigilance. Criminalization of environmentally harmful conduct is an attempt to compensate for acts which offend the public interest; it also encourages compliance with laws or regulations that would otherwise be largely ignored and thus discourages acts which are particularly harmful to society.

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[142]See Berat, L. "Defending the Right to a Healthy Environment: Toward a Crime of Geocide in International Law" (Fall, 1993) 11 BUILJ 327 at 339.

[143]*Ibid.* at 342-43.

[144]*Convention on Prevention and Punishment of Genocide,* Dec. 9, 1948, 78 U.N.T.S. 277 (entered into force Jan. 12, 1951). According to the Convention, "genocide means any of the following acts committed with the intent to destroy, in whole or in part, a national, ethnical, racial or religious group, as such: (a) Killing members of the group; (b) Causing serious bodily or mental harm to members of the group; (c) Deliberately inflicting on the group conditions of life calculated to bring about its physical destruction in whole or in part; (d) Imposing measures intended to prevent births within the group; (e) Forcibly transferring children of the group to another group." *Ibid.* Art. II. "[Genocide] whether committed in time or peace or in time of war, is a crime under international law which [the contracting parties] undertake to punish," *Ibid.* Article I. Persons charged with genocide "shall be tried by a competent tribunal of the State in the territory of which the act was committed, or by such international penal tribunal as may have jurisdiction with respect to those Contracting Parties which shall have accepted its jurisdiction." *Ibid.* Article VI. According to the Convention the following acts shall be punishable : (a) Genocide; (b) Conspiracy to commit genocide; (c) Direct and public incitement to commit genocide; (d) Attempt to commit genocide; (e) Complicity in genocide. *Ibid.* Article III.

6.1. ILC Draft Articles on State Responsibility

Some commentators doubt whether there is any need to separate State responsibility into civil and criminal liability. They reason that the consequences for civil and criminal liability are not different. This was part of the debate which took place from 1960 to 1963 and from 1967 to 1970 in the ILC. Among the points considered was the possible distinction between those international wrongful acts involving merely a duty to make reparation and those involving the application of sanctions.[145] The possible basis for such a distinction was also considered. [146]The commission decided to base its Draft Articles on wrongful acts, all recognized as such by the international community.[147]

In 1979, however, the ILC adopted Article 19 (in Part I) of its Draft Articles on State responsibility and for the first time tried to determine duties and obligations of States, the violation of which would be considered an international crime.[148] This article identifies as an international crime the serious breach by a State of an obligation essential to the protection of fundamental interests of the world community, including peace and security of human rights, and the safeguarding and preservation of the human environment. Paragraph 3(d) explicitly states that an "international crime" may result, *inter alia*, "from 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

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[145]Members of the ILC could not agree on how to sanction States that committed international crimes. 2 ILC Yearbook, 1976 pt.2, at 108.

[146]ILC Yearbook, 1963, vol. II, p. 228.

[147]Marina Spinedi, "International Crimes of States; The Legislative History" in Weiler, *infra*, note, 152 at 1-141.

[148]See Weiler, *infra, note* 152 at 362-372.

seas."[149] Article 19 equates and links the safeguarding and preservation of the human environment (paragraph 3(d)) to the maintenance of international peace and security (paragraph 3(a)) and to the safeguarding of human beings (paragraph 3(c)). The view has been given by some ILC members that paragraph 3(d) might be premature in terms of achieving community recognition.[150] This ILC Draft Article does not define "massive pollution" of the atmosphere or of the seas. This term should be defined in order to protect the environment more efficiently.[151]

The ILC, by defining an 'injured State', is suggesting that every member[152] of

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[149]ILC Draft Articles on State Responsibility, Part I, Report of the ILC on the work of its 32ed Session, 5 May- 25 July 1980 UN Doc. A/35/10: ILC Yearbook (1980 II, Part 2).

[150]See Report of the Commission to the General Assembly on the work of its forty-fifth session, (1993) 2 (II)ILC Yearbook, U.N. Doc. A/CN.4/SER.A/1993/Add.1(Part 2), U.N. Sales No. E.95.V.4 (Part 2) at 49-53; Mark Allan Gray, "The International Crime of Ecocide", (Spring 1996)26 Cal. W. Int'l. L.J.,, 215 at267.

[151]A/C.6/31/SR.17, para.10 (the US); *Ibid.*, SR.24, para.73 and ILC Yearbook 1981, vol.II pt.1 p.75; A/C.6/31/SR.18, paras 37-38 (UK); See Weiler, *infra*, note, 152 at 61. Inclusion of the acts mentioned in Article 19.3(d) did not receive support from all States. It was expressly approved by only Mongolia and Mexico. States such as the U.S., the UK, Federal Republic of Germany, China, Egypt, Hungary, Indonesia, Syria, and the former USSR criticized this subparagraph. Some of these States based their criticism on the view that aggression (Article 3 (a)) and pollution (Article 3(d)) could not be put in the same category. *Ibid.*

[152]This is a different kind of liability since normally the directly affected State is considered an 'injured State' and supposed to take measures against the wrongdoer. See Dixon, *supra*, note 66 at 200. Some authors believe that "beyond the case of International crimes, there are no internationally wrongful act having an *erga omnes* character." See Fourth Report of Graefrath, Doc.A/CN.4/366/Add.1 at 12 quoted in Giorgio Gaja, "Obligations *Erga Omnes*, International Crimes and *jus cogens*: A Tentative Analysis of Three Related Concepts", in Weiler,J.H.H., *International Crimes of State, A Critical Analysis of the ILC's Draft Article 19 of State Responsibility* (Berlin; New York: Walter de Gruyter, 1989) at 157. Graefrath did not accept that the *erga omnes* construction leads to the development of an international criminal responsibility. See Bernard Graefrath, "International Crimes - A Specific Regime of International Responsibility of States and Its Legal Consequences" in Weiler, *Ibid.* 161 at 163.The ICJ in the *Barcelona Traction* case (ICJ Reports 1970, at 32, para. 33) used the concept of obligation *erga omnes*. The Court then referred to "'obligations of a State towards the international community as a whole': that is, to obligations which 'by their very nature ... are the concern of all States". *Ibid.* The Court stated: "In view of the importance of the rights involved, all States can be held to have a legal interest in their

the international community is injured if the international wrongful act constitutes an international crime (Draft Article 5.3, part II). Draft Article 4 provides that the legal consequences of an international crime will be based on the provisions and procedures of the *UN Charter* relating to the maintenance of international peace and security. Draft Articles 14 and 15 identify the collective action which may be taken against a State which has committed an international wrongful act.

6.2. Crimes Against the Peace and Security of Mankind

The UN General Assembly, in Resolution 177 (II) of November 21, 1947, requested the ILC to: (a) "formulate the principles of international law recognized in the Charter of the Nuremberg Tribunal and in the Judgement of the Tribunal; and (b) prepare a Draft Code of offences against the peace and security of mankind"[153]

In 1950, the ILC adopted a formulation of the principles of international law recognized in the Charter of the Nuremberg Tribunal and in its judgement submitted them to the UN General Assembly. The Commission submitted, at its sixth session, in 1954, a Draft Code of Offences Against the Peace and Security of Mankind to the UN General Assembly.[154]

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protection; they are obligations *erga omnes*. ... when one such obligation in particular is in question, in a specific case ... all States have a legal interest in its observance." *Ibid.* para. 35; Giorgio Gaja, *Ibid* at 151-154. Article 1 of the four *Geneva Conventions* of August 12, 1949, for the protection of victims of war (*supra*, part one, note 31) may meet the same requirement: *erga omnes* type of responsibility. A broad definition of this article has been suggested by ICRC commentary: "The contracting parties should not be content merely to apply its provisions themselves, but should do everything in their power to ensure that the humanitarian principles underlying the Convention are applied universally". See Commentary to the Geneva Conventions of 12 August 1949: The *Geneva Convention Relative to the Protection of Civilian Persons in Time of War* (O.Uhler & H. Coursier eds. 1958) quoted in T.Meron *Lex Lata*: "Is There Already a Differentiated Regime of State Responsibility in the *Geneva Conventions*? in Weiler, *Ibid.* at 228.

[153]UN General Assembly, resolution 177 (II) of November 21, 1947.

[154]ILC Yearbook 1982, vol. II, Part Two, p. 121.

On December 10, 1981, the UN General Assembly, in resolution 36/106, invited the ILC to take duly into account the progressive development of international law and to elaborate the Draft Code, and to give it priority in its study.[155] The ILC, from its 35th session, in 1983, to its 43rd session, in 1991, received nine reports from its Special Rapporteur. In 1991, at its 43rd session the ILC adopted, on first reading, the Draft Articles of the Draft Code of Crimes against the Peace and Security of Mankind.[156] At the same session, the ILC decided to transmit the Draft Articles, through the Secretary General, to Governments for their comments and observations, which were to be submitted to the UN Secretary General by January 1, 1993.[157]

The ILC, at its 47th session, considered the 13th report of the Special Rapporteur which had prepared for the second reading of the Draft Code. It focused, in Part II, on crimes against the peace and security of mankind.

The Working Group, examining the issue of wilful and severe damage to the environment, proposed to the 48th session of the ILC that such an occurence be considered either as (i) a war crime, or (ii) a crime against humanity, or (iii) a separate crime against the peace and security of mankind. The ILC decided to refer to the Drafting Committee only the text prepared by the Working Group that described

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[155]ILC Yearbook 1983, vol. II (Part One), p. 137, document A/CN.4/364; ILC Yearbook 1984, vol. II (Part One), p. 89, document A/CN.4/377; ILC Yearbook 1985, vol. II (Part One), document A/CN.4/387; ILC Yearbook 1986, vol. II, document A/CN.4/398; ILC Yearbook 1987, vol. II (Part One), document A/CN.4/404; ILC Yearbook 1988, vol. II (Part One), document A/CN.4/411; ILC Yearbook 1989, vol. II (Part One), document A/CN.4/419 and Add.1 and Corr.1 and 2 (Spanish only); ILC Yearbook 1990, vol. II (Part One), document A/CN.4/430 and Add.1; ILC Yearbook 1991, vol. II (Part One), document A/CN.4/435 and Add.1 and Corr.1.

[156]See ILC Yearbook 1991, vol. II (Part Two), para. 175.

[157]ILC Yearbook 1990, vol. II (Part Two) (A/45/10), chap. II, sec. C.

wilful and severe damage to the environment as a war crime. From June 6 to July 5, 1996, the ILC adopted the final text of a set of 20 Draft Articles constituting the code of crimes against the peace and security of mankind.[158]

The seventh category of war crimes addressed in subparagraph (g) of Article 20 of the ILC Draft Article covers war crimes which have their basis in Articles 35 and 55 of the 1977 *Geneva Protocol I*.[159] It reads "[A]ny of the following war crimes constitutes a crime against the peace and security of mankind when committed in a systematic manner or on a large scale: [...] (g) 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."[160]

This article contains three additional elements which are not given as requirements for violation of the 1977 *Geneva Protocol I*. First, the use of prohibited methods or means of warfare is considered not justified by military necessity. Secondly, it states that military conduct should result in more serious consequences

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[158]UN Dec. A/52/10. N.A.M. *Green, International Law*, 3rd ed. (London: Pitman Publishing, 1987) at 243. A number of representative at the CCD stated that the *Enmod Convention* must apply to *erga omnes* and not only to the State parties. CCD/pv.692 (Netherlands); 697 (Iran); 699 (Japan); 701 (Egypt and Yugoslavia); 724 (Mexique); See G. Fischer, "La convention sur l'interdiction d'utiliser des techniques de modification de l'environnement à des fins hostiles" 1977, XXIII, AFDI, 820, 831. The consequences of environmental modification techniques are international and they are a potential ground for liability in international law prohibiting environmental destruction. If one accepts its close relation to the peace and security of mankind, the *Enmod Convention* should not be limited to the member states and should apply equally to all members of the international community.

[159]See 1977 *Geneva Protocol I*, *supra*, part one, note 23.

[160]*Ibid.*

for the health or survival of the population in order to constitute a war crime, namely, gravely prejudicial consequences as compared to prejudicial consequences required for a violation of the 1997 *Geneva Protocol I*. Thirdly, the present subparagraph requires that the damage to the environment should have occurred as a result of the prohibited conduct. This subparagraph applies "in the case of armed conflict", whether of an international or a non-international character, in contrast to the more limited scope of application of the 1977 *Geneva Protocol I* which applies only to international armed conflict. The present subparagraph does not include the phrase "in violation of international humanitarian law"in order to avoid giving the impression that this type of conduct necessarily constitutes a war crime under existing international law in contrast to the preceding subparagraphs.[161]

6.3. Doctrinal Opinion

Concerning ecocide, commentators suggest that this should include crimes against humanity.[162] Both Gray[163] and Gilbert[164] quoted from Mohr who stated that "[t]he term international crimes' is only and simply used for labeling a certain kind of

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[161]The Guidelines for Military Manuals and Instructions on the Protection of the Environment in Times of Armed Conflict prepared by the ICRC state that "[d]estruction 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". Document A/49/323, annex.

[162]Some commentaries argued that Saddam Hussein should be charged as a war criminal for environmental acts. Some members of the Congress have called for the establishment of a war crimes tribunal, to consider, *inter alia*, the environmental damage caused to the Persian Gulf environment. David Freed, Hussein Trial Urged over Oil Damage, L.A. TIMES, March 18, 1991. (Sen. John Kerry). See The Gulf War: Environment as a Weapon, Proceedings of the Eighty-Fifth Annual Meeting of the American Society of International Law, Thursday, April 18: Evening, 85 Am. Soc'y. Int'l. L. Proc. 214 at 228.

[163]Gray, M.A. "The International Crime of Ecocide" (Spring 1996) 26 Cal. W. Int'l. L.J.215.

[164]See Geoff Gilbert, "The Criminal Responsibility of States", 39 Int'l & Comp. L.Q. 345, 347 (1990).

internationally wrongful acts (sic) of an extremely grave nature."[165] This idea asserts that ecocide is more than a serious international delict. Article 19 of the ILC Draft Article[166], identifying an act of State constituting breach of an international obligation as "an internationally wrongful act", supports the proposition that States can be responsible for international crimes.[167]

Bassiouni writes that international crimes reflect the existence of any one or more of the following elements: a) a threat to the peace and security of mankind; b) "conduct recognized as shocking to the conscience of the world community" and contrary to its shared values; C) an effect on public interests in more than one State and whose commission exceeds national boundaries; and d) the involvement of citizens of more than one State.[168]

Environmental destruction which fits within the definition of ecocide, as evidenced by the Draft Articles on State Responsibility and the Draft Code of Crimes Against the Peace and Security of Mankind , is recognized as an international crime.

Pleshakov analyzed the criminal aspect of environmental protection in the Draft of the Criminal Code of the Soviet Union and its republics, and defined "crime against peace and safety of humankind" in international criminal law. The problem of ecocide has long existed as an international crime. It is defined as the performance

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[165]Gilbert, *supra*, note 164; Mohr, "The ILC's Distinction Between 'International Crimes' and 'International Delicts' and Its Implications" in Spinedi and Simma, United Nations Codification of State Responsibility (1987), p.115; Gray, *supra*, note 163 at 264.

[166]See *supra*, note 53.

[167]Article 19, *supra* note 53.

[168]M. Cherif Bassiouni, A *Draft International Criminal Code and Draft Statute for an International Criminal Tribunal* (Dordrecht: Martinus Nijhoff , 1987) at 36.

of intentional harm to the human environment for a military or other purpose. He suggests that the notion of ecocide should be introduced into Russian law. He concludes that the Criminal Code of the Russian Federation should include provisions for the punishment of crimes against the ecological interests of the international community. Pleshakov also states that the criteria for defining activities intentionally threatening the ecological safety of humankind as criminal should include long-term ecological consequences dangerous for people and environment.[169]

Berat contends that "states should begin to move toward a comprehensive international environmental legal dispensation that recognizes the unity of the planet as a single, fragile ecosystem" and that such a "dispensation should revolve around the creation of the crime of geocide, literally a killing of the earth, the environmental counterpart of genocide, and its entrenchment as an international legal crime."[170] He suggests that the international community should adopt a geocide convention which holds accountable the most conspicuous destroyers of the environment and create a permanent international environmental tribunal to prosecute offenders.[171] Yuzon proposes that the quantum of proof that is necessary in international crime of environmental destruction, or the threshold of damage that must occur in such cases, should be relatively low compared to the *Enmod Convention* and 1977 *Geneva Protocol I.*[172] He states that any damage, regardless of the degree, whether

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[169]A. M. Pleshakov, Ecological Crimes Against Peace and Safety of Humankind, 7 State and L. 81 (1994) (in Russian) summarized by Liliya Altshuler and printed in Foreign Publications, 8 Geo. Int'l Envtl. L. Rev. 227 at 251-52.

[170]See Berat *supra*, note 142 at 328-9.

[171]See Berat *supra*, note 142 at 329.

[172]See Ensign Florencio J. Yuzon, "Deliberate Environmental Modification Through the Use of Chemical and Biological Weapons: 'Greening' the International Laws of Armed Conflict to Establish an Environmentally Protective Regime", (1996) 11 AU J I L & Policy 793 at 841.

widespread, long-term, or severe, would automatically render the actor criminally liable.[173]

Richard Falk proposed an interesting idea for a convention on the crime of ecocide[174] which was adopted at the Emergency Conference Against Environmental Warfare in Indochina, held in Stockholm in June 1972. It criminalized many of the activities in which the United States had engaged during the Vietnam war.[175] The document defined ecocide as, *inter alia*, II (c) the use of chemical herbicides to defoliate and deforest natural forests; (d) the use of bombs and artillery in such quantity, density, or size as to impair the quality of the soil or to enhance the prospect of diseases dangerous to human beings, animals, or crops; (e) the use of bulldozing to destroy large tracts of forest or cropland for military purposes; (f) the use of techniques designed to increase rainfall or otherwise modify weather as a weapon of war.[176] The document forbade, *inter alia*, the employment of weapons of mass destruction (WMD).[177] Persons who committed such acts, or were otherwise culpable for their commission, would be punished, at minimum, to the extent of being removed from any position of public trust.[178]

Falk also recommended the passage of national legislation providing effective

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[173]*Ibid.* at 841.

[174]See R.Falk, *Revitalizing International Law*, (Lowa:Lowa State University Press, 1989) at 187.

[175]Michael N. Schmitt, "*Green War: An Assessment of the Environmental Law of International Armed Conflict*", Winter (1997) 22 YJIL, 1 at 11.

[176]See Falk, *supra*, note 174.

[177]*Ibid.* Art. 2.

[178]Ibid. Art. 4.

penalties for persons guilty of ecocide.[179] The United Nations may be called upon to take 'appropriate' action under the UN Charter to prevent and suppress ecocide.[180] This implies that ecocide could amount to a breach of the peace and security of mankind that might lead the UN to take measures in accordance with Articles 41 and 42 of the UN Charter to maintain or restore international peace and security.[181]

States must attach penal sanctions to certain kinds of conduct and activities that threaten, damage or destroy those natural resources which represent internationally shared values. Unfortunately, international law does not afford a well-tested body of principles concerning environmental crime. Ecocide, whether committed in time of peace or in time of war, should be considered a crime under international law. Persons committing acts such as ecocide, conspiracy to commit ecocide, attempt to commit ecocide and complicity in ecocide must be punished.

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[179]Ibid. Art. 6.

[180]Ibid. Art. 9.

[181]See UN Charter, *supra*, note 73.

7. Conclusion

'Fault as *culpa*' cannot properly be defined as a general requirement for cases to be considered violations of international obligation. The 'no-fault' theory, thus, seems to provide a better basis for establishing reasonable standards in international relations while maintaining the principle of reparation. It does not deny that fault as *culpa* may be a condition of State responsibility. This point is explained by Amerasinghe and quoted by Smith: "The basis of [State responsibility] will vary with the content of the international obligation. This may be a strict basis or the basis of risk in some circumstances, while in others it may involve malice or culpable negligence, or conceivably malice alone."[182]

There are some difficulties involved in the effective application of State responsibility in environmental law. Customary law does not specify whether liability is strict or whether fault must be proven. There is no doubt that States are responsible for damage caused to other States by their activities, but speaking of it as a "regime of strict liability", most writers are of the opinion that there is no strict liability standard for environmental damage. Quentin-Baxter writes that: "... il n'est nullement douteux que la responsabilité objective est un élément très important et très fréquent dans les régimes conventionnels et qu'elle doit donc être énoncée correctement dans toutes dispositions rédigées à l'occasion de l'étude du sujet examiné. [...]."[183]

Goldie states that:

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[182]See Smith, *supra*, note 15 at 17. In Stark's words "it is probable that 'culpable negligence' means in this connection no more than the breach of an international obligation to perform or abstain from a certain line of conduct. Whether a mental element is added or not would appear to depend simply on the specific rule of international law" See Stark, "Imputability in International Delinquencies" 1983, 19 B.Y.I. L. 104 at 114.

[183]See Quentin-Baxter, A/CN.4/360 para.20.

> "theories of strict liability which are based on the economic analysis of the costs of ultrahazardous activities involve hidden subsides in the form of external or social costs of the enterprise which should be internalized and do not provide a sufficient and complete explanation or justification, of themselves, for imposing strict or absolute liability in international law."[184]

A series of acts adopted by conferences, international organizations, prestigious scientific institutions, some UNGA Resolutions, the 1972 Stockholm Declaration[185] and acts such as the Helsiniki Rules[186] are also in favor of assigning responsibility for lack of due diligence.[187]

Admittedly, these examples do not provide a strong affirmation of strict responsibility as a general principle but it is clear that a strict or absolute standard of responsibility for environmental injury enjoys some support among State practices.

In 1978, the ILC began to discuss the new legal relationships that might arise as consequences of harm caused by an act that was not wrongful under international law. In the view of the Commission, liability does not depend on wrongfulness but rather arises from a primary rule of obligation (*sic utere tue ut alienum non laedas*).[188] The present situation was correctly summarized by the Director-General of UNITAR:

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[184]See Goldie, *supra* note 78 at 247.

[185]Mazzeschi states that Principle 21 of the Stockholm Declaration is not in favor of objective responsibility but clearly affirms that the responsibility of a State could be based solely on negligence. See Mazzeschi, *supra*, note 70 at 32.

[186]See Helsinki Rules on the Use of the Waters of International Rivers, International Law Association, 52nd conference, Aug. 1966, reprinted in Kindred, M.Kindred et al. *International Law Chiefly as Interpreted and Applied in Canada*, 4th ed. (Canada: Emond Montgomery Publications,1987) at 854.

[187]See Mazzechi, *supra*, note 70 at 31-34.

[188]Pinto, *supra*, note 61 at 24-34.

"There is reason to think that studies now being carried out by the International Law Commission might gradually result in new rules and principles which would be acceptable to the world community as a whole."[189]

We have discussed international responsibility of States in general in Chapter I. Chapter II of the second part deals with international regulation of State responsibility for environmental harm. It will discuss conventions, cases and declarations related to the responsibility of States for the protection of the environment.

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[189]See Remnants of War 10 and 82 (UNITAR and Libyan Institute for International Relations eds., sales pub. No. UNITAR/CR/26 (1983), quoted in Karl Josef Partsch, "Remnants of War as a Legal Problem in the Light of the *Libyan* case", 1984, vol. 78, AJIL, 386, at 396.

Chapter II. International Regulation of State Responsibility for Environmental Harm

Le chapitre 2 sera consacré aux règles internationales en matière de responsabilité d'un État pour un dommage environnemental. Les Conventions internationales, quelques décisions judiciaires internationales et les Déclarations de Rio et Stockholm serons abordées dans ce chapitre. Nous déterminerons quels traités sont applicables pendant la guerre. Nous les classerons en catégories selon qu' ils contiennent au non des dispositions spécifiques en matière de responsabilité environnementale. Certaines décisions provenant des tribunaux, comme par exemple le cas de l'affaire du Détroit de Corfou et celle Fonderie de Trail peuvent être considérées comme des indications précieuse dans l'élaboration du droit international environnemental; elles seront abordées dans ce chapitre. Le principe 21 de la Déclaration de Stockholm mentionne deux règles importantes: premièrement, la souveraineté de l'État et deuxièmement, la prohibition de créer un dommage à l'environnement.

1. Introduction

States are responsible for international law violations that can be attributed to them. Similarly some treaties have established the responsibility of States for environmental damage they have caused, particularly transborder pollution.

The principles of State responsibility for environmental damage are also contained in various international texts, such as the Stockholm and Rio Declarations.

Some international cases and arbitrations recognize that principles of State responsibility are applicable to environmental damage.

In Chapter I, we looked at the historical development of State responsibility and discussed different schools of thought in the matter. We then focused on the modern concept of liability for created risk. The present Chapter is devoted to the international regulation of State responsibility for environmental harm. It begins by examining the provisions of international conventions which hold States responsible for their wrongful actions (section 2 of this Chapter) and analyzes some important international cases (section 3) and principles of the Stockholm Declaration (section 4) that reflect State obligations toward the environment. Finally, we will discuss whether the rules of State responsibility for environmental damage in peace time are applicable in time of war. We will examine those international rules which may lose their efficacy in time of war. (Section 5)

2. Rules of State Responsibility for Environmental Damage in International Conventions

Precise rules on State responsibility are very rare. Most environmental treaties have either no provision on responsibility or their rules are very general. Some conventions even exclude any provisions on liability. For example, the 1979 *Convention on Long-Range Transboundary Air Pollution*[190] in its footnote to Article 8(f) regarding the extent of damage which can be attributed to such pollution provides that "the present convention does not contain a rule of State liability as to damage."[191] In fact, the Convention confirms that its rules are non-binding since it excludes any

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[190]1979 *Convention on Long-Range Transboundry Air Pollution*, UKTS 57 (1983), Cmd. 9034; TIAS, NO. 10541; 18 ILM, 1442 (1979).

[191]*Ibid.*

State responsibility for violations.

Some international conventions contain precise rules on responsibility for environmental damage. For example the 1972 *Convention on International Liability for Damage Caused by Space Objects* [192] provides two different forms of responsibility: first, where liability is absolute[193], full and unlimited compensation for damage caused on the surface of the earth or to aircraft in flight must be paid, without regard to fault - liability is unlimited in the sense that a *restitutio in integrum* is required[194]; and second, fault responsibility for other kinds of damage[195].

Article 139 of the 1982 UNCLOS[196] is an example of treaty rule on State responsibility for wrongful acts and for lack of due diligence. States party are responsible for their activities carried out in the international sea-bed area.[197]

There are other treaties which provide that States party pledge themselves to adopt rules concerning responsibility. For example the 1992 *Helsinki Convention*[198] contains a general provision which states in Article 25: "[t]he contracting parties

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[192]1972 *Convention on International Liability for Damage Caused by Space Objects*, GA Res.2777, UN GAOR, 26th Session, supp. No.29 at p. 25 (UN Doc. A/8528 (1971); 1975 Can.T.S. No. 7; 961 UNTS 187 (in firce 1972).

[193]Ibid. Article II.

[194]*Ibid*. Article V(3) of the Treaty.

[195]*Ibid*. Article III.

[196]*Supra*, note 141.

[197]Article 139 of *UNCLOS*. *Supra*, note 141.

[198]The 1992 *Helsinki Convention* on *the Protection and Use of Transboundary Watercourses and International Lakes*; UN doc. E/ECE/1267; 31 ILM 1312 (1992)

undertake jointly to develop and accept rules concerning responsibility for damage resulting from acts or omissions in contravention of this Convention, including, *inter alia*, limits of responsibility, criteria and procedures for the determination of liability and available remedies."[199]There is doubt about the binding forces of such commitments and about the possibility of enforcing international responsibility for breach of these rules.

There is a recognized principle of international law that whoever infringes on the rights of another person, either intentionally or through negligence, or by an act contrary to law, is obliged to make reparation to that person for the damage resulting from the act. This principle was transformed into conventional law by Article 3 of the 1907 *Hague Convention IV*.[200] The essential characteristics of responsibility hinge upon: the existence of an international legal obligation in force; the occurrence of an act or omission which violates that obligation and which is imputable to the State responsible; and the resulting of loss or damage from the unlawful act or omission.[201]

Most of the treaties which provide obligations to prevent environmental harm do not in general establish a strict obligation not to damage the environment, but they do provide obligations binding on the State under due diligence rules to prevent, control and reduce environmental harm. These conventions contain provisions, in

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[199]*Ibid.*

[200]Article 3 of the 1907 *Hague Convention IV* states: "A belligerent party which violates the provisions of the said Regulations shall, if the case demands, be liable to pay compensation. It shall be responsible for all acts committed by persons forming parts of its armed forces." *Hague Convention IV Respecting the Laws and Customs of War on Land*. 100 BFSP (1906-1907) 338-59 (Fr.); UKTS 9 (1910), Cd. 5030 (Eng. Fr.); CXII UKPP (1910) 59 (Eng. Fr.); 2 AJIL (1908) Supplement 90-117 (Eng. Fr.); 205 CTS (1907) 227-98 (Fr.). In force from Jan. 26, 1910.

[201]Mosler, *The International Society as a Legal Community* (Alphen aan den Rijn:Sijthoff & Noordhoff, 1980) p. 157.

which the States pledge themselves to take 'all appropriate measures' or to make 'appropriate efforts' to control and reduce sources of damage to the environment. Mazzeschi writes that "Breach of such obligation involves responsibility for fault (for lack of due diligence)".[202] The 1982 UNCLOS is a clear example providing responsibility for a wrongful act and for fault (or lack of due diligence).[203] This Convention establishes obligations to prevent pollution.[204] It specifies, for example: "States shall take [...] all measures [...] that are necessary to prevent, reduce and control pollution [...]."[205]

Part XII of the 1982 *UNCLOS* contains many obligations to prevent damage to, and to preserve, the marine environment. For example Article 195 of this Convention states: "In taking measures to prevent, reduce and control pollution of the marine environment, States shall act so as not to transfer, directly or indirectly, damage or hazards from one area to another or transform one type of pollution into another."[206] Similar due diligence obligations are found in the 1972 *London Convention on the Prevention of Marine Pollution by dumping of Wastes and other Matters*.[207] This is clear in the wording of Article II: "Contracting parties shall take effective measures [...] to prevent marine pollution caused by dumping and shall

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[202]Mazzeschi, *supra*, note 70 at 19.

[203]UNCLOS, *supra*, note 141, Article 139.

[204]UNCLOS, *supra*, note 141, Articles 195 and 196.

[205]UNCLOS, *supra*, note 141, Article 194 (1).

[206]*Ibid.*

[207]1972 *London Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matters*, 26 UST 2403, TIAS 8165. Amended Oct. 12, 1978, TIAS No. 8165; 18 ILM, 510 (1979).

harmonize their policies in this regard."[208]

Article X of the 1966 Helsinki Rules on international rivers similarly prohibits States from any form of water pollution in an international drainage basin.[209] This rule has been understood to be a restatement of already existing customary law.[210] A commentary by the International Law Association states that the rules mentioned in Article X of the 1966 Helsinki Rules place a duty upon a basin state to take the specified measures respecting the pollution of international river.[211]

Some treaties establish rules of international law in terms of a 'duty not to damage the environment'; liability for resulting damage in this case is liability *ex delicto*.[212] The 1963 *Nuclear Test Ban Treaty*, for example, prohibits nuclear tests in the atmosphere, in outer space or under water.[213]

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[208]*Ibid.*

[209]International Law Association, Report of 52ed. Conference, Helsinki, 1966 pp.484, 496-7; re-printed in Kindred, *supra*, note 186 at 855; Brownlie, *supra*, note 7 at 275.

[210]See Akehurst, *supra*, note 61 at 6.

[211]*Ibid.*

[212]See Akehurst *supra*, note 61 at 4.

[213] 1963 *Treaty Banning Nuclear Weapons Tests in the Atmosphere, in Outer Space and Under Water* (Moscow), 480 UNTS 43; UKTS 3 (1964), Cmd. 2245; 14 UST 1313, TIAS 5433; ATS 26 (1963); 57 AJIL 1026.

3. General Principles Concerning Environmental Harm

3.1. Case Law

In addition to international conventions and ILC Draft Articles, the law of State responsibility has been developed through case law, such as that provided by mixed claims commissions set up to resolve disputes between States. The Iran-U.S. Claims Tribunal[214] is a recent example which deals with claims arising out of the breakdown in Iran-U.S. relations in 1979.

There are, however, certain decisions of the courts and tribunals which may be taken as a guide in this field of international law. Such examples are the famous and important *Corfu Channel* case and the *Trail Smelter* case.

3.1.1. Trail Smelter Arbitration

The Trail Smelter Arbitration[215] between the United States and Canada was an important event. Although it was a decision involving neighboring countries with almost identical traditions and legal systems, it has wide acceptance as a leading exposition of principle. It showed that principles related to State responsibility are applicable for environmental damage which one State may cause to others. The case resulted from injuries caused to American farmers from sulphur dioxide emitted from a Canadian smelter plant located in Trail, British Colombia. The Canadian smelter plant operations began in 1896 and resulted injuries to the farmers in Washington.

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[214]According to Article II, (1) CSD (Claim Settlement Declaration), the Tribunal may decide "claims of nationals of the United States against Iran and claims of nationals of Iran against the United States, and any counterclaim which arises out of the same contract, transaction or occurrence that constitute the subject matter of that national's claim." Art. II, (1) CSD, Iran-U.S.C.T.R. at 9; See generally Jacomijn J. Van Hof, *Commentary on the UNCITRAL Arbitration Rules, the Application by the Iran-US Claims Tribunal* (Deventer, Boston: Kluwer Law and Taxation Publisher, 1991) at 4.

[215](1931-41) 3 UN R.I.A.A. 1905.

Damage increased significantly after 1925 leading to the submission of the issue to the U.S.-Canada International Joint Commission established under the 1909 *Boundary Waters Treaty*. In February 1931, the Commission adopted a unanimous report according to which the government of Canada would cause to be paid to the Secretary of State of the U.S. the sum of 350 thousand dollars[216]. In February 1933, the U.S. complained that further damage had occurred and in April 1935 the two countries agreed to constitute a tribunal for the purpose of deciding the questions of, *inter alia*, what indemnity or compensation, if any, should be paid and whether the Trail Smelter Plant should be required to refrain from causing damage in the future.[217] The tribunal held Canada to be responsible under international law for causing damage to the United States farmers and stated that the government of Canada had "the duty [...] to see to it that this conduct should be in conformity with the obligation of the Dominion under international law."[218] The tribunal issued its final decision on March 11, 1941 and recognized the existence of a general principle of international law as a general requirement of environmental law banning transfrontier pollution and stated that:

> "[...] under the principle of international law, as well as of the law of United States, no State has the right to use or permit the use of its territory in such a manner as to cause injury by fumes in or to the territory of another or the properties or persons therein, when the case is of serious consequence and the injury is established by clear and convincing evidence."[219]

The tribunal recommended that the two governments protect the environment in the future, and hoped that they would conduct all future investigations jointly.

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[216]*Convention for the Settlement of Difficulties Arising from Operations of Smelter at Trail*, B.C. signed at Ottawa, April, 1935, 49 Stat. 3245 (1938) 941, RIAA III, 1905; 3 RIAA, 1907.

[217]*Ibid.* Articles I & II.

[218]See 3 UNIAA, 1938, 1965.

[219]*Ibid.*

It is interesting to note that in some international cases, parties have relied on domestic court decisions. In the *Trail Smelter* case the law to be applied was based on precedents established both by international law and the U.S. Supreme Court in "dealing with controversies between States of the Union or with other controversies concerning the quasi-sovereign rights of such States"[220]. Bernier, in his discussion on "whether interstate law has positively influenced the development of international law relating to the international rivers"[221], has discussed the matter in detail. Bernier quoted from Laylin, an individual member of the Committee of the International Law Association, saying that "preventable pollution of water in one state which did substantial injury to another State rendered the former State responsible for the damage done" and that "in general the maxim *sic utere tue* should be followed by riparian States in all matters concerning the use of the waters of an international river by one or several of them." Bernier stated that "the principle of equitable apportionment and the principle that a state has a duty to prevent pollution originating from within its territory were developed in the first place by federal courts."[222]

3.1.2. Corfu Channel Case

Some international cases bear more generally upon uses of a State's territory that cause damage beyond its borders. In 1947, the ICJ established the principle that nations that are responsible for 'imminent dangers' to the environment bear a duty to inform other States of such dangers.[223]

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[220]3 RIAA, p. 1964. Quoted by I. Bernier, *International Legal Aspects of Federalism* (Great Britain: Northumberland Press, 1973) at 252; Shaw, *supra*, note 69 at 515-16.

[221]Bernier, *supra,* note 220 at 252.

[222]Bernier, *Ibid.* at 256 & 263.

[223](U.K. v. Albania 1949) ICJ. 4 .

