

**AN APPRAISAL OF THE LEGAL FRAMEWORK FOR
INTERNATIONAL ENVIRONMENTAL PROTECTION UNDER
THE LAW OF ARMED CONFLICT**

By

JAMILA, ISAH

LLM/LAW/00894/2006-2007

April, 2011

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**A THESIS SUBMITTED TO THE POSTGRADUATE SCHOOL, AHMADU
BELLO UNIVERSITY, ZARIA, IN PARTIAL FULFILLMENT FOR THE
REQUIREMENT OF MASTER OF LAWS (LLM) DEGREE.**

April, 2011

Declaration

I hereby declare that this work is original. It has not been presented or published anywhere. All quotations and references were acknowledged.

.....
Jamila Isah

April, 2011

Certification

This thesis titled: “An Appraisal of the Legal Framework for Environmental Protection under International Environmental Law of War” by Jamila Isah meets the regulations governing the award of the Degree of Masters of Law LL.M of Ahmadu Bello University, Zaria and is approved for its contribution to academic knowledge and literally presentation.

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Dedication

This work is dedicated to my late father, Alh. Isah Eneyika Ozovehe, (may Allah grant him eternal rest, Amen).

Acknowledgement

I am grateful to Almighty Allah for all He has been doing in my life; I wish to appreciate my parents especially my mother Hajiya Fatimah Isah for her continuous prayer and moral support, may Allah reward them with Aljannah Firdausi (Amen.)

I am immensely grateful to my supervisor, the humble Dr. A.K. Usman. I must place on record that you read all the chapters despite the whole lot of LLM students under your supervision. Sir, your scholarly guidance and encouragement throughout the period of this research have positively impacted my life and the quality of this research. May God continue to guide and protect you and your family. My thanks also go to Dr. B.Y. Ibrahim the second supervisor of this work.

I am also very grateful to the following people; Prof. M.T Ladan the Chairman of my seminar presentation; Dr. A.M. Madaki, may Allah reward him abundantly for his assistance; Ibrahim Abdulkarim Esq., Dr (Mrs.) J.A.M. Audi, Mrs. Lar for their contributions; Mohammed(Sir Hero) Umar for editing this work; General Saleh Maina and his wife Hajiya Jamila S. Maina who is a sister and friend. I thank them for their support for making it possible for me to use the National Defence War College Library, Abuja.

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Abbreviations

ICRC	-	International Committee of the Red Cross
NIAC	-	Non International Armed Conflict
IHL	-	International Humanitarian Law
IAC	-	International Armed Conflict
IUCN	-	International Union for Conservation of Nation
ENMOD	-	Environmental Modification Techniques
CCW	-	Certain Conventional Weapons
UNCC	-	United Nation Compensation Commission
ICJ	-	International Court of Justice
NATO	-	North Atlantic Treaty Organization
UNSC	-	United Nation Security Council
ICTY	-	International Criminal Tribunal for Yugoslavia
UNEP	-	United Nations Environment Protection
ICC	-	International Criminal Court
DMZ	-	Demilitarized Zone
CCZ	-	Civilian Control Zone

List of Cases

1. Prosecutor v. Sesay, Kallan and Others. Special Court of Sierra Leone. Case SCSL 04-15-T. 2008
2. Legality of the Threat or Use of Nuclear Weapons. Advising Opinion, ICJ. 1996
3. New Zealand v. France ICJ 1995
4. Nicaragua v. US ICJ 1986
5. Tadic Case ICTY 1999
6. United Kingdom v. Albania (Corfu Channel) ICJ 1949
7. Yugoslavia v. NATO ICJ 1999.

List of Statutes

1. Geneva Conventions 1949 and their Additional Protocols I and II 1977
2. Hague Conventions 1899 and 1907
3. Hague Convention for the Protection of Cultural Property in the Event of Armed Conflict 1954 and 1999
4. International Criminal Court Statute 1998
5. United Nations Charter 1945
6. United Nations Convention on the Prohibition of Military or any Other Use of Environmental Modification Techniques (ENMOD) 1976.
7. Convention on Certain Conventional Weapons (CCW) 1980
8. Chemical Weapons Convention (CWC) 1993

Biological Weapons Convention (BWC) 1972

Abstract

The effect of war has far gone beyond human suffering. Armed conflict has devastating effect on the environment. It is on record that some battlefields of the World War I and II are still unfit for human habitation and cultivation. Consequently, environmental law of war exists to provide protection to the environment during armed conflicts. This thesis examines the adequacy or otherwise of the legal framework for the protection of the environment during war time. It equally investigates the mechanisms for the enforcement of the legal regime on the protection of the environment.