The most important case on State responsibility which the prior ICJ precedent addressed is the *Corfu Channel* case[224]. This case stands for the principle that a State is obligated to refrain from allowing its territory to be used in a fashion that causes harm to others.[225] On May 15, 1946, two British warships, when passing through the Corfu Channel between the Albanian mainland and the northern part of the island of Corfu, were fired upon by an Albanian battery.[226] The Albanian government declared that the passage of foreign ships had to be announced in advance and required its approval. A squadron of British warships, including two cruisers and two destroyers, then left that part of Corfu and proceeded northward. The two destroyers struck mines and incurred heavy damage; in addition, forty-four British sailors lost their lives, forty-two sailors were injured, two ships were crippled and one was totally lost.[227] The Albanian government stated that the accident did not happen through its wilful action. It argued that a State should not be held responsible for all that happens in its waters. In this case, the ICJ held, by eleven votes to five, that the factual evidence made it improbable that the Albanian authorities had been unaware of this mine-laying in Albanian waters.[228] The Court declared that:

> "[...] every State has an obligation not to allow knowingly its territory to be used for acts contrary to the rights of the States [...] these grave omissions

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[224](U.K. v. Albania 1949) ICJ. 4 .

[225]Adrienne Paule, "Underground Water: a Fugitive at the Border" (Spring 1996)13 Pace Envtl. L. Rev. 1129 at 1153.

[226]D. Lévy, "La responsabilité pour ommission et la responsabilité pour risque en droit international public", RGDIP, vol. 65 (1961) 744-764; N.H. Shah, "Discovery by Intervention, The Right of a State to Seize Evidence Located within the Territory of the Respondent State", vol. 53 (1959) AJIL, 595-612.

[227]R. Bernhardt, "*Corfu Channel* case", in *Encyclopedia of Public International Law*, Vol.2 (North Holland: Published under the Auspices of the Max Planck Institute, 1982) at 61.

[228]See I.Chong, *Legal Problems Involved in the Corfu Channel Incident* (Geneva: E.Droz, 1959) at 152-159.

> involve the international responsibility of Albania [...] therefore [...] Albania is responsible under international law for the explosion which occurred on October 22nd 1946, in Albanian waters, and for the damage and loss of human life which resulted from them and [...] there is a duty upon Albania to pay compensation to the United Kingdom."[229]

Although the court in the *Corfu Channel* case did not mention the responsibility of States in respect to environmental damage, it can be interpreted from the court's statement that every State has an obligation to take precautions against possible environmental damage which another State may suffer through its activities. They also have the responsibility to pay compensation for damage caused by them.

Birnie states that the ICJ judgement in the *Corfu Channel* case supports a similar principle as in the *Trail Smelter* arbitration which prescribed a regime for controlling further emmissions from a Canadian smelter causing air pollution damage.[230] The decision of the ICJ in the *Corfu Channel* case has undergone varied interpretations. Although the context of this case is different from environmental issues, the Court expressly based the view of obligation on the grounds of general application, namely the "elementary considerations of humanity"[231] which entail a State's duty not to knowingly allow its territory to be used for acts contrary to the rights of other States. Thus, it is legitimate to consider the Corfu Channel case as authority for a customary obligation to protect the environment.[232] Concerning the environment, this principle suggests that States have a duty to avoid injuring both

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[229]*Ibid.* at pp.158-159.

[230]P.W. Birnie& A.E. Boyle, *International Law and the Environment*, 2ed (Great Britain: Biddles, Guildfold & King's Lynn, 1993) at 89-90.

[231]ICJ Report, 1949 at 22.

[232]Birnie, *supra*, note 230 at 89-90.

present and future generations through misuse of the environment.[233] This case can also be applied in establishing State responsibility for transboundary pollution.[234]

3.1.3. Gut Dam Claim

The Gut Dam Claim[235] is another environmental dispute between Canada and the United States. In 1900, the Government of Canada requested the consent of the United States to construct a dam from Adams Island to Les Galops Island. This dam was designed to stop the flow of water through the Gut Channel. The U.S. government permitted the construction of the dam upon the condition that, *inter alia*, if the construction and operation of the dam caused damage to the property of U.S. citizens, the Government of Canada whould pay compensation. In 1951-52, the water level of Lake Ontario rose enough to cause damage to U.S. property owners along the shore of all of the Great Lakes including Lake Ontario. The two governments established an international tribunal, the so-called Lake Ontario Claim Tribunal, which held that the Government of Canada was liable and should compensate for the damage caused by the inundation of Lake Ontario. The obligation extended not only to the owner of Les Galops Island but to any citizen of the United States. After the tribunal had decided certain initial legal questions in favor of the United States, Canada and the United States entered into a compromise settlement whereby Canada

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[233]Francois A. Mathys, "International Environmental Law: A Canadian Perspective" (1991)3 Pace Y.B. Int'l. L. 91.

[234]Farah Khakee, "The North American Free Trade Agreement: The Need to Protect Transboundary Water Resources" (1992/1993) 16 Fordham Int'l. L.J. 848 at note 35.

[235]See 8 ILM 118, 133-42 (1969); 7 Can.Y.B. Int'l. L. 316-18 (1969); E.L. Kerley & C.F.Goodman, "The Gut Dam Claims, A Lump Sum Settlement Disposes of an Arbitrated Dispute" (1970) vol.10, Virginia J.Int.l.L. 300-327; Birnie, *supra*, note 230 at 231-246; Gunther Handl, "Gut Dam Claims", in *Encyclopedia of Public International Law*, vol.2 (North Holland: Published under the Auspices of the Max Planck Institute, 1982) at 121; R.B.Lillich, "The Gut Dam Claims Agreement with Canada", vol.59 (1965) AJIL, 892-899.

agreed to pay $ 350,000 to the United States.

3.1.4. The Sandoz Environmental Disaster

On Nov. 1, 1986, warehouse 956, at the northwest boundary of the Sandoz facility in Schweizerhalle, Switzerland, caught fire. At the time, 1,351 metric tones of chemicals were stored in the warehouse.[236]

Fire fighters used water to extinguish the fire and consequently toxic chemicals, including two tons of mercury and 30 tones of agricultural chemicals spilled into the Rhine River. Although the ICPR recorded 46 other instances of sudden releases of hazardous substances that same year[237], the Sandoz accident was called Western Europe's worst environmental disaster in decades[238]. It devastated the fauna of the Rhine and the fish population was almost entirely destroyed. It had many other devastating effects on the area. For example, crops in France, the Netherlands, Switzerland, and West Germany were damaged by oxides of sulphur, nitrogen, and carbon were released into the atmosphere, causing many people to suffer from respiratory and gastrointestinal problems.[239]

As of September 1987, Sandoz had received 1,118 claims for compensation from governments and individuals. Most of these claims were settled that same year

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[236]See A. Schwabach, "The Sandoz Spill: The Failure of International Law to Protect the Rhine from Pollution", (1989) vol. 16 Ecology Law Q., 443 at 446.

[237]See D'Olivera, H.U.J. "The Sandoz Blaze: The Damage and the Public and Private Liabilities", in Scovazzi, F. Francioni & T. Scovazzi eds., *International Responsibility for Environmental Harm* (Great Britain: Graham & Trotman, 1993) 429 at 435.

[238]Netter, Spill's Effects on Rhine May Be Less Than Feared, N.Y.Times, Jan. 11, 1987, 1, at 4, col. 1; Schwabach, *supra*, note 236 at 444.

[239]See Schwabach, *supra*, note 236 at 445-452.

and Sandoz paid compensation.[240] Negotiations between the French Environment Minister, for example, and Sandoz resulted in an agreement under which the Swiss company agreed to pay an indemnity of approximately $9 million.[241]

Several treaties govern the pollution control of the Rhine. In 1949, the *Berne Convention Concerning the Commission for the Protection of the Rhine Against Pollution*[242] was signed by Switzerland, West Germany, the Netherlands, France, and Luxembourg. The Convention set up the International Commission to, *inter alia*, determine the nature, origin, and scope of the pollution of the Rhine and to recommend appropriate measures to the contracting parties in order to protect the Rhine from pollution.[243]

Another related convention is the *Convention on the Protection of the Rhine Against Chemical Pollution*[244] which was signed on Dec. 3, 1976 between States party to the *Berne Convention* and European Community. The contracting parties to this Convention undertook to eliminate pollution of the surface waters of the Rhine basin by dangerous substances listed in Annex I, and reduce the pollution of the Rhine by the dangerous substances in the families and groups of substances listed in Annex II.

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[240]See D'Olivera, *supra*, note 237 at 436.

[241]See Kiss, *supra*, note 71 at 220.

[242]The 1949 *Convention Concerning the Commission for the Protection of the Rhine Against Pollution* (The *Bern Convention*); 1963, 994 UNTS 3; signed at Bern on April 29, 1963 and entered into force in 1965.

[243]*Ibid.* Art. 2.

[244]The 1976 *Convention on the Protection of the Rhine Against Chemical Pollution (Rhine Chemical Convention)* 16 ILM 242 (1977).

The Convention provides that the contracting parties shall take all legislative and administrative measures to ensure that the storage and deposit of substances at Annex I and II are so carried out as to entail no danger of pollution to the Rhine.[245]

In the Sandoz case, Switzerland, as Schwabach points out, "failed to fulfill its obligation under Article 7 of the *Rhine Chemical Convention*[246] to ensure by all necessary legislative and administrative measures that the storage of hazardous substances did not endanger the Rhine."[247]

The Convention places some obligations on the States party to the Convention. These States must establish a national inventory of discharges which may contain dangerous substances into the surface waters of the Rhine basin.[248] They must communicate to the International Commission for the Protection of the Rhine Against Pollution the contents of their inventories.[249] If a government which is a party to this commission learns of an accident which could seriously threaten the quality of Rhine water, it has the obligation to inform without delay the International Commission and the contracting parties which could be affected. In the Sandoz case, Switzerland delayed informing the affected countries for more than 24 hours. The Netherlands, Germany, France and others criticized Switzerland for this delay in notifying countries downstream of the spill.[250]

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[245]*Ibid.* Article 7.

[246]*Ibid.*

[247]Schwabach, *supra*, note 236 at 467; D'Oliveria, *supra*, note 237 at 431.

[248]The *Rhine Chemical Convention*, *supra*, note 244 Art. 2(1).

[249]The *Rhine Chemical Convention*, *supra*, note 244 Art. 2(2).

[250]Schwabach, *supra*, note 236 at 425.

Although the Conference of Rhine Ministers and the European Community's Council of Ministers mentioned only Sandoz's civil liability, Switzerland should be held responsible for its wrongful acts under the ILC Draft Articles[251] which were failing to take all necessary precautions to ensure that the storage of hazardous substances would not endanger the Rhine and failing to inform without delay the countries downstream of the spill.

3.1.5. Gabcikovo-Nagymaros Barrage System (GNBS)

Environmental problems are often a product of political and economic organization which can lead to dangerous consequences. Environmental conflict in the case of the Gabcikovo-Nagymaros Barrage System (hereinafter called GNBS) is an example of the relationship between environmental conflict and the political milieu which gives rise to such conflict.[252] What is important in the relationship between environmental conflicts and politics is the manner in which environmental conflicts can be harmful to security. In this case three neighboring countries -- Czechoslovakia, Hungary and Austria --[253] played the central roles. The GNBS consists of three dams and two hydroelectric power plants. Joint planning commenced in the early 1950s, when the planning committee representing Czechoslovakia and Hungary approved the plans of the dam system. Both governments approved the plan in 1963.[254] In 1977,

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[251]ILC Draft Article, *supra*, note 53 Art. 3.

[252]See M.A. Mohamad Salih, "Environmental Conflict in African Arid Lands: Cases from the Sudan and Nigeria" in J. Kakonen, *Perspectives on Environmental Conflict and International Politics* (London: Pinter publishers, 1992) 116.

[253]The Hungarian Government would not be able to continue construction of the GNBS without finding a solution to its financial and technological problems. Therefore the Hungarian investor concluded a contract with an Austrian company for financing the construction. See 1993, ILM at 1264.

[254]For a case study on the political dimension of an environmental conflict arising over the construction of the GNBS on the Danube see J. Galambos, "Political Aspects of an Environmental

the two governments signed a bilateral agreement on the construction of the GNBS.[255] Since it was evident that the operation of this type of hydroelectric power plant on lowlands could have serious ecological effects, the joint plan approved the necessity of investigating the environmental consequences of the proposed system. The States undertook to ensure compliance with the obligations for the protection of nature[256] and to take appropriate measures for the protection of fishing interests.[257] The two countries agreed to provide compensation for any damage resulting from acts for which they were jointly liable. They agreed to "make compensation for damage arising in the course of the realization of the joint investment and during the period of operation of the jointly-owned works, and [...] pay the costs arising from such compensation: (a) In the case of damage resulting from unavoidable circumstances (vis major); (b) In the case of damage caused by a third party, on condition that the investor or operator could not have prevented the damage even though the exercise of the diligence that might have been expected of him."[258]

In 1983, the parties, due to the economic difficulties arising simultaneously in both countries, decided to postpone the operation of the power generators by 5 years. When the governments re-established the plan, the public and experts in both countries focused their attention on the protection of the environment and natural

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Conflict: The Case of the Gabcikovo – Nagymaros Dam System", in J. Kakonen, *Perspectives on Environmental Conflict and International Politics* (London: Pinter publishers, 1992) at 72.

[255]1993, ILM at 1264.

[256]Article 19 of the Agreement. 1993, ILM at 1249.

[257]*Ibid.* Article 20 of the agreement.

[258]*Ibid.* Article 25(3) of the Agreement.

resources.[259] In 1989, following a decision by the Hungarian parliament, the Hungarian Government suspended the construction of NGBS, despite the objections of Czechoslovakia. The Hungarian Government justified its decision on the grounds that the Dunakiliti reservoir implied a serious environmental risk. The Hungarian prime minister stated that because of the possibility of ecological danger, international law required the suspension of work in order to keep the ecological consequences at a tolerable level.

In 1991, the new Hungarian Government announced its conclusion that the construction of the Danube Barrage System would be a mistake.

In April 1991, the two parties met to discuss the official positions of their governments. The Hungarian representatives stressed the principle of the protection of natural conditions of human life and the seriously harmful environmental consequences which GNBS would cause. They proposed the termination of the 1977 treaty by mutual consent. In contrast, the Czech and Slovak representatives, judging the environmental risk avoidable, proposed setting up joint working groups to study issues on which the two parties had different positions. They further proposed to set up a trilateral expert committee (Hungarian, Czech and Slovak and EC) to prepare a proposal to the governments.

Following discussions between the two sides, the Hungarian Government contacted the Commission of the European Community. The EC expressed the

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[259]The harmful environmental and social consequences of the dams and hydroelectric plants were known to scientists since negotiations in the 1950s. Some arguments against the GNBS were that the GNBS would jeopardize the freshwater supplies of millions of people, destroy valuable natural flora and result in the disappearance or dramatic transformation of a historical and natural landscape. See Galambos, *supra*, note 254 at 78-79.

readiness of the Commission to take part in the resolution of the dispute upon the condition that both sides refrain from steps that could influence the future conclusion of the trilateral committee. However, the Czech and Slovak party, by continuing the work, made it impossible to set up the trilateral Committee.[260]

In 1992, the Hungarian Government suspended the treaty unilaterally and stated that it could not accept, *inter alia*, "that the irreversible damage afflicts the ecological and environmental resources of the region" and "that degradation and, in certain cases extinction, threaten the vegetation and fauna of the region."[261]

The Hungarian Government argued that its unilateral decision to suspend construction of GNBS was based on the requirements of international law. By referring to Article 3 of the ILC Draft on State Responsibility[262], Part V of the 1969 *Vienna Convention*[263], Article 2 of the *Convention on the Protection and Use of Transboundary Watercourses and International Lakes*[264], *UNCLOS*[265], Principles of customary international law such as Principles 5 and 8 of the ILC Draft Articles on

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[260]*Ibid.*

[261]*Ibid.*

[262]*supra*, note 53.

[263]*Vienna Convention on the Law of Treaties*, 63 AJIL (1969), 875; 8 ILM (1969), 679. This Convention concluded at Vienna on May 23, 1969. Entry into force: January 27, 1980, in accordance with Article 84 (1). Registration: 27 January 1980, No. 18232.
Text: United Nations, Treaty Series, vol. 1155, p. 331. Status: Signatories: 47. Parties: 79.

[264]The 1992 *Helsinki Convention on the Protection and Use of Transboundary Watercourses and International Lakes*; UN doc. E/ECE/1267; 31 ILM 1312 (1992).

[265]*UNCLOS, supra*, note 141.

the 'Law of Non-navigational Uses of International Watercourses'[266], the Principle of prohibition of transboundary harm affecting the neighboring State, Principle 4 of the Stockholm Declaration[267] and Principle 3 of the 1982 *World Charter for Nature*[268] as well as international cases such as the *Russian Indemnity* case[269], it argued that the construction and operation of the barrage system constituted an ecological state of necessity which precluded the wrongfulness of the termination.[270] The Hungarian Government, after the suspension of the Treaty, tried to terminate it.[271]

Following their negotiations, Hungary and Slovakia concluded a special agreement for resolving a series of difficult problems concerning the flow of the Danube River including the adoption of measures for its protection against pollution. The two governments referred the dispute to the ICJ for resolution.[272] Since that time, little has occurred that might significantly lead to a resolution. The case involves complicated issues of treaty law, state succession and the law of international watercourses of concern to the parties. It also concerns environmental and human

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[266]Report of the International Law Commission on the work of its 43th session, Official Records of the General Assembly, 46th Session, Suppl. No. 10 (A/46/10) at 250.

[267]See *supra*, note 3.

[268]1982 *World Charter for Nature*, UNGA Res. 37/7, 37 UNGAOR Suppl. No. 51) at 17, UN Doc. A/37/51 (1982).

[269](1912) H.C.R.P. 532 at p. 546 (transl.) and (1912) PCA.

[270] 1993, ILM at 1264.

[271]*Ibid.*

[272]See Special Agreement for the Submission to the International Court of Justice of the Difference Between Them Concerning the Gabcikovo-Nagymaros Project, Apr. 7, 1993, Hung.-Slov., 32 I.L.M. 1293 (1993) (entered into force June 28, 1993); See also Hungary and Slovakia Submit Legal Documents on Gabcikovo to the Hague, BBC, Sept. 4, 1994, available in LEXIS, Nexis Library, Wires File (stating that Hungary and Slovakia officially submitted their dispute to the World Court on May 2, 1994).

rights considerations of the people of the region. The Court may eventually be able to effectively resolve the dispute in a manner that will protect the environmental interests in the region.

3.2. The UN Conference on the Human Environment [273]

The Stockholm declaration[274], the most successful among recent UN conferences in some respects, contains a set of "common principles to inspire and guide the peoples of the world in the preservation and enhancement of the human environment."[275] This is not the place to undertake an exhaustive general analysis of the Stockholm Declaration. However, it is necessary to present here a discussion of two key principles in the Declaration which contribute to the development of international environmental law by which a State is hold responsible for the environmental injury it causes.

3.2.1. Absolute Obligation of Prevention of Damage: Principle 21 of Stockholm Declaration

While the UN Conference on the Human Environment did not deal directly with the question of environmental destruction in time of war, the Declaration contains two Principles which are relevant to this matter. Principle 21 of the Declaration reads:

> "States have, in accordance with the Charter of the United Nations and the principles of international law, the sovereign right to exploit their own resources pursuant to their own environment policies, and the responsibility to ensure that activities within their jurisdiction or control do not cause damage

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[273]Stockholm Declaration, *supra*, note 3.

[274]See supra, note 3.

[275]See L.B. Sohn "The Stockholm Declaration on the Human Environment" (1973) vol.14, Harv. Int'l.L.J. at 423.

to the environment of other States or of areas beyond the limits of national States or of areas beyond the limits of national Jurisdiction."[276]

Principle 21 mentions two important concepts, both of equal weight and which should be examined. One is State sovereignty[277] and the other relates to the prohibition against causing damage to the environment. The term sovereignty characterizes the independence of a State.[278] It means that a State must be able to exercise full and exclusive authority over its territory as a physical precondition for its own existence.[279] This right was recognized explicitly by several resolutions of the General Assembly.[280] It is usually considered a legal presumption for a State to perform any act within its territory, but the international community adopted the maxim of *sic utere tuo ut alienum non laedas* (use your own property so as not to injure that of another)[281] which obliges every State not to intervene in the territory of another State.

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[276]See supra, note 3.

[277]Judge Max Huber in the *Las Palmas Arbitration* case defined territorial sovereignty as the exclusive right of a State to display its activities. This right includes the obligation of States to protect the rights of other States' integrity and inviolability in peace and in war. See *Las Palmas Arbitration* case, Permanent Court of Arbitration, 2 UN RIAA, 829 (1928); H.A.V. Briceno, *The Aerospace Environmental Hazards: Diagnosis and Proposals for International Remedies* (LL.M. Thesis, McGill University, IASL, 1981) at 62.

[278]See J. Steinberger, "Sovereignty", in *vol. 10, Encyclopedia of Public International Law* (North Holland: Published under the Auspices of the Max Planack Institute, 1982) at 397.

[279]See Lévy, *supra*, note 226 at 751.

[280]See for example G.A.Res.626, Dec.21, 1952, 7 UN. GAOR, Supp.20 (Doc. A/2361) at 18, reprinted in K. Krakau & H.V.Wedel, *UN General Assembly Resolutions, A Selection of the Most Important Resolutions During the Period 1949 Through 1974* (Frankfurt: Alfred Metzner Verlag Gmb H., 1975) at 158. It states: "The right of peoples freely to use and exploit their natural wealth and resources is inherent in their sovereignty and is in accordance with the Purpose and Principles of the Charter of the United Nations."

[281]See J.Schneider, *World Public Order of the Environment* (Toronto; Buffalo: University of Toronto Press, 1979) 3.

Thus, a State may be held responsible for any damage it causes to the environment of another State[282]. The principle of sovereignty implies a duty on the part of States to refrain from interfering in the territorial integrity of other States. Hostile intervention in the territory of other States in generally prohibited by international law. The Charter of the United Nations upholds as an important principle the restriction of the use of force by its members. The UN Charter provides that "[a]ll Members shall refrain in their international relations from the threat or use of force against the territorial integrity or political independence of any State, or in any other manner inconsistent with the purposes of the United Nations."[283]

This principle draws States' attention to international environmental protection. In its second paragraph,[284] the Declaration urges States to 'ensure' that they will not cause damage to the environment of other States. Principle 21 considers that every State has the right to exploit its resources pursuant to its own environmental policy; however, the question remains: To what extent is a State allowed to change its environment? For example, can a State ruin its environment merely to sell more

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[282]Sovereignty has both a positive and a negative component. While a State enjoys exclusive competence over its territory, it is under its duty to respect the rights of other States. See M.N. Shaw, "Discovery by Intervention, the Right of a State to Seize Evidence Located within the Territory of the Respondent State", 53 (1959) AJIL, 595-612 at 240.

[283]The U.N. Charter, *supra*, note 73, Article 2 para.4.

[284]Gaines states that "Part II of this Article looks to the practices that the States observe in their municipal liability regimes as the primary sources for such principles." See Gaines S.E. "International Principles for Transnational Environmental Liability: Can Developments in Municipal Law Help Break the Impasse?" (1989) Vol.30, Harv. Int'l. L.J. 311 at 315. In 1966 UN General Assembly in Resolution 2158 confirmed that "the exploration of natural resources in each country shall always be conducted in accordance with its natural laws and regulations" reprinted in Krakau, *supra*, note 280 at 160.

wood?[285] The only limit placed on sovereignty rights is that States may not cause damage to others, under the second part of Principle 21. It may have been better if the principle had been expanded to include information regarding techniques that are harmful to the environment and if it had an "environmental policy" for future generations.

As States' liability moves from the notion of fault to strict and absolute liability, from responsibility for harms caused by wrongful acts to international liability for injurious consequences arising out of acts not prohibited by international law, States' obligations increase and their sovereign rights within their own territories diminish.[286] Principle 21, by stating that "States have [...] the responsibility [...] not [to] cause damage to [...] other States [...]"[287], does not accept that a State has unlimited sovereignty over its environment. It is customary international law that no State may use its territory or allow the use of it in such a manner as to cause injury to the territory of another State.[288] This rule protects States' territory which includes the primary corpus of land territory, internal waters, territorial sea, subsoil of land and sea, and the airspace above all of them, but it does not encompass *res communis*, as applied to the high seas and outer space, and the "common heritage of mankind" as

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[285]Lester, when speaking of pollution as the right of the territorial sovereignty, points out that "unlimited exercise of sovereignty by an upper riparian State must limit the equally important sovereignty of the lower riparian" See A.P. Lester "River Pollution in International Law" (1963) 57, AJIL at 832.

[286]See J.B. Moore, *A Digest of International Law*, vol. VIII (Washington Printing Office, 1906) at 1293, 1294, 1290 and 1295. "From the supremacy and exclusiveness of the territorial jurisdiction, it follows that it is the duty of the state, within the bounds of legal responsibility, to prevent its territory and territorial waters from being used to the injury of another state" *Ibid.* at p. 446.

[287]*Supra*, note 3.

[288]See *Trail Smelter* Arbitration. (1938) 941, RIAA III, 1905.

applied to the seabed and its resources.[289] With regard to existing international law and custom, it reveals that States have agreed to use their territory paying due regard to the rights and duties of States under international law.[290] Thus, they have international liability for illegal activities or failure to perform according to international standards. The UN General Assembly, in its Resolution 2200 (XXI) stated: "All peoples may, for their own ends, freely dispose of their natural wealth and resources without prejudice to any obligations arising out of international economic co-operation, based upon the principle of mutual benefit, and international law. In no case may a people be deprived of its own means of subsistence."[291]

3.2.2. Duty to Cooperate to Develop Further the International Law Regarding Liability and Compensation for Victims of Environmental Damage: Principle 22 of Stockholm Declaration

Insofar as State responsibility extends to liability for operations within its own territory, Principle 22 of the Declaration states: "State shall co-operate to develop further the international law regarding liability and compensation for the victims of pollution and other environmental damage caused by activities within the jurisdiction or control of such State to areas beyond their jurisdiction."[292]

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[289]See Brownlie *supra*, note 7 at 178.

[290]During the preparatory process of the Stockholm Declaration there were many discussions between members of the Working Group of the Stockholm Declaration. Some members of the Working Group argued that "sovereignty includes the right to environmental integrity and the right to maintain that integrity in a wholesome and unimpaired condition". See Sohn, *supra* note 275 at 488-89.

[291]G.A.Res.2200, Annex, Dec. 16, 1966, 21 UN GAOR, Supp.16 (Doc. A/6216) 1967, reprinted in Krakau *supra* note 280 at 251.

[292]*Supra*, note 3.

This principle is connected to the previous one, whereby States have been obligated to prevent damage to other States (Principle 21) and to pay compensation if they do. In fact, the requirement of international co-operation to develop international law regarding liability and compensation for environmental damage has been expressed in obligatory form. The terms "responsibility" (in Principle 21) and "liability" (in Principle 22) have been used with different significations. The former indicates a duty which the principle imposes on States and the latter is seen as designating the consequences of a failure to perform the duty. Some writers use these words interchangeably but, in these principles, they are used in two distinct senses. The term liability is usually used when failure to perform a duty results in an injury to another State. The term responsibility has different meanings in different languages. For example, in French the term "responsabilité" is used to describe the duty to repair the damage without regard to the causation.[293] In English, as in German, where dual meanings exist, it describes the consequences of an offence and specifies the duty to compensate.

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[293]Stern states: "Comme en droit interne, la responsabilité internationale peut être pénale ou 'civile', c'est-à-dire répressive ou réparatrice". See B. Stern, "Les problèmes de Responsabilité posés par la crise et la 'Guerre' du Golfe", in B. Stern, ed., "Les aspects juridique de la crise et de la Guerre de la Golfe: aspects de droit international public et de droit international privé (Paris: Edition, Montchrestien, 1991) at p. 329. But Zemanek states: "Compared with domestic legal systems, international law is little specialized, and does not differentiate between constitutional, administrative, criminal or private law, neither as branches of the law nor as separate legal disciplines". *supra*, note 117.

4. Applicability of International Environmental Law in Wartime

4.1. Introduction

State responsibility for environmental damage in peace time, discussed in the first and second Chapters of this part, can also be applicable in time of war. Different legal consequences are attributed to the outbreak of hostilities. It is difficult to determine a definite general rule as to the effect of armed conflict on legal relations. Legal scholars consider the issue of the effects of war on treaties between belligerent an "obscure topic with only the vaguest guiding principles"[294]. In *Karnuth v. United States*[295], the US Supreme Court stated: "The effect of war upon treaties is a subject of which there are widely divergent opinions [...]. The authorities, as well as the practice of nations, present a great contrariety of views."[296] Three theories may be brought to bear on the effects of war on treaties in time of war. First, the majority of scholars before the nineteenth century supported the 'termination theory'. According to this theory, war terminated all treaties between belligerents. The second theory, the 'continuation theory', holds that war is not the state of complete lawlessness that the 'termination theory' holds to exist. According to the continuation theory, war terminates only those treaties which are incompatible with war. The third theory takes the middle ground and is called the 'classification theory'.[297] According to this theory, three methods can be used for classifying treaties and determining whether they are applicable upon the outbreak of hostilities: by determining the intention of

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[294]Michael K. Prescott, "How War Affects Treaties Between Belligerents: A Case Study of the Gulf War" (Spring 1993) 7:1 Emory Int'l. L.Rev. 197 at 197.

[295]*Karnuth v. United States* (1929) 279 U.S. 231.

[296]*Ibid.*

[297]For a discussion of the differing applicability of wartime laws, see Betsy Baker, "Legal Protections for the Environment in Times of Armed Conflict, (Winter, 1993), 33 Va. J. Int'l. L. 351 at 354-357; Schmitt, *supra*, note 175 at 37-42; Prescott, *supra*, note 294 at 197-206.

the parties; by deciding on an *ad hoc* basis; and by determining whether individual treaties are compatible with war.

The *Vienna Convention on the Law of Treaties*[298], although concerned extensively with the invalidity, termination, and suspension of the operation of treaties,[299] does not resolve the problem of the effects of war on treaties. Article 73 of the Convention states that "[t]he provisions of the present Convention shall not prejudge any question that may arise in regard to a treaty [. . .] from the outbreak of hostilities."[300] When there is no definitive statement of law one must turn to logic and context in order to select from among the three theories.

4.2. Legal Doctrine and Judicial Decisions

4.2.1. Termination Theory

Supporters of the first theory point out that the maintenance of peaceful treaty relations between States is incompatible with a state of war. Thus, war affects most legal relations between States. But exceptions to this rule exist, namely, treaties which regulate the relations among belligerent States and their relations with neutrals.[301] In 1845, Buchanan, the United States Secretary of State, said that according to the general rule of international law, war terminates all treaties that existed between the belligerents. He states that the exception may be a treaty maintaining sovereign rights which a nation possessed prior to the treaty

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[298]See *Vienna Convention, supra,* note 263.

[299]Articles 42 to 72 of the *Vienna Convention, supra,* note 263.

[300]*Ibid.* Article 73.

[301]Jost Delbrück, "War, Effect on Treaties" in Encyclopedia, vol. 4, *supra*, note 278, 310 at 311.

engagements.[302] A review of the doctrinal view and judicial decisions reveals a remarkable shift away from the traditional concept of the effects of war on treaties. At the time when commentators supported this theory, multilateral treaties were few. They did not play as important a role in international relations as they do today. Therefore, the application of the 'termination theory' did not have the same upsetting effects on the world.[303] In 1910, the Tribunal of Arbitration, in the *North Atlantic Fisheries* case[304] stated: "International law in its modern development recognizes that a great number of treaty obligations are not annulled by war, but [are] at most suspended by it."[305] It has been realized that the existence of a state of war between States is not necessarily incompatible with the maintenance in force of treaties between them, even though execution of some treaties may be suspended during the period of war.[306] This theory is no longer supported by commentators.[307]

4.2.2. Continuation Theory

The second theory asserts that war may suspend treaties but that only under certain circumstances will armed conflict terminate them. Supporters of this theory argue that treaties "lose their efficacy in time of war only when their execution is

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[302]See J.B. Hurst, "The Effect of War on Treaties" (1921-1922) II BYIL 37 at 38.

[303]See Editorial Comment to the Harvard Draft Convention, Research in International Law of the Harvard Law School, Draft Convention on the Law of Treaties (hereinafter Editorial Comment to the Harvard Draft Convention) (1935) 29 AJIL Supp. 653 at 1184.

[304]Scott, James Brown, The Hague Court Reports (New York : Oxford University Press, 1916) at 159.

[305]*Ibid.*

[306]see Editorial Comment to the Harvard Draft Convention, *supra*, not 303 at 1185.

[307]Prescott, *supra*, note 294 at 201.

incompatible with the war itself"[308] as is, for example, the case with treaties of alliance and friendship. The 1935 *Harvard Draft Convention on the Law of Treaties*, drafted by a group of legal scholars in order to codify customary law, supported this point of view.[309] The Convention was planned with a view to setting forth what is deemed to be the existing law, in some instances the desirable law.[310] Article 35 of the Draft Convention does not recognize that the outbreak of war between the parties or some of them *ipso facto* terminates any treaties whatever. It lays down criteria for determining the effect of war on treaties, rather than attempting to enumerate the specific kinds of treaties which are affected by the outbreak of war. Article 35(a) provides that a treaty which declares by its own terms that its obligations are to be performed in time of war, or which by reason of its nature and purpose was manifestly intended by the parties to be executed in time of war, is not affected by the outbreak of war between the parties or some of them. Article 35(b) envisages that all treaties not falling within one of the categories mentioned in paragraph (a) are suspended between two or more of the parties and will again come into existence when the state of war ended. The 1986 Resolution of the Institute of International Law on the effect of the outbreak of war on treaties[311] took almost the same approach as the *Harvard Draft Convention*. It states that the outbreak of hostilities does not automatically abrogate treaties between the parties. Article 2 of the Resolution provides that "at the

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[308]See Editorial Comment to the Harvard Draft Convention, *supra*, note 303.

[309]See Research in International Law of the Harvard Law School, *Draft Convention on the Law of Treaties*, (hereinafter Harvard Draft Convention), (1935) 29 AJIL Supp. 653 at 1186; Prescott, *supra*, note 294 at 203.

[310]See Introduction to the Harvard Draft Convention, *supra*, note, 309.

[311]Resolution of the Institute of International law, "The Effects of Armed Conflict on Treaties" 61-II Y.B.Inst.Int'l.L. 199 (1986).

end of war, unless otherwise agreed, the treaty will be resumed as soon as possible."[312] Article 7 of the Resolution adds that a "State exercising its right of individual or collective self defense in accordance with the charter of the United Nations is entitled to suspend in whole or in part a treaty incompatible with such resolution."[313]

4.2.3. Classification Theory

This theory has been supported more than the others. It addresses the interests of belligerent States in treaties and those of the international community at large. There is no international court addressing the issue of the effects of armed conflict on treaties[314] but most commentators[315] and some States' judicial decisions follow this approach. The classification theory has most frequently been employed in cases related to property, immigration, trade and diplomatic treaties in American case law.[316] In the *Gospel v. New Haven*[317], the U.S. Supreme Court, addressing the issue of the effect of war on property and inheritance treaties, accepted the classification theory and noted that treaties do not "become extinguished, *ipso facto*, by war between the two governments, unless they should be revived by an express or implied renewal on the return of peace."[318] The Court stated that some treaties should terminate when nations go to war and others, which concern permanent rights and

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[312]*Ibid.* Article 2.

[313]*Ibid.*

[314]Prescott, *supra*, note 294 at 227.

[315]See James J. Lenoir, "the Effect of War on Bilateral Treaties" (1946) 34 Geo.L.J. 129, at 131; Prescott, *supra*, note 294 at 204.

[316]Prescott, *supra*, note 294 at 206-215.

[317]21 U.S. 464 (1823).

[318]21 U.S. 464 (1823).

parties' intention in their applicability in both peace and war, are not terminated.[319] In *Techt v. Hughes*[320] and *Clark v. Allen*[321] a US Court considered the treaties themselves to decide whether or not they were compatible with armed conflict. In *Techt v. Hughes*[322], the Court stated that "international law to-day does not [in case of war] preserve treaties or annul them regardless of the effects produced. It deals with such problems pragmatically, preserving or annulling as the necessities of war exact. It establishes standards, but it does not fetter itself with rules" [323]. Similarly, in *Sutton v. Sutton*[324], between an American and English citizens concerning a testate conveyance of real property, the English court decided that the war of 1812 had not abrogated Article 9 of the Jay Treaty. Schmitt states that many treaties are the expression of mutual interests which are not related to the causes or effects of conflict. The aim should be to preserve treaty regimes that can survive. The third theory seems to be the best way to promote this aim and to uphold international interests in global order.[325] In 1910, Lawrence[326], in his book on the principles of international law, contributed to this theory. He proposed a classification for this purpose. As the following table shows, he separated treaties to which the belligerents and neutrals are parties from treaties to which only the belligerents are parties.

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[319]Ibid. at 464. See Prescott, *supra*, note 294 at 206.

[320]128 NE 185 (NY, 1920).

[321]331 U.S. 503 (1947).

[322]128 NE 185 (NY 1920).

[323]128 NE 185 (NY 1920).

[324]1Russ. & M. 663 (ch. 1830); Prescott, *supra*, note 294 at 215.

[325]See Schmitt, *supra*, note 175 at 38.

[326]T.J.Lawrence, *The Principles of International Law* (Boston: D.C.Heath & co. 1910) at 356.

Table showing the effect of war on treaties to which the belligerents are parties

I. Treaties to which other powers besides the belligerents are parties.	(A) Great international treaties.	(a) When the war is quite unconnected with the treaty.	Unaffected
		(b) When the war does not arise out of the treaty, but prevents the performance of some of its stipulations by the belligerents.	Unaffected as regards the other stipulations, and entirely unaffected with regard to neutral signatory powers.
		(c) When the war arises out of the treaty.	Effect doubtful, depending chiefly on will of neutral signatory powers.
		(d) When the treaty is a law-making treaty	Either unaffected or brought into operation by the war
	(B) Ordinary treaties to Which one or more powers besides the belligerents are parties.		Effect depends upon subject matter. Generally suspended or abrogated with regard to belligerents; unaffected with regard to third parties
II. Treaties to which the belligerents only are parties	(a) Pacta transitoria.		Unaffected.
	(b) Treaties of alliance.		Abrogated.
	(c) Treaties for regulating ordinary social and commercial intercourse, such as postal and commercial treaties, conventions about property, etc.		Effect doubtful. Generally the treaty of peace deals With such matters; if not, it is best to take the stipulations as merely suspended during war.
	(d) Treaties regulating the conduct of signatory powers towards each other as belligerents, or as belligerent and neutral.		Brought into operation by War

Source: T.J.Lawrence, *The Principles of International Law* (Boston: D.C.Heath & co. 1910) at 365.

Three main categories of treaties may be distinguished as follows: a) treaties continuing to be in force in time of hostilities; b) treaties suspended in time of hostilities; and c) treaties terminated by the outbreak of war.

4.3. The Effects of War on Treaties

4.3.1. Treaties not Affected by Armed Conflict

Hurst in his article on the effects of war on treaties concluded that on the whole it seems safe to state that the outbreak of war does not invalidate multilateral treaties between belligerents to which neutral States are also parties, although the execution of the treaty may be difficult while hostilities last.[327]

Several groups of treaties are considered unaffected by the outbreak of war. First, the outbreak of war does not affect the legal relation between belligerents and neutral States. The question arises as to who can be considered 'neutrals' in a war. The term 'neutrality' means a legally regulated position of a State that is not a party to the armed conflict.[328] This concept in law is based on the desire to be sure that first there will be no harm done by a neutral State, and second, that it will be fully neutral in that it prevents its territory from becoming a 'base of operations' for either belligerent.[329] A neutral State is prohibited from supplying warships, ammunition or war material of any kind or in any manner to a belligerent State. If a neutral State fails to prevent even a private individual from exporting war material which is already

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[327]See Hurst, *supra*, note 302 at 41.

[328]Both the 1907 *Hague Convention on the Rights and Duties of Neutrals* and Customary International Law are sources of the relevant rules related to neutral states; See H. Blix; *Sovereignty, Aggression and Neutrality* (Publ. by the Dag Hammarskjold Foundation, Uppsala: Almqvist & Wiksell 1970) at p.42.

[329]See Y.Dinstein; Neutrality in Sea Warfare; *Encyclopedia of Public International Law*, Vol.4, *supra*, note 278 at p.19-28.

armed and ready for action to a State involved in a military conflict, this constitutes a violation of the laws of neutrality.[330] The Hague Convention obliges a neutral State to prevent the arming of any vessel within its jurisdiction for use in hostile actions against a belligerent State. The *Alabama* case (1872) between Great Britain and the United States of America is a famous case in which a neutral State was held responsible for allowing expeditions to be equipped within its jurisdiction to carry out military operations against another State.[331] The constraints inherent to the status of neutrality were well summed up by T.Nilson, Swedish Foreign Minister, in 1965: "The neutral country must each day exert itself to build up and cherish this confidence. Firmness and consistency must be shown by the representatives of the policy of neutrality."[332] The ICJ in its advisory opinion on the *Legality of the Threat or Use of Nuclear Weapons in Armed Conflict* found that there was no doubt that the principle of neutrality was applicable to all international armed conflict whether conventional or nuclear weapons were used.[333] The Court stated that "the principle of neutrality, in its classic sense, was aimed at preventing the incursion of belligerent forces into neutrals."[334] The Court emphasized that the aim to prevent the incursion of belligerent forces into neutral territory also applies to, and makes unlawful, transborder damage caused to a neutral State by the use of a weapon in a belligerent

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[330]*Ibid.* at pp.21-23.

[331]See P.Seidel; "The Alabama", *Encyclopedia of Public International Law*, Vol.2, *supra* note 278 at p.11.

[332]See Blix, *supra,* note 328 at p.43.

[333]Legality of the Threat or Use of Nuclear Weapons, Advisory Opinion, ICJ, General List no. 95 (July 8, 1996), at paras. 88-89. The opinion has been reproduced along with selected opinions at 35 ILM 809 (1996).

[334]*Ibid.* at para. 88.

State.[335] Therefore, treaties between belligerent and neutral States remain in force in time of war. One commentator to Article 35 of the Harvard Draft Convention[336] states that in the case of multilateral treaties to which neutral States are parties, the commencement of war does not terminate or even suspend the operation of such treaties between the belligerent and neutral parties. The rule adopted by the Institute of International Law[337] confirms the same idea. Article IX of the rule states that "collective agreements remain in force in the relations of each of the belligerent States with third contracting States."[338]

The commission appointed under the Act of Congress of March 3, 1849 concerning the binding force of the treaty of 1831 between the United States and Mexico, which determined a certain period of time for the withdrawal of citizens in the event of armed conflict between the two countries, stated that "as a general principle, the breaking out of war puts an end to all treaties between the belligerents, yet it is not universally so." The Commission quoted from Kent, a commentator on American law, stated: "[I]f a treaty contains any stipulations which contemplate a state of future war, and make provision for such an exigency they preserve their force and obligation when a rupture takes place. All those duties of which the exercise is not suspended necessarily by the war subsist in their full force."[339]

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[335]*Ibid.* at para. 88.

[336]See *supra*, note 309.

[337]Project of the Institute of International Law, adopted at its Session in Christiania, August 1912, (1913) 7:1 AJIL 153 at 155.

[338]*Ibid.*

[339]See Moore, *History and Digest of International Law Arbitrations*, (Washington: Government Printing Office, 1895) at pp. 3334-35; Commentary to the Harvard Draft Convention, *supra*, note 303 at 1192.

Second, Article 35(a) of the Harvard Draft Convention asserts that there exist other treaties which are neither terminated nor suspended during war. These treaties are those which "by reason of their nature and purpose were manifestly intended by the parties to be operative in time of war between two or more of them."[340] These treaties are either related to the conduct of war, such as the *1949 Geneva Convention IV*[341], or to intentions of the parties, such as the 1679 *Treaty of Saint Germain*[342], to maintain these agreements in time of hostilities. These treaties usually deal only with conditions or problems, such as the prohibition of the employment of certain weapons, the treatment of prisoners of war, and the rights of persons engaged in tending to the sick and wounded, which arise in time of hostilities. They may also establish obligations which can only become performable in time of war. If the provisions of a treaty expressly mention that the treaty is to remain in force in case of hostilities, it must be regarded as in force, whether it be a political or nonpolitical treaty. For example, the parties to the 1679 *Treaty of Saint Germain* agreed that the treaties of Westphalia would remain in force during war.[343] The 1922 *Convention Instituting the Status of Navigation of the Elbe*[344] concluded between Germany, Belgium, Great Britain, France, Italy and Czechoslovakia provided that "the provisions of the present Convention continue to be valid in time of war to the fullest extent compatible with the rights and duties of belligerents and neutrals."[345] In *Techt v. Hughes*, the New

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[340]Article 35 (a) of Harvard Draft Convention, *supra*, note 309.

[341]See *supra*, Part One, note 31.

[342]Articles 4 & 7, Dumont, *Corps diplomatique et universel de droit des gens*, 408 (1731) mentioned in Richard Rank, "Modern War and the Validity of Treaties; A Comparative Study" (1953) vol. 38 Cornell Law Quarterly 321 at 326.

[343]*Ibid.* Articles 4 &7.

[344]26 LNTS 219, 241 (1924)

[345]*Ibid.* Article 49.

York Court of Appeal stated that "treaties which regulate the conduct of hostilities of course survive war."[346]

Third, treaties creating an "international regime or status", such as those determining borders, or those providing for the demilitarization or neutralization of zones, remain in force in time of war.[347] Lawrence states that war has no effect upon boundary conventions and treaties of cession or recognition.[348] The continuing in force of such treaties in time of hostilities is sometimes expressly stated by the treaty. In *Karnuth, United States Director of Immigration, et al. v. United States, on Petition of Arbro, for Cook et al.*[349], Justice Sutherland stated that

> "The doctrine sometimes asserted, especially by the older writers, that war ipso facto annuls treaties of every kind between the warring nations, is repudiated by the great weight of modern authority; and the view now commonly accepted is that 'whether the stipulations of a treaty are annulled by war depends upon their intrinsic character. [...] But as to precisely what treaties fall and what survive, under this designation, there is lack of accord. There seems to be fairly common agreement that at least the following treaty obligations remain in force: Stipulations in respect of what shall be done in a state of war; treaties of cession, boundary, and the like; provisions giving the right to citizens or subjects of one of the high contracting powers to continue to hold and transmit land in the territory of the other; and, generally, provisions which represent completed acts."[350]

The reason for the continuation of these kinds of treaties, as Delbrück points out, is that the commencement of hostilities should not affect legal regimes

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[346]128 NE 185 (NY 1920).

[347]See Delbrück, *supra*, note 301 at 312.

[348]See Lawrence, *supra*, note 326 at 362.

[349]279 U.S. 231, 49 S.Ct. 274 (April 8, 1929).

[350]*Ibid.*

concerning the interest of the international community unless this is inevitable.[351] Exceptions to this rule occur when the legal regime or status extends into the territorial jurisdiction of one of the belligerents. In such a case, the treaty obligations are suspended between the belligerent States.[352]

One should distinguish between private and public, and between multilateral and bilateral treaties. Schmitt asserts that those treaties governing purely private interests are more likely to survive, and citizens of belligerent States may continue benefiting from their relations even after the outbreak of war, without damaging the State's interests.[353] Since environmental treaties perform both private and public functions, a case-by-case analysis is needed in order to determine whether they are terminated by the outbreak of war or not. Multilateral treaties will generally remain operative at least between belligerent and nonbelligerent parties. Schmitt summarizes that "the approach that best comports with the reality of armed conflict while fostering world order is one in which a presumption of survivability attaches to peacetime environmental treaties, absent either *de facto* incompatibility with a state of conflict or express treaty provisions providing for termination."[354]

Many international environmental principles,[355] treaties[356] and resolutions are

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[351]See Delbrück, *supra*, note 301 at 312.

[352]See Delbrück, *supra*, note 301 at 312.

[353]See Schmitt, *supra*, note 175 at 41.

[354]*Ibid.* at 41.

[355]Such as Stockholm Declaration. *Supra*, note 3.

[356]See For example, the *Oslo Convention for the Prevention of Marine Pollution by Dumping From Ships and Aircraft*, 932 UNTS 3; UKTS 119 (1975) Cmd. 6228; 11 ILM 262 (1972) reprinted in Rummel-Bulska, *supra* note 4 at 266.

not limited to peace-time applications. The *1972 Convention for the Protection of the World Cultural and Natural Heritage*[357] obliges each State party "not to take any deliberate measures which might damage directly the cultural and natural heritage[358] [...] situated on the territory of other States parties to this Convention."[359] This Convention does not exclude military causes of damage to the natural heritage and may apply to wartime activities that damage the natural heritage.[360] One has to examine how international conventions are compatible with war in order to determine whether they are applicable during warfare. Simonds states that general regulations concerning protection of the environment are compatible with war.[361] Most conventions establishing regulations to protect certain sectors of the environment such as the seas, the atmosphere, and the ozone layer, do not exclude military causes of environmental damage from their scope. Under the 1972 *Convention for the Prevention of Marine Pollution by Dumping from Ships and Aircraft*[362], parties undertake to "take all possible steps to prevent the pollution of the sea 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."[363] This Convention does not exclude government ships or aircraft. This kind of treaty regime would be compatible with war.

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[357]*UNESCO Convention*, *supra* note 5.

[358]*Ibid.* Article 2.

[359]*Ibid.* Article 6(3).

[360]See Simonds, *supra*, note 6 at 197.

[361]*Ibid.* at 196.

[362]Article 1 of the *Oslo Convention for the Prevention of Marine Pollution by Dumping From Ships and Aircraft*, 932 UNTS 3; UKTS 119 (1975) Cmd. 6228; 11 ILM, 262 (1972).

[363]*Ibid.*

4.3.2. Treaties Suspended by Armed Conflict

Since the belligerents are unable to fulfil all their obligations as a result of the effects of war, some international treaties may be suspended by the outbreak of war. Suspension of a treaty depends on the interpretation of its provisions in the light of particular political and military conditions. The States involved in the hostilities are expected to resume their obligations upon the termination of war.[364] In the *Gospel v. New-Haven*[365], the Supreme Court of the United States declared that "[t]reaties, stipulating for permanent rights and general arrangements, and professing to aim at perpetuity and to deal with the case of war as well as of peace, do not cease on the occurrence of war, but are, at most, only suspended while it lasts".[366]

The validity of a treaty may be affected in situations such as the outbreak of war.[367] A number of environmental conventions contain clauses which prevent them from applying to "those vessels and aircraft entitled to sovereign immunity"[368]. These

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[364]See Delbrück, *supra*, note 301 at 313.

[365]*Gospel in Foreign Parts v. the Town of New-Haven and William Wheeler*, 21 U.S. 464, March 12, 1823.

[366]21 U.S. 464, March 12, 1823

[367]Hurst, *supra*, note 302 at 37; J.G. Castel et al., *International Law Chifely as Interpreted and Applied in Canada*, 4th ed. (Canada: Emond Montgomery Publications, 1987) at 174; M.B. Akehurst, "Treaty Reservations", in *Encyclopedia of Public International Law*, vol.7 (North Holland: Published under the Auspices of the Max Planck Institute, 1982) 496 at 509; I. Brownlie, *Principles of Public International Law*, 4th. ed. (Oxford: Clarendon Press 1990) at 616-617.

[368]See Article VII (4) of the 1972 *London Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matters*, 26 UST 2403, TIAS 8165. Amended Oct. 12, 1978, TIAS No. 8165; 18 ILM 510 (1979) printed in I. Rummel-Bulska & S. Osafo, *Selected Multilateral Treaties in the Field of the Environment*, vol. 2 (Cambridge: Grotius Limited, 1991) at 283. *International Convention for the Prevention of Pollution from Ships*, Feb. 11, 1973, Marpol, London, UN Legislative Series ST/LEG/SER.B/18, at 461; UKTS 27 (1983), Cmd. 8924; 12 ILM 1319 (1973), Article 3(3), *Ibid.* at 320; *International Convention on Civil Liability for Oil Pollution Damage*, Nov. 29, 1969 in 9 ILM 45 (1969); UKTS 77 (1975), Cmd. 6056; 26 UST 765.

conventions require parties to ensure that such vessels and aircraft act in a manner consistent with the object and purpose of the treaty requirements. For example, the 1969 *Intervention Convention*[369] and 1982 *UNCLOS*[370] do not apply to any warship or naval auxiliary. Further, the preamble to the 1982 UNCLOS refers to "the desirability of establishing through this Convention [...] a legal order for the seas and ocean which will [...] promote the peaceful uses of the seas and oceans."[371] The 1969 *Intervention Convention* states that "no measures shall be taken under the present Convention against any warship or other ship owned or operated by a State and used, for the time being, only on government non-commercial service."[372] Both instruments[373] contain notification and consultation procedures. Simonds notes that instruments that require advance notification, consultation and environmental assessments before taking any action which may affect the environment are incompatible with wartime secrecy requirements. Therefore, these conventions do not cover the effects of man's wartime activities concerning the environment.

4.3.3. Treaties Terminated by Armed Conflict

Some treaties, of course, are terminated by their own terms once armed conflict breaks out or are so obviously inconsistent with hostilities as is the case with military aid agreements. The problem is more difficult in the case of political treaties or those

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[369]Article 8 of the *International Convention Relating to Intervention on the High Seas in Case of Oil Pollution Casualties* (Brussels) UKTS 77 (1971); 9 ILM (1970), 25.; In force March 30, 1983. Reprinted in Bulska, *Ibid.* at 230.

[370]See *supra*, note 141, Article 236.

[371]See Preamble to the 1982 UNCLOS, *supra*, note 141 .

[372]See *Intervention Convention*, *supra*, note 369 Article 1(2).

[373]1982 UNCLOS, *supra*, note 141 Art. 198; 1969 *Intervention Convention*, *supra*, note 369 Art. III. This Convention states that "in case of war or other hostilities [a party may] suspend the operation of the whole or any part of the present convention [....]").

of a political nature such as treaties of friendship, commerce, alliance or non-aggression. Difficulties may arise in recognizing whether or not a particular treaty was concluded with a political object since a precise definition of what constitutes a political treaty cannot be laid down.[374] These kinds of treaties are considered to be either terminated or suspended by the outbreak of war.[375] They usually do not contain any express provisions on the intention of the parties concerning their application in time of war. The intention of parties may be discovered by an examination of the *travaux preparatoires*[376] which in many cases it may not be easy to discover the intention of the parties.

4.4. Legal Principles Other Than Treaties Affected by War

Some argue that the law of armed conflict is more specialized than the whole of the law of peace. They state that international environmental law is also a specialized subset of the law of peace. Therefore, environmental law would apply during hostilities.[377]

It is also argued that the most peaceful common human rights are not suspended in time of war. Some human rights rules, as the ICRC recommended, are considered as "core norms' and are applicable in both peace and wartime. The ICJ in its advisory opinion on the *Legality of the Threat or Use of Nuclear Weapons* stated:

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[374]See Hurst, *supra*, note 302 at 42.

[375]See Delbrück, *supra*, note 301 at 313.

[376]See Commentary to the Harvard Draft Convention, *supra*, note 303.

[377]See Simonds, *supra*, note 6 at 192.

> "[T]he protection of the International Covenant of Civil and Political Rights[378] does not cease in times of war, except by operation of Article 4 of the Covenant whereby certain provisions may be derogated from in a time of national emergency. Respect for the right to life is not, however, such a provision. In principle, the right not arbitrarily to be deprived of one's life applies also in hostilities. The test of what is an arbitrary deprivation of life, however, then falls to be determined by the applicable *lex specialis*, namely, the law applicable in armed conflict which is designed to regulate the conduct of hostilities. Thus whether a particular loss of life, through the use of a certain weapon in warfare, is to be considered an arbitrary deprivation of life contrary to Article 6 of the Covenant, can only be decided by reference to the law applicable in armed conflict and not deduced from the terms of the Covenant itself." [379]

In its 1992 report to the Secretary General, the ICRC asserted that peacetime environmental law remains in force during armed conflict, particularly between belligerents and neutrals.[380] The experts of the ICRC compared international environmental law with human rights law and stated that the core provisions of human rights law remain in effect during armed conflict.[381] The ICRC recommended that "certain provisions of environmental law should not be suspended during hostilities but that the most important 'core norms' must be applied in all circumstances."[382]

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[378]*International Covenant on Civil and Political Rights*, adopted by the General Assembly of the United Nations on December 16, 1966. Entry into force: March 23, 1976. Registration: March 23, 1976, No. 14668. Text: UNTS, vol. 999, p. 171 and vol. 1057, p. 407.
Status: Signatories: 58. Parties: 138.

[379]See *supra*, note 333.

[380]See Protection of the Environment in Times of Armed Conflict: Report of the Secretary General, U.N. GAOR, 47th Sess., para. 40, U.N. Doc. A/47/328 (1992).

[381]*Ibid.*

[382]UN Doc. A/47/328, July 31, 1992 at 12-13.

A hostile military action tries to affect the lives of its enemy's people in order to defeat it. Whether we are concerned with protecting nature for nature's sake or for the sake of mankind, it is unlikely that a belligerent would discharge its ammunition on parts of the environment which would not affect its enemy's forces. As Feliciano points out:

> "Commonly, damage to the environment impacts upon earth's human population, whether in physical or in less tangible (e.g. psychological, spiritual, or aesthetic) terms, whether in the short run or in the long term or possibly in the very long term. It may, however, be possible to conceive of environmental harm that has absolutely no consequences of any kind for human beings, though it would be difficult to imagine why a rational belligerent would expend resources in attacking the environment and inflicting damage which would *ex hypothesi* not prejudice the enemy population. Historically, the law of war has been "humanitarian" in orientation and has sought the protection -- by reducing to a minimum the destruction -- of human and anthropocentric values. Should normative formulations which are wholly or primarily "nature-centric" actually be achieved, such de-humanized provisions are likely to be very difficult to implement and enforce. A new and more exacting morality which would recognize duties not only to men in society but also to non-human life-forms and even non-sentient beings, may be essential." [383]

Baker has discussed the issue of applicability of peacetime norms in time of war. He argues that the basic precept of international environmental protection is derived from the principle of limitation.[384] The concept of limitation in the environmental context may be understood as the idea that the right of human beings to use or abuse the environment is not unlimited.[385] The principle of limitation is also

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[383]Florentino P. Feliciano, "Marine Pollution and Spoilation of Natural Resources as War Measures: a Note on Some International Law Problems in the Gulf War", (Spring, 1992)14 Hous. J. Int'l.L. 483 note 104.

[384]See Baker, *supra*, note 297 at 354.

[385]*Baker, supra*, note 297 at 360.

important in the laws of war. In the laws of war, the concept is understood as the idea that the right of belligerents to injure the enemy is not unlimited. It has been suggested that the protection of an object under the law of armed conflict depends sometimes on its peacetime legal protection.[386] This idea supports the notion that some peacetime limitations are applicable to wartime exploitation of the environment. As Simonds notes, the Gulf War has shown that Principle 21 of the Stockholm Declaration[387] or a similar standard of liability can apply between belligerents since UN Security resolutions 686 and 687 held Iraq liable for all damages caused to Kuwait.[388] Baker states that "the two concepts of limitation may converge if international limitations on the use of the environment can help to redefine what are reasonable, proportional, or militarily necessary effects of war on the environment thereby providing constraints upon parties engaged in hostilities."[389]

The peacetime concept of limitation is found in many international environmental principles and conventions. Principle 21 of the Stockholm Declaration[390], which is repeated almost verbatim as Principle 2 of the Rio Declaration[391], provides that states have "[...] the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment

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[386]Baker, *supra*, note 297 at 360.

[387]See *supra*, note 3.

[388]See Simonds, *supra*, note 6 at 193.

[389]Baker, *supra*, note 297 at 354.

[390]See *supra*, note 3.

[391]See *infra*, note 392.

of other States or of areas beyond the limits of national jurisdiction."[392] This principle is addressed in a number of peacetime treaties as well as in treaties that are related to armed conflict.

The requirements of Principle 21 might be extended in an armed conflict to prohibit war-related activities that damage another State's environment. In 1983-84, a group of experts was invited by the Commission of the European Community to discuss environmental damage resulting from the Iran-Iraq War of 1980-1988. They concluded that the general obligation to refrain from damaging the environment mentioned in Principle 21 of the Stockholm Declaration applied during armed conflict to the relations of belligerents and third States.[393] Baker [394] states that this evokes particular parallels to Article 2(4) of the UN Charter prohibiting "the threat or use of force against the territorial integrity or political independence of any state."[395] In the January 1992 summit meeting of heads of States, the President of the Security Council stated that "non-military sources of instability in the economic, social, humanitarian and ecological fields have become threats to peace and security."[396] If one accepts such an interpretation of Article 2(4) of the UN Charter[397], and considers also Principle 21 of the Stockholm Declaration, transboundary

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[392]See Principle 2 of the Rio Declaration. United Nations Conference on Environment and Development: Rio Declaration on Environment and Development, adopted at Rio de Janeiro, June 14, 1992, 31 ILM 874 (1992).

[393]Bothe et al., La protection de l'environnement en temps de conflit armé, Communautés Européennes, Commission, Doc. interne SJ/110/85, at 47 et suiv., in E. David, "La guerre du Golfe et le droit international", 1987 Revue belge de droit international 153, 165.

[394]See Baker *supra*, note 297 at 355.

[395]UN Charter, Article 2, para. 4. *Supra*, note 73.

[396]Note by the President of the Security Council, U.N.Doc. S/23500 (1992).

[397]See *supra*, note 73.

environmental damage occurring in time of armed conflict could be argued to have effects similar to the use of force. This is especially true if the environmental damage is caused deliberately.

ILC Draft Articles on State responsibility[398] are also evidence of States' accountability for environmental damage. The ILC Draft Articles states that "[e]very internationally wrongful act of a State entails the international responsibility of that State."[399] Moreover, according to the ILC, the elements necessary to constitute an "internationally wrongful act" include "conduct consisting of an action or omission [...] attributable to the State under international law" that "constitutes a breach of an international obligation of the State."[400] Article 19 of the Draft Articles characterizes an international crime as a "breach by a State of an international obligation so essential for the protection of fundamental interests of the international community," which may result from a breach of the obligations of "safeguarding and preserv(ing) [...] the human environment, such as those prohibiting massive pollution of the atmosphere or of the seas."[401] On the other hand, Article 26 of the ILC's Draft Articles on "International Liability for Injurious Consequences Arising out of Acts not Prohibited by International Law" provides that "there shall be no liability [...] if the harm was directly due to an act of war [or] hostilities."[402] Leibel states that " this provision has no basis in customary international law and certainly does not prejudice the wartime application of the principle established in the *Trail Smelter* case and

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[398]See *supra*, note 53.

[399]Article 1 of the ILC Draft Articles, *supra* note 53.

[400]*Ibid.*

[401]*Ibid.*

[402]See 1984 ILC REP. 171.

Stockholm Declaration."[403] He concludes that the general principle of State responsibility for environmental destruction is applicable in the context of hostilities.[404]

Another nonbinding text of universal applicability emanating from the United Nations is the World Charter for Nature, adopted by the General Assembly in 1982.[405] That Charter includes a series of general principles intended to guide the actions of States, of international organizations and even of individuals, with respect to nature. The World Charter announced that "States and, to the extent they are able, other public authorities, international organizations, individuals, groups and corporations shall [...] [e]nsure that activities within their jurisdictions or control do not cause damage to the natural systems located within other States or in the areas beyond the limits of national jurisdiction [...]."[406]

Section I of the World Charter, entitled 'General Principles', contains well-meaning language calling for the respect of nature and its essential processes. Regarding extending peacetime norms to wartime, the Charter presents five important principles. The first four of these principles urge: respect for nature; [407] preservation

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[403]See Leibler, A."Deliberate Wartime Environmental Damage: New Challenges for International Law", (Fall, 1992) 23 Cal. W. Int'l L.J. 67. at 75.

[404]See Anthony Leibler, *supra*, note 403 at 75; Ensign Florencio J. Yuzon, *supra*, note 172 at 803.

[405]World Charter for Nature, *supra*, note 268.

[406]*Ibid.* Article III (21)(d)

[407]"Nature shall be respected and its essential processes shall not be impaired." *Ibid.* Article I(1).

of global genetic resources;[408] global conservation;[409] and sustainable use.[410] Principle 5 of the Charter states that "[n]ature shall be secured against degradation caused by warfare or other hostile activities."[411] Principle 20 in the section on implementation builds on these goals. It states that "[m]ilitary activity damaging to nature shall be avoided."[412] This principle could apply equally to times of peace and war. Schmitt states that coming on the heels of the 1977 *Geneva Protocol I*[413] and the *Enmod Convention*[414], the "World Charter reflected the broadest statement on war and the environment to date by an intergovernmental organization."[415]

The World Charter states that the General Assembly is aware that "[m]ankind is a part of nature and life depends on the uninterrupted functioning of natural systems which ensure the supply of energy and nutrients";[416] and urges that the Charter's recommendations "be reflected in the law and practice of each State, as well as at the

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[408]"The genetic viability on the earth shall not be compromised; the population levels of all life forms, wild and domesticated, must be at least sufficient for their survival, and to this end necessary habitats shall be safeguarded." *Ibid.* Article I(2).

[409]"All areas of the earth, both land and sea, shall be subject to these principles of conservation; special protection shall be given to unique areas, to representative samples of all the different types of ecosystems and to the habitats of rare or endangered species." *Ibid.* Article I(3).

[410]"Ecosystems and organisms, as well as the land, marine and atmospheric resources that are utilized by [human beings], shall be managed to achieve and maintain optimum sustainable productivity, but not in such a way as to endanger the integrity of those other ecosystems or species with which they coexist." *Ibid.* Article I(4).

[411]Principle 5 of the World Charter for Nature, *supra*, note 268 .

[412]Ibid.

[413]See *supra*, Part One, note 23.

[414]See *supra*, Part One, note 17.

[415]See Schmitt, *supra*, note 175 at 43.

[416]See Preamble to the World Charter for Nature, *supra*, note, 268 .

international level."[417] These recommendations include avoiding "activities which are likely to cause irreversible damage to nature".[418]

The Rio Declaration treats the issue of State responsibility for environmental damage by calling for further development in that area of the law. It encourages States to address liability and compensation issues through national legislation. The Declaration also advises States to "cooperate in an expeditious and more determined manner to develop further international law regarding liability and compensation for adverse effects of environmental damage caused by their activities within their jurisdiction or control to areas beyond their jurisdiction."[419]

As a general principle, the World Charter for Nature dictates that "nature shall be secured against degradation caused by warfare or other hostile activities."[420] Furthermore, the Rio Declaration states that warfare is inherently destructive of sustainable development. States shall therefore respect international law providing protection for the environment in times of hostilities and must, when necessary, reevaluate this framework.[421] Although these principles are not binding on States, the widespread approval of these resolutions shows that State responsibility for environmental damage applies in time of warfare.

Authors asserting that international environmental law is inconsistent with the

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[417]*Ibid.* Principle 14.

[418]*Ibid.* Principle 11(a).

[419]See Rio Declaration, *supra*, note 392.

[420]World Charter for Nature, *supra* note 268.

[421]Rio Declaration, *supra* note 392 , principle 24 .

nature of war do not deny the effects of peace time norms on the protection of the environment in time of war. Low suggests that international environmental law is relevant to the question of the protection of the environment in wartime. Military action has to take international environmental law into account in determining the means and methods of warfare.[422] This is because of the Martens clause which states that "the belligerents remain under the protection and the rule of the principles of the nations, as they result from the usages established among civilized peoples, from the laws of humanity, and from the dictates of public conscience."[423]

The ICJ in its advisory opinion on the *Legality of the Threat or Use of Nuclear Weapons* recognized that the environment is under daily threat and that "the environment is not an abstraction but represents the living space, the quality of life and the very health of human beings, including generations unborn."[424] The Court, by repeating principle 24 of the Rio Declaration, emphasized that "States must take environmental considerations into account when assessing what is necessary and proportionate in the pursuit of legitimate military objectives."[425] The Court thus found that the existing international law relating to the protection and safeguarding of the environment "indicates important environmental factors that are properly to be taken into account in the context of the implementation of the principles and rules of the law applicable in armed conflict."[426]

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[422]See Luan Low and David Hodgkinson, "Compensation for Wartime Environmental Damage: Challenges to International Law After the Gulf War" (Winter 1995) 35 Va.J.Int'l.L. 405 at 445.

[423]Preamble to the *1907 Hague Convention IV*. *Supra*, note 200.

[424]See para. 29, *supra*, note 333.

[425]See para. 30, *supra*, note 333

[426]Para. 33, *supra*, note 333

Judge Weeramantry, in his dissenting opinion on the *Legality of the Threat or Use of Nuclear Weapons*, stated: "There is a growing awareness of the ways in which a multiplicity of traditional legal systems across the globe protect the environment for future generations. To these must be added a series of major international declarations commencing with the 1972 Stockholm Declaration on the Human Environment."[427] The developments in environmental law heightened the awareness of the public of environmentally related matters which affect human rights. Judge Weeramantry quoting approvingly from the ILC's consideration of State responsibility, stated that a conduct gravely endangering the preservation of the human environment violates principles "which are now so deeply rooted in the conscience of mankind that they have become particularly essential rules of general international law".[428] Enumerating a number of principles which are violated by nuclear weapons such as the principle of intergenerational equity, the common heritage principle, the precautionary principle, the principle of trusteeship of earth resources, and the polluter pays principle, he stated that "these basic principles ensuring the survival of civilization, and indeed of the human species, are already an integral part of that law."[429]These principles "do not depend for their validity on treaty provisions [but] are part of customary international law [and] are part of the *sine qua non* for human survival."[430] He concluded that "[n]or are these principles confined to either peace or war, but cover both situations, for they proceed from general duties, applicable alike in peace

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[427] (July 8, 1996) 35 ILM 809 at 888.

[428] *Ibid.* at p. 901; Report of the ILC on the work of its twenty- eighth session. ILC Yearbook, 1976 Vol. II, Part II, p. 109, para. 33.

[429] (1996) 35 ILM 809 at p. 905.

[430] *Ibid.* at p. 906.

and war".[431]

In assessing the international law governing environmental damage during war we can conclude that, if either of the last two mentioned theories were to be applied, war would not abrogate environmental law. It is generally accepted that war *per se* does not terminate all peacetime treaties between belligerent States. Some international environmental rules may lose their efficacy in time of war only if their execution is incompatible with war. Therefore, war terminates certain rules and suspends some others, while most environmental principles remain unaffected.

5. Conclusion

In order to protect the environment at the international level in wartime it is important that, in addition to an existing system of treaty and customary rules, there exist also a system of rules regarding State responsibility in wartime. Although the question of whether State responsibility for environmental protection exists calls for an affirmative response, references to the Roman maxim *sic utere tue ut alienum non laedas* and cases cited in this Chapter are debatable and many uncertainties exist as to the exact content of the principles related to environmental law in wartime. There exist only a few agreements specifically concerning with environmental protection; other agreements that include provisions on it lack rules concerning responsibility of the State[432] for environmental injury resulting from wartime activities. Although other treaties on environmental protection refer to legal duties and "acts contrary to the

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[431] *Ibid.* at p. 906.

[432] It even appears that the 1979 *Convention on Long-Range Transboundary Air Pollution* in its footnote to Article 8(f) regarding the extent of damage which can be attributed to such pollution provides that "the present *Convention* does not contain a rule of State liability as to damage." *supra*, note 190.

rights of other States" and not to the causing of harm or injury[433] and although the ICJ in several cases put an obligation on States "...not to allow knowingly its territory to be used for acts contrary to the rights of the States [...]", it is doubtful whether one can extend this to a prohibition against environmental destruction in war. It seems evident that all these efforts are intended to cover the full array of State relations. They would lose much of their meaning if environmental protection were excluded during wartime. The important principle is that there is a basic obligation upon each State to protect the environment and to use whatever means possible to prevent destructive impacts on its resources.

International environmental law being a specialized branch of general law, its sources are the same as those from which all international law emanates. International law has responded to the most immediate damages to the environment. Many general problems, such as those of marine environment, air quality, the extinction of wildlife, etc., have led to the adoption of bilateral and multilateral treaties.

Treaties are the most frequent method of creating international environmental law in that they create general obligations for States to protect the environment. Some international conventions adopted by regional organizations or under the auspices of international organizations for the preservation and the protection of the environment are applicable in time of armed conflict. The outbreak of war does not automatically terminate all agreements between the parties to a conflict.[434] Not only are few treaties

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[433]See Graefrath, B. "Responsibility and Damage Caused: Relationship Between Responsibility and Damages", in 185, *Recueil des Cours*, Leyde; Pay Bas, A.W. Sijthoff (1984-II) at 111.

[434]The 1969 *Vienna Convention on the Law of Treaties* does not deal with the effects of war on the treaties except Article 73 which states that the provisions of the *Vienna Convention* "shall not prejudge any question that may arise in regard to a treaty [...] from the outbreak of hostilities between States". The *Vienna Convention* partly codifies the relevant rules of customary

suspended or terminated in case of armed conflict, but some treaties, such as the *UN Charter*[435], are binding in wartime and some others, including the *1907 Hague*[436] and *1949 Geneva Conventions*[437] regulate the conduct of war. However, in the case of State responsibility for environmental protection there is no explicit treaty obligation laying down this responsibility in terms comprehensive enough for it to be implemented effectively.