The main objectives of this thesis are to identify the legal framework on environmental protection during armed conflict; to examine problems if any in the enforcement of environmental law of war and to enhance access to information on the consequences of armed conflict on the environment.

The thesis observes that some treaty provisions that afford protection to the environment during armed conflict are vague and imprecise. It also found that majority of the international legal framework protecting the environment during armed conflict were basically designed for international armed conflict and do not apply to non international armed conflict.

Consequently, the thesis recommends, amongst other things, the establishment of new legal regime specifically for the protection of the environment during armed conflict. Similarly, countries must develop the necessary political commitment and popular support to implement fully laws and policies that enhance environment protection during wartime.

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Chapter One:

General Introduction

1.1 Historical Background

In modern times, the legal framework for environmental protection during armed conflict i.e. environmental law of warfare, is broadly divided into Principles of Customary International Humanitarian Law of warfare and the treaty provisions of international humanitarian law. The evolution of environmental law of war dates back to period when some basic principles of international humanitarian law were developed. Some of these international humanitarian law principles are that the right of states to use method and means of warfare is not unlimited, the principle of humanity and public conscience popularly known as the Martens Clause, principle of distinction, military necessity and proportionality. The relevance of the principles customary international humanitarian law (IHL) lies in the fact that it binds all states as a general principle accepted as binding, by all nations. Thus, customary IHL is very effective as it does not depend on the consent of state before it become operative.

Despite this advantage, it could not prevent the horror and massive destruction of lives and property experienced during armed World War II. The experiences acquired from successive armed conflicts brought to light the inadequacy of the principles of International Humanitarian Law and the need for a more comprehensive legal regime to protect the environment during armed conflict. This brought out the establishment of various Conventions such as the 1899 Hague and 1907 Hague Conventions, the Four Geneva Conventions of 1945 and the Two Additional Protocols to the Geneva Convention of 1977, just to mention but a few.

However, it must be pointed out at this junction that it was not until 1977 through the Additional Protocol I and II that the environment was specifically made an object of protection during armed conflict. In fact, all provisions effort at regulating means and methods of warfare are targeted at protecting the civilian and to reduce human suffering. Thus, effort at protecting the environment during armed conflict through the instrumentality of the international humanitarian law was rather indirect or collateral.

Yet the existence of environmental law of war could not prevent massive destruction of vegetation by the U.S. army during the Vietnam War, could not prevent the attempt by the U.S. to modify the environment to gain military advantage.

The consequences of armed conflict today have gone far beyond human suffering, displacement and damage to infrastructure and homes. Armed conflicts also cause environmental destruction and degradation.

Environmental destruction or degradation or both during wartime whether deliberately or inadvertently done, have been part of war since ancient times. As early as 146 BC, Roman troops razed the city of Coutlage and salted the surrounding earth to sterilize soil.¹ Thus environmental damage in wartime has for decades been recognized as one of the most immediate threats to human existence. This is because the destruction associated with armed conflict spills over to the natural resources such as water, agricultural land, trees and wildlife. The destruction during armed conflict can undermine human survival, act as a driver of poverty and forced migration.

Due to technological advancement, nations have the capability and potential to destroy large areas in a matter of seconds, and such destruction to the environment could be

¹ Morrison, D.C., War on the *Environment*. *Nat'L.J* 1991, 2 at 536

irreversible and for others, it could take many decades to recover. Few examples will suffice. Today, some battlefields of the World War I and World War II remain unfit for cultivation or dangerous to the population because of the unexploded mines and projectile still embedded in the soil.² During the Vietnam War, the United States instituted operation Ranch Hand for the purpose of destroying vegetation used by the enemy as cover and as a source of sustenance. It has been estimated that the chemical based incendiary weapons, such as Agent Orange, have caused destruction of eight percent of the regions crop lands, fourteen percent of its forests, and half of its swamp areas.³

During the Persian Gulf War, it was reported that the Iraq Forces set fire in more than 160 oil installations. One report suggested that the fires released numerous toxins, including the emission of sulphur dioxide and hydrogen sulphide from the burning oil field. The ensuing oil slick devastated the coral reef communities disrupting the sensitive ecological system⁴.