The law of State responsibility in general has been developed through case law. Liability for environmental damage encompasses the concept of State responsibility for breaches of international law as well as liability for harm resulting from an activity not prohibited by international law. The *Trail Smelter* case, for example, recognized that principles of State responsibility are applicable to transborder pollution.

Beginning with the 1972 UN Conference on the Environment (when the Stockholm Declaration asserted State responsibility for preventing damage to other States and liability for such damage) and continuing with the 1992 Rio conference on Environment and Development (when the Rio Declaration asserted that States are obliged to compensate for damage), international law has evolved in response to the greater technological threats to the environment and to growing public concern about them.

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international law and constitutes the important rules for any discussion of the characteristics of treaties. See *Vienna Convention on the Law of Treaties*, *supra*, note 263.

[435U]*UN Charter*, *supra*, note 73.

[436]See *supra*, note 200.

[437]See *supra*, part one, note 31.

As human activities give rise to environmental damage, these harmful environmental activities impose two obligations upon the actor. One is a responsibility for any breach of international law. The second is liability for any harm caused by one's activities. In spite of this fundamental duty to conserve the human environment and accept responsibility for the effects of one's actions on the environment of others, there is no explicit treaty that states this responsibility. International agreements do not cover the full range of environmental issues. Some of the treaties and principles discussed in this Chapter are ambiguous. It might seem that the only way to resolve their ambiguity, that is, to hold the State responsible and require it to remediate and compensate when environmental damage occurs in time of war, is to conclude agreements on a comprehensive and precise basis, because it is through law that the shared objectives, values, and policies of the community at large are most effectively enforced. To be free of differing interpretations, principles protecting the environment, such as Principle 21 of Stockholm Declaration , should be incorporated into existing conventions applicable during armed conflict. International environmental law, which has yet to be developed, must regulate, *inter alia*, the question of responsibility for harm caused from wartime activities. There has been a tendency toward the establishment of an international criminal law and a trend in favor of a pecuniary punishment in case of an international wrongful act. This idea should include crimes against man's environment.

We discussed, in Chapter II, international regulation of State responsibility for environmental harm. Chapter III focuses on the responsibility for environmental damage in time of war. It will analyse the international law of State responsibility for the actions of its armed forces.

Chapter III: Responsibility for Environmental Damage in War

Pour faire suite à notre discussion générale sur la responsabilité présentée dans le premier chapitre et nos propos sur la responsabilité de l'État pour un dommage environnemental apparaissant au deuxième chapitre, nous considérerons maintenant le droit international environnemental et le droit de la guerre pour déterminer sur quoi repose directement la protection de l'environnement en temps de guerre. Le chapitre III nous éclairera sur la responsabilité pour un dommage environnemental en temps de conflits armés. Nous discuterons à savoir si le droit relatif à la responsabilité d'un État protège l'environnement en temps de guerre. On examinera aussi si la responsabilité d'un État pour un dommage environnemental en temps de guerre est stricte ou absolue ou si la victime doit prouver que l'État belligérant a commis un acte illégal. Nous verrons que si un gouvernement est tenu responsable pour les actes de fonctionnaires et autres représentants officiels, il doit de même être responsable pour ses actes causant des dommages à l'environnement.

1. Introduction

In today's world, the potential for oil spills and other environmental catastrophes is greater than ever before. There are some indications of a movement towards international agreements concerning strict and absolute liability in case of environmental damage. Some international agreements imply that the duty of a State is not just to protect its own environment, but to protect the environment of all. International environmental standards have been developing to protect the global environment.

Violation of the laws of war leads to criminal liability.[438] All the *Geneva Conventions* of 1949 contain identical articles according to which no party to the Convention shall be allowed to absolve itself or others of any liability incurred for breaches referred to in Article 50 of the Convention.[439] Each party to the Convention must try to suppress all acts contrary to the provisions of the Convention.[440] A party to a conflict may request an inquiry into any alleged violation of the *Geneva Convention.*[441] Cheng states that acts which are contrary to the rules and customs of warfare, "although they may be justifiable and advantageous from the military point of view, are considered as unlawful or even criminal."[442] In the past, invading armies used to destroy all enemy property and its environment to stop their attack. In the nineteenth century, however, it became a recognized rule of international law that wanton destruction of enemy property was prohibited.[443]

There have been many criminal cases involving the law of war. Some of these cases concerned crimes against international law. In most peace treaties, the parties established responsibility for all damages caused. For example, at the end of the First World War, on November 11, 1918, the Principal Allied and Associated Powers[444]

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[438]See 1949 *Geneva Conventions*, Articles 49/I, 50/II, 129/III and 149/IV. *Supra,* Part One, note 31.

[439]*Ibid.* Articles 51/I, 52/II, 131/III and 148/IV.

[440]*Ibid.* Articles 49/I, 50/II, 129/III and 149/IV.

[441]*Ibid.* Articles 52/I, 53/II, 132/III, 149/IV.

[442]See Cheng, *supra*, note 20 at 63.

[443]See Article 23(g) of the 1907 *Hague Convention IV, supra,* note 200.

[444]The Principal Allied and Associated Powers described in the *Treaty of Versailles* are the U.S., the British Empire, France, Italy and Japan.Allemagne, The *Treaty of Peace Between the Allied and Associated Powers and Germany: The Protocol Annexed Thereto*, the agreement respecting the

granted an armistice to Germany at the request of the Imperial German Government. They desired that the war should be resolved by a firm, just and durable peace. The contracting parties in the *Treaty of Versailles*[445] (June 28, 1919) agreed that upon the coming into force of the treaty, the state of war would be terminated. Regarding responsibility for damages caused, Article 231 of the treaty states: "The Allied and Associated Governments affirm and Germany accepts the responsibility of Germany and its allies for causing all the loss and damage which the Allied and Associated Governments and their nationals have been subjected to as a consequence of the war imposed upon them by the aggression of Germany and its allies."[446] In the 1919 *Peace Treaty of St. Germain* between the Allied Powers and Austria, the latter accepted its own and its allies' responsibility for causing the loss and damage to the Allied and Associated Governments and their nationals as a result of the war imposed upon them by the aggression of Austria-Hungary and its allies.[447] This trend has been observed in other peace treaties such as the *Trianon Treaty* in which Hungary accepted responsibility for the loss and damage caused as a consequence of war imposed upon the Allied and Associated Governments and their nationals by the aggression of Austria-Hungary and its allies.[448]

Following a discussion on State responsibility in general in the first Chapter and international regulation of State responsibility for environmental harm in the

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military occupation of the territories of the Rhine, and the treaty between France and Great Britain respecting assistance to France in the event of unprovoked aggression by Germany; signed at Versailles, June, 28, 1919 (London: ill., Cartes, 1919).

[445]See F.L.Israel, vol.II, *Major Peace Treaties of Modern History* (New York: Chelsea House Publishers, 1967) 1265.

[446]*Ibid.* at 1391.

[447]Article 177 of the *St-Germain Treaty*. *Ibid.* Vol. III at 1598.

[448]See Article 161 of the *Trianon Treaty* printed in Israel vol.III, *supra* note 445 at 1923.

second Chapter, special attention is given, in Chapter III to the cases, treaties and principles related to the environmental responsibility of States in time of armed conflict. Section 2 will discuss legal consequences of violating the of law of war and law related to the environment. Section 3 is dedicated to long-term and long-distance environmental health effects. Section 4 examines whether the responsibility of States for wartime activities damaging the environment is strict, absolute, or whether fault must be proven. Section 5 discusses the different forms of reparation, *i.e.* restitution, compensation, and satisfaction for breach of a legal obligation. Various problems which must be resolved in order to determine reparation for ecological damages of war will be considered in this section. This Chapter will finally examine (in section 6) the responsibility of States for the acts or omissions of State personnel which are incompatible with the rules of international law.

2. Illegal Act and the Law of War: Violation of the Customary Law of War

International responsibility usually arises from a breach of an international obligation, whether a treaty or a customary or general principle of law. The international community has prohibited waging war in defiance of obligations arising from treaties and other sources of international law. Waging war[449] against another State except in self-defence or according to the UN Charter is a crime.[450] All forms of warfare are harmful to man and its environment and so all warfare can be perceived to be a form of environmental warfare. Falk defined 'environmental warfare' as

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[449]It was stated in the Nuremberg Judgement (1946) that "the Charter makes the planning or waging of a war of aggression or a war in violation of international treaties a crime" and that it was "therefore not strictly necessary to consider whether and to what extent aggressive war was a crime before the execution of the London Agreement". The Tokyo Tribunal also rejected "submissions of the Defense to the effect that aggression was not a crime." See Schwarzenberger, *supra*, note 35 vol.II at pp.485-486.

[450]See S.D. Bailey, *Prohibitions and Restraints in War* (London: Oxford University Press, 1972) at 41-53.

"including all those weapons and tactics which either intend to destroy the environment *per se* or disrupt normal relationships between man and nature on a sustained basis."[451]

Acts which violate the laws or customs of war (war crimes) were covered, *inter alia*, by specific provisions of the regulations annexed to the 1907 *Hague Convention* IV[452], the 1949 *Geneva Convention IV*[453], the Nuremberg Charter Tribunal and the judgment of the Tribunal.[454]

Violations of the laws of customs of war include, *inter alia*, wanton destruction[455] of cities, towns or villages and devastation not justified by military necessity.[456] Environmental destruction as a military tool and attacks on forest or other

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[451]R.A. Falk, "Environmental Warfare and Ecocide-Facts, Appraisal and Proposals", in *The Committee on Foreign Relations, United States Senate, Prohibiting Military Weather Modification, Hearing before the Subcommittee on Ocean and International Environment*, 92ed Congress, 2ed session (Washington: Government Printing Office, 1972) at 138.

[452]See *supra*, note 200.

[453]See *supra*, Part One, note 31.

[454]Res. 3(1), 13 Feb. 1946 & 95 (1), 11 Dec. 1946; GAOR, 1st session 35th mtg, 24 Oct. 1946, pp. 699-700. Reprinted in D. Schindler and J. Toman, "The Laws of Armed Conflict, A Collection of Conventions, Regulations and Other Documents" (Geneva: A. W. Sijthoff, 1973) at 701.

[455]Responsibility for wanton destruction has not been accepted in all cases. For example, in 1892, the majority of the Chilean-United States Claim Commission in the *Edward C. Du Bois* case, in which Chilean forces destroyed the property of American citizens in Peru, held that "The Government of Chile should be held responsible for the wanton and unnecessary destruction of claimants' property." See M.M. Whiteman, *Damages in International Law*. vol. III (US: Government Printing Office, 1943) at 1698.

[456]See Principles of Nuremberg Tribunal, Principle VI. See Trail of German Major War Criminals: Proceedings of the International Military Tribunal Sitting at Nuremberg, Part 22, HMSO, London, 1950.

kinds of vegetation by incendiary weapons[457] have been prohibited.[458] Both the Nuremberg and Tokyo Tribunals described war crimes *stricto sensu* as violations of the laws and customs of war. According to both charters, war crimes signify breaches of any of the rules of warfare including international conventions.[459] The principles of customary international law -- namely the principles of necessity, humanity, proportionality, discrimination and unnecessary suffering -- provide guidelines for any other belligerent act not specifically mentioned in the treaties.

3. Long-term and Long-distance Environmental Health Effects

This section is concerned with the effects of environmental conditions on human health and with the health of the environment in general. It is evident that in a theater of war all components of the environment are subject to severe abuse, given even disciplined use of technological power. The risk of war continues even with the coming of peace. Such damages, obviously, are not necessarily confined to the area in which they first occur and, indeed, it is difficult to confine them. Moreover, the natural recovery from such damage, even with intensive human efforts to aid this recovery, may be measured in years or even decades. For example, chemical and biological weapons disturb the environmental balance and have harmful effects on the human population, vegetation, water, land and the entire ecosystem for a long time. Mines or bombs can make land, sea and other components of the environment unsafe for people. Those booby traps and land mines which have not exploded during a war

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[457]See *Protocol III* of the *Inhumane Weapons Convention*. *Supra*, Part One, note 24.

[458]See *Enmod Convention*. *Supra*, Part One, note 17.

[459]See Schwarzenberger, *International Law as Applied by International Courts and Tribunals*, Vol. II (London: Steven & Sons Limited, 1968) at p. 484.

have similar effects on the environment and population.[460] Such damage to natural vegetation and to crops grown for food and fibre is often long-lasting.[461] Therefore, once the war is over, the harmful effects of damage may not be felt until years or decades after the act.[462] The harmful effects of air pollution present another problem. The naked eye is not able to see some air pollutants such as carbon monoxide which damages plants, animals and humans.

Regarding the use of nuclear weapons, there is no basis for distinguishing between human health protection and environmental protection. The use of nuclear weapons can cause damage to human health and the environment in the territory of the State which uses a nuclear weapon, and in the territory of the target State and other States. Radiation does not respect national boundaries and can be carried for thousands of kilometers, and wherever it is deposited it will cause harm to human health and the environment. The consequences of using nuclear weapons can be catastrophic, as seen in the effects of radiation on human health and the environment in the Chernobyl accident on April 26, 1986.

This was the most serious accident in the history of the nuclear industry. Large amounts of radioactive material were released into the environment and had immediate and long-term health and environmental effects, as was reported by the

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[460]See C. Pilloud et al., *Commentary on the Additional Protocols of 8 June 1977 to the Geneva Convention of 12 August 1949*, International Committee of the Red Cross (Geneva: Martinus Nijhoff Publishers, 1987) at 411.

[461]See Hinnawi, E.E. Hinnawi & M.H. Hashmi "Natural Resources and the Environmental Series", Vol.7 (Dublin: Tycooly International, 1982) at 15-29.

[462]This problem was highlighted by the Chernobyl accident (1986) in which the explosion of a Soviet nuclear reactor caused pollution in several countries. This accident may cause directly or indirectly thousands of cases of cancer. See Kiss, *supra*, note 71 at 392.

joint EC/IAEA/WHO International Conference held in Vienna in April 8-12, 1996. The number of fatal cancer victims among the residents of contaminated territories and strict control zones due to the accident was calculated to reach around 6,600 over the next 85 years.[463] The United Kingdom National Radiation Protection Board has estimated that in the EEC countries 1,000 people will die and 3,000 will contract non-fatal cancer because of the accident. The report states: "[L]ethal radiation doses were reached in some radiosensitive local ecosystems, notably for coniferous trees and for some small mammals within 10 km of the reactor site, in the first few weeks after the accident. By the autumn of 1986, dose rates had fallen by a factor of 100. [...] The possibility of long term genetic effects and their significance remains to be studied."[464]

These harmful effects can only be eliminated with considerable risk and tremendous effort over several years. In this respect, a series of obstacles must be overcome before responsibility can be placed upon a State. First, a link of causality must be established between a culpable act and long-term damage sustained by the State. If one of the parties in a war acts in such a way that its action causes damage to the other party in the far distant future, or if its action causes injury in the long-term, it is not always possible to identify the author of the damage. It is a well-known principle of law that *causa proxima non remota spectatur*. It must be mentioned that States are responsible for the proximate consequences of their illegal actions.[465] 'Proximate'

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[463]International Atomic Energy Agency, "One Decade After Chernobyl: Summing up the Consequences of the Accident", International Conference, April 8-12, 1996 (Vienna, Austria: International Atomic Energy Agency: 1996) co-sponsored by the European Commission (EC), International Atomic Energy Agency (IAEA) and the World Health Organization (WHO) at p. 5.

[464]*Ibid.* at p. 6.

[465]See Brownlie, *supra*, note 7 at 240-253.

does not mean immediate, but there should be a link between the damage and the act[466] and it is not always easy to elucidate the appropriate criterion for finding out proximate causality in a legal context.[467] This condition has been emphasized by the Italo-United States conciliation in the *Armstrong Cork Company* case[468] in which a company suffered a loss as a result of the aggressive war undertaken by Italy on June 10, 1940. The Commission based its decision on the *Pertusla* case and summarized the conditions of compensation as follows:

1. that these nationals have suffered a loss;
2. that there exist a link of casualty between the loss and the war;
3. that the loss be in connection with the property located in Italy;
4. that this property have been owned by the United Nations on June 10, 1940.
5. that this property suffered injury or damage;
6. that the loss to be made good be the consequence of said injury or damage.[469]

Second, the author of the damage should be identified. If the damage continues after the end of the war, proof of causation makes it difficult to impute the responsibility to one source rather than another. There is no significant State practice in this respect. Identification of the author is more difficult when the damage results from several acts or collective omissions. For example, one State may participate in

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[466]This conclusion does not apply to all cases. In the case of *Pieri Dominique and Co.* (France v. Venezuela), the Nicaraguan Claim Commission did not accept the direct and approximate cause of any wrong on the part of the respondent Government. It adopted the rule that "the Government is not responsible for '*lucro cesante*' (unaccrued or uncollected profits), or indirect damage suffered in business as a consequence of war." See Whiteman, *supra*, note 455 at 1783.

[467]The principle of proximate casualty has been known as that of normal and natural consequences of a damaging act. In the *Antippa (the Spyros)* case (1926), the Greco-German Mixed Arbitral Tribunal said: "According to the principles recognized both by municipal and by international law, the indemnity due from one who has caused injury to another comprises all loss which may be consider as the normal consequences of the causing the damage." See Cheng, *supra*, note 20 at 249. The foreseeability of the consequences of an act may be considered as a criterion to render its author liable for all his voluntary acts which are illegal. *Ibid.* at 245-253.

[468]See 14 RIAA, p.159-167.

[469]*Ibid.* at 165.

wrongful conduct or may provide technology to another that has the intention to use it in war to harm the environment of others. Indeed, the former State does not violate a primary obligation but its assistance may facilitate the breach of an international obligation by the recipient State. Article 1 common to all *Geneva Conventions* and Protocols provides that "[t]he High Contracting Parties undertake to respect and to ensure respect for the present Convention in all circumstances."[470] Therefore, an arm-supplying State for any armed conflict should be co-responsible for violation of the law on means of warfare under the *Geneva Conventions*. States supplying weapons should be deemed to be co-responsible with their user in case of attacks on the natural environment. State responsibility for 'collective', 'participation' or 'complicity' was analyzed by Ago and the ILC. Ago described the composite conduct as "made up of a series of separate actions or omissions which relate to separate situations but which, taken together, meet the conditions for a breach of a given international obligation."[471] The ILC considered the legal consequences of acts or omissions which aid or assist another State in the breach of an international obligation. ILC Draft Article 27 states: "Aid or assistance by a State to another State, if it is established that it is rendered for the commission of an internationally wrongful act carried out by the latter, itself constitutes an internationally wrongful act, even if, taken alone, such aid or assistance would not constitute the breach of an international obligation."[472] The *culpa* doctrine for State responsibility seems to be relevant here where there is no breach unless the State "intends" to facilitate a violation by the recipient State of its obligation.[473]

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[470]See *supra*, Part One, note 31.

[471]See II ILC Yearbook (1976) at 73.

[472]See, *supra*, note 53.

[473]ILC Report to the General Assembly, II ILC Yearbook. 73, at 93; UN Doc. A/CN.4 Ser.A/ 1976 Add. 7 (pt.2)1976.

4. Type of Responsibility for Wartime Activities

International decisions, agreements, and standards concerning State responsibility, although not fully developed, constitute a moral responsibility for States toward the global environment in times of both peace and conflict. The question is how far States are considered to be responsible for environmental damage resulting from their wartime activities. It must be determined whether responsibility exists only for some specific case or whether there are some general provisions that may include all possible environmental damage resulting from armed conflict. It must also be determined whether responsibility is 'absolute', 'strict', or whether 'fault' must be proved. International law provides little support in favor of strict responsibility for environmental damage, let alone the acceptance of this form of liability in wartime. The lack of clear principles of responsibility in this field derives in part from the general reluctance of States to define binding rules of State responsibility and, in particular, from their hesitation to establish regulatory standards that would limit their military activities. Due to the relatively recent growth and spread of, *inter alia*, nuclear activities, resolving these issues is necessary. It is foolish to assume that future wars will not give rise to significant environmental damage. It is therefore important to reexamine the theories of State responsibility for environmental damage under international law.

Strict responsibility is preferable for environmental damage resulting from wartime activities for several reasons. First, if fault provides the basis of State responsibility in such environmental damage, it may be impossible to decide what conduct is to be deemed negligent. Experts may even find it difficult to determine the application of standards of care and, they may therefore interpret war regulations differently. Determining that there should be a causal nexus between the damage and

the negligence of the State[474] and also between the damage and the war [475] may make it difficult for an environmentally injured State to obtain the evidence it requires to prove its case. This may exempt the defendant from its obligation to make compensation for any harm caused to the environment of that State.

Second, when the type of State responsibility for environmental damage is unclear, one interpretation of that responsibility would allow a State to fully escape responsibility by asserting a lack of intention in causing any of the environmental damage. One commentator suggests that the international community should hold States responsible for any foreseeable or intentional damage caused to the environment.[476] This is true in situations both when the damage is deliberately directed against an opponent and in cases of collateral damage affecting belligerents, neutrals, or the acting State's own environment.

Third, belligerents usually damage all private and public enemy property, immovable or movable, on each other's territory at the outbreak of war. The destruction of the human environment in times of war is usually caused by intentional actions of the belligerents. To overcome the troops of the enemy, the State power attempts intentionally damage the enemy's environment, or objects of artistic, historical or archaeological value belonging to the enemy's cultural heritage. As it has

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[474]See re Rizzo, ILR 22 (1955) P.317 at 322.

[475]In the decision of the Italo-American Conciliation Commission given in December 1954 in the Giuditta Grottanelli *Shafer* case, Article 78(4)(a) of the Treaty of Peace was interpreted as not to require a relation of cause and effect between damage and a "fait de guerre", but only causal , close, and direct relation between the damage and the war. See *Shafer Claim*, Int'l.L.R.22 (1955) at pp.959-964.

[476]See Anthony Leibler, "Deliberate Wartime Environmental Damage: New Challenges for International Law", (Fall, 1992) 23 Cal. W. Int'l L.J. 67 at p. 83.

been demonstrated in this thesis especially in Chapter I of the second part on criminal responsibility for environmental injury, States and possibly individuals and organizations intentionally causing damage or permitting environmental harm commit an international crime. States should be held strictly responsible for their wilful activities causing damage to the environment.

Fourth, an absolute liability for ultrahazardous activities is not a new concept and is now widely accepted in many legal systems.[477] Haley defines ultrahazardous activity "as an act or conduct, not common usage, which necessarily involves a risk of serious harm to the person or property of others which can not be eliminated by the exercise of utmost care."[478] He states that this description "perhaps aptly fits the launching of missiles at the present time, since the complexity of the rocket propulsion and guidance systems and the myriad possibilities of malfunctions present such a risk."[479] Keeton, discussing principles of strict liability, states that if there is a significant risk of substantial damage, strict liability would be applicable to the dangerous activities.[480] Waligory states that strict liability should be imposed upon the responsible State in situations where the activity is inherently destructive or ultrahazardous. He writes that "this theory is based on the potential magnitude of the damage that may occur despite all possible precautions. The doctrine of strict liability could provide justice and equity in that no State shall be called upon to pay for

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[477]See M.S.McDougal & al., *Law and Public Order in Space*, (New Haven and London: Yale University Press, 1963) at 616.

[478]See Andrew G. Haley, *Space Law and Government* (New York: Appleton-Century-Crofts, 1963) at 235.

[479]*Ibid.*

[480]P. Keeton, *Prosser and Keeton on the Law of Torts*, (St.Paul, Minn: West Pub., 1974) pp. 75, 78-79. Moira Hayes Waligory, "Radioactive Marine Pollution: International Law and State Liability", (Spring, 1992) 15 Suffolk Transnat'l L.J. 674 at 697.

environmental damage arising from extraordinary risks created by other States."[481] This type of liability has already been incorporated into international law in the areas of offshore drilling operations, carriage of oil by sea, and activities relating to the use of nuclear energy.[482]

Waging war is not a new phenomenon, nor is using the environment as a weapon a new strategy. One notable characteristic of most wars is the nature of the belligerents' conduct. War activities are, by their very nature, harmful and risky and, although not considered inherently destructive of the environment, are usually illegal if they cause destruction, unless a State argues that, *e.g.* it has acted in retaliation for a prior illegal act committed by the other side[483] or that the act is a justifiable military necessity. The potential hazards of nuclear damage and contamination in time of war are much more dramatic than hazards of other activities, for example, aviation which was considered dangerous enough to give impetus to international action concerning ultra-hazardous liability. Concerning the most vivid example of environmental damage during hostilities, the intentional Gulf War oil spills, no one asserted that such damage could be considered legal. Strict responsibility is to be imposed on a State which knowingly engages in a conduct that results in a violation of international law.

Fifth, when war breaks out, even one limited to two States, other nations are affected. The neutral States may feel the consequences of the outbreak of war in many ways. A belligerent State has a duty to respect the rights of neutral States in time of

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[481]Waligory, *Ibid.* at p. 697.

[482]*Ibid.*

[483]See A.Dammed, "National Prosecution for International Crime", ed., *International Criminal Law*, vol. III Enforcement (N.Y.: Transnational Publications Inc., 1987) at 177.

war.[484] If due diligence is the standard of conduct for State responsibility for wartime damage to the environment, neutral States may bear some of the costs of the environmental harm where this harm is unforeseeable.

In conclusion, an overall evaluation of State practice and conventional international law concerning strict and absolute responsibility demonstrates that States accept either strict or absolute responsibility in certain cases. This depends on necessary specifications such as the nature of the violation giving rise to liability. In light of the difficulties associated with relying on a negligence standard, and because of the special risks created by wartime activities, we suggest that a strict liability standard is appropriate in this field, and that such a standard should be firmly established for wartime activities damaging the environment. We propose that strict liability for environmental injury of wartime acts be firmly established by international conventions. Our preference is for strict liability for environmental damage sustained during armed conflict, which would eliminate a burden of which the victim is not reasonably able to discharge. He may prove legal causation between the facts of the damage, but may never prove fault or negligence.

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[484]See Walter G. Sharp, "The Effective Deterrence of Environmental Damage During Armed Conflict: a Case Analysis of the Persian Gulf War" 137 Mil. L. Rev. 1 at p. 25.

5. State Responsibility for Reparation of Environmental Damage

5.1. Forms of Reparation[485]

It is a principle of international law that indemnification is required where the exercise of armed force is unlawful. International law has also established that compensation is not required for damage incidental to the lawful use of armed forces.[486] The language of the PCIJ in the *Chorzow Factory* case[487] represents a clear example of the recognition of the content of this duty. It states: "It is a principle of international law, and even a general conception of law, that any breach of an engagement involves an obligation to make reparation."[488] 'Reparations' may be understood to refer to all measures *i.e.* restitution, compensation, and satisfaction which a State in breach of its obligations may have to take.[489]

On September 29, 1918, the principal Allied and Associated Powers (the U.S.A., the British Empire, France, Italy and Japan) granted an Armistice to Bulgaria at the request of the Royal Government of Bulgaria. Article 121 of this treaty states that "Bulgaria recognizes that, by joining in the war of aggression which Germany and Austria-Hungary waged against the Allied and Associated Powers, she has caused to

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[485]The legal foundation for claims for war damages have changed in this century. For more details see G. Schwarzenberger, *International Law as Applied by International Courts and Tribunals*, Vol. II (London: Steven & Sons Limited, 1968) at 758-783. Schwarzenberger, when comparing the reparation systems of the pre-1914 law and the post-1945 settlements stated that "[i]t was, first, from monetary reparations to reparations in kind, and, secondly from reparations to restitutions of identifiable property removed by the defeated Powers from the territories under their wartime occupation." *Ibid.*

[486]See M.N.Leich, Agora, "The Downing of Iran Air Flight 655" (1989) 83, AJIL 318 at 321.

[487]PCIJ, *Chorzow Factory* case (Merits) 1928, A. 17.

[488]*Ibid.* at p.29.

[489]See Brownlie, *supra*, note 7 at 457-463.

the latter losses and sacrifices of all kinds, for which she ought to make complete reparation."[490]

'Restitution' represents the obligation of a breaching State to reduce the effects of the breach and restore the situation that existed before the breach. The Court in the *Chorzow Factory* case stated that the duty to make reparation should

> "wipe out all consequences of the illegal act and re-establish the situation which would, in all probability, have existed if that act had not been committed. Restitution in kind, or, if this is not possible, payment of a sum corresponding to the value which a restitution in kind would bear; the award, if need be, of damages for loss sustained which would not be covered by restitution in kind or payment in place of it -- such are the principles which should serve to determine the amount of compensation due for an act contrary to international law."[491]

By the *Peace Treaty of Versailles*, Germany and her allies undertook, in addition to the compensation decided on, to restitute in cash any "cash taken away, seized or sequestrated" and also restitute "animals, objects of every nature and securities taken away, seized or sequestrated."[492] Another outstanding illustration of restitution in the peace settlement is that of the Italian Peace Treaty of February 10, 1947. It states that the obligation to make restitution applies to all public and private property removed from the territory of Allied and Associated Powers.[493]

'Compensation' is the second form of reparation. It means the payment of

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[490]See the *Neuilly Treaty*, Israel, *supra* note 445, vol. III at 1771.

[491]*Chorzow Factory* case (merits) 1928, p. 47; Cheng, *supra*, note 20 at 169.

[492]See Article 238 of the *Peace Treaty of Versailles*. *Supra*, note 445.

[493]See Article 75 of the *Italian Peace Treaty* of 1947 printed in Israel, *supra* note 445 vol. IV at 2452.

money as 'valuation' of the asset damaged because of the wrongful act. In Article 3 of the 1907 *Hague Convention IV*[494], the duty to "pay compensation" has been expressly recognized.

In the *Peace Treaty of Versailles*, Germany and her allies accepted responsibility for all the losses and damages caused by the war. She undertook to "make compensation for all damages done to the civilian population of the Allied and Associated Powers and to their property during the period of the belligerency of each as an Allied or Associated power against Germany by such aggression by land, by sea and from the air, and in general all damages as defined in Annex I hereto."[495]

The categories of compensable damages enumerated in Annex I of the treaty are, *inter alia*, "[d]amages caused by Germany or her allies in their own territory or in occupied or invaded territory to civilian victims of all acts injurious to health or capacity to work, or to honor, as well as to the surviving dependents of such victims."[496]

'Satisfaction' is often connected to non-economic damages. It can take different forms such as formal apology, acceptance of responsibility, or formal assurance against future repetition. The declaratory judgement of a court as to the unlawfulness of an act can also be considered a measure of satisfaction.[497]

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[494]See *supra*, note 200.

[495]See Article 232 of the *Peace Treaty of Versailles*. *Supra*, note 445 at 312.

[496]*Ibid.* at 1396.

[497]See Brownlie, *supra*, note 7 at 459.

5.2. Reparation of Ecological Damages of War

States incur international responsibility for their illegal acts committed in warfare against enemy States, neutrals, and their nationals. Article 3 of the 1907 *Hague Convention IV* reads: "A belligerent party which violates the provisions of the said Regulation shall [...] be liable to pay compensation."[498] Environmental damage in wartime usually consists in a violation of territory or a hostile action on the part of a belligerent State. To illustrate this, we may consider, for example, a case in which military forces of State A enter the territory of State B and destroy its environment. Responsibility for this injury and, thus, restitution, compensation, and satisfaction certainly lies with State A. If unauthorized troops cause damage to the environment of State B, State A may be held responsible for its failure to exercise due diligence in order to prevent the damage.

Since international environmental law is in a primitive stage of development, it is not always possible to distinguish between the different sorts of reparations, *i.e.* restitution, compensation, or satisfaction, from considering existing precedents. Various elements are required and problems must be resolved to establish compensation for victims. First, the nature of the duties of States regarding environmental protection and the mode of the breach, which have already been considered, may determine the approach to the question of compensation. Second, the different types of environmental damage resulting from wartime activities which affect the environment make the problem of their compensation difficult to deal with. Some claims have an economic character (e.g. devastation of agricultural lands in a certain area) while "lost enjoyment" is the most important in others. The specific performance of restitution or compensation may in certain cases be impossible.

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[498]See *supra*, note 200.

Ecological damage, in particular, is almost impossible to quantify in economic terms. Monetary damages may be paid for non-material damages.[499] It would be necessary to codify general rules for assessing the quantity of ecological damage.

6. Responsibility of the State for its Armed Forces

6.1. General Rules

A government is the aggregate of all its officials, including those in its armed forces, and it bears wide and unlimited vicarious responsibility for their acts. For this reason, it must be held to a higher standard of care.[500] When acts or omissions of State personnel are incompatible with the rules of international law, they give rise to State responsibility whether its functions are of an international or of an internal character. Their conduct shall be considered an act of the State if such persons are acting on behalf of that State or exercising governmental authority in the case of the absence of the official authorities. This idea is different from that of the medieval period as described by Grotius. According to Grotius, a State is responsible for the acts of its members only through its involvement in wrongdoing. Subsequently, writers have distinguished between direct (for its own conduct) and indirect (for the conduct of its members) responsibility on the part of the State.[501] A State has at all times, both in peace and in war, a duty to protect other States against injurious acts including

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[499]In the *I'm Alone* case, for example, the U.S. suggested a sum of $25,000 for the indignity suffered by Canada. See 3 RIAA, p. 1609 (1935).

[500]See Brownlie, *supra* note 7 at p.183. Article 3 of the 1907 *Hague Convention* states that "a State is responsible for all acts committed by its armed forces." In the hostilities between Chinese and Japanese forces, the British Government informed both parties that they should be responsible for any loss of British life and property caused by their armed forces. In February 1938 the United States announced that "it would attribute to Japan responsibility for damage caused to United States nationals or property by Japanese armed forces in China." See Oppenhim, *supra* note 2 at pp.323-330.

[501]See Eagleton, *supra*, note 36 at 76.

environmental damage by its agents. It is responsible for the act of an individual[502] or of its agents if the State is revealed to be involved in illegal acts of its own[503] through an omission to restrain or punish, or through positive encouragement of the agents or individual. [504] Acting as an agent means acting under and within the authority given by national law and, thus, representing the will of the State. The nature of the acts and the nature of the function of the official are important factors in determining whether a State is to be held responsible or not. It is important to distinguish between different acts performed by the same agent; If the agent acts in his official capacity, the State is responsible,otherwise, he assumes responsiblity for his wrongfull acts.

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[502]Eagleton, *Supra* note 36 at 78. He states: "The responsibility of the State for the acts of individuals is therefore based upon the territorial control which it enjoys, and which enables it, and it alone, to restrain and punish individuals, whether nationals or not, within its limits." *Ibid.*

[503]This is the imputability of acts of the State in international law. See B. Cheng, *supra*, note 20 at 180. Cheng states that "international law, in order to determine whether or not a person is acting as a State official, whose acts may be imputed to the State, decides autonomously according to the facts of the case and not according to the municipal status of the individual concerned." He enumerated two pertinent considerations governing the imputability of acts of official to the State, namely the "character of the act in question" and the "nature of the function which the official is entrusted to discharge." *Ibid.*

[504]Some authors and some court decisions believe that a State is responsible for any act of its agents, whether authorized or not. See Eagleton, *supra*, note 36 at 44-94.

6.2. International Judicial and State Practice

Responsibility on the part of the State consists in its failure to live up to international obligations to act with due diligence to avoid causing damage to other States. If an individual[505] commits an international crime, he or she must be punished according to the characteristics of that particular case. [506]

Under the *Charter of the International Military Tribunal of Nuremberg*, [507]"any person who commits an act which constitutes a crime under international law is responsible therefore and liable to punishment."[508] According to the tribunal, a person who violates the laws or customs of war, including wanton destruction of cities, towns, or villages or devastation not justified by military necessity[509], is responsible under international law even if he acted pursuant to an order from his government or from a superior.[510] In the *Hostage Trial* (1948) the defendants stated that the acts charged as crimes were carried out pursuant to orders of superior officers whom they were obliged to obey. The Tribunal said "the general rule is that members of the

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[505]Edmonds and Oppenheim stated that "members of the armed forces who commit such violations of the recognized rules of warfare as are ordered by their Government or by their commander are not war criminals and cannot therefore be punished by the enemy. He may punish the official or commanders responsible for such orders if they fall into his hands." In W.M. Graham Harrison ed. *Manual of Military Law*, Vol. VI (Washington: Government Printing Office, 1906) at 758-760; Cheng, *supra*, note 20 at 203

[506]*Ibid.* Stern states: "Ces acts - crimes contre la paix, crime de guerre et crimes contre l'humanité- engagent en tout état de cause la responsabilité de leur auteur: s'il s'agit, d'un subordonné, l'ordre reçu ne l'exonère pas en principe; s'il s'agit du chef de l'État, il ne bénéficie d'aucune immunité, et sa qualité de chef d'État ne l'exonère en rien de sa responsabilité pénale internationale." *Supra*, note 293 at 333.

[507]Principles of Nuremberg Tribunal 1950, Principle I. *Supra*, note 456

[508]*Ibid.*

[509]*Ibid.* Principle VI.

[510]*Ibid.* Principle IV.

armed forces are bound to obey the lawful orders of their commanding officers and they cannot escape criminal liability by obeying a command which violates international law and outrages fundamental concepts of justice."[511]

Innumerable cases may be found of damages suffered by foreign States through the action of an individual. Many such cases arise from violations of international law which cause damage to another State's environment. For example, in the *Trail Smelter* case, Canada was held responsible for an individual action. The tribunal concluded that "no State has the right to use or permit the use of its territory in such a manner to cause injury" to others.[512]

In the Mexico-United States General Commission in the *Janes* case(1926), a Mexican national was held liable for having killed an American national. The Commission declared that a State is responsible for what it has done or failed to do and not for the act of individual persons. It said:

> "[T]he government is liable for not having measured up to its duty of diligently prosecuting and probably punishing the offender. The culprit has transgressed the penal code of his country; the State, so far from having transgressed its own penal code (which perhaps not even is applicable to it) has transgressed a provision of international law as to State duties. [---] [T]he government can be sentenced once the non-performance of its judicial duty is proven to amount to an international delinquency, the theories on guilt or intention in criminal and civil law not being applicable here. The damage caused by the culprit is the damage caused to Janes' relatives by Janes' death; the damage caused by the government's negligence is the damage resulting from the non-punishment

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[511]See L.Friedman, *The Law of War, A Documentary*, vol.II (NY: Random House, 1972) at 1307. In the German War Trial (1972) the German Supreme Court said that "the subordinate obeying ... an order [violating the law] is liable to punishment, if it was known to him that the order of the superior involved the infringement of civil or military law." *Ibid.* at 1307.

[512](1938) 941, RIAA III, 1905.

of the murderer."[513]

In *Pear's* case[514], Frank Pears, a citizen of the U.S. was shot and killed by a sentinel in Honduras. The U.S., stated that the action was committed in violation of the military ordinance and demanded the arrest and punishment of the sentry and compensation for Pear's relatives. The Government of the Honduras paid the sum demanded.

The most cruel war crimes are usually committed by militia and volunteer troops. Responsibility for their crimes rests upon the State which employs them. A government is not responsible for environmental damage caused by these troops if they are unauthorized. As stated in the *Home Missionary Society* case (1920): "It is a well-established principle of international law that no government can be held responsible for the act of rebellious bodies of men committed in violation of its authority, where it is itself guilty of no breach of good faith, or of no negligence in suppressing insurrection."[515] The same conclusion may be reached respecting soldiers' crimes committed as ordinary individuals. We may learn from the *Irene Roberts* case[516] that environmental damage done to other States by soldiers absent from their regiments and not under the direct authorization of their officers are called "common crimes" and do not affect the responsibility of their governments. These soldiers, therefore, are personally liable for their personal actions. On the other hand, a

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[513]See Cheng, *supra*, note 20 at pp.174-76.

[514]*Ibid.* at 762-765.

[515]6 (1955) RIAA 42-45, See also *Youman's claim* in which an American citizen became involved in a riot in a Mexican town. Youman's Claim (U.S.-Mexico) 1920 General Claims Commission IV RIAA, p.110; 21 AJIL, 1927 at 571.

[516]*Irene Roberts* case, Ralston, Venezuelan's Arbitration, p.142 cited in Eagleton, *supra note* 36 at 62.

government is responsible if it commits an illegal act by omitting to prevent or punish the act of the individual. On January 7, 1885, the American consul in Colombia reported that the country was in a state of revolution. The rebels had seized a river steamer belonging to a U.S. citizen and the government authorities had done the same thing on other rivers. The U.S. Secretary of State said that "while the question of accountability for the spoilation of insurgents may remain open, yet there can be no doubt as to the responsibility of the *de jure* for all spoilation it may resort to for its own protection."[517]

We can conclude that a government is liable for the injuries and destruction caused to other States as a result of the misconduct of its enlisted and uniformed soldiers even if their actions were not ordered by their superior in command.[518]

6.3. Treaty Law

A number of international agreements make States responsible for acts committed by their armed forces in wartime. One example is the 1899 *Hague Convention II with Respect to the Law and Custom of War on Land* .[519] Regulations respecting the laws and customs of war on land are annexed to this Convention.[520] The Convention and the regulations annexed to it were revised and amended at the second Peace Conference in 1907 and incorporated as the fourth annex to the 1907 *Hague*

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[517]See Moore, *supra*, note 286 at 1038.

[518]See Moore, *supra*, note 286 at 758-60.

[519]1899*Hague Convention II Respecting the Laws and Customs of War on Land*, BFSP, vol. 91, 1898- 1899, pp. 988-1002 (Fr.); GBTS, 1901, No. 11, cd. 800; AJIL, vol 1, 1907 suppl., pp. 129-153(Eng.).

[520]Article 1 of the *Hague Convention IV*, *supra*, note 200.

Convention.[521] The Convention and its regulations lay down rules as model[522] instructions addressed to the armed land forces. Article 3 of the 1907 *Hague Convention* states: "A belligerent party which violates the provisions of the said Regulations 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." According to this article, States, but not officers and soldiers, shall bear responsibility for all damages caused to civilians and there should be close links between armed forces and belligerent governments.[523] Thus a belligerent government is responsible for any destruction and it is unacceptable, as the German delegate, Major General Von Gundell in the course of the 1907 Conference argued,[524] for a victim to demand compensation from the officer or soldier who violated the regulation of the Convention. The term 'Armed Forces'[525] mentioned in this article applies not only to regular armies, but also to militia and volunteer corps.[526]

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[521]See *supra*, note 200.

[522]Article 1 of the 1907 *Hague Convention IV* states: "The Contracting Powers shall issue instructions to their armed land forces which shall be inconformity with the Regulations respecting the laws and customs of war on land, annexed to the present Convention." *supra*, note 200.

[523]This conclusion is drawn from Article 1 of the Regulations annexed to the 1907 *Hague Convention IV* . *Supra*, note 200.

[524]See F.Kalshowen, "State Responsibility for Warlike Acts of the Armed Forces" (1991) vol. 40, Int'l. & Comp. L. Q., 827, at p.832.

[525]Armed forces have also been defined in the 1949 *Geneva Convention*: *Convention* I, Article 13; *Convention* II Article 13; *Convention* III Article 4. See Schindler *supra,* note 454 at pp. 293, 323 and 345. It defined 'armed forces' in Article 43 of 1949 *Geneva Protocol I* to "... consist of all organized armed forces, groups and units which are under a command responsible to that party for the conduct of its subordinates, even if that Party is represented by a government or an authority not recognized by an adverse party ...". *Supra*, part one, note 23.

[526]Article 1 of the Regulations Respecting the Laws and Customs of War on Land annexed to the Hegue *Convention IV.* It states that "The laws, rights, and duties of war apply not only to arms, but also to militia and volunteer corps fulfilling the following conditions: 1. to be commanded by a person responsible for his subordinates; 2. to have a fixed distinctive emblem

Similar to Article 3 of the 1907 *Hague Convention* is Article 91 of the 1977 *Geneva Protocol* 1. It reads as follows: "A Party to the conflict which violates the provisions of the Convention 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."[527]

Most of the treaties on war crimes concluded between the world wars show that delegates tried to assign responsibility to the State rather than to individuals and it is clear from the conventions that only States are competent to bring an action against another State. Although it is difficult for individual victims of war to claim compensation from a State's armed forces, just as it is difficult for an injured person to bring an action against a State, it seems not to be a proper decision to prevent an individual, especially neutral persons, from doing so. The 1949 *Geneva Convention IV* obliges States to give instructions to their military, civil and other authorities concerning their rights and obligations in these matters.[528] It states that "the party to the conflict in whose hands protected persons may be is responsible for the treatment accorded to them by its agents ..."[529] Article 148 of the said Convention, which is the repetition of Article 51 of the 1949 *Geneva Convention II* and Article 131 of the 1949 *Geneva Convention III*, states "No High Contracting Party shall be allowed to absolve itself or any other High Contracting Party of any liability incurred by itself or by another High Contracting Party in respect of breaches referred to in the preceding

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recognizable at a distance; 3. to carry arms openly; and 4. to conduct their operations in accordance with the laws and customs of war." *supra*, note 200.

[527]See 1977 *Geneva Protocol I, supra*, part one, note 23. This protocol supplements rather than replaces the 1949 *Geneva Conventions*.

[528]*The 1949 Geneva Convention IV* Article 144 and *Convention III* Article 127. *Supra*, part one, note 31.

[529]*Ibid. Convention IV* Article 29.

Article." Grave breaches in Article 147 of the *Geneva Convention IV* are described, *inter alia*, as "extensive destruction and appropriation of property."

A State is responsible for the wrongdoing of its armed forces irrespective of whether they acted willfully or unintentionally[530] or whether they acted in their capacity as an organ of the State or not. This conclusion is derived from a broad application of Article 3 since it includes all violations of the regulations mentioned in the annex to the Convention committed by armed forces. It may be concluded that any act of the armed forces which violates the general rules of State responsibility leads to State responsibility.

6.4. ILC Draft Articles

Maintaining global safety is not possible if each man tries only to satisfy his own personal desire. Each organ should respect the internal law of its country while acting in its own capacity. Doing so is a cornerstone of State responsibility. Thus, placing restraints on the destruction of non-military objectives, including the environment, requires a well-disciplined army that respects the orders of its commanders. Organs cannot maintain the necessary military discipline if they do not act in their own capacity. Chapter II of the ILC Draft Articles is devoted to the "Act of the State" under international law. It follows that the capacity of the State's organ

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[530]The international precedents accepted the very strict accountability for mistaken action. An example of State responsibility arising from mistaken actions of armed forces is the U.S.S.R.'s shooting down of KAL 007. See G.M. McCarthy, "Limitation on the Right to Use Force Against Civil Aerial Intruders, The Destruction of KAL Flight 007 in Community Perspective" (Fall 1984), V.6, N.Y.L. Sch.J. Int'l & Comp. L. In *Massey* case (1938, 941, RIAA iii, 1905) it was said: "I believe that it is undoubtedly a sound general principle that, whenever misconduct on the part of any such persons, whatever may be their particular status or rank under domestic law, results in the failure of a nation to perform its obligations under international law, the nation must bear the responsibility for the wrongful acts of its servants." See Cheng, *supra*, note 20 at p 195.

in the case in question irrespective of the actor's competence to perform that act[531] is the sole condition for holding the State responsible for the conduct of its organ.[532] Thus, if the armed forces of a State cause environmental damage during war, that damage appears to be covered by the ILC Draft Articles if "it is established that such person or group of persons was in fact acting on behalf of that State." The point is that this condition will certainly cause some difficulty since it is not always easy to prove that the army was acting in "that capacity in the case in question". The same is true for organs of an entity that is not part of the normal structure of the State, but is empowered to act on behalf of governmental authority by the national law of that State.[533] States are responsible for the acts of persons who, in the absence of official authority, act on behalf of those States.[534]

Article 11 of the 1980 draft rules provides that "the conduct of a person or a group of persons not acting on behalf of the State shall not be considered as an act of the State under international law." Kiss, in his commentary to this article, states that "this does not appear to be accepted for environmental matters."[535] By referring to the *Trail Smelter* case and Stockholm Principles, he affirms that the State whose territory serves to support the activities resulting in environmental injury to other States is responsible for the damage caused.

We can conclude that under the 1907 *Hague Convention IV*, the 1949 *Geneva*

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[531]Article 6 of ILC Draft Articles. *Supra*, note 53.

[532]*Ibid.* Article 5.

[533]*Ibid.* Article 7 (2).

[534]*Ibid.* Article 8 (b).

[535]See Kiss, *supra*, note 71 at 353-354.

Convention IV and the 1977 *Geneva Protocol I*, a State assumes responsibility for acts by its 'organs'--including members of its armed forces--even if those acts are *ultra vires*. This seems to be different under general principles of international law including those mentioned in the IC's Draft Articles of State Responsibility. Thus, Hague and Geneva rules, which merely codify what has become a generally accepted principle of State responsibility during armed conflict, appear to establish a higher standard of responsibility for violations of their rules than would otherwise be the case.

7. Conclusion

The effects of war on humans and their environment continue even with the coming of peace. Beth Osborne Daponte, a demographer with the U.S. Census Bureau, estimated that after the 1991 Persian Gulf War's conclusion, 111,000 Iraqi civilians had died from war-related health problems by the end of 1991. Many of these deaths are attributable to "[A]llied bombing of Iraq's electrical generating capacity, which was needed to fuel Iraq's sewerage and water treatment system."[536]

International law prohibits a State from carrying out or authorising activities which damage human health and the environment. In using weapons which cause mass destruction in war, a State is subject to the specific obligations established by the rules of general international law reflected in treaty and custom. Any use of such weapons would violate these rules of general international law.

The use of weapons by a State in violation of an international legal obligation for the protection of the environment gives rise to the international responsibility of

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[536]Study Shows Iraqi Post-War Deaths Greater Than Initially Thought, PR Newswire, Aug. 17, 1993, available in LEXIS, Nexis Library, PR News File.

that State. As the PCIJ stated in the *Chorzow Factory* case[537], the principle that a breach of an international legal obligation under treaty or customary law, or perhaps even general principles of law, creates a liability to make reparation is well established.

A State which causes damage to other States will be under an obligation to make reparation for the consequences of the violation. This arises from a principle of general application, and there is no reason to exclude violations relating to environmental obligations.

If a State causes damage to the environment in time of war, especially in a third State not involved in the conflict, financial reparation should cover the costs associated with material damage to the environment. This approach has been confirmed by Security Council Resolution 687, which reaffirmed that Iraq was liable under international law, *inter alia*, for "environmental damage and the depletion of natural resources" resulting from the unlawful invasion and occupation of Kuwait."[538]

Under Article 3 of the 1907 *Hague Convention IV*[539], a belligerent is responsible for all acts committed by persons forming part of its armed forces. The rule of the 1907 *Hague Convention IV*, imposing responsibility on a State for misdeeds of its armed forces in land warfare, has entered customary law. The Security Council, in its resolution addressing Iraq's attempted annexation of Kuwait, clearly demonstrated that a duty of indemnity attaches to the unlawful use of armed force,

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[537]PCIJ; German/Poland: jd. 1927.

[538]Security Council Res. 687 (3 Apr. 1991).

[539]1907 *Hague Convention* IV, *supra*, note 200.

both for breaches of the humanitarian rules of armed conflict and for the use of unlawful armed force itself. The application of the objective approach to liability for the unlawful use of armed force by a State is also demonstrated in the *Dogger Bank* Incidents[540] in which belligerents' mistaken attacks on neutrals invoked maritime warfare legal principles.

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[540] (U.K. v. USSR 1905), Finding Report Feb.26. 1905, The Hague Court Reports N.Y. Oxford University Press, 403.

Conclusion

L'objectif principal de cette thèse est de discuter de la base légale concernant la protection de l'environnement en temps de guerre. La conclusion tentera de contribuer à une évolution du droit international concernant les dommages environnementaux en temps de guerre et suggérera une amélioration aux règles de droit existantes. Une attention particulière est accordée aux changements majeurs qui seraient souhaitables dans un avenir rapproché.

Il convient en effet de souligner que le droit international humanitaire contient nombre de principes et des règles qui restreignent les dommages reliés à l'environnement. Mais traditionnellement, ces dispositions sont destinées à protéger l'homme et depuis une date récente, la nature, contre les excès des armes.

Notre conclusion générale est à l'effet que les traités et principes examinés dans cette thèse sont vagues et ne couvrent pas toutes les matières concernant le sujet. La convention Enmod, par exemple, est considérée comme un instrument important pour protéger l'environnement, mais ce ne sont pas toutes les techniques de modification qui sont interdites par la convention, mais seulement celles "ayant des effets étendus, durables ou graves."Nous devons donc trouver une façon pour en arriver à une protection véritable de l'environnement. Pour terminer, nous arriverons à la conclusion que la véritable solution réside dans la clarification et la modification des conventions existantes selon les recommandations que nous allons faire dans la conclusion de la thèse et dans la conclusion d'une nouvelle convention spécifique concernant la protection de la mer et de l'air. Cette convention doit protéger la mer et l'air qui sont sous la juridiction des États qui sont hors de leur juridiction. Elle doit définir ce qu'est un dommage non acceptable causé à la mer et à l'air et déclarer que tout dommage à la mer et à l'air comme étant crime de guerre.

"Our bitter history informs us that the last war is never the last one."[541] Given that war presents an ever-increasing danger to the environment, it may well be that the future of humanity depends on a precise formulation of the environmental law

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[541]See R.G. Tarasofsky, "Legal Protection of the Environment During International Armed Conflict", (1993) vol. XXIV NYIL at 79.

necessary to safeguard the environment during a state of war. We should be actively seeking ways to ensure that tragedies such as Iraq's environmental damage in the Persian Gulf War do not occur again. The sad example of the Gulf War showed that the present environmental law of war is not sufficiently strong to survive the hostile environment of international relations. Indeed, even for the Gulf War, a case involving almost-universal condemnation of the resulting environmental damage, the basis for state responsibility was found elsewhere. What steps can be taken to reinforce and extend existing prohibitions against environmental damage? In response to this question the international community has produced international standards for States to attempt to maintain environmental safety. The international community cannot counteract threats to the environment unless States strive to increase their knowledge and take measures so that they and their citizens act in conformity with the international rules.

Customary law of war has a role to play in the efforts to protect the environment. Although traditional laws of war do not directly address this concern, it may be inferred that environmental protection falls within the general ambit of these laws which include the obligation to protect the civilian population and property. The law of war sets limits on the right of belligerents to cause suffering and injury to civilians and to wreak destruction on objects. The concepts of customary principles such as proportionality set definite limits on warfare. These rules are part of customary international law and are therefore binding on all States. Traditional laws of war create a legal regime which tries to balance the interests of military forces with the humanitarian law which protects civilians. Environmental matters have been addressed in different ways in the traditional laws of war. Poisoning of wells, for example, has been prohibited since ancient times. The wanton destruction of State property is prohibited unless demanded by the imperative necessities of war. The

principal deficiency of the customary law of war is its anthropocentricity, directly protecting only civilians and their property. It is essential that the environment be considered *qua* environment, not simply as yet another civilian object. This is particularly because warfare affects nonbelligerents environmentally, either in their own territory or in the global commons. Polluting the water of a river, for example, harms all of the riparian states, not simply the target state. Polluting the atmosphere leads to damage elsewhere, depending on the direction of the wind. Environmental damage is often difficult to restrict, regardless of the intent of the actor. Furthermore, the lack of environmental specificity forces us to fall back upon customary law of war principles such as necessity and proportionality, even when applying treaty law provisions.

International agreements on the law of war began to be codified in the second half of the nineteenth century. These conventions provide indirect environmental protection from warfare. Environmental issues have been mentioned in different ways in the law of war. According to these conventions, the occupying State must, for example, safeguard public buildings, forests and agricultural estates belonging to the hostile States. The 1907 *Hague Convention IV* state that it is not permitted "to destroy or seize the enemy's property unless such destruction or seizure be imperatively demanded by the necessities of war."[542]

The *Geneva Conventions* are generally cited to support the proposition that civilians and their property should be respected, protected and treated humanely. Grave breaches of the *Geneva Conventions* include any of, *inter alia*, the following acts, if committed against persons or property protected by the *Geneva Conventions*

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[542]Article 23(g) of the *Hague Convention IV*. *Supra*, note 200.

(I-IV): "wilful killing, torture or inhumane treatment, including biological experiments, wilfully causing great suffering or serious injury to body or health, and extensive destruction and appropriation of property, not justified by military necessity and carried out unlawfully and wantonly."[543] Thus, the Hague Regulations and the Geneva Conventions implicitly protect the environment by prohibiting the useless destruction of property.

The notion of "natural environment" did not appear in the instruments of the law until 1977. It was not seen as having any independent existence. Following the Vietnam war, the environment began to be recognized as a distinct entity, albeit primarily in anthropocentric terms.

The *1977 Geneva Protocol I*[544] protects the civilian population and civilian property in the conduct of military operations. It prohibits carrying out area bombing, attacking, destroying, removing or rendering useless resources such as agricultural areas, livestock, drinking water installations and irrigation works intended for the civilian population.[545] Dams, dykes and nuclear electrical generating stations must not be attacked if the result could be severe damage among the civilian population.[546] The use of terror tactics against civilians in time of war is prohibited by the1977 *Geneva Protocol I*.[547] Thus, environmental destruction which spreads terror among the civilian

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[543]See *supra*, Part one, note 31, Article 50 of the *Geneva Convention* I, Article 130 of the *Geneva Convention* III, and Article 147 of the *Geneva Convention IV*.

[544]See *supra*, Part One, note 23.

[545]*Ibid.* Article 54(2).

[546]*Ibid.* Article 56(1).

[547]*Ibid.* Article 51.

population or causes incidental loss of civilian life, injury to civilians and damage to civilian objects should also be unlawful.

States must reconcile different interpretations and ambiguous terms in the *Enmod Convention*[548] and the 1977 *Geneva Protocol I*[549] so that they might have clear guidelines for military operations. Articles 35(3) and 55 of the 1977 *Geneva Protocol I* should be amended so as to encourage States to take measures to prevent environmental destruction during war. Simonds proposed that the following section be added to Articles 35 and 55:

> "If a state becomes aware that a party (a) is employing, planning to employ, or conspiring to employ, or (b) is assisting, planning to assist, or conspiring to assist another state in employing methods or means of warfare that violate [section 3 of this article for art. 35; section 1 or 2 of this article for art. 55], it shall immediately report that situation to (a) the International Fact Finding Commission pursuant to article 90 of this *Protocol*, and (b) the U.N. Security Council. The Security Council shall take such action as is necessary under its Chapter VII powers to prevent or halt the violation."[550]

The environment should be treated in terms of the autonomous status of its values, and not, as currently formulated in the 1977 *Geneva Protocol I*, from an overly anthropocentric perspective that subordinates it to human goals. Crimes against the environment can be even more serious than crimes against humanity because they have an impact upon all living beings on the planet.

Under Article 56 of the 1977 *Geneva Protocol I*[551], oil installations are not

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[548]See *supra*, Part One, note 17.

[549]See *supra*, Part One, note 23.

[550]See Simonds, *supra*, note 6 at 212.

[551]See *supra*, Part One, note 23.

prohibited targets. The recent sad example of setting oil-wells afire during the Gulf War showed the importance of expanding the list of prohibited targets to include them. The list of installations containing dangerous forces in Article 56, by using the word 'namely', was intended to be exhaustive.[552] Neverthless, oil-wells were not included.

Strong political endorsement on a global level is essential to achieving a proposal to protect the environment. Following the Gulf war which awakened general concern to explore the possibilities offered by international law to protect the environment, governments, international organizations, NGOs and individual academics took an active interest in the questions. President Bush gave a clear warning on environmental issues on January 9, 1991. He said: " The United States will not tolerate the use of chemical or biological weapons, support of any kind for terrorist actions, or the destruction of Kuwait's oil fields and installations."[553] Two government initiatives, namely Jordanian and German, proposed putting the issue of environmental protection on the agenda of the 46th UN General Assembly in order to give this issue further attention within the UN System. The increasing environmental regulation in most States and the unanimous condemnation of the environmental damage sustained during the Gulf war provide evidence that environmental protection is in the forefront of the public conscience. Therefore, the

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[552]Hans-Peter Gasser states: "It would seem that the spilling of oil into the sea and on to the shores does not normally cause such damage as to fall under the strict criteria of Article 55" as widespread long-term and severe damage to the natural environment." See Gasser, H.P. "Some Legal Issues Concerning Ratification of the 1977 Geneva Protocols" in M.A. *Meyer, Armed Conflict and the New Law: Aspects of the 1977 Geneva Protocols and the 1981 Inhumane Weapons Convention* (London: British Institute of International Law, 1989) 81. at p. 91.

[553]See The Sunday Times, London, January 13, 1991; see G. Plant, *Environmental Protection and the Law of War: A 'Fifth Geneva' Convention on the Protection of the Environment in Time of Armed Conflict* (London: Belhaven Press, 1992) at 154.

Martens Clause is of particular significance to the protection of the environment under the customary law of war. It provides that unforeseen cases are to be subject to the principles of the laws of nations, as they result from the laws of humanity, and dictates of the public conscience. Military commanders therefore cannot ignore the environment because it is not dealt with under the customary law of war. Military culture should adopt modes of conducting warfare which do not create damage to the environment. Involving the military in the process of codifying the law of war and rules related to methods of combat would make changes more acceptable to those who must implement them.

The 1977 *Enmod Convention*[554] makes explicit reference to the hostile use of environmental modification techniques having "widespread, long-lasting or severe effects". It deals with modification of the environment brought about by deliberate manipulation of natural processes. The Convention does not define the terms 'widespread', 'long-term' and 'severe'. It should be made applicable to any hostile use of the techniques in question. The Convention should ban not only the hostile use of these techniques, but also preparation for such use.

The threshold for environmental damage was set out as 'widespread, long-lasting or severe' in the *Enmod Convention*[555] and the 197 *Geneva Protocol I*[556] whereas 'appreciable harm' was used in the "Law of Non-navigational Uses of International Watercourses", and 'massive pollution' in Draft Article 19 on "State Responsibility". The attempt must be made to find a single, low, and precisely defined

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[554]*Supra*, part One, note, 17.

[555]See *supra*, Part One, note 17.

[556]See *supra*, Part One, note 23.

threshold and responsibility commensurate with that threshold must be established.

The 1981 *Inhumane Weapons Convention*[557] sets out to enhance the protection of the environment in time of war by recalling, in its preamble, 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 environment. This Convention is a step forward in the development of humanitarian laws of war. Its preamble repeats Article 35.3 of the 1977 *Geneva Protocol I* and surpasses it by prohibiting the use of incendiary weapons on forests or other kinds of plant cover, unless they are used to conceal or camouflage combatants or other military objectives, or are themselves military objectives.[558] The introduction of new technology and the increased destructiveness of modern weaponry lead to the creation of various new problems in time of war. To succeed, efforts to regulate the use of new weapons must be expressed in legal terms, either within the framework of existing legal regulations or under new regulations still to be developed.

Nuclear weapons have the capacity to cause vast destruction. The law of war theoretically prohibits the use of these weapons through limits on methods and means of warfare. On July 8, 1996, in its advisory opinion, the ICJ unanimously decided that the threat or use of nuclear weapons that was contrary to Article 2(4) of the UN Charter[559] was unlawful. The Court, however, refused to determine unanimously the legality of using nuclear weapons in an extreme situation of self-defense which

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[557]*Inhumane Weapons Convention, supra,* part one, note 24.

[558]See J. Goldblat, "The *Convention on 'Inhumane Weapons'*" January 1983, The Bulletin of the Atomic Scientists, at 24.

[559]See *supra*, noe 73.

threatens a States' survival. The advisory opinions of the ICJ are not binding. The international community should adopt a system of strict regulation to prevent the future use of nuclear weapons.

Because there are different opinions on the legality of the use of chemical weapons, the possibility of resorting to the use of such weapons remains. The 1993 *Chemical Weapons Convention*[560] provides a remedy. States not party to this Convention should ratify it in order to prevent extensive environmental damage through the use of chemical weapons.

Other international law instruments similarly do not relieve States of their obligations under legal norms aimed at protecting the environment. Certain non-binding instruments protect the human environment. Principle 5 of the *World Charter for Nature*[561] states that "[n]ature shall be secured against abrogation caused by warfare or other hostile activities". Principle 20 of the Charter declares that "[m]ilitary activities damaging to nature shall be avoided".[562]

State responsibility is a principle by which States may be held liable under international law for harm caused to other States. Most war-related environmental destruction can be considered to be illegal. Intentional damage of the environment, such as the devastating oil spills in the Persian Gulf caused by Iraq in August 1991, is an important point in identifying international responsibility for violations of

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[560] *Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on Their Destruction*. 32 (1993) ILM 800.

[561] *World Charter for Nature*, *supra*, note 268.

[562] *Ibid.*

environmental law and the law of armed conflict.[563] Environmental destruction may be permitted by Article 54(5) of the 1977 *Geneva Protocol I* only in the defense of national territory against invasion where required by "imperative military necessity". Since the belligerent must prove reasonable grounds exist to justify environmental destruction as necessary to safeguard its national territory, it is unlikely that a scorched-earth policy would be accepted as a defensive act in most cases.

One serious problem about the law of war is not with its substantive content but with its enforcement. The application of the law of war in a world of sovereign States presents a number of difficult problems. The rules related to the means and methods of combat compose the most difficult and perhaps the weakest part of the law of war.[564]

We must approach environmental protection during wartime with the same depth of commitment and determination that we do in peacetime. Environmental protection relies upon a series of requirements which need to be enforced. Enforceability is the first essential stage in the process of achieving compliance with the requirements. If law is to serve the aspirations of the global community, it must be clear, understandable, practical and precisely defined in order to be enforceable. Furthermore, it should outline behavior that is realistic and necessary to meet

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[563]See Joyner, C.C. & Kirkhope, J.T. "The Persian Gulf War Oil Spill: Reassessing the Law of Environmental Protection and the Law of Armed Conflict" (1992) vol.24, Case W.J.I.L.29. They state "[a]lthough both the law of environmental protection and that of regulation of the conduct of war share humanitarian, environmental and conservation objectives and ideals, the law of armed conflict appears bound to assume greater relevance in situations like the 1991 Gulf War oil spill. That conclusion mirrors more the acceptability of environmental consideration in the laws of war than the acceptability of war in environmental protection law." *Ibid.* at 62.

[564]See A.Roberts; An International Relations Expert's Overview, in G. Plant, *supra*, note 553 at 152-53.

environmental goals.

The law concerning environmental protection during armed conflict must include effective means of enforcement to ensure compliance.[565] Many environmental problems resulting from armed conflict may affect common property such as the atmosphere, the oceans, and natural resources which are open for reasonable use by all States. Enforcement and compliance is the weakest part of international environmental law and, until now, has been thoroughly disappointing.[566] A mere formulation of the law is not enough without a mechanism to enforce compliance. International pressure on States' representatives to place a high priority on global environmental interests remains the only means of enforcing compliance with regulations protecting, *inter alia*, common property.

Preventive measures having greater detail and in order to hold States liable for all military activities, whether deliberate or incidental, that affect the environment, should be considered; such measures should take into account a wider range of known and potential future hazards which may be presented by contemporary scientific and technological developments. Ecologically sensitive areas should be named and protected.[567]

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[565]The 1985 *Vienna Convention for the Protection of the Ozone Layer* innovated measures to ensure compliance and effective implementation of the Convention. UKTS 1 (1990) Cm. 910; 26 ILM (1987), 1529. In force Sept. 22, 1988. Article 3 para. 2. The parties are forbidden to trade with non-parties in ozone-depleting substances or their producers. See Birnie, *supra*, note 230 at 404-408.

[566]See A. Hurrell & B. Kingsbury, *The International Politics of the Environment* (Oxford: Clarendon Press, 1992) at 28; E. Somers, "The Role of the Courts in the Enforcement of Environmental Rules" (1990) 5, International Journal of Estuarine and Coastal Law, 195.

[567]Attacks on endangered species in the area of armed conflict should be restricted. For example, the Dugong in the Gulf War, which suffered heavily from the effects of the oil spill, is

Declaring unacceptable damage to the environment a punishable war crime against the environment would make governments more reluctant to resort to wanton environmental destruction as a necessary tool of war. Establishing 'ecocide' as a crime under international law would prevent future environmental abuse.[568] We propose that Article 85(3) of the 1977 *Geneva Protocol I*[569], which enumerates different war crimes, be amended to add a section such as the following:

"Launching an attack against the environment as defined in Article 35(3) and 55"

'Crimes against nature' should be recognized as a distinct category of international crime. Personal criminalization of offences against the environment in wartime should be considered an important approach to the security and peace of mankind.

The ILC has contributed to the development of international law to protect the environment against the effects of military activities. In its Draft Article on State responsibility (Part One)[570] the ILC enumerated certain acts as international crimes. It states that an international crime may result, *inter alia*, from "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 of the seas."[571] In its 48th session from June 6 to July 5, 1996, the ILC adopted the final text of a set of 20 Draft Articles constituting the code of crime

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restricted to very few areas in the world. See R.Reeve, "Round Table Sessions", in Plant, *supra*, note 553 at 109.

[568]For a proposed convention on the crime of ecocide see R.Falk, *Revitalizing International Law* (Lowa State University Press, 1989) at 187.

[569]See *supra*, Part One, note 23.

[570]ILC Draft Articles on State Responsibility, *supra*, note 53.

[571]*Ibid.* Article 19 para. 3(d) of the ILC Draft Articles on State Responsibility.

against the peace and the security of mankind.[572] The Commission considered wilfu and severe damage to the environment a war crime.

The acts of a State's armed forces may thus be attributable to the State an hence engage its responsibility. The armed forces have to do their duty whenever thei country gets involves in an hostile activity. They, therefore, are equipped wit weapons which can cause harm to human beings and objects. Rules of internationa law set limits to the means and methods of war which the armed forces may wish t employ during their activities. A State, therefore, may have to bear internationa responsibility for the acts of its armed forces. Domestic legislation and othe measures taken at the national level should be based on the concept of *res omnium* States should be encouraged to put into practice the international law protecting th environment.[573] International environmental law should also be included in nationa military manuals and instruments reflecting national policy.[574] The applicability o general customary law principles such as military necessity, proportionality, an humanity to environmental damage merits particular emphasis in the manual.

The proposition that the law is inadequate raised the question of what to do t ovecome its deficiencies. The debate on the quality of the existing law has divide commentators into several camps. Some believe that the present rules of internationa law are not enough to protect the environment in time of armed conflict. They suggest

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[572]Report of the ILC on the work of its 48th session - May 6 - July 26, 1996. General Assembly Official Records. 51th session, supplementary No. 10 (A/51/10).

[573]See instructions given in the ICRC Guidelines for military manuals, *supra*, part one pp.55-57.

[574]On Nov. 25, 1992 the General Assembly urged States to ensure compliance with international law applicable to the protection of the environment in wartime and to incorporate the provisions of such law into their military manuals. Res 47/37 reprinted in YUN 1992 at 991.

enacting a new convention. However, most States participating in the debate in the Sixth (Legal) Committee and the ICRC thought that the existing rules to protect the environment in time of war were sufficient[575] and so they called on States to implement and respect them. They pointed to Iraqi actions in the Gulf and urged that the problem is enforcement, not law. If Iraq had complied with the existing law, such environmental destruction would not have occurred. They cite the almost unanimous condemnation of Iraq's actions as evidence of universal acceptance of the relevant norms.

Those who favor the stricter enforcement of rules already established in international law of war to avoid unjustifiable damage to the environment look to the provisions of the 1899 and 1907 *Hague Conventions*[576] and the 1949 *Geneva Conventions*[577] along with principles such as proportionality between the means and methods of warfare employed in an attack and the value of its military objective.[578]

Other commentators consider it necessary to amend, clarify and interpret the

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[575]Susskind, in her debate on the topic entitled "The Weakness of the Existing Environmental Treaty-Making System", states that some, whom she calls idealists, "worry about treaties that 'sound' good but yield few tangible improvements in environmental quality. In their view, these may be worse than no agreement at all. Empty promises, they assert, let politicians off the hook, allowing them to take credit for solving problems when, in fact, the environment may actually be deteriorating at a rapid rate. Indeed, inadequate or partial agreements may forestall the efforts needed to achieve measurable improvements." See Lawrence E. Susskind, *Environmental Diplomacy, Negotiating More Effective Global Agreements* (New York: Oxford University Press, 1994) at 13.

[576]See *supra*, note 200.

[577]See *supra*, Part One, note 31.

[578]See Plant, *supra*, note 553 at 15-35.

scope and content of some provisions in existing conventions.[579] They argue that enacting a new convention to protect the environment in wartime would be unrealistic and difficult though unnecessary once certain gaps in the existing law are filled. For them, the 1977 *Geneva Protocols* and the *Enmod Convention* present a direct path to means of protecting the environment during armed conflict.

Deliberate environmental destruction during the Gulf conflict showed that present international law needs to be developed. A serious problem during the Gulf war was the lack of attention to the laws of war by both Iraq and leaders of Coalition. Even the UN Security Council in its resolutions did not clearly mention that the inhabitants of Kuwait, their property and the environment are protected by 1949 *Geneva Convention IV* and 1977 *Geneva Protocol I.* The UN should clearly state that war crimes did occur and should put the criminal on trail.