More recently, in 1999 dozens of industrial sites were bombed during the Kosovo conflict, leading to toxic chemical contamination at several hotspots. In another example, an estimated 12,000 to 15,000 tons of fuel oil were released into the Mediterranean Sea following the bombing of the Jiyeh power station during the conflict between Israel and Lebanon in 2006.⁵

² See Commentary on the Additional Protocols of 8 June 1977

³ Westing, A.H (ed) *Herbicides in War: The Long-Term Ecological and Human Consequences*. 1984

⁴ United Nations Dept of Public Information, Kuwait: Report To The Secretary-General on the Scope of Nature of Damage Inflicted on the Kuwait Infrastructure During the Iraqi Occupation at 27, U.N. Doc. DP1/1157(1991)

⁵ United Nations Environment Programme (UNEP) Report "Protecting the Environment During Armed Conflict: An Inventory and Analysis of International Law 2009 p.8

Armed conflict apart from having direct impact on the environment, the environment may equally suffer indirect consequence from armed conflict. For example, over-exploitation and illegal exploitation of natural resource particularly high valued resources have been on the increase in recent years to generate revenue for financing armed forces and acquisition of weapons. A report had it that since 1990, at least eighteen civil wars have been fuelled by natural resources.⁶ Natural resources like diamonds, timbers, oil, minerals and cocoa have been exploited in internal conflicts in countries such as Democratic Republic of Congo, Cote d'Ivoire, Liberia, Sierra Leone, Angola, Somalia, Sudan, Indonesia and Cambodia just to mention but a few.

In addition to direct and indirect impacts on the environment, armed conflict often weakens already fragile governance structure and causes a disruption of state institutions, initiatives and mechanisms of policy coordination. This in turn creates space for poor management, lack of investment, illegality and the collapse of positive environmental practices. For example, according to national review processes, concessions over natural resources granted during conflicts in countries like Liberia and the Democratic Republic of Congo have lacked legitimacy and often failed to the broader interests of the state.

The foregoing illustrates the direct and indirect as well as the realist potential impact of war on the environment. These impacts increase with technological capability of states in developing weapon of mass destruction. All these issues suddenly awaken the need to protect the environment that has continued to be the silent victim of armed conflicts.

⁶ Ibid

The evolution of law of armed conflict proceeded without direct consideration of the environment. The Hague Law (regulates method and means of warfare) and the Geneva Law (protects some category of persons and things during (armed conflict) though made oblique reference to the environment.), do not in general tie those prohibitions to the protection of the environment, but to the ultimate impact upon human dignity, survival and welfare. The prohibitions are covered by international human right law and international humanitarian law. These laws represent the desire of the international community at protecting the basic rights of the individual during wartime and peacetime. It was later realized that the rules of international humanitarian law are most often than not, subordinated by military necessity. Thus use of particularly devastating means of warfare could cause a large scale destruction to the environment as to render illusory or even prevent the implementation of provisions to protect the victims of armed conflict.

Although the international community was rudely shaken by the aftermath of the United States environmental devastation during the Vietnam War, it was deliberately excluded from the 1972 Stockholm Conference on the Human Environment. However, the Stockholm Conference still came up with some declarations that form the bedrock of international environmental law. Though conceived mainly for application in peacetime, they can influence the development of the law for the protection of the environment during armed conflict. Some of these principles are: the obligation for states to avoid causing environmental damage beyond their borders and the obligation for states to respect the environment in general.