It seems that the difficulty with the current legal regime is not the lack of regulations concerning the protection of the environment in time of war; rather the existing law of war needs to be improved. The *Geneva Protocol* belongs to a period of time which did not take into account the great concern for the protection of the natural environment that exists today. However, a discussion that the law is insufficient does not necessarily lead to the conclusion that a new convention is necessary. Therefore, the first step, in our view, would be amending the *Enmod*[580] and *Inhumane Weapons*[581] *Conventions* and the 1977 *Geneva Protocol I* by means of the

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[579]See Protection of the Environment in Time of Armed Conflict, International Council of Environmental Law, *24/1, Environmental Policy and Law* (Lausanne: Elsevier Sequooia S.A. 1994) at 25.

[580]*Supra*, part one, note 17.

[581]*Supra*, part one, note 24.

above-mentioned proposals. In so doing, adopting new norms prohibiting the use of new weapons could be introduced without any need to renegotiate the conventions themselves.

Another approach would be to gather widespread State support for existing instruments. This is probably the most immediate task. The 1977 *Geneva Protocol I* and the *Enmod Convention* contain the potential to provide a system of environmental protection in wartime. Efforts to secure the ratification of their environmental provisions could be achieved by convening a diplomatic conference in order to reach agreement on the existing instruments.

The cost of drafting, negotiating and adopting a new international treaty is today very high indeed. Also there is always the risk that a new treaty may not be ratified by some important States. However, obstacles such as the difficulty of getting States to agree on such a broad range of issues and the time-consuming nature of the international political process are common to all subjects of international law and must not prevent us from proposing a new convention to govern environmental protection during war. Our second recommendation concerns protection of the sea and the air. There exist no general conventions and no declarations of legal principle defining the measures of liability for hostile military activities affecting the sea and the air.[582] The *1977 Geneva Protocol I* does not extend its application to the protection of the air and the sea in an armed conflict. The Geneva and *Hague Conventions* are outdated and have not been codified. Despite the considerable difficulties involved in achieving adoption by general agreement of a new international convention for the protection of the environment in time of war, we propose that a new convention be

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[582]See Simonds, *supra*, note 6 at 210-215.

created in order to protect this part of the environment adequately from damage in the course of sea and air warfare. Such a convention should define unacceptable damage to the air and sea and categorize it as a war crime. This protection should cover the sea and air both within and beyond the jurisdiction of States.

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Appendix I

The 1907 *Hague Convention on Land Warfare (IV)* (excerpt)

CONVENTION (IV) RESPECTING THE LAWS AND CUSTOMS OF WAR ON LAND

Signed at The Hague, 18 October 1907.

1907 *Hague Convention IV respecting the Laws and Customs of War on Land.* 100 BFSP (1906-1907) 338-59 (Fr.); UKTS 9 (1910), Cd. 5030 (Eng. Fr.); CXII UKPP (1910) 59 (Eng. Fr.); 2 AJIL (1908) Supplement 90-117 (Eng. Fr.); 205 CTS (1907) 227-98 (Fr.). In force from Jan. 26, 1910.

Seeing that, while seeking means to preserve peace and prevent armed conflicts between nations, it is likewise necessary to bear in mind the case where the appeal to arms has been brought about by events which their care was unable to avert;

Animated by the desire to serve, even in this extreme case, the interests of humanity and the ever progressive needs of civilization;

Thinking it important, with this object, to revise the general laws and customs of war, either with a view to defining them with greater precision or to confining them within such limits as would mitigate their severity as far as possible;

Have deemed it necessary to complete and explain in certain particulars the work of the First Peace Conference, which, following on the Brussels Conference of 1874, and inspired by the ideas dictated by a wise and generous forethought, adopted provisions intended to define and govern the usages of war on land.

According to the views of the High Contracting Parties, these provisions, the wording of which has been inspired by the desire to diminish the evils of war, as far as military requirements permit, are intended to serve as a general rule of conduct for the belligerents in their mutual relations and in their relations with the inhabitants.

It has not, however, been found possible at present to concert regulations covering all the circumstances which arise in practice;

On the other hand, the High Contracting Parties clearly do not intend that unforeseen cases should, in the absence of a written undertaking, be left to the arbitrary judgment of military commanders.

Until a more complete code of the laws of war has been issued, the High Contracting Parties deem it expedient to declare that, in cases not included in the Regulations adopted by them, the inhabitants and the belligerents remain under the protection and the rule of the principles of the law of nations, as they result from the usages established among civilized peoples, from the laws of humanity, and the dictates of the public conscience.

They declare that it is in this sense especially that Articles 1 and 2 of the Regulations adopted

must be understood.

Who, after having deposited their full powers, found in good and due form, have agreed upon the following:

Article 1

The Contracting Powers shall issue instructions to their armed land forces which shall be in conformity with the Regulations respecting the laws and customs of war on land, annexed to the present Convention.

Article 2

The provisions contained in the Regulations referred to in Article 1, as well as in the present Convention, do not apply except between Contracting Powers, and then only if all the belligerents are parties to the Convention.

Article 3

A belligerent party which violates the provisions of the said Regulations 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.

Art. 4. The present Convention, duly ratified, shall as between the Contracting Powers, be substituted for the Convention of 29 July 1899, respecting the laws and customs of war on land.

The Convention of 1899 remains in force as between the Powers which signed it, and which do not also ratify the present Convention.

Article 5

The present Convention shall be ratified as soon as possible. The ratifications shall be deposited at The Hague.

The first deposit of ratifications shall be recorded in a procs-verbal signed by the Representatives of the Powers which take part therein and by the Netherlands Minister for Foreign Affairs.

The subsequent deposits of ratifications shall be made by means of a written notification, addressed to the Netherlands Government and accompanied by the instrument of ratification.

A duly certified copy of the procs-verbal relative to the first deposit of ratifications, of the notifications mentioned in the preceding paragraph, as well as of the instruments of ratification, shall be immediately sent by the Netherlands Government, through the diplomatic channel, to the Powers invited to the Second Peace Conference, as well as to the other Powers which have adhered to the Convention. In the cases contemplated in the

preceding paragraph the said Government shall at the same time inform them of the date on which it received the notification.

Article 6

Non-Signatory Powers may adhere to the present Convention.

The Power which desires to adhere notifies in writing its intention to the Netherlands Government, forwarding to it the act of adhesion, which shall be deposited in the archives of the said Government.

This Government shall at once transmit to all the other Powers a duly certified copy of the notification as well as of the act of adhesion, mentioning the date on which it received the notification.

Article 7

The present Convention shall come into force, in the case of the Powers which were a party to the first deposit of ratifications, sixty days after the date of the procs-verbal of this deposit, and, in the case of the Powers which ratify subsequently or which adhere, sixty days after the notification of their ratification or of their adhesion has been received by the Netherlands Government.

Article 8

In the event of one of the Contracting Powers wishing to denounce the present Convention, the denunciation shall be notified in writing to the Netherlands Government, which shall at once communicate a duly certified copy of the notification to all the other Powers, informing them of the date on which it was received.

The denunciation shall only have effect in regard to the notifying Power, and one year after the notification has reached the Netherlands Government.

Article 9

A register kept by the Netherlands Ministry for Foreign Affairs shall give the date of the deposit of ratifications made in virtue of Article 5, paragraphs 3 and 4, as well as the date on which the notifications of adhesion (Article 6, paragraph 2), or of denunciation (Article 8, paragraph 1) were received.

Each Contracting Power is entitled to have access to this register and to be supplied with duly certified extracts.

In faith whereof the Plenipotentiaries have appended their signatures to the present Convention.

Done at The Hague 18 October 1907, in a single copy, which shall remain deposited in the

archives of the Netherlands Government, and duly certified copies of which shall be sent, through the diplomatic channel to the Powers which have been invited to the Second Peace Conference.

Annex to the Convention

REGULATIONS RESPECTING THE LAWS AND CUSTOMS OF WAR ON LAND

SECTION I

ON BELLIGERENTS

CHAPTER I

The Qualifications of Belligerents

Article 1

The laws, rights, and duties of war apply not only to armies, but also to militia and volunteer corps fulfilling the following conditions:

1. To be commanded by a person responsible for his subordinates;
2. To have a fixed distinctive emblem recognizable at a distance;
3. To carry arms openly; and
4. To conduct their operations in accordance with the laws and customs of war.

In countries where militia or volunteer corps constitute the army, or form part of it, they are included under the denomination "army."

Article 2

The inhabitants of a territory which has not been occupied, who, on the approach of the enemy, spontaneously take up arms to resist the invading troops without having had time to organize themselves in accordance with Article 1, shall be regarded as belligerents if they carry arms openly and if they respect the laws and customs of war.

Article 3

The armed forces of the belligerent parties may consist of combatants and non-combatants. In the case of capture by the enemy, both have a right to be treated as prisoners of war.

CHAPTER III

The Sick and Wounded

Article 21

The obligations of belligerents with regard to the sick and wounded are governed by the Geneva Convention.

SECTION II

HOSTILITIES

CHAPTER I

Means of Injuring the Enemy, Sieges, and bombardments

Article 22

The right of belligerents to adopt means of injuring the enemy is not unlimited.

Article 23

In addition to the prohibitions provided by special Conventions, it is especially forbidden -

(a) To employ poison or poisoned weapons;
(b) to kill or wound treacherously individuals belonging to the hostile nation or army;
(c) To kill or wound an enemy who, having laid down his arms, or having no longer means of defense, has surrendered at discretion;
(d) To declare that no quarter will be given;
(e) To employ arms, projectiles, or material calculated to cause unnecessary suffering;
(f) To make improper use of a flag of truce, of the national flag or of the military insignia and uniform of the enemy, as well as the distinctive badges of the Geneva Convention;
(g) To destroy or seize the enemy's property, unless such destruction or seizure be imperatively demanded by the necessities of war;
(h) To declare abolished, suspended, or inadmissible in a court of law the rights and actions of the nationals of the hostile party. A belligerent is likewise forbidden to compel the nationals of the

hostile party to take part in the operations of war directed against their own country, even if they were in the belligerent's service before the commencement of the war.

Article 24

Ruses of war and the employment of measures necessary for obtaining information about the enemy and the country are considered permissible.

Article 25

The attack or bombardment, by whatever means, of towns, villages, dwellings, or buildings which are undefended is prohibited.

Article 26

The officer in command of an attacking force must, before commencing a bombardment, except in cases of assault, do all in his power to warn the authorities.

Article 27

In sieges and bombardments all necessary steps must be taken to spare, as far as possible, buildings dedicated to religion, art, science, or charitable purposes, historic monuments, hospitals, and places where the sick and wounded are collected, provided they are not being used at the time for military purposes.

It is the duty of the besieged to indicate the presence of such buildings or places by distinctive and visible signs, which shall be notified to the enemy beforehand.

Article 28

The pillage of a town or place, even when taken by assault, is prohibited.

SECTION III
MILITARY AUTHORITY OVER THE TERRITORY OF THE HOSTILE STATE

Article 42

Territory is considered occupied when it is actually placed under the authority of the hostile army.

The occupation extends only to the territory where such authority has been established and can be exercised.

Article 43

The authority of the legitimate power having in fact passed into the hands of the occupant, the latter shall take all the measures in his power to restore, and ensure, as far as possible, public order and safety, while respecting, unless absolutely prevented, the laws in force in the country.

Article 44

A belligerent is forbidden to force the inhabitants of territory occupied by it to furnish information about the army of the other belligerent, or about its means of defense.

Article 45

It is forbidden to compel the inhabitants of occupied territory to swear allegiance to the hostile Power.

Article 46

Family honor and rights, the lives of persons, and private property, as well as religious convictions and practice, must be respected.

Private property cannot be confiscated.

Article 47

Pillage is formally forbidden.

Article 48

If, in the territory occupied, the occupant collects the taxes, dues, and tolls imposed for the benefit of the State, he shall do so, as far as is possible, in accordance with the rules of assessment and incidence in force, and shall in consequence be bound to defray the expenses of the administration of the occupied territory to the same extent as the legitimate Government was so bound.

Article 49

If, in addition to the taxes mentioned in the above article, the occupant levies other money contributions in the occupied territory, this shall only be for the needs of the army or of the administration of the territory in question.

Article 50

No general penalty, pecuniary or otherwise, shall be inflicted upon the population on account of the acts of individuals for which they cannot be regarded as jointly and severally responsible.

Article 51

No contribution shall be collected except under a written order, and on the responsibility of a commander-in-chief.

The collection of the said contribution shall only be effected as far as possible in accordance with the rules of assessment and incidence of the taxes in force.

For every contribution a receipt shall be given to the contributors.

Article 52

Requisitions in kind and services shall not be demanded from municipalities or inhabitants except for the needs of the army of occupation. They shall be in proportion to the resources of the country, and of such a nature as not to involve the inhabitants in the obligation of taking part in military operations against their own country.

Such requisitions and services shall only be demanded on the authority of the commander in the locality occupied.

Contributions in kind shall as far as possible be paid for in cash; if not, a receipt shall be given and the payment of the amount due shall be made as soon as possible.

Article 53

An army of occupation can only take possession of cash, funds, and realizable securities which are strictly the property of the State, depots of arms, means of transport, stores and supplies, and, generally, all movable property belonging to the State which may be used for military operations.

All appliances, whether on land, at sea, or in the air, adapted for the transmission of news, or for the transport of persons or things, exclusive of cases governed by naval law, depots of arms, and, generally, all kinds of munitions of war, may be seized, even if they belong to private individuals, but must be restored and compensation fixed when peace is made.

Article 54

Submarine cables connecting an occupied territory with a neutral territory shall not be seized or destroyed except in the case of absolute necessity. They must likewise be restored and compensation fixed when peace is made.

Article 55

The occupying State shall be regarded only as administrator and usufructuary of public

buildings, real estate, forests, and agricultural estates belonging to the hostile State, and situated in the occupied country. It must safeguard the capital of these properties, and administer them in accordance with the rules of usufruct.

Article 56

The property of municipalities, that of institutions dedicated to religion, charity and education, the arts and sciences, even when State property, shall be treated as private property.

All seizure of, destruction or wilful damage done to institutions of this character, historic monuments, works of art and science, is forbidden, and should be made the subject of legal proceedings.

2.1. The 1949 *Geneva Convention IV*

CONVENTION (IV) RELATIVE TO THE PROTECTION OF CIVILIAN PERSONS IN TIME OF WAR

1949 Geneva Convention IV *Respecting the Laws and Customs of War on Land., signed in Auguest* 1949, entry into force Oct. 21, 1950, 75 UNTS (1950)287-417 (En. Fr.); 157 BFSP (1950) 355-423 (Eng.); UKTS 39 (1958), Cmnd. 550 (Eng. Fr.);ZZZII UKPP (1958-1959) 11 (Eng. Fr.); 50 AJIL (1956) 724-83 (Eng.).

The undersigned Plenipotentiaries of the Governments represented at the Diplomatic Conference held at Geneva from 21 April to 12 August 1949, for the purpose of establishing a Convention for the Protection of Civilians in Time of War, have agreed as follows:

PART I

GENERAL PROVISIONS

Article 1

The High Contracting Parties undertake to respect and to ensure respect for the present Convention in all circumstances.

Article 2

In addition to the provisions which shall be implemented in peace-time, the present Convention shall apply to all cases of declared war or of any other armed conflict which may arise between two or more of the High Contracting Parties, even if the state of war is not recognized by one of them.

The Convention shall also apply to all cases of partial or total occupation of the territory of a High Contracting Party, even if the said occupation meets with no armed resistance.

Although one of the Powers in conflict may not be a party to the present Convention, the Powers who are parties thereto shall remain bound by it in their mutual relations. They shall

furthermore be bound by the Convention in relation to the said Power, if the latter accepts and applies the provisions thereof.

Article 3

In the case of armed conflict not of an international character occurring in the territory of one of the High Contracting Parties, each Party to the conflict shall be bound to apply, as a minimum, the following provisions:

(1) Persons taking no active part in the hostilities, including members of armed forces who have laid down their arms and those placed hors de combat by sickness, wounds, detention, or any other cause, shall in all circumstances be treated humanely, without any adverse distinction founded on race, colour, religion or faith, sex, birth or wealth, or any other similar criteria. To this end the following acts are and shall remain prohibited at any time and in any place whatsoever with respect to the above-mentioned persons:

(a) violence to life and person, in particular murder of all kinds, mutilation, cruel treatment and torture;

(b) taking of hostages;

(c) outrages upon personal dignity, in particular humiliating and degrading treatment;

(d) the passing of sentences and the carrying out of executions without previous judgment pronounced by a regularly constituted court, affording all the judicial guarantees which are recognized as indispensable by civilized peoples.

(2) The wounded and sick shall be collected and cared for.

An impartial humanitarian body, such as the International Committee of the Red Cross, may offer its services to the Parties to the conflict.

The Parties to the conflict should further endeavour to bring into force, by means of special agreements, all or part of the other provisions of the present Convention.

The application of the preceding provisions shall not affect the legal status of the Parties to the conflict.

Article 4

Persons protected by the Convention are those who, at a given moment and in any manner whatsoever, find themselves, in case of a conflict or occupation, in the hands of a Party to the conflict or Occupying Power of which they are not nationals.

Nationals of a State which is not bound by the Convention are not protected by it. Nationals of a neutral State who find themselves in the territory of a belligerent State, and nationals of a co-belligerent State, shall not be regarded as protected persons while the State of which they are nationals has normal diplomatic representation in the State in whose hands they are.

The provisions of Part II are, however, wider in application, as defined in Article 13.

Persons protected by the Geneva Convention for the Amelioration of the Condition of the Wounded and Sick in Armed Forces in the Field of 12 August 1949, or by the Geneva Convention for the Amelioration of the Condition of Wounded, Sick and Shipwrecked Members of Armed Forces at Sea of 12 August 1949, or by the Geneva Convention relative to the Treatment of Prisoners of War of 12 August 1949, shall not be considered as protected persons within the meaning of the present Convention.

Article 5

Where in the territory of a Party to the conflict, the latter is satisfied that an individual protected person is definitely suspected of or engaged in activities hostile to the security of the State, such individual person shall not be entitled to claim such rights and privileges under the present Convention as would, if exercised in the favour of such individual person, be prejudicial to the security of such State.

Where in occupied territory an individual protected person is detained as a spy or saboteur, or as a person under definite suspicion of activity hostile to the security of the Occupying Power, such person shall, in those cases where absolute military security so requires, be regarded as having forfeited rights of communication under the present Convention.

In each case, such persons shall nevertheless be treated with humanity and, in case of trial, shall not be deprived of the rights of fair and regular trial prescribed by the present Convention. They shall also be granted the full rights and privileges of a protected person under the present Convention at the earliest date consistent with the security of the State or Occupying Power, as the case may be.

Article 6

The present Convention shall apply from the outset of any conflict or occupation mentioned in Article 2.

In the territory of Parties to the conflict, the application of the present Convention shall cease on the general close of military operations.

In the case of occupied territory, the application of the present Convention shall cease one year after the general close of military operations; however, the Occupying Power shall be bound, for the duration of the occupation, to the extent that such Power exercises the functions of government in such territory, by the provisions of the following Articles of the present Convention: 1 to 12, 27, 29 to 34, 47, 49, 51, 52, 53, 59, 61 to 77, 143.

Protected persons whose release, repatriation or re-establishment may take place after such dates shall meanwhile continue to benefit by the present Convention.

Article 7

In addition to the agreements expressly provided for in Articles 11, 14, 15, 17, 36, 108, 109,

132, 133 and 149, the High Contracting Parties may conclude other special agreements for all matters concerning which they may deem it suitable to make separate provision. No special agreement shall adversely affect the situation of protected persons, as defined by the present Convention, not restrict the rights which it confers upon them.

Protected persons shall continue to have the benefit of such agreements as long as the Convention is applicable to them, except where express provisions to the contrary are contained in the aforesaid or in subsequent agreements, or where more favourable measures have been taken with regard to them by one or other of the Parties to the conflict.

Article 8

Protected persons may in no circumstances renounce in part or in entirety the rights secured to them by the present Convention, and by the special agreements referred to in the foregoing Article, if such there be.

Article 9

The present Convention shall be applied with the cooperation and under the scrutiny of the Protecting Powers whose duty it is to safeguard the interests of the Parties to the conflict. For this purpose, the Protecting Powers may appoint, apart from their diplomatic or consular staff, delegates from amongst their own nationals or the nationals of other neutral Powers. The said delegates shall be subject to the approval of the Power with which they are to carry out their duties.

The Parties to the conflict shall facilitate to the greatest extent possible the task of the representatives or delegates of the Protecting Powers.

The representatives or delegates of the Protecting Powers shall not in any case exceed their mission under the present Convention.

They shall, in particular, take account of the imperative necessities of security of the State wherein they carry out their duties.

Article 10

The provisions of the present Convention constitute no obstacle to the humanitarian activities which the International Committee of the Red Cross or any other impartial humanitarian organization may, subject to the consent of the Parties to the conflict concerned, undertake for the protection of civilian persons and for their relief.

Article 11

The High Contracting Parties may at any time agree to entrust to an international organization which offers all guarantees of impartiality and efficacy the duties incumbent on the Protecting Powers by virtue of the present Convention.

When persons protected by the present Convention do not benefit or cease to benefit, no matter for what reason, by the activities of a Protecting Power or of an organization provided for in the first paragraph above, the Detaining Power shall request a neutral State, or such an organization, to undertake the functions performed under the present Convention by a Protecting Power designated by the Parties to a conflict.

If protection cannot be arranged accordingly, the Detaining Power shall request or shall accept, subject to the provisions of this Article, the offer of the services of a humanitarian organization, such as the International Committee of the Red Cross, to assume the humanitarian functions performed by Protecting Powers under the present Convention.

Any neutral Power or any organization invited by the Power concerned or offering itself for these purposes, shall be required to act with a sense of responsibility towards the Party to the conflict on which persons protected by the present Convention depend, and shall be required to furnish sufficient assurances that it is in a position to undertake the appropriate functions and to discharge them impartially.

No derogation from the preceding provisions shall be made by special agreements between Powers one of which is restricted, even temporarily, in its freedom to negotiate with the other Power or its allies by reason of military events, more particularly where the whole, or a substantial part, of the territory of the said Power is occupied.

Whenever in the present Convention mention is made of a Protecting Power, such mention applies to substitute organizations in the sense of the present Article.

The provisions of this Article shall extend and be adapted to cases of nationals of a neutral State who are in occupied territory or who find themselves in the territory of a belligerent State in which the State of which they are nationals has not normal diplomatic representation.

Article 12

In cases where they deem it advisable in the interest of protected persons, particularly in cases of disagreement between the Parties to the conflict as to the application or interpretation of the provisions of the present Convention, the Protecting Powers shall lend their good offices with a view to settling the disagreement.

For this purpose, each of the Protecting Powers may, either at the invitation of one Party or on its own initiative, propose to the Parties to the conflict a meeting of their representatives, and in particular of the authorities responsible for protected persons, possibly on neutral territory suitably chosen. The Parties to the conflict shall be bound to give effect to the proposals made to them for this purpose. The Protecting Powers may, if necessary, propose for approval by the Parties to the conflict a person belonging to a neutral Power, or delegated by the International Committee of the Red Cross, who shall be invited to take part in such a meeting.

PART II
GENERAL PROTECTION OF POPULATIONS AGAINST CERTAIN CONSEQUENCES OF WAR

Article 13

The provisions of Part II cover the whole of the populations of the countries in conflict, without any adverse distinction based, in particular, on race, nationality, religion or political opinion, and are intended to alleviate the sufferings caused by war.

Article 14

In time of peace, the High Contracting Parties and, after the outbreak of hostilities, the Parties thereto, may establish in their own territory and, if the need arises, in occupied areas, hospital and safety zones and localities so organized as to protect from the effects of war, wounded, sick and aged persons, children under fifteen, expectant mothers and mothers of children under seven.

Upon the outbreak and during the course of hostilities, the Parties concerned may conclude agreements on mutual recognition of the zones and localities they have created. They may for this purpose implement the provisions of the Draft Agreement annexed to the present Convention, with such amendments as they may consider necessary.

The Protecting Powers and the International Committee of the Red Cross are invited to lend their good offices in order to facilitate the institution and recognition of these hospital and safety zones and localities.

Article 15

Any Party to the conflict may, either direct or through a neutral State or some humanitarian organization, propose to the adverse Party to establish, in the regions where fighting is taking place, neutralized zones intended to shelter from the effects of war the following persons, without distinction:

(a) wounded and sick combatants or non-combatants;

(b) civilian persons who take no part in hostilities, and who, while they reside in the zones, perform no work of a military character.

When the Parties concerned have agreed upon the geographical position, administration, food supply and supervision of the proposed neutralized zone, a written agreement shall be concluded and signed by the representatives of the Parties to the conflict. The agreement shall fix the beginning and the duration of the neutralization of the zone.

Article 16

The wounded and sick, as well as the infirm, and expectant mothers, shall be the object of particular protection and respect.

As far as military considerations allow, each Party to the conflict shall facilitate the steps

taken to search for the killed and wounded, to assist the shipwrecked and other persons exposed to grave danger, and to protect them against pillage and ill-treatment.

Article 17

The Parties to the conflict shall endeavour to conclude local agreements for the removal from besieged or encircled areas, of wounded, sick, infirm, and aged persons, children and maternity cases, and for the passage of ministers of all religions, medical personnel and medical equipment on their way to such areas.

Article 18

Civilian hospitals organized to give care to the wounded and sick, the infirm and maternity cases, may in no circumstances be the object of attack but shall at all times be respected and protected by the Parties to the conflict.

States which are Parties to a conflict shall provide all civilian hospitals with certificates showing that they are civilian hospitals and that the buildings which they occupy are not used for any purpose which would deprive these hospitals of protection in accordance with Article 19.

Civilian hospitals shall be marked by means of the emblem provided for in Article 38 of the Geneva Convention for the Amelioration of the Condition of the Wounded and Sick in Armed Forces in the Field of 12 August 1949, but only if so authorized by the State.

The Parties to the conflict shall, in so far as military considerations permit, take the necessary steps to make the distinctive emblems indicating civilian hospitals clearly visible to the enemy land, air and naval forces in order to obviate the possibility of any hostile action.

In view of the dangers to which hospitals may be exposed by being close to military objectives, it is recommended that such hospitals be situated as far as possible from such objectives.

Article 19

The protection to which civilian hospitals are entitled shall not cease unless they are used to commit, outside their humanitarian duties, acts harmful to the enemy. Protection may, however, cease only after due warning has been given, naming, in all appropriate cases, a reasonable time limit and after such warning has remained unheeded. The fact that sick or wounded members of the armed forces are nursed in these hospitals, or the presence of small arms and ammunition taken from such combatants which have not yet been handed to the proper service, shall not be considered to be acts harmful to the enemy.

Article 20

Persons regularly and solely engaged in the operation and administration of civilian hospitals, including the personnel engaged in the search for, removal and transporting of and caring for wounded and sick civilians, the infirm and maternity cases shall be respected and protected.

In occupied territory and in zones of military operations, the above personnel shall be recognizable by means of an identity card certifying their status, bearing the photograph of the holder and embossed with the stamp of the responsible authority, and also by means of a stamped, water-resistant armlet which they shall wear on the left arm while carrying out their duties. This armlet shall be issued by the State and shall bear the emblem provided for in Article 38 of the Geneva Convention for the Amelioration of the Condition of the Wounded and Sick in Armed Forces in the Field of 12 August 1949.

Other personnel who are engaged in the operation and administration of civilian hospitals shall be entitled to respect and protection and to wear the armlet, as provided in and under the conditions prescribed in this Article, while they are employed on such duties. The identity card shall state the duties on which they are employed.

The management of each hospital shall at all times hold at the disposal of the competent national or occupying authorities an up-to-date list of such personnel.

Article 21

Convoys of vehicles or hospital trains on land or specially provided vessels on sea, conveying wounded and sick civilians, the infirm and maternity cases, shall be respected and protected in the same manner as the hospitals provided for in Article 18, and shall be marked, with the consent of the State, by the display of the distinctive emblem provided for in Article 38 of the Geneva Convention for the Amelioration of the Condition of the Wounded and Sick in Armed Forces in the Field of 12 August 1949.

Article 24

The Parties to the conflict shall take the necessary measures to ensure that children under fifteen, who are orphaned or are separated from their families as a result of the war, are not left to their own resources, and that their maintenance, the exercise of their religion and their education are facilitated in all circumstances. Their education shall, as far as possible, be entrusted to persons of a similar cultural tradition.

The Parties to the conflict shall facilitate the reception of such children in a neutral country for the duration of the conflict with the consent of the Protecting Power, if any, and under due safeguards for the observance of the principles stated in the first paragraph.

They shall, furthermore, endeavour to arrange for all children under twelve to be identified by the wearing of identity discs, or by some other means.

Article 25

All persons in the territory of a Party to the conflict, or in a territory occupied by it, shall be enabled to give news of a strictly personal nature to members of their families, wherever they may be, and to receive news from them. This correspondence shall be forwarded speedily and without undue delay.

If, as a result of circumstances, it becomes difficult or impossible to exchange family correspondence by the ordinary post, the Parties to the conflict concerned shall apply to a neutral intermediary, such as the Central Agency provided for in Article 140, and shall decide in consultation with it how to ensure the fulfilment of their obligations under the best possible conditions, in particular with the cooperation of the National Red Cross (Red Crescent, Red Lion and Sun) Societies.

If the Parties to the conflict deem it necessary to restrict family correspondence, such restrictions shall be confined to the compulsory use of standard forms containing twenty-five freely chosen words, and to the limitation of the number of these forms despatched to one each month.

Article 26

Each Party to the conflict shall facilitate enquiries made by members of families dispersed owing to the war, with the object of renewing contact with one another and of meeting, if possible. It shall encourage, in particular, the work of organizations engaged on this task provided they are acceptable to it and conform to its security regulations.

STATUS AND TREATMENT OF PROTECTED PERSONS

SECTION I

Provisions Common to the Territories of the Parties to the Conflict and to Occupied Territories

Article 27

Protected persons are entitled, in all circumstances, to respect for their persons, their honour, their family rights, their religious convictions and practices, and their manners and customs. They shall at all times be humanely treated, and shall be protected especially against all acts of violence or threats thereof and against insults and public curiosity.

Women shall be especially protected against any attack on their honour, in particular against rape, enforced prostitution, or any form of indecent assault.

Without prejudice to the provisions relating to their state of health, age and sex, all protected persons shall be treated with the same consideration by the Party to the conflict in whose power they are, without any adverse distinction based, in particular, on race, religion or political opinion.

However, the Parties to the conflict may take such measures of control and security in regard to protected persons as may be necessary as a result of the war.

Article 28

The presence of a protected person may not be used to render certain points or areas immune from military operations.

Article 29

The Party to the conflict in whose hands protected persons may be, is responsible for the treatment accorded to them by its agents, irrespective of any individual responsibility which may be incurred.

Aricle 30

Protected persons shall have every facility for making application to the Protecting Powers, the International Committee of the Red Cross, the National Red Cross (Red Crescent, Red Lion and Sun) Society of the country where they may be, as well as to any organization that might assist them.

These several organizations shall be granted all facilities for that purpose by the authorities, within the bounds set by military or security considerations.

Apart from the visits of the delegates of the Protecting Powers and of the International Committee of the Red Cross, provided for by Article 143, the Detaining or Occupying Powers shall facilitate, as much as possible, visits to protected persons by the representatives of other organizations whose object is to give spiritual aid or material relief to such persons.

Article 31

No physical or moral coercion shall be exercised against protected persons, in particular to obtain information from them or from third parties.

Art. 32. The High Contracting Parties specifically agree that each of them is prohibited from taking any measure of such a character as to cause the physical suffering or extermination of protected persons in their hands.
This prohibition applies not only to murder, torture, corporal punishments, mutilation and medical or scientific experiments not necessitated by the medical treatment of a protected person, but also to any other measures of brutality whether applied by civilian or military agents.

Article 33

No protected person may be punished for an offence he or she has not personally committed. Collective penalties and likewise all measures of intimidation or of terrorism are prohibited.

Pillage is prohibited.

Reprisals against protected persons and their property are prohibited.

Article 34

The taking of hostages is prohibited.

SECTION II
Aliens in the Territory of a Party to the Conflict
Article 35

All protected persons who may desire to leave the territory at the outset of, or during a conflict, shall be entitled to do so, unless their departure is contrary to the national interests of the State. The applications of such persons to leave shall be decided in accordance with regularly established procedures and the decision shall be taken as rapidly as possible. Those persons permitted to leave may provide themselves with the necessary funds for their journey and take with them a reasonable amount of their effects and articles of personal use.

If any such person is refused permission to leave the territory, he shall be entitled to have refusal reconsidered, as soon as possible by an appropriate court or administrative board designated by the Detaining Power for that purpose.

Upon request, representatives of the Protecting Power shall, unless reasons of security prevent it, or the persons concerned object, be furnished with the reasons for refusal of any request for permission to leave the territory and be given, as expeditiously as possible, the names of all persons who have been denied permission to leave.

Article 36

Departures permitted under the foregoing Article shall be carried out in satisfactory conditions as regards safety, hygiene, sanitation and food. All costs in connection therewith, from the point of exit in the territory of the Detaining Power, shall be borne by the country of destination, or, in the case of accommodation in a neutral country, by the Power whose nationals are benefited. The practical details of such movements may, if necessary, be settled by special agreements between the Powers concerned.

The foregoing shall not prejudice such special agreements as may be concluded between Parties to the conflict concerning the exchange and repatriation of their nationals in enemy hands.

Article 37

Protected persons who are confined pending proceedings or subject to a sentence involving loss of liberty, shall during their confinement be humanely treated.

As soon as they are released, they may ask to leave the territory in conformity with the foregoing Articles.

Article 38

With the exception of special measures authorized by the present Convention, in particularly by Article 27 and 41 thereof, the situation of protected persons shall continue to be regulated, in principle, by the provisions concerning aliens in time of peace. In any case, the following rights shall be granted to them:

(1) they shall be enabled to receive the individual or collective relief that may be sent to them.
(2) they shall, if their state of health so requires, receive medical attention and hospital treatment to the same extent as the nationals of the State concerned.
(3) they shall be allowed to practise their religion and to receive spiritual assistance from ministers of their faith.
(4) if they reside in an area particularly exposed to the dangers of war, they shall be authorized to move from that area to the same extent as the nationals of the State concerned.
(5) children under fifteen years, pregnant women and mothers of children under seven years shall benefit by any preferential treatment to the same extent as the nationals of the State concerned.

Article 39

Protected persons who, as a result of the war, have lost their gainful employment, shall be granted the opportunity to find paid employment. That opportunity shall, subject to security considerations and to the provisions of Article 40, be equal to that enjoyed by the nationals of the Power in whose territory they are.

Where a Party to the conflict applies to a protected person methods of control which result in his being unable to support himself, and especially if such a person is prevented for reasons of security from finding paid employment on reasonable conditions, the said Party shall ensure his support and that of his dependents.

Protected persons may in any case receive allowances from their home country, the Protecting Power, or the relief societies referred to in Article 30.

Article 40

Protected persons may be compelled to work only to the same extent as nationals of the Party to the conflict in whose territory they are.

If protected persons are of enemy nationality, they may only be compelled to do work which is normally necessary to ensure the feeding, sheltering, clothing, transport and health of human beings and which is not directly related to the conduct of military operations.

In the cases mentioned in the two preceding paragra phs, protected persons compelled to work shall have the benefit of the same working conditions and of the same safeguards as national workers in particular as regards wages, hours of labour, clothing and equipment, previous training and compensation for occupational accidents and diseases.

If the above provisions are infringed, protected persons shall be allowed to exercise their right of complaint in accordance with Article 30.

Article 41

Should the Power, in whose hands protected persons may be, consider the measures of control mentioned in the present Convention to be inadequate, it may not have recourse to any other measure of control more severe than that of assigned residence or internment, in accordance with the provisions of Articles 42 and 43.

In applying the provisions of Article 39, second paragraph, to the cases of persons required to leave their usual places of residence by virtue of a decision placing them in assigned residence, by virtue of a decision placing them in assigned residence, elsewhere, the Detaining Power shall be guided as closely as possible by the standards of welfare set forth in Part III, Section IV of this Convention.

Article 42

The internment or placing in assigned residence of protected persons may be ordered only if the security of the Detaining Power makes it absolutely necessary.

If any person, acting through the representatives of the Protecting Power, voluntarily demands internment, and if his situation renders this step necessary, he shall be interned by the Power in whose hands he may be.

Article 44

In applying the measures of control mentioned in the present Convention, the Detaining Power shall not treat as enemy aliens exclusively on the basis of their nationality de jure of an enemy State, refugees who do not, in fact, enjoy the protection of any government.

Article 45

Protected persons shall not be transferred to a Power which is not a party to the Convention. This provision shall in no way constitute an obstacle to the repatriation of protected persons, or to their return to their country of residence after the cessation of hostilities.

Protected persons may be transferred by the Detaining Power only to a Power which is a party to the present Convention and after the Detaining Power has satisfied itself of the willingness and ability of such transferee Power to apply the present Convention. If protected persons are transferred under such circumstances, responsibility for the application of the present Convention rests on the Power accepting them, while they are in its custody. Nevertheless, if that Power fails to carry out the provisions of the present Convention in any important respect, the Power by which the protected persons were transferred shall, upon being so notified by the Protecting Power, take effective measures to correct the situation or shall request the return of the protected persons. Such request must be complied with.

In no circumstances shall a protected person be transferred to a country where he or she may have reason to fear persecution for his or her political opinions or religious beliefs.

The provisions of this Article do not constitute an obstacle to the extradition, in pursuance of extradition treaties concluded before the outbreak of hostilities, of protected persons accused of offences against ordinary criminal law.

Article 46

In so far as they have not been previously withdrawn, restrictive measures taken regarding protected persons shall be cancelled as soon as possible after the close of hostilities.

Restrictive measures affecting their property shall be cancelled, in accordance with the law of the Detaining Power, as soon as possible after the close of hostilities.

2.2. PROTOCOL ADDITIONAL TO THE GENEVA CONVENTIONS OF 12 AUGUST 1949, AND RELATING TO THE PROTECTION OF VICTIMS OF INTERNATIONAL ARMED CONFLICTS (PROTOCOL I) (excerpt)

1977*Protocols I and II Additional to the Geneva Conventions of August 12, 1949 and Relating to the Geneva Protection of Victims of International Armed Conflicts*, 1125 U.N.T.S. 3, 1125 U.N.T.S. 609, 16 I.L.M. (1977), 1391. In force December 7, 1978.

PREAMBLE

The High Contracting Parties,

Proclaiming their earnest wish to see peace prevail among peoples,

Recalling that every State has the duty, in conformity with the Charter of the United Nations, to refrain in its international relations from the threat or use of force against the sovereienty, territorial integrity or political independence of any State, or in any other manner incongistent with the purposes of the United Nations,

Believing it necessary nevertheless to reaffirm and develop the provisions protecting the victims of armed conflicts and to supplement measures intended to reinrorce their application,

Expressing their conviction that nothing in this Protocol or in the Geneva Conventions of 12 August 1949 can be construed as legitimizing or authorizing any act of aggression or any other use of force inconsistent with the Charter of the United Nations,

Reaffirming further that the provisions of the Geneva Conventions of 12 August 1949 and of this Protocol must be fully applied in all circumstances to all persons who are protected by those instruments, without any adverse distinction based on the nature or origin of the armed conrlict or on the causes espoused by or attributed to the Parties to the conflict,

Have agreed on the following:

General Provisions

Article 1
General principles and scope of application

1. The High Contracting Parties undertake to respect and to ensure respect for the Protocol in all circumstances.
2. In cases not covered by this Protocol or by other international agreements, civilian and combatants remain under the protection and authority of the princples of international law derived from established custom, from the principles of humanity and from the dictates of public conscience.
3. This Protocol, which supplements the Geneva Conventions of 12 Auguest 1949 for the protection of war victims, shall apply in the situations refered to in Article 2 common to those Conventions.
4. The situations referred to an the preceding paragraph include armed conflicts in which peoples are fighting colonial domination and alien occupation and against racist regimes in the exercise of their right of self determination, as enshrined in the Charter of the United Nations and the Declaration on Principles of International Law concerning Friendly Relations and Co-operation among States in accordance with theCharter of the United Nations.

Article 3 - Begining and end of application

Without prejudice to the provisions which are applicable at all times:
(a) the Conventions and this Protocol shall apply from the beginining of any situation referred to in Article 1 of this Protocol;
(b) the application of the Conventions and of the Protocol shall cease, in the territory of the conflict, on the general close of military operations and, in the case of occupied territories, on the termination of the occupation, except, in either circumstance, for those persons whose final release, reparation or re-establishment takes plase therafter. These persons shall continue to benefit from the relevant provisions of the Conventions and of this Protocol until their final release, repatriation or re-establishment.

Article 4 - Legal status of the Parties to the conflict

The application of the Conventions and of this Protocol, as well as the conclusion of the agreement provided for therein, shall not affect the legal status of the Parties to the conflict. Neither the occupation of a territory nor the application of the Conventions and this Protocol shall affect the legal status of the territory.

Article 5 - Appointment of Protecting Powers and of their substitute

1. It is the duty of the Parties to a conflict from the begining of that conflict to secure the supervision and impementation of the Conventions and of this Protocol by the application of the system of protecting owers, including, *inter alia* the designation and acceptance of those powers, in accordance with the following paragraphs. Protecting Powers shall have the duty of safeguarding the interests of the Parties to the conflict.
2. From the begining of a situation referred to in Article 1, each Party to the conflict shall without delay designate a Protecting Power for the purpose of applying the Conventions and this Protocol and shall, likewise without delay and for the same purpose, permit the activities of a Protecting Power which has accepted by it as such after designation by the adverse Party.

3. If a Protecting Power has not been designated or accepted from the begining of a situation referred to in Article 1, the international Committee of the Red Cross, without prejudice to the right of any other impartial humanitarin organization to do likewise, shall offer its good offices to the Parties to the conflict with a view to the designation without delay of a Protecting Power to which the Parties to the conflict consent. For that purpose it may, inter alia, ask each Party to provide it with a list of at least five States which that Party considers acceptable to act as Protecting Power on its behalf in relation to an adverse Party, and ask each adverse Party to provide a list of at least five States which it would accept as the Protecting Power of the first Party; these lists shall be communicated to the Committee within two weeks after the receipt of the request; it shall compare them and seek the agreement of any proposed State named on both lists.

4. If, despite the foregoing, there is no Protecting Power, the Parties to the conflict shall accept without delay an offer which may made by the International Committee of the Red Cross or by any other organization which offers all guarantees of impartiality and efficacy, after due consultations with thesaid Parties and taking into account the result of these consultations, to act as a substitute. The functioning of such a substitute is subject to the consent of the Patties to the conflict; every effort shall be made by the Parties to the conflict to facilitate the operations of the substitute in the performance of its tasks under the Conventions and this Protocol.

5. In accordance with Article 4, the designation and acceptance of Protecting Powers for the purpose of applying the Conventions and this Protocol shall not affect the legal status of the Parties to the conflict or of any territory, including occuped territory.

6. The maintenance of diplomatic relations between Parties to the conflict or the entrusting of the protection of a Party's interests and those of its nationals to a third State accordance with the rules of international law relating to diplomatic relations is no obstacle to the designation of Protecting Powers for the purpose of applying the Conventions and the Protocol.

7. Any subsequent mention in the Protocol of a Protecting Power includes also a substitute.

PART III
METHODS AND MEANS OF WARFARE COMBATANT AND PRISONER-OF-WAR STATUS
SECTION I : METHODS AND MEANS OF WARFARE

Article 35 - Basic rules

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.

Article 36 - New weapons

In the study, development, acquisition or adoption of a new weapon, means or method of warfare, a High Contracting Party is under an obligation to determine whether its employment would, in some or all circumstances, be prohibited by this Protocol or by any other rule of international law applicable to the High Contracting Party.

PART IV
CIVILIAN POPULATION
SECTION I : GENERAL PROTECTION AGAINST EFFECTS OF HOSTILITIES
Chapter I
BASIC RULE AND FIELD OF APPLICATION
Article 48 - Basic rule

In order to ensure respect for and protection of the civilian population and civilian objects, the Parties to the conflict shall at all times distinguish between the civilian population and combatants and between civilian objects and military objectives and accordingly shall direct their operations only against military objectives.

Article 49 - Definition of attacks and scope of application

1. "Attacks" means acts of violence against the adversary, whether in offence or in defense.

2. The provisions of this Protocol with respect to attacks apply to all attacks in whatever territory conducted, including the national territory belonging to a Party to the conflict but under the control of an adverse Party.

3. The provisions of this section apply to any land, air or sea warfare which may affect the civilian population, individual civilians or civilian objects on land. They further apply to all attacks from the sea or from the air against objectives on land but do not otherwise affect the rules of international law applicable in armed conflict at sea or in the air.

4. The provisions of this section are additional to the rules concerning humanitarian protection contained in the Fourth Convention, particularly in part II thereof, and in other international agreements binding upon the High Contracting Parties, as well as to other rules of international law relating to the protection of civilians and civilian objects on land, at sea or in the air against the effects of hostilities.

Chapter II
CIVILIANS AND CIVILIAN POPULATION

Article 50 - Definition of civilians and civilian population

1. A civilian is any person who does not belong to one of the categories of persons referred to in Article 4 (A) (1), (2), (3) and (6) of the Third Convention and in Article 43 of this Protocol. In case of doubt whether a person is a civilian, that person shall be considered to be a civilian.

2. The civilian population comprises all persons who are civilians.

3. The presence within the civilian population of individuals who do not come within the definition of civilians does not deprive the population of its civilian character.

Article 51 - Protection of the civilian population

1. The civilian population and individual civilians shall enjoy general protection against dangers arising from military operations. To give effect to this protection, the following rules, which are additional to other applicable rules of international law, shall be observed in all circumstances.

2. The civilian population as such, as well as individual civilians, shall not be the object of attack. Acts or threats of violence the primary purpose of which is to spread terror among the civilian population are prohibited.

3. Civilians shall enjoy the protection afforded by this section, unless and for such time as they take a direct part in hostilities.

4. Indiscriminate attacks are prohibited. Indiscriminate attacks are:

(a) those which are not directed at a specific military objective;
(b) those which employ a method or means of combat which cannot be directed at a specific military objective; or
(c) those which employ a method or means of combat the effects of which cannot be limited as required by this Protocol;
and consequently, in each such case, are of a nature to strike military objectives and civilians or civilian objects without distinction.

5. Among others, the following types of attacks are to be considered as indiscriminate:

(a) an attack by bombardment by any methods or means which treats as a single military objective a number of clearly separated and distinct military objectives located in a city, town, village or other area containing a similar concentration of civilians or civilian objects; and
(b) an attack which may be expected to cause incidental loss of civilian life, injury to

civilians, damage to civilian objects, or a combination thereof, which would be excessive in relation to the concrete and direct military advantage anticipated.

6. Attacks against the civilian population or civilians by way of reprisals are prohibited.

7. The presence or movements of the civilian population or individual civilians shall not be used to render certain points or areas immune from military operations, in particular in attempts to shield military objectives from attacks or to shield, favour or impede military operations. The Parties to the conflict shall not direct the movement of the civilian population or individual civilians in order to attempt to shield military objectives from attacks or to shield military operations.

8. Any violation of these prohibitions shall not release the Parties to the conflict from their legal obligations with respect to the civilian population and civilians, including the obligation to take the precautionary measures provided for in Article 57.

Chapter III
CIVILIAN OBJECTS
Article 52 - General Protection of civilian objects

1. Civilian objects shall not be the object of attack or of reprisals. Civilian objects are all objects which are not military objectives as defined in paragraph 2.

2. Attacks shall be limited strictly to military objectives. In so far as objects are concerned, military objectives are limited to those objects which by their nature, location, purpose or use make an effective contribution to military action and whose total or partial destruction, capture or neutralization, in the circumstances ruling at the time, offers a definite military advantage.

3. In case of doubt whether an object which is normally dedicated to civilian purposes, such as a place of worship, a house or other dwelling or a school, is being used to make an effective contribution to military action, it shall be presumed not to be so used.

Article 53

- 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, and of other relevant international instruments, it is prohibited:

(a) to commit any acts of hostility directed against the historic monuments, works of art or places of worship which constitute the cultural or spiritual heritage of peoples;

(b) to use such objects in support of the military effort;

(c) to make such objects the object of reprisals.

Article 54 - Protection of objects indispensable to the survival of the civilian population

1. Starvation of civilians as a method of warfare is prohibited.

2. It is prohibited to attack, destroy, remove or render useless objects indispensable to the survival of the civilian population, such as food-stuffs, agricultural areas for the production of food-stuffs, crops, livestock, drinking water installations and supplies and irrigation works, for the specific purpose of denying them for their sustenance value to the civilian population or to the adverse Party, whatever the motive, whether in order to starve out civilians, to cause them to move away, or for any other motive.

3. The prohibitions in paragraph 2 shall not apply to such of the objects covered by it as are used by an adverse Party:

(a) as sustenance solely for the members of its armed forces; or
(b) if not as sustenance, then in direct support of military action, provided, however, that in no event shall actions against these objects be taken which may be expected to leave the civilian population with such inadequate food or water as to cause its starvation or force its movement.

4. These objects shall not be made the object of reprisals.

5. In recognition of the vital requirements of any Party to the conflict in the defense of its national territory against invasion, derogation from the prohibitions contained in paragraph 2 may be made by a Party to the conflict within such territory under its own control where required by imperative military necessity.

Article 55 - Protection of the natural environment

1. Care shall be taken in warfare to protect the natural environment against widespread, long-term and severe damage. This protection includes a prohibition of the use of methods or means of warfare which are intended or may be expected to cause such damage to the natural environment and thereby to prejudice the health or survival of the population.

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

Article 56 - Protection of works and installations containing dangerous forces

1. Works or installations 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 civilian population. Other military objectives located at or in the vicinity of these works or installations shall not be made the object of attack if such attack may cause the release of dangerous forces from the works or installations and consequent severe losses among the civilian population.

2. The special protection against attack provided by paragraph 1 shall cease:

(a) for a dam or a dyke only if it is used for other than its normal function and in regular, significant and direct support of military operations and if such attack is the only feasible way to terminate such support;

(b) for a nuclear electrical generating station only if it provides electric power in regular, significant and direct support of military operations and if such attack is the only feasible way to terminate such support;

(c) for other military objectives located at or in the vicinity of these works or installations only if they are used in regular, significant and direct support of military operations and if such attack is the only feasible way to terminate such support.

3. In all cases, the civilian population and individual civilians shall remain entitled to all the protection accorded them by international law, including the protection of the precautionary measures provided for in Article 57. If the protection Ceases and any of the works, installations or military objectives mentioned in paragraph 1 is attacked, all practical precautions shall be taken to avoid the release of the dangerous forces.

4. It is prohibited to make any of the works, installations or military objectives mentioned in paragraph 1 the object of reprisals.

5. The Parties to the conflict shall endeavour to avoid locating any military objectives in the vicinity of the works or installations mentioned in paragraph 1. Nevertheless, installations erected for the sole purpose of defending the protected works or installations from attack are permissible and shall not themselves be made the object of attack, provided that they are not used in hostilities except for defensive actions necessary to respond to attacks against the protected works or installations and that their armament is limited to weapons capable only of repelling hostile action against the protected works or installations.

6. The High Contracting Parties and the Parties to the conflict are urged to conclude further agreements among themselves to provide additional protection for objects containing dangerous forces.

7. In order to facilitate the identification of the objects protected by this article, the Parties to the conflict may mark them with a special sign consisting of a group of three bright orange circles placed on the same axis, as specified in Article 16 of Annex I to this Protocol. The absence of such marking in no way relieves any Party to the conflict of its obligations under this Article.

Chapter IV
PRECAUTIONARY MEASURES
Article 57 - Precautions in attack

1. In the conduct of military operations, constant care shall be taken to spare the civilian population, civilians and civilian objects.

2. With respect to attacks, the following precautions shall be taken:

(a) those who plan or decide upon an attack shall:

(i) do everything feasible to verify that the objectives to be attacked are neither civilians nor civilian objects and are not subject to special protection but are military objectives within the meaning of paragraph 2 of Article 52 and that it is not prohibited by the provisions of this Protocol to attack them;

(ii) take all feasible precautions in the choice of means and methods of attack with a view to avoiding, and in any event to minimizing, incidental loss or civilian life, injury to civilians and damage to civilian objects;

(iii) refrain from deciding to launch any attack which may be expected to cause incidental loss of civilian life, injury to civilians, damage to civilian objects, or a combination thereof, which would be excessive in relation to the concrete and direct military advantage anticipated;

(b) an attack shall be canceled or suspended if it becomes apparent that the objective is not a military one or is subject to special protection or that the attack may be expected to cause incidental loss of civilian life, injury to civilians, damage to civilian objects, or a combination thereof, which would be excessive in relation to the concrete and direct military advantage anticipated;

(c) effective advance warning shall be given of attacks which may affect the civilian population, unless circumstances do not permit.

3. When a choice is possible between several military objectives for obtaining a similar military advantage, the objective to be selected shall be that the attack on which may be expected to cause the least danger to civilian lives and to civilian objects.

4. In the conduct of military operations at sea or in the air, each Party to the conflict shall, in conformity with its rights and duties under the rules of international law applicable in armed conflict, take all reasonable precautions to avoid losses of civilian lives and damage to civilian objects.

5. No provision of this article may be construed as authorizing any attacks against the civilian

population, civilians or civilian objects.

Article 58 - Precautions against the effects of attacks The Parties to the conflict shall, to the maximum extent feasible:

(a) without prejudice to Article 49 of the Fourth Convention, endeavour to remove the civilian population, individual civilians and civilian objects under their control from the vicinity of military objectives;

(b) avoid locating military objectives within or near densely populated areas;

(c) take the other necessary precautions to protect the civilian population, individual civilians and civilian objects under their control against the dangers resulting from military operations.

Chapter V
LOCALITIES AND ZONES UNDER SPECIAL PROTECTION

Article 59 - Non-defended localities

1. It is prohibited for the Parties to the conflict to attack, by any means whatsoever, non-defended localities.

2. The appropriate authorities of a Party to the conflict may declare as a non-defended locality any inhabited place near or in a zone where armed forces are in contact which is open for occupation by an adverse Party. Such a locality shall fulfil the following conditions:

(a) all combatants, as well as mobile weapons and mobile military equipment must have been evacuated;

(b) no hostile use shall be made of fixed military installations or establishments;

(c) no acts of hostility shall be committed by the authorities or by the population; and
(d) no activities in support of military operations shall be undertaken.

3. The presence, in this locality, of persons specially protected under the Conventions and this Protocol, and of police forces retained for the sole purpose of maintaining law and order, is not contrary to the conditions laid down in paragraph 2.

4. The declaration made under paragraph 2 shall be addressed to the adverse Party and shall define and describe, as precisely as possible, the limits of the non-defended locality. The Party to the conflict to which the declaration is addressed shall acknowledge its receipt and shall treat the locality as a non-defended locality unless the conditions laid down in paragraph 2 are not in fact fulfilled, in which event it shall immediately so inform the Party

making the declaration. Even if the conditions laid down in paragraph 2 are not fulfilled, the locality shall continue to enjoy the protection provided by the other provisions of this Protocol and the other rules of international law applicable in armed conflict.

5. The Parties to the conflict may agree on the establishment of non-defended localities even if such localities do not fulfil the conditions laid down in paragraph 2. The agreement should define and describe, as precisely as possible, the limits of the non-defended locality; if necessary, it may lay down the methods of supervision.

6. The Party which is in control of a locality governed by such an agreement shall mark it, so far as possible, by such signs as may be agreed upon with the other Party, which shall be displayed where they are clearly visible, especially on its perimeter and limits and on highways.

7. A locality loses its status as a non-defended locality when its ceases to fulfil the conditions laid down in paragraph 2 or in the agreement referred to in paragraph 5. In such an eventuality, the locality shall continue to enjoy the protection provided by the other provisions of this Protocol and the other rules of international law applicable in armed conflict.

Article 60 - Demilitarized zones

1. It is prohibited for the Parties to the conflict to extend their military operations to zones on which they have conferred by agreement the status of demilitarized zone, if such extension is contrary to the terms of this agreement.
2. The agreement shall be an express agreement, may be concluded verbally or in writing, either directly or through a Protecting Power or any impartial humanitarian organization, and may consist of reciprocal and concordant declarations. The agreement may be concluded in peacetime, as well as after the outbreak of hostilities, and should define and describe, as precisely as possible, the limits of the demilitarized zone and, if necessary, lay down the methods of supervision.

3. The subject of such an agreement shall normally be any zone which fulfils the following conditions:

(a) all combatants, as well as mobile weapons and mobile military equipment, must have been evacuated;
(b) no hostile use shall be made of fixed military installations or establishments;
(c) no acts of hostility shall be committed by the authorities or by the population; and
(d) any activity linked to the military effort must have ceased. The Parties to the conflict shall agree upon the interpretation to be given to the condition laid down in subparagraph (d) and upon persons to be admitted to the demilitarized zone other than those mentioned in paragraph 4.

4. The presence, in this zone, of persons specially protected under the Conventions and this Protocol, and of police forces retained for the sole purpose of maintaining law and order, is not contrary to the conditions laid down in paragraph 3.

5. The Party which is in control of such a zone shall mark it, so far as possible, by such signs as may be agreed upon with the other Party, which shall be displayed where they are clearly visible, especially on its perimeter and limits and on highways.

6. If the fighting draws near to a demilitarized zone, and if the Parties to the conflict have so agreed, none of them may use the zone for purposes related to the conduct of military operations or unilaterally revoke its status.

7. If one of the Parties to the conflict commits a material breach of the provisions of paragraphs 3 or 6, the other Party shall be released from its obligations under the agreement conferring upon the zone the status of demilitarized zone. In such an eventuality, the zone loses its status but shall continue to enjoy the protection provided by the other provisions of this Protocol and the other rules of international law applicable in armed conflict.

Chapter VI
CIVIL DEFENSE
SECTION II
RELIEF IN FAVOUR OF THE CIVILIAN POPULATION

Article 68 - Field of application

The provisions of this Section apply to the civilian population as defined in this Protocol and are supplementary to Articles 23, 55, 59, 60, 61 and 62 and other relevant provisions of the Fourth Convention.

Article 69 - Basic needs in occupied territories

1. In addition to the duties specified in Article 55 of the Fourth Convention concerning food and medical supplies, the Occupying Power shall, to the fullest extent of the means available to it and without any adverse distinction, also ensure the provision of clothing, bedding, means of shelter, other supplies essential to the survival of the civilian population of the occupied territory and objects necessary for religious worship.

2. Relief actions for the benefit of the civilian population of occupied territories are governed by Articles 59, 60, 61, 62, 108, 109, 110 and 111 of the Fourth Convention, and by Article 71 of this Protocol, and shall be implemented without delay.

Article 90 - International Fact-Finding Commission

1. (a) An International Fact-Finding Commission (hereinafter referred to as "the Commission") consisting of 15 members of high moral standing and acknowledged impartiality shall be established;

(b) When not less than 20 High Contracting Parties have agreed to accept the competence of the Commission pursuant to paragraph 2, the depositary shall then, and at intervals of five years thereafter, convene a meeting of representatives of those High Contracting Parties for the purpose of electing the members of the Commission. At the meeting, the representatives shall elect the members of the Commission by secret ballot from a list of persons to which each of those High Contracting Parties may nominate one person;

(c) The members of the Commission shall serve in their personal capacity and shall hold office until the election of new members at the ensuing meeting;
(d) At the election, the High Contracting Parties shall ensure that the persons to be elected to the Commission individually possess the qualifications required and that, in the Commission as a whole, equitable geographical representation is assured;

(e) In the case of a casual vacancy, the Commission itself shall fill the vacancy, having due regard to the provisions of the preceding subparagraphs;

(f) The depositary shall make available to the Commission the necessary administrative facilities for the performance of its functions.

2. (a) The High Contracting Parties may at the time of signing, ratifying or acceding to the Protocol, or at any other subsequent time, declare that they recognize ipso facto and without special agreement, in relation to any other High Contracting Party accepting the same obligation, the competence of the Commission to inquire into allegations by such other Party, as authorized by this Article;
(b) The declarations referred to above shall be deposited with the depositary, which shall transmit copies thereof to the High Contracting Parties;
(c) The Commission shall be competent to:

(i) inquire into any facts alleged to be a grave breach as defined in the Conventions and this Protocol or other serious violation of the Conventions or of this Protocol;
(ii) facilitate, through its good offices, the restoration of an attitude of respect for the Conventions and this Protocol;

(d) In other situations, the Commission shall institute an inquiry at the request of a Party to the conflict only with the consent of the other Party or Parties concerned;
(e) Subject to the foregoing provisions or this paragraph, the provisions of Article 52 of the First Convention, Article 53 of the Second Convention, Article 132 or the Third Convention and Article 149 of the Fourth Convention shall continue to apply to any alleged violation of the Conventions and shall extend to any alleged violation of this Protocol.

3. (a) Unless otherwise agreed by the Parties concerned, all inquiries shall be undertaken by a Chamber consisting of seven members appointed as follows:

(i) five members of the Commission, not nationals of any Party to the conflict, appointed by the President of the Commission on the basis of equitable representation of the geographical areas, after consultation with the Parties to the conflict;

(ii) two ad hoc members, not nationals of any Party to the conflict, one to be appointed by each side;

(b) Upon receipt of the request for an inquiry, the President of the Commission shall specify an appropriate time-limit for setting up a Chamber. If any ad hoc member has not been appointed within the time-limit, the President shall immediately appoint such additional member or members of the Commission as may be necessary to complete the membership of the Chamber.

4. (a) The Chamber set up under paragraph 3 to undertake an inquiry shall invite the Parties to the conflict to assist it and to present evidence. The Chamber may also seek such other evidence as it deems appropriate and may carry out an investigation of the situation in loco;
(b) All evidence shall be fully disclosed to the Parties, which shall have the right to comment on it to the Commission;
(c) Each Party shall have the right to challenge such evidence.

5. (a) The Commission shall submit to the Parties a report on the findings of fact of the Chamber, with such recommendations as it may deem appropriate;
(b) If the Chamber is unable to secure sufficient evidence for factual and impartial findings, the Commission shall state the reasons for that inability;
(c) The Commission shall not report its findings publicly, unless all the Parties to the conflict have requested the Commission to do so.

6. The Commission shall establish its own rules, including rules for the presidency or the Commission and the presidency of the Chamber. Those rules shall ensure that the functions of the President of the Commission are exercised at all times and that, in the case of an inquiry, they are exercised by a person who is not a national of a Party to the conflict.

7. The administrative expenses of the Commission shall be met by contributions from the High Contracting Parties which made declarations under paragraph 2, and by voluntary contributions. The Party or Parties to the conflict requesting an inquiry shall advance the necessary funds for expenses incurred by a Chamber and shall be reimbursed by the Party or Parties against which the allegations are made to the extent of 50 per cent of the costs of the Chamber. Where there are counter-allegations before the Chamber each side shall advance 50 per cent of the necessary funds.

Article 91 - Responsibility

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.

30 June 1997

Geneva Conventions of 12 August 1949 and Additional Protocols of 8 June 1977 : ratifications, accessions and successions

	GENEVA CONVENTIONS			PROTOCOL I				PROTOCOL II		
COUNTRY	R/A/S		R/D	R/A/S		R/D	D90	R/A/S		R/D
Afghanistan	26.09.1956.	R								
Albania	27.05.1957.	R	X	16.07.1993.	A			16.07.1993.	A	
Algeria	20.06.1960.; 03.07.1962.	A		16.08.1989.	A	X	16.08.1989.	16.08.1989.	A	
Andorra	17.09.1993.	A								
Angola	20.09.1984.	A	X	20.09.1984.	A	X				
Antigua and Barbuda	06.10.1986.	S		06.10.1986.	A			06.10.1986.	A	
Argentina	18.09.1956.	R		26.11.1986.	A	X	11.10.1996.	26.11.1986.	A	X
Armenia	07.06.1993.	A		07.06.1993.	A			07.06.1993.	A	
Australia	14.10.1958.	R	X	21.06.1991.	R	X	23.09.1992.	21.06.1991.	R	
Austria	27.08.1953.	R		13.08.1982.	R	X	13.08.1982.	13.08.1982.	R	X
Azerbaijan	01.06.1993.	A								
Bahamas	11.07.1975.	S		10.04.1980.	A			10.04.1980.	A	
Bahrain	30.11.1971.	A		30.10.1986.	A			30.10.1986.	A	
Bangladesh	04.04.1972.	S		08.09.1980.	A			08.09.1980.	A	
Barbados	10.09.1968.	S	X	19.02.1990.	A			19.02.1990.	A	
Belarus	03.08.1954.	R	X	23.10.1989.	R		23.10.1989.	23.10.1989.	R	
Belgium	03.09.1952.	R		20.05.1986.	R	X	27.03.1987.	20.05.1986.	R	
Belize	29.06.1984.	A		29.06.1984.	A			29.06.1984.	A	
Benin	14.12.1961.	S		28.05.1986.	A			28.05.1986.	A	
Bhutan	10.01.1991.	A								
Bolivia	10.12.1976.	R		08.12.1983.	A		10.08.1992.	08.12.1983.	A	
Bosnia-Herzegovina	31.12.1992.	S		31.12.1992.	S		31.12.1992.	31.12.1992.	S	
Botswana	29.03.1968.	A		23.05.1979.	A			23.05.1979.	A	
Brazil	29.06.1957.	R		05.05.1992.	A		23.11.1993.	05.05.1992.	A	
Brunei Darussalam	14.10.1991.	A		14.10.1991.	A			14.10.1991.	A	
Bulgaria	22.07.1954.	R		26.09.1989.	R		09.05.1994.	26.09.1989.	R	

Burkina Faso	07.11.1961.	S		20.10.1987.	R				20.10.1987.	R		
Burundi	27.12.1971.	S		10.06.1993.	A				10.06.1993.	A		
Cambodia	08.12.1958.	A										
Cameroon	16.09.1963.	S		16.03.1984.	A				16.03.1984.	A		
Canada	14.05.1965.	R		20.11.1990.	R	X	20.11.1990.		20.11.1990.	R	X	
Cape Verde	11.05.1984.	A		16.03.1995.	A		16.03.1995.		16.03.1995.	A		
Central African Republic	01.08.1966.	S		17.07.1984.	A				17.07.1984.	A		
Chad	05.08.1970.	A		17.01.1997	A				17.01.1997	A		
Chile	12.10.1959.	R		24.04.1991.	R		24.04.1991.		24.04.1991.	R		
China	28.12.1956.	R	X	14.09.1983.	A	X			14.09.1983.	A		
Colombia	08.11.1961.	R		01.09.1993.	A		17.04.1996.		14.08.1995.	A		
Comoros	21.11.1985.	A		21.11.1985.	A				21.11.1985.	A		
Congo	04.02.1967.	S		10.11.1983.	A				10.11.1983.	A		
Congo (Dem. Rep.)	24.02.1961.	S		03.06.1982.	A							
Costa Rica	15.10.1969.	A		15.12.1983.	A				15.12.1983.	A		
Côte d'Ivoire	28.12.1961.	S		20.09.1989.	R				20.09.1989.	R		
Croatia	11.05.1992.	S		11.05.1992.	S		11.05.1992.		11.05.1992.	S		
Cuba	15.04.1954.	R		25.11.1982.	A							
Cyprus	23.05.1962.	A		01.06.1979.	R				18.03.1996.	A		
Czech Republic	05.02.1993.	S	X	05.02.1993.	S		02.05.1995.		05.02.1993.	S		
Denmark	27.06.1951.	R		17.06.1982.	R	X	17.06.1982.		17.06.1982.	R		
Djibouti	06.03.1978.	S		08.04.1991.	A				08.04.1991.	A		
Dominica	28.09.1981.	S		25.04.1996.	A				25.04.1996.	A		
Dominican Republic	22.01.1958.	A		26.05.1994.	A				26.05.1994.	A		
Ecuador	11.08.1954.	R		10.04.1979.	R				10.04.1979.	R		
Egypt	10.11.1952.	R		09.10.1992.	R	X			09.10.1992.	R	X	
El Salvador	17.06.1953.	R		23.11.1978.	R				23.11.1978.	R		
Equatorial Guinea	24.07.1986.	A		24.07.1986.	A				24.07.1986.	A		
Estonia	18.01.1993.	A		18.01.1993.	A				18.01.1993.	A		
Ethiopia	02.10.1969.	R		08.04.1994.	A				08.04.1994.	A		
Fiji	09.08.1971.	S										
Finland	22.02.1955.	R		07.08.1980.	R	X	07.08.1980.		07.08.1980.	R		
France	28.06.1951.	R							24.02.1984.	A	X	
Gabon	26.02.1965.	S		08.04.1980.	A				08.04.1980.	A		
Gambia	20.10.1966.	S		12.01.1989.	A				12.01.1989.	A		
Georgia	14.09.1993.	A		14.09.1993.	A				14.09.1993.	A		
Germany	03.09.1954.	A	X	14.02.1991.	R	X	14.02.1991.		14.02.1991.	R	X	
Ghana	02.08.1958.	A		28.02.1978.	R				28.02.1978.	R		
Greece	05.06.1956.	R		31.03.1989.	R				15.02.1993.	A		
Grenada	13.04.1981.	S										
Guatemala	14.05.1952.	R		19.10.1987.	R				19.10.1987.	R		
Guinea	11.07.1984.	A		11.07.1984.	A		20.12.1993.		11.07.1984.	A		
Guinea-Bissau	21.02.1974.	A	X	21.10.1986.	A				21.10.1986.	A		

Guyana	22.07.1968.	S		18.01.1988.	A				18.01.1988.	A				
Haiti	11.04.1957.	A												
Holy See	22.02.1951.	R		21.11.1985.	R	X			21.11.1985.	R	X			
Honduras	31.12.1965.	A		16.02.1995.	R				16.02.1995.	R				
Hungary	03.08.1954.	R	X	12.04.1989.	R		23.09.1991.		12.04.1989.	R				
Iceland	10.08.1965.	A		10.04.1987.	R	X	10.04.1987.		10.04.1987.	R				
India	09.11.1959.	R												
Indonesia	30.09.1958.	A												
Iran (Islamic Rep.of)	20.02.1957.	R	X											
Iraq	14.02.1956.	A												
Ireland	27.09.1962.	R												
Israel	06.07.1951.	R	X											
Italy	17.12.1951.	R		27.02.1986.	R	X	27.02.1986.		27.02.1986.	R				
Jamaica	20.07.1964.	S		29.07.1986.	A				29.07.1986.	A				
Japan	21.04.1953.	A												
Jordan	29.05.1951.	A		01.05.1979.	R				01.05.1979.	R				
Kazakhstan	05.05.1992.	S		05.05.1992.	S				05.05.1992.	S				
Kenya	20.09.1966.	A												
Kiribati	05.01.1989.	S												
Korea (Dem.People's Rep.)	27.08.1957.	A	X	09.03.1988.	A									
Korea (Republic of)	16.08.1966.	A	X	15.01.1982.	R	X			15.01.1982.	R				
Kuwait	02.09.1967.	A	X	17.01.1985.	A				17.01.1985.	A				
Kyrgyzstan	18.09.1992.	S		18.09.1992.	S				18.09.1992.	S				
Lao People's Dem.Rep.	29.10.1956.	A		18.11.1980.	R				18.11.1980.	R				
Latvia	24.12.1991.	A		24.12.1991.	A				24.12.1991.	A				
Lebanon	10.04.1951.	R		23.07.1997	A				23.07.1997	A				
Lesotho	20.05.1968.	S		20.05.1994.	A				20.05.1994.	A				
Liberia	29.03.1954.	A		30.06.1988.	A				30.06.1988.	A				
Libyan Arab Jamahiriya	22.05.1956.	A		07.06.1978.	A				07.06.1978.	A				
Liechtenstein	21.09.1959.	R		10.08.1989.	R	X	10.08.1989.		10.08.1989.	R	X			
Lithuania	03.10.1996.	A												
Luxembourg	01.07.1953.	R		29.08.1989.	R		12.05.1993.		29.08.1989.	R				
Macedonia	01.09.1993.	S	X	01.09.1993.	S	X	01.09.1993.		01.09.1993.	S				
Madagascar	18.07.1963.	S		08.05.1992.	R		27.07.1993.		08.05.1992.	R				
Malawi	05.01.1968.	A		07.10.1991.	A				07.10.1991.	A				
Malaysia	24.08.1962.	A												
Maldives	18.06.1991.	A		03.09.1991.	A				03.09.1991.	A				
Mali	24.05.1965.	A		08.02.1989.	A				08.02.1989.	A				
Malta	22.08.1968.	S		17.04.1989.	A	X	17.04.1989.		17.04.1989.	A	X			
Mauritania	30.10.1962.	S		14.03.1980.	A				14.03.1980.	A				
Mauritius	18.08.1970.	S		22.03.1982.	A				22.03.1982.	A				
Mexico	29.10.1952.	R		10.03.1983.	A									