Later environmental protection was raised in more specific context of international human right law. It is now recognized that personal growth and happiness cannot be achieved in a severely damaged environment. Thus, right to a healthy natural environment is gaining acceptance as a fundamental human right.⁷

Unfortunately, all these efforts did not prevent environmental destruction during the Persian Gulf War. It was reported that on the 21st January, 1991, the US military in Kuwait accused the Iraqis in occupation of Kuwait of opening valves at the sea island (Mina al-Ahamadi) oil terminal near Kuwait city and of pumping crude oil into the gulf. Also the coalition bombing and missile attacks resulted in damage to a large number of facilities in including chemical installations, refineries and factories.⁸ These destructions to the environment, Iraq's acts in particular caused a worldwide sense of outrage. That development led to reappearance in the agenda of government, international bodies and others, the need to provide adequate laws to protect the environment in times of armed conflict. In this regard, two significant international meetings where the issues were debated were convened. The first was the London Conference on a Fifth Geneva Convention on the protection of the Environment in Time of Armed Conflict of 3rd June, 1991 while the second was the Ottawa Conference on the Use of the Environment as a Tool of Conventional Warfare of 10-12th July, 1991.⁹ These conferences have raised awareness on the importance and need to protect the environment during wartime. Yet, to date, there is still no

⁷ See Environmental Law www.whatconvention.org 16th/12/2010

⁸ See for example Article 24 of the African Charter on Human and People Rights, which provides that: "All Peoples shall have the right to a general satisfactory environment favourable to their development".

⁹ Salter, John. Environmental Legal Issues Arising from Gulf Conflict (1993)10 OGLTR 348.

agreement on this topical issues and the environment continues to be the silent victims of modern warfare.

1.2 Literature Review

International environmental law of war is a recent subject of law. Because of the recent nature of the subject of this research, not much text or journal publications exist in it. The few works that exist to the limited knowledge of this writer on the subject of research are examined here.

Prof. Brauer while writing on the topic: The Effects of War on the Natural Environment discusses extensively, the direct and induced effect of war, on the natural environment,¹⁰ and came to the conclusion that among human activities, by far the most damage to the natural environment is wrought not by war, but by peacetime commerce. His preoccupation was a comparison between peacetime commerce and war which is more damaging to the environment. This being his concern, the paper did not consider environmental damage occasioned by armed conflict materially serious to warrant any legal protection. Williams¹¹ writing under the title land mines. Dealing with the environmental impact concentrates entirely on impact of landmines on human. The paper is devoid almost completely of information on the environmental impact of land mines. Also Westing's contribution on the environmental aftermath of Vietnam War deals almost exclusively either with the human impact or with the

¹⁰ Braver, J. "The effect of war on the Natural environment" www.aug.edu/~sbajmb (visited 15th December 2010)

¹¹ Williams, J. Land Mines: Dealing with the Environmental Impact. Environment and Security (1997) Vol. 1 No. 2 P. 107-124

impact on cultivated environments transmitted to humans.¹² This article deals essentially with the humanitarian aspect of armed conflict. Prof. Barnaby while writing on the environmental impact of Gulf War is similarly empty of actual scientific data on environmental damage assessment. In fact, the article dwells on speculations For example, what could happen and what may happen and what is likely to happen and what will happen to the environment? There is no discussion whatsoever on the actual environmental damage the war has caused.¹³

The point here is that these contributions did not even deliver on the topic chosen by the respective authors i.e. the actual impact of war on the environment not to even talk of identifying or analyzing the legal framework for protecting the environment. Some authors, while discussing the impact of armed conflict on the environment, brims classification of environmental effects of war. These authors are Dahl,¹⁴ Lanier-Graham,¹⁵ El-baz¹⁶ and Levy.¹⁷ The main draw back with emphasis on classification is that it tends to focus on environmental damages that only have immediate impact on human. These appear to be of no thought of intrinsic or existence value of non-human nature for its own sake. With due respect, Dahl fell into this error.¹⁸

¹² Westing, A.H, The Environmental Aftermath of Warfare in Vietnam. *Natural Resources Journal* (1983) vol. 23 p. 365-389

¹³ Barnaby, F. The Environmental Impact of the Gulf War, *The Ecologist* (1991) Vol. 21. No. 4 pp 166-172.

¹⁴ Dahl, Arme Willy, Environmental Destruction in War :*Disarmament* (1992) vol. 15. No. 2 pp. 113.