Micronesia	19.09.1995.	A		19.09.1995.	A											19.09.1995.	A			
Moldova (Republic of)	24.05.1993.	A		24.05.1993.	A											24.05.1993.	A			
Monaco	05.07.1959.	R																		
Mongolia	20.12.1958.	A		06.12.1995.	R	X	06.12.1995.									06.12.1995.	R			
Morocco	26.07.1956.	A																		
Mozambique	14.03.1983.	A		14.03.1983.	A															
Myanmar	25.08.1992.	A																		
Namibia	22.08.1991.	S		17.06.1994.	A		21.07.1994.									17.06.1994.	A			
Nepal	07.02.1964.	A																		
Netherlands	03.08.1954.	R		26.06.1987.	R	X	26.06.1987.									26.06.1987.	R			
New Zealand	02.05.1959	R	X	08.02.1988.	R	X	08.02.1988.									08.02.1988.	R			
Nicaragua	17.12.1953.	R																		
Niger	21.04.1964.	S		08.06.1979.	R											08.06.1979.	R			
Nigeria	20.06.1961.	S		10.10.1988.	A											10.10.1988.	A			
Norway	03.08.1951.	R		14.12.1981.	R		14.12.1981.									14.12.1981.	R			
Oman	31.01.1974.	A		29.03.1984.	A	X										29.03.1984.	A	X		
Pakistan	12.06.1951.	R	X																	
Palau	25.06.1996.	A		25.06.1996.	A											25.06.1996.	A			
Panama	10.02.1956.	A		18.09.1995.	R											18.09.1995.	R			
Papua New Guinea	26.05.1976.	S																		
Paraguay	23.10.1961.	R		30.11.1990.	A											30.11.1990.	A			
Peru	15.02.1956.	R		14.07.1989.	R											14.07.1989.	R			
Philippines	06.10.1952.	R														11.12.1986.	A			
Poland	26.11.1954.	R	X	23.10.1991.	R		02.10.1992.									23.10.1991.	R			
Portugal	14.03.1961.	R	X	27.05.1992.	R		01.07.1994.									27.05.1992.	R			
Qatar	15.10.1975.	A		05.04.1988.	A	X	24.09.1991.													
Romania	01.06.1954.	R	X	21.06.1990.	R		31.05.1995.									21.06.1990.	R			
Russian Federation	10.05.1954.	R	X	29.09.1989.	R	X	29.09.1989.									29.09.1989.	R	X		
Rwanda	05.05.1964.	S		19.11.1984.	A		08.07.1993.									19.11.1984.	A			
Saint Kitts and Nevis	14.02.1986.	S		14.02.1986.	A											14.02.1986.	A			
Saint Lucia	18.09.1981.	S		07.10.1982.	A											07.10.1982.	A			
Saint Vincent Grenadines	01.04.1981.	A		08.04.1983.	A											08.04.1983.	A			
Samoa	23.08.1984.	S		23.08.1984.	A											23.08.1984.	A			
San Marino	29.08.1953.	A		05.04.1994.	R											05.04.1994.	R			
Sao Tome and Principe	21.05.1976.	A		05.07.1996.	A											05.07.1996.	A			
Saudi Arabia	18.05.1963.	A		21.08.1987.	A	X														
Senegal	18.05.1963.	S		07.05.1985.	R											07.05.1985.	R			
Seychelles	08.11.1984.	A		08.11.1984.	A		22.05.1992.									08.11.1984.	A			
Sierra Leone	10.06.1965.	S		21.10.1986.	A											21.10.1986.	A			
Singapore	27.04.1973.	A																		
Slovakia	02.04.1993.	S	X	02.04.1993.	S		13.03.1995.									02.04.1993.	S			
Slovenia	26.03.1992.	S		26.03.1992.	S		26.03.1992.									26.03.1992.	S			
Solomon Islands	06.07.1981.	S		19.09.1988.	A											19.09.1988.	A			

Somalia	12.07.1962.	A										
South Africa	31.03.1952.	A		21.11.1995.	A				21.11.1995.	A		
Spain	04.08.1952.	R		21.04.1989.	R	X	21.04.1989.		21.04.1989.	R		
Sri Lanka	28.02.1959	R										
Sudan	23.09.1957.	A										
Suriname	13.10.1976.	S	X	16.12.1985.	A				16.12.1985.	A		
Swaziland	28.06.1973.	A		02.11.1995.	A				02.11.1995.	A		
Sweden	28.12.1953.	R		31.08.1979.	R	X	31.08.1979.		31.08.1979.	R		
Switzerland	31.03.1959.	R		17.02.1982.	R	X	17.02.1982.		17.02.1982.	R		
Syrian Arab Republic	02.11.1953.	R		14.11.1983.	A	X						
Tajikistan	13.01.1993.	S		13.01.1993.	S				13.01.1993.	S		
Tanzania (United Rep.of)	12.12.1962.	S		15.02.1983.	A				15.02.1983.	A		
Thailand	29.12.1954.	A										
Togo	06.01.1962.	S		21.06.1984.	R		21.11.1991.		21.06.1984.	R		
Tonga	13.04.1978.	S										
Trinidad and Tobago	24.09.1963.	A										
Tunisia	04.05.1957.	A		09.08.1979.	R				09.08.1979.	R		
Turkey	10.02.1954.	R										
Turkmenistan	10.04.1992.	S		10.04.1992.	S				10.04.1992.	S		
Tuvalu	19.02.1981.	S										
Uganda	18.05.1964.	A		13.03.1991.	A				13.03.1991.	A		
Ukraine	03.08.1954.	R	X	25.01.1990.	R		25.01.1990.		25.01.1990.	R		
United Arab Emirates	10.05.1972.	A		09.03.1983.	A	X	06.03.1992.		09.03.1983.	A	X	
United Kingdom	23.09.1957.	R	X									
United States of America	02.08.1955.	R	X									
Uruguay	05.03.1969.	R	X	13.12.1985.	A		17.07.1990.		13.12.1985.	A		
Uzbekistan	08.10.1993.	A		08.10.1993.	A				08.10.1993.	A		
Vanuatu	27.10.1982.	A		28.02.1985.	A				28.02.1985.	A		
Venezuela	13.02.1956.	R										
Viet Nam	28.06.1957.	A	X	19.10.1981.	R							
Yemen	16.07.1970.	A	X	17.04.1990.	R				17.04.1990.	R		
Yugoslavia	21.04.1959.	R	X	11.06.1979.	R	X			11.06.1979.	R		
Zambia	19.10.1966.	A		04.05.1995.	A				04.05.1995.	A		
Zimbabwe	07.03.1983.	A		19.10.1992.	A				19.10.1992.	A		

Appendix III

Convention on the Prohibition of Military or any Other Hostile Use of Environmental Modification Techniques

31 UST 333, 16 ILM (1977), 88. In force Oct. 5, 1978.
Adopted by the General Assembly of the United Nations on 10 December 1976
Entry into force: 5 October 1978, in accordance with article IX (3).
Registration: 5 October 1978, No. 17119.
Text: United Nations, Treaty Series, vol. 1108, p. 151 and depositary notification C.N.263.1978.TREATIES-12 of 27 October 1978 (rectification of the English text).
Status: Signatories: 48. Parties: 64.
Note: The Convention was approved by the General Assembly of the United Nations in its resolution 31/721 of 10 December 1976. In application of paragraph 2 of the said resolution, the Secretary-General decided to open the Convention for signature and ratification by States from 18 to 31 May 1977 at Geneva, Switzerland. Subsequently, the Convention was transmitted to the Headquarters of the Organization of the United Nations, where it was open for signature by States until 4 October 1978.

Participant	Signature	Ratification, accession (a), succession (d)
Afghanistan		22 Oct 1985 a
Algeria		19 Dec 1991 a
Antigua and Barbuda		25 Oct 1988 d
Argentina		20 Mar 1987 a
Australia	31 May 1978	7 Sep 1984
Austria		17 Jan 1990 a
Bangladesh		3 Oct 1979 a
Belarus	18 May 1977	7 Jun 1988
Belgium	18 May 1977	12 Jul 1982
Benin	10 Jun 1977	30 Jun 1986
Bolivia	18 May 1977	
Brazil	9 Nov 1977	12 Oct 1984
Bulgaria	18 May 1977	31 May 1978
Canada	18 May 1977	11 Jun 1981
Cape Verde		3 Oct 1979 a
Chile		26 Apr 1994 a

Costa Rica				7	Feb	1996	a
Cuba	23	Sep	1977	10	Apr	1978	
Cyprus	7	Oct	1977	12	Apr	1978	
Czech Republic				22	Feb	1993	d
Democratic People's Republic of Korea				8	Nov	1984	a
Denmark	18	May	1977	19	Apr	1978	
Dominica				9	Nov	1992	d
Egypt				1	Apr	1982	a
Ethiopia	18	May	1977				
Finland	18	May	1977	12	May	1978	
Germany	18	May	1977	24	May	1983	
Ghana	21	Mar	1978	22	Jun	1978	
Greece				23	Aug	1983	a
Guatemala				21	Mar	1988	a
Holy See	27	May	1977				
Hungary	18	May	1977	19	Apr	1978	
Iceland	18	May	1977				
India	15	Dec	1977	15	Dec	1978	
Iran (Islamic Republic of)	18	May	1977				
Iraq	15	Aug	1977				
Ireland	18	May	1977	16	Dec	1982	
Italy	18	May	1977	27	Nov	1981	
Japan				9	Jun	1982	a
Kuwait				2	Jan	1980	a
Lao People's Democratic Republic	13	Apr	1978	5	Oct	1978	
Lebanon	18	May	1977				
Liberia	18	May	1977				
Luxembourg	18	May	1977				
Malawi				5	Oct	1978	a
Mauritius				9	Dec	1992	a
Mongolia	18	May	1977	19	May	1978	
Morocco	18	May	1977				
Netherlands	18	May	1977	15	Apr	1983	
New Zealand				7	Sep	1984	a
Nicaragua	11	Aug	1977				
Niger				17	Feb	1993	a
Norway	18	May	1977	15	Feb	1979	
Pakistan				27	Feb	1986	a
Papua New Guinea				28	Oct	1980	a

Poland	18	May	1977			8	Jun	1978	
Portugal	18	May	1977						
Republic of Korea						2	Dec	1986	a
Romania	18	May	1977			6	May	1983	
Russian Federation	18	May	1977			30	May	1978	
Saint Lucia						27	May	1993	d
Sao Tome and Principe						5	Oct	1979	a
Sierra Leone	12	Apr	1978						
Slovakia						28	May	1993	d
Solomon Islands						19	Jun	1981	d
Spain	18	May	1977			19	Jul	1978	
Sri Lanka	8	Jun	1977			25	Apr	1978	
Sweden						27	Apr	1984	a
Switzerland						5	Aug	1988	a
Syrian Arab Republic	4	Aug	1977						
Tunisia	11	May	1978			11	May	1978	
Turkey	18	May	1977						
Uganda	18	May	1977						
Ukraine	18	May	1977			13	Jun	1978	
United Kingdom	18	May	1977		16	May	1978		
United States of America	18	May	1977	17	Jan	1980			
Uruguay						16	Sep	1993	a
Uzbekistan						26	May	1993	a
Viet Nam						26	Aug	1980	a
Yemen	18	May	1977			20	Jul	1977	
Zaire	28	Feb	1978						

The States Parties to this Convention,

Guided by the interest of consolidating peace and wishing to contribute to the cause of halting the arms race and of bringing about general and complete disarmament under strict and effective international control, and of saving mankind from the danger of using new means of warfare,

Determining to continue negotiating with a view to achieving effective progress towards further measures in the field of disarmament,

Recognizing that scientific and technical advances may open new possibilities with respect to modification of the environment,

Recalling the Declaration of the United Nations Conference on the Human Environment adopted at Stockholm on 16 June 1972,

Realizing that the use of environment modification techniques for peaceful purposes

could improve the interrelationship of man and nature and contribute to the preservation and improvement of the environment for the benefit of present and future generations,

Recognizing, however, that military or any other hostile use of such techniques could have effects extremely harmful to human welfare,

Desiring to prohibit effectively military or any other hostile use of environmental modification techniques in order to eliminate the danger to mankind from such use, and affirming their willingness to work towards the achievement of this objective,

Desiring also to contribute to the strengthening of trust among nations and to the future improvement of the international situation in accordance with the purposes and principles of the Charter of the United Nations,

Have agreed as follows:

Article I

1. Each State Party to this Convention undertakes [sic] not to engage in military or any other hostile use of environmental modification techniques having widespread, long-lasting or sever 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.

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 dynamic, composition or structure of the Earth, including its biota, lithosphere and hydrosphere and atmosphere, or of outer space.

Article III

1. The provisions of this Convention shall not hinder the use of environmental modification techniques for peaceful purposes and shall be without prejudice to the generally recognized principles and applicable rules of international law concerning such use.

2. The State Parties to this Convention undertake to facilitate, and have the right to participate in, the fullest possible exchange of scientific and technological information on the use of environmental modification techniques for peaceful purposes. State Parties in a position to do so shall contribute, alone or together with other States or international organizations, to international economic and scientific co-operation in the preservation, improvement and peaceful utilization of the environment, with due consideration for the needs of the developing areas of the world.

Article IV

Each State Party to this Convention undertakes to take any measures it considers necessary in accordance with its constitutional processes to prohibit and prevent any activity in violation of the provisions of the Convention anywhere under its jurisdiction or control.

Article V

1. The State Parties to this Convention undertake to consult one another and to co-operate in solving any problems which may arise in relation to the objectives of, or in the application of the provisions of, the Convention. Consultation and co-operation pursuant to this article may also be undertaken through appropriate international procedures within the framework of the United Nations and in accordance with its Charter. These international procedures may include the services of appropriate international organizations, as well as of a Consultative Committee of experts as provided for in paragraph 2 of this article.

2. For the purpose set forth in paragraph 1 of this article, the Depositary shall, within one month of the receipt of a request from any State Party to this Convention, convene a Consultative Committee of Experts. Any State Party may appoint an expert to the Committee whose functions and rules of procedure are set out in the annex, which constitute an integral part of this Convention. The Committee shall transmit to the Depositary a summary of its findings of fact, incorporating all views and information presented to the Committee during its proceedings. The Depositary shall distribute the summary to all States Parties.

3. Any State Party to this Convention which has reason to believe that any other State Party is acting in breach of obligations deriving from the provisions of the Convention may lodge a complaint with the Security Council of the United Nations, such a complaint should include all relevant information as well as all possible evidence supporting its validity.

4. Each State Party to this Convention undertakes to co-operate in carrying out any investigation which the Security Council may initiate, in accordance with the provisions of the Charter of the United Nations, on the basis of the complaint received by the Council. The Security Council shall inform the States Parties of the results of the investigation.

5. Each State Party to this Convention undertakes to provide or support assistance in accordance with the provisions of the Charter of the United Nations, to any State Party which so requests, if the Security Council decides that such Party has been harmed or is likely to be harmed as a result of violation of the Convention.

Article VI

1. Any State Party to this Convention may propose amendments to the Convention. The text of any proposed amendment shall be submitted to the Depositary, who shall promptly circulate it to all States Parties.

2. Any amendment shall enter into force for all States Parties to this Convention which have accepted it, upon the deposit with the Depository of instruments of acceptance by a majority of States Parties. Thereafter it shall enter into force for any remaining State Party on the date of deposit of its instrument of acceptance.

Article VII

This Convention shall be of unlimited duration.

Article VIII

1. Five years after the entry into force of this Convention, a conference of the State Parties to the Convention shall be convened by the Depositary at Geneva, Switzerland. The

conference shall review the operation of the Convention with a view to ensuring that its purposes and provisions are being realized, and shall in particular examine the effectiveness of the provisions of paragraph 1 of article I in eliminating the dangers of military or any other hostile use of environmental modification techniques.

2. At intervals of not less than five years thereafter, a majority of the States Parties to this Convention may obtain, by submitting a proposal to this effect to the Depositary, the convening of a conference with the same objectives.

3. If no conference has been convened pursuant to paragraph 2 of this article within ten years following the conclusion of a previous conference, the Depositary shall solicit the views of all States Parties to this Convention concerning the convening of such a conference. If one third or ten of the State Parties, whichever number is less, respond affirmatively, the Depositary shall take immediate steps to convene the conference.

Annex to the Convention
Consultative Committee of Experts

1. The Consultative Committee of Experts shall undertake to make appropriate findings of fact and provide expert views relevant to any problem raised pursuant to paragraph 1 of article V of this Convention by the State Party requesting the convening of the Committee.

2.The work of the Consultative Committee of Experts shall be organized in such a way as to permit it to perform the functions set forth in paragraph 1 of this annex. The Committee shall decide procedural questions relative to the organization of its work, where possible by consensus, but otherwise by a majority of those present and voting. There shall be no matters of substance.

3. The Depositary or his representative shall serve as the Chairman of the Committee.

4. Each expert may be assisted at meeting by one or more advisers.

5. Each expert shall have the right, through the chairman, to request from State, and from international organizations, such information and assistance as the expert considers desirable for the accomplishment of the Committee's work.

Understandings worked out at the Conference of the Committee on Disarmament

Understanding relating to Article 1

It is Understanding of the Committee that, for the purpose of this Convention, the terms "widespread", "long-lasting" and "sever" shall be interpreted as follows:

a) "widespread": encompassing as area on the scale of several hundred square kilometers;

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.

It is further understood that the interpretation set forth above is intended exclusive for this Convention and is not intended to prejudice the interpretation of the same or similar terms if used in connection with any other international agreement.

Understanding related to Article II

It is the understanding of the Committee that the following examples are the use of environmental modification techniques as defined in Article II of this Convention: earthquakes: an upset in the ecological balance of a region; changes in weather (clouds, precipitation, cyclones various types and tornadic storms); changes in climate patterns; changes in ocean currents; changes in the state of the ozone layer; and changes in the state of the ionosphere.

It is further understood that all the phenomena listed above, when produced by military or any other hostile use of environmental modification technique, would reasonably be expected to result, in widespread, long-lasting or sever destruction, damage or injury. Thus, military or any other hostile use of environmental modification techniques as defined in Article II, so as to cause those phenomena as a means of destruction, damage or injury to another State party, would be prohibited.

It is recognized, moreover, that the list of example set out above is not exhaustive. Other phenomena which could result from the use of environmental modification techniques as defined in Article II could also be appropriately included. The absence of such phenomena from the list does not in any way imply that the understanding contained in Article I would not be applicable to those phenomena, provided the criteria set out in the Article were met.

Understanding relating to Article III

It is understanding of the Committee that this Convention does not deal with the question whether or not a given use of environmental modification techniques for peaceful purposes is in accordance with generally recognized principles and applicable rules of international law.

Understanding relating to Article VIII

It is the understanding of the Committee that a proposal to amend the Convention may also be considered at any Conference of parties held pursuant to Article VIII. It is further understood that any proposed amendment that is intended for such consideration should, if possible, be submitted to the Depositary no less than 90 days before the commencement of the Conference.

Appendix IV

Draft Article on State Responsibility Adopted So Far by the International Law Commission

Part One

Chapter 1

General Principles

Article 1

Responsibility of a State for its internationaly wrongful acts

Every Internationally wrongful act of a State entails the international responsibility of the

State.

Article 2

Possibility that every State may be held to have committed an internationally wrong ful act

Every State is subjec to the possibility of being held to have committed an internationally wrongful act entailing its international responsibility.

Article 3

Elements of an internationally wrongful act of a State

There is an internationally wrongful act of a State when:

a) conduct consisting of an action or omission is attributable to the State under international law; and

b) that conduct constitutes a breach of an international obligation of the State.

Article 4

Characterization of an act of a State as internationally wrongful

An act of a State may only be characterized as internationally wrongful by international law. Such characterization cannot be affected by the characterization of the same act as lawful by internal law.

Chapter II
The "Act of the State" under international law

Article 5

Attribution to the State of the conduct of its organs

For the purposes of the present articles, conduct of any State organ having the status under the internal law of that State shall be considered as an act of the State concerned under international law, provided that organ was acting in that capacity in the case in question.

Article 6

Irrelevance of the position of the organ in the organization of the State

The conduct of an organ of the State shall be considered as an act of that State under international law, whether that organ belongs to the constituent, legislative, excutive, judicial or other power, whether its functions are of an international or an internal character, and whether it holds a superior or a subordinate position in the organization of the State.

Article 7

Attribution to the State of the conduct of other entities to exercise elements of the governmental authority

1. The conduct of an organ of a territorial governmental entity within a State shall also be considered as an act of that State under international law, provided that organ was acting in that capacity in the case in question.

2. The conduct of an organ of an entity which is not part of the formal structure of the State or of a territorial governmental entity, but which is empowered by the internal law of that State to exercise elements of the governmental authority, shall also be considered as an act of the State under international law, provided that organ was acting in that capacity in the

case in quesion.

Article 8

Attribution to the State of the conduct of persons acting in fact on behalf of the State

The conduct of a person or group of persons shall also be considered as an act of the State under international law if:

a) it is established that such person or group of persons was in fact acting on behalf of that State; or

b) Such person or group of persons was in fact exercising elements of the governmental authority in the absence of the official authorities and in circumstances which justified the exercise of those elements of authority.

Article 9

Attribution to the State of the conduct of organs placed at its disposal by another State or by an international oranization

The conduct of an organ which has been placed on the disposal of a State by another State or by an interntional organization shall be considered as an act of the former State under interntional law, if that organ was acting in the exercise of elements of the governmental authority of the State at whose disposal it has been placed.

Article 10

Attribution to the State of conduct of organs acting outside their competence or contrary to instruction concerning their activity

The conduct of an organ of a State, of a territorial governmental entity or of an entity empowered to exercise elements of the governmental authority, such organ having acted in that capacity, shall be considered as an act of the State under international law even if, in the particular case, the organ exceeded its competence according to internal law or contravened instructions concerning its activity.

Article 11

Conduct of persons not acting on behalf of the State

1. The conduct of a person or a group of persons not acting on behalf of the State shall not be considered as an act of the State under international law.

2. Paragraph 1 is without prejudice to the attribution on the State of any other conduct which is related to that of the persons or groups of persons referred to in that paragraph and which is to be considered as an act of the State by virtue of article 5 to 10.

Article 12

Conduct of organs of another State

1. The conduct of an organ of a State acting in that capacity which takes place in the territory of another State or in any other territory under its jurisdiction shall not be considered as an act of the latter State under international law.

2. Paragraph 1 is without prejudice to the attribution to a State of any other conduct which is related to that referred to in that paragraph and which is to be considered as an act of that State by0virtue of article 5 to 10.

Article 13

Conduct of organs of an international organization

The conduct of an organ of an international organization acting in that capacity shall not be considered as an act of a State under international law by reason onlyof the fact that such conduct has taken place in the territory of that State or in any other territory under its jurisdiction.

Article 14

Conduct of organs of an international movement

1. The conduct of an organ of an organ of an insurrectional movement which is established in the territory of a State or in any other territory under its administration shall not be considered as an act of that State under international law.
2. Paragraph 1 is without prejudice to the attribution to a State of any other conduct which is related to that of the organ of the insurrectional movement and which is to be considered as an act of that State by virtue article 5 to 10.
3. Similarly paragraph 1 is without prejudice to the attribution of the organ of the insurrectional movement in any case in which such attribution may be made under international law.

Article 15

Attribution to the State of the act of an international movement which becomes the new government of a State or which results in the formation of a new State

1. The act of an insurrectional movement which becomes the new government of a State Shall be considered as an act of that State. However, such attribution shall be without prejudice to the attribution to that State of conduct which would have been previously considered as an act of the State by virtue of articles 5 to 10.
2. The act of an insurrectional movement whose action results in the formation of a new State in part of the territory of a pre-existing State or in a territory under its administration shall be considered as an act of the new State.

Chapter III
Breach of an interntional Obligation

Article 16

Existance of a breach of an international obligation

There is a breach of an international obligation by a State when an act of that State is not in conformity with what is required of it by that obligation.

Article 17

Irrelevance of the origin of the international obligation breached

1. An act of a State which constitutes a breach of an interntional obligation is an internationally wrongfull act regardless of the origin, whether customary, conventional or other, of that obligation.
2. The breach of the interntional obligation breached does not affect the international responsibility arising fron the internationally wrongful act of that State.

Article 18

Requirement that the international obligation be in force for the State

1. An act of the State which is not in conformity with what is required of it by an international obligation constitutes a breach of that obligation only if the act was performed at the time when the obligation was in force for that State.
2. However, an act of the State which, at the time when it was performed, was not in conformity with what was required of it by an international obligation in force for that State, ceases to be considered as internationally wrongful act if, subsequently, such an act has become compulsory by virtue of a peremptory norm of general international law.
3. If an act of a State which is not in conformity with what is required of it by an international obligation has a continuing character, there is breach of that obligation only in respect of the period during which the act continues while the obligation is in force for that State.
4. If an act of the State which is not in conformity with what is required of it by an international obligation is composed of a series or omissions in respect of separate case, there is a breach of that obligation if such an act may be considered to be constituted by the action or omissions occuring within the period during which the obligation is in force for that State.
5. If an act of the State which is not in conformity with what is required of it by an international obligation is a complex act constituted by actions or omissions by the same or different organs of the State in respect of the same case, there is a breach of that obligation if the complex act not in conformity with it begins with an action or omission occuring within the period during which the obligation is in force for that State, even if that act is completed after that period.

Article 19

International crimes and international delicts

1. An act of a State which constitutes a breach of an international obligation is an internationally wrongful act, regardless of the subject-matter of the obligation breached.
2. An international wrongful act which results from the breach by a State of an international obligation so essential for the protection of fundamental interests of the international comunity as a whole constitutes an international crime.
3. Subject to paragraph 2, and on the basis of the rules of international law in force, an international crime may result, inter alia, from:
a) a serious breach of an international obligation of essential importance for the maintenance of international peace and security, such as that prohibiting aggression;
b) a serious breach of an international obligation of essential importance for safeguarding the right of self-determination of peoples, such as that prohibiting the estabilishment or

maintenance by force of colonial domination;
c) a serious breach on a widespread scale of an international obligation of essential importance for safeguarding the human being, such as those prohibiting slavery, genocide and aparthide;
d) 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.
4. Any internationally wrongful act which is not an interntional crime in accordance with paragraph 2 constitutes an international delict.

Article 20

Breach of an international obligation requiring the adoption of a particulat course of conduct

There is a breach by a State of an international obligation requiring it to adopt a particular course of conduct when the conduct of that State is not in conformity with that required of it by that obligation.

Article 21

Breach of an international obligation requiring the achievement of a specified result

1. There is a breach by a State of an international obligation requiring it to achive, by means of its own choice, a specified result if, by the conduct adopted, the State does not achieve the result required of it by that obligation.
2. when the conduct of the State has created a situation not in conformity with the result of it by an international obligation, but the obligation allows that this or an equivalent result may nevertheless be achieved by subsequent conduct of the State, there is a breach of the obligation only if the State also fails by its subsequent conduct to achieve the result required of it by that obligation.

Article 22

Exhausion of local remedies

When the conduct of a State has created a situation not in conormity with the result required of it by an international obligation concerning the treatment to be accorded to aliens, whether natural or juridical persons, but the obligation allows that this or an equivalent result may nevertheless be achieved by subsequent conduct of the State, there is a breach of the obligation only if the aliens concerned have exhausted the effective local remedies available to them without obtaining the treatment called for by the obligation or, where that is not possible, an equivalent treatment.

Article 23

Breach of an international obligation to prevent a given event

When the result required of a State by an interntional obligation is the prevention, by means of its own choice, of the occurrence of a given event, there is a breach of that obligation only if, by the conduct adopted, the State does not achieve that result.

Article 24

Moment and duration of the breach of an international obligation by an act of the State not extending in time

The breach of an international obligation by an act of the State not extending in time occures at the moment when that act is performed. The time of commission of the breach does not extend beyond that moment, even if the effects of the act of the State continue subsequently.

Article 25

Moment and duration of the breach of an international obligation by an act of the State extending in time

1. The breach of an international obligation by an act of the State having a continuing character occurs at the moment when that act begins. Nevertheless, the time of commission of the breach extends over the entire period during which the act continues and remains not in conformity with the international obligation.
2. The breach of an international obligation by an act of the State, composed of a series of actions or omissions in respect of seperate cases, occurs at the moment when that action or omission of the series is accomplished which establishes the existence of the composit act. Nevertheless, the time of commission of the breach extends over the entire period from the first of the actio or omissions constituting the composite act not in conformity with the international obligation and so long as such action or omissions are repeated.
3. The breach of an international obligation by a complex act of the State, consisting of a succession of actions or omissions by the same or different organs of the State in respect of the same case, occures at the moment when the last constituent element of that complex act is accomplished. Nevertheless, the same of commission of the breach extends over the entire period between the action or omission which initiated the breach and that which completed it.

Article 26

Moment and duration of the breach of an international obligation to prevent a given event

The breach of an international obligation requiring a State to prevent a given event occurs when the event begins. Nevertheless, the time of ommission of the breach extends over the entire period during which the event continues.

Chapter IV
Implication of a State in the Internationally Wrongful Act of Another State

Article 27

Aid or assistance by a State to another State for the commission of an internationally wrongful act

Aid or assistance by a State to another State, if it is established that it is rendered for the commission of an internationally wrongful act carried out by the latter, itself constitutes an internationally wrongful act, even if, taken alone, such aid or assistance would not constitute the breach of an international obligation.

Article 28

Responsibility of a State for an internationlly wrongful act of another State

1. An Internationally wrongful act committed by a State in a field of activity in which that State is subject to the power of direction or control of another State entails the international responsibility of that State.
2. An Internationally wrongful act committed by a State as the result of coercion exerted by another State to secure the commission of that act entails the international responsibility of that other State.
3. Paragraphs 1 and 2 are without to the interntional responsibility, under the other articles of the present draft, of the State which has committed the internationally wrongful act.

Chapter V
Circumstances Precluding Wrongfulness

Article 29

Consent

1. The consent validly given by a State to the commission by another State of a specified act not in conformity with an obligation with an obligation of the latter towards the former State precludes the wrongfulness of the act in relation to that State to the extent that the act remains within the limits of that consent.
2. Paragraph 1 does not apply if the obligation arises out of a premptory norm of general international law. For the purpose of the present draft articles, a peremptory norm of general international law is a norm accepted and recognized by the international community of States as a whole as a norm from which no derogation is permitted and which can be modified only by a subsequent norm of general international law having the same character.

Article 30

Countermeasures in respect of an internationally wrongful act

The wrongfulness of an act of a State not in conformity with an obligation of that State toward another State is precluded if the act constitutes a measure legitimate under international law against that other State, in consequence of an internationally wrongful act of that other State.

Article 31

Force majeure and fortuitous event

1. The wrongfulness of an act of a State not in conformity with an international obligation of that State is precluded if the act was due to an irresistible force or to an unforseen external event beyond its control which made impossible for the State to act in conformity with that obligation or to know that its sconduct was not in conformity with that obligation.
2. Paragraph 1 shall not apply if the State in question has contributed to the occurrence of the situation of material impossibility.

Article 32

Distress

1. The wrongfulness of an act of a State not in conformity with an international obligation

of that State is precluded if the author of the conduct which constitute the act of that State had no other means, in a situation of extreme distress, of saving his life or that of persons entrusted to his care.
2. Paragraph 1 shall not apply if the State in question has contributed to the occurrence of the situation of extreme distress or if the conduct in question was likely to create a comparable or great peril.

Article 33
State of necessity

1. A state of necessity may not be invoked by a State as a ground for precluding the wrongfulness of an act of that State not in conformity with an international obligation of the State unless:
(a) the act was the only means of safeguarding an essential interest of the State against a grave and imminent peril; and
(b) the act did not seriously impair an essential interest of the State towards which the obligation existed.
2. In any case, a state of necessity may not be invoked by a State as a ground for precluding wrongfulness:
(a) if the international obligation with which the act of the State is notin conformity arises out of a peremptory norm of general international law; or
(b) if the international obligation with which the act of the State is not in conformity is laid down by a treaty which, explicity or implicitly, excludes the possibility of invoking the state of necessity with respect to that obligation; or
(c) if the State in question has contributed to the occurrence of the state of necessity.

Article 34
self-defence

The wrongfulness of an act of a State not in conformity with an international obligation of that State is precluded if the constitute a lawful measure of self-defence taken in conformity with the Charter of the United Nations.

Article 35
Reservation as to compensation for damage

Preclusion of the wrongfulness of an act of a State by virtue of the provisions of articles 29, 31, 32 or 33 does notprejudge any question that may arise in regard to compensation for damage caused by that act.

Part Two
Article 1

The international responsibility of a State which, pursuant to the provisions of part 1, arises from an internationally wrongful act committed by that State entails legal consequences as set out in the present part.

Article 2

Without prejudice to the provisions of articles 4 and [12], the provisions of this partgovern the legal consequences of any internationally wrongful act of a State, except whrere and to the extent that those legal consequences have determined by other rules ofinternational law relating specifically to the internationally wrongful act in question.

Article 3

Without prejudice to the provisions of articles 4 and [12], the rules of customary international law shall continue to govern the legal consequences of an internationally wrongful act of a State not set out in the provisions of the present part.

Article 4

The legal consequences of an internationally wrongful act of a State set out in the provisions of the present part are subject, as appropriate, to the provisions and procedures of the Charter of the United Nations relating to the maintenance of international peace and security.

Article 5

1. For the purposes of the present articles, "injured State" means any State a right of which is infringed by the act of another State, if that act constitutes, in accordance with Part One of the present articles,an internationally wrongful act of that State.

2. In particular, "injured State" means

(a) if the right infringed by the act of a State arises from a bilateral treaty, the other State party to the treaty;

(b) if the right infringed by the act of a State arises from a judgement or other binding dispute settlement decision of an international court or tribunal, the other State or States parties to the dispute and entitled to the benefit of that right;

(c) if the right infringed by the act of a State arises from a binding decision of an international organ other than an international court or tribunal, the State or States which, in accordance with the constituent instrument of the international organization concerned, are entitled to the benefit of that right;

(d) if the right infringed by the act of a State arises from a treaty provision for a third state, that third State;

(e) if the right infringed by the act of a State arises from a multilateral treaty or from a rule of customary international law, any other States party to the multilateral treaty or bound by the relevant rule of customary international law, if it is established that:

(i) the right has been created or is established in its favour;

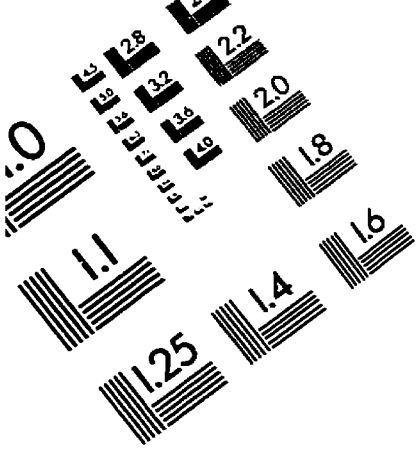
(ii) the infringement of the right by the act of a State necessarily affects the enjoyment of the rights or the performance of the other States parties to the multilateral treaty or bound by the rule of customary international law; or

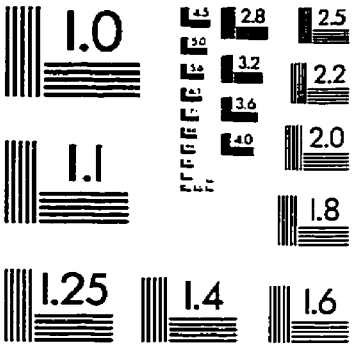
(iii) the right has been created or is established for the protection of human rights and fundamental freedoms;

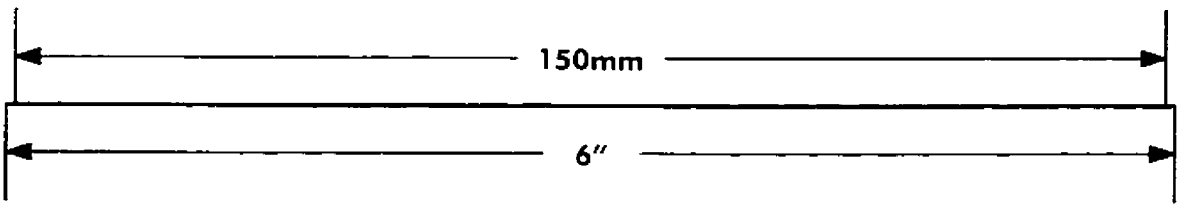
(f) if the right infringed by the act of a State arises from a multilateral treaty, any other States party to the multilateral treaty, if it is established that the right has been expressly stipulated

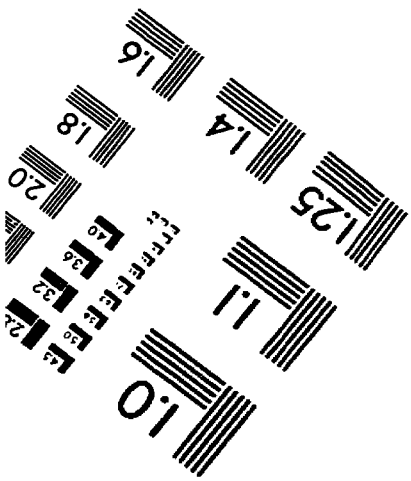
in that treaty for the protection of the collective interests of the States parties thereto.

3. In addition, "injured State" means, if the internationally wrongful act constitutes an international crime [and in the context of the rights and obligations of States under article 14 and 15], all other States.









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