¹⁵ Lainer-Graham, S.D. *The Ecology of War: Environmental Impacts of Weaponry and Warfare*, Walker and Company, New York, 1993.

¹⁶ El.Baz, Farouk et al, Detection by Satellite Images of Environmental Changes due to the Gulf War in ElBaz, F & Mahkarita, R.M (eds) *The Gulf War and the Environment*, Gordon & Breach, Lausanne, 1994 P. 1-24.

¹⁷ Levy, B.S. et al, *The Environmental Consequences of War*, In Levy, B.S & Sidel, V.W. (eds) *War and Public Health* Oxford University Press New York, 1997.

¹⁸ Dahl, A.W. op cit p. 127

Jensen's¹⁹ contribution on the international law of environment warfare focuses on the need to clearly differentiate between active and passive environmental warfare. According to him, active environmental warfare requires the intentional use of the environment as a weapon of waging armed conflict and this violates international law *per se*, while passive environmental warfare includes acts not specifically designed to use the environment for a particular military purpose but have a degrading effect on the environment and this violates international law only when it produces effects that are widespread, long term and severe. While this distinction may be relevant for the purpose of imposing state responsibility, it is rather too subjective.

Plant²⁰ in his contribution, attempts to explain viability of a new legal regime to protect the environment during armed conflict. Unfortunately, the work only appears to be the author's summary of the proceedings on London Conference on "A "fifth Geneva Convention" in the protection of the environment in time of Armed Conflict of 3rd June, 1991 and the Ottawa Conference on the Use of Environment as a Tool for Conventional Warfare of 10-12 July, 1991.

Yuzon²¹ in his paper entitled Deliberate Environmental Modification Through the Use of Chemicals and Biological Weapons. Prof. Greening²² in his article "The International Laws of Armed Conflict to Establish an Environmentally Protective Regime" focused on the use of chemical and biological weapons in international armed conflicts and concludes that there is need for a fifth Geneva Convention to

¹⁹ Jensen, E.T The International Law of Environmental Warfare: Active and Passive Damage During Armed Conflict www.portfrotterdem.com visited 16/12/2010.

²⁰ Plant, G. op cit.

²¹ Yuzon, JFE. Deliberate Environmental Modification Through the Use of Chemical and Biological Weapons:

²² "Greening" The International Laws of Armed Conflict established an Environmentally Protective Regime, *Am. U. J Int'l L & Poly* 1996. Vol. 11.5 p. 793

protect the environment during armed conflict. His analysis was limited to the use of chemical and biological weapons. He failed to analyse the use of conventional weapon in relation to the four Geneva Conventions. Worst still is that his analysis was restricted to international armed conflict. The International Committee of the Red Cross (ICRC)²³ in its contribution on the topic “Environment and Armed Conflict” took the position that the current law is sufficient and should be enforced strictly. Infact, it objected to any attempt at creating a “Fifth Geneva” Convention. This position is quite unfortunate because most of the armed conflicts in modern times are internal rather than international and, the bulk of the existing international legal regime on war regulates international armed conflict.

Prof Greening²⁴ examines most issues relating to law of armed conflict. Some of the issues include history, sources of law of armed conflict, legality of war, offences, etc. Infact, he discusses environmental impact of war as a crime. While his contribution is relevant to some aspect of the present research such as providing material for the theoretical framework and analysis of concept, the contribution is essentially focused on the humanitarian aspect of war.

From this review, it is quite clear that a great deal of academic research is still required to further enrich the existing literature on the environmental impact of war. For example there is need to clearly identify the adequacy or otherwise of the legal framework for protecting the environment during armed conflict. Who should be

²³ ICRC view can be seen in United Nations Environment Programme (UNEP) Report, Protecting the Environment during Armed Conflict, 2009 www.unep.org.

²⁴ Green, L. C, The Contemporary Law of Armed Conflict, Manchester University Press, New York, 1996.

responsible? What are the mechanisms for the enforcement of the laws? This research hopes to fill the gaps existing in the literature and to illicit further research in this area.

1.3 Statement of Research Problem

Arising from the literature review are the following problems:

- a. It is rather difficult to assess the impact of armed conflict on the environment;
- b. Lack of adequate legal frame work for the protection of the environment during armed conflict; and
- c. Lack of efficient mechanisms for the enforcement of environmental law of war.

Perhaps, it is beyond dispute that warfare has direct and indirect impact on the environment. Consequently, right from time immemorial, attempts have been made to regulate conduct of hostility. For example in early biblical writing²⁵, it states “when you are at war, and lay siege to a city for a long time in order to take it, do not destroy its trees by taking the axe to them, for they provide you with food; you shall not cut them down. The trees of the field are not men that you should besiege them ...” The Holy Quran²⁶ provides that “fight in the way of Allah those who fight you”. The Prophet²⁷ (SAW) in explaining the Islamic rules of conduct of hostilities said: “No wanton killing of livestock and animals, no burning or destruction of trees and orchards. No destruction of wells”.

In modern times, environmental protection at peacetime and during armed conflict has been placed on the agenda of many institutions active in the field of international law.

²⁵ Old Testament, Deuteronomy 20: 19 – 20.

²⁶ The Holy Quran 2:19 and 2:60

²⁷ Cited in Sherifa-Zahur, Y. H. A., Islamic Rulings on Warfare at www.carlislearmy.Mill/ssi visited in October 2009.

Their efforts have resulted in the adoption of many rules, principles and treaties. According to the Stockholm Declaration,²⁸ “man and his environment must be spared the effects of nuclear weapons and all other means of mass destruction. States must strive to reach prompt agreement in the relevant international organs, on the elimination and complete destruction of such weapons”. Also, the World Charter for Nature and the Rio Declaration take positions similar to the Stockholm Declaration. As a general principle, the World Charter for Nature²⁹ dictates that “nature shall be secured against degradation caused by warfare or other hostile activities”. Furthermore, the Rio declaration indicates that international law should guide states to protect the environment in wartime and that states will, when necessary, re-evaluate this framework. Principle 24 of the Rio Declaration³⁰ provides that “warfare is inherently destructive of sustainable development” and that “states shall therefore respect international law, providing for the protection of the environment in times of armed conflict and cooperate in its further development as necessary”. Although these principles are not binding on states, their adoption and widespread approval by the states indicate, the international community desires to limit the effect of war on the environment. However, Treaty law and customary law of international humanitarian law provide additional binding legal rules on the protection of the environment during armed conflict.

Despite these efforts at protecting the environment during armed conflict, the environment has continued to be the victim of modern warfare. At times, deliberate

²⁸ Principle 26, Stockholm Declaration on Human Environment adopted by the United Nations Conference on the Human Environment, June 16, 1972.

²⁹ World Charter for Nature, U. N. GAOR 37th Sess, Agenda item 21 at 7 U. N. Doc. A/Res/37/7.

³⁰ United Nations Conference on Environmental and Development. R 10 Declaration on Environment and Development, June 14, 1992. 31 LLM 874.

attempts have been made to manipulate weather with negative consequences on the natural environment to achieve military objectives.³¹ The first problem this research investigate is the adequacy or otherwise of legal regime to prevent or limit environmental impact of warfare. Closely related to this, is the question of which international laws directly and indirectly protect the environment during armed conflict. The second problem this research investigates is the mechanisms for the enforcement of legal regime on the protection of the environment during armed conflict. Although the Stockholm Declaration and its progeny have indicated that states must take responsibility for their actions and activities that cause destruction to the environment, questions as to who is responsible for the implementation and enforcement of these standards remain largely obscure.

1.4 Objectives of the Research

The objective of this research work is to find solutions to the problems raised by the statement of the research problems. Specifically, it is also the objective of this research:

1. To identify the legal framework that directly and indirectly protects the environment during armed conflict.
2. To examine the problems, if any, to the enforcement and implementation of the legal regimes that protect the environment in wartime.
3. To enhance access to information on the negative consequences of armed conflict on the environment.

³¹ The US attempt to Modify the environment during the Indochina War 1961-1975 to hamper land movement in North Vietnam

1.5 The Scope of the Research

The scope of this work is determined by the objectives of the research as circumscribed by the research problems. Accordingly, only issues like environmental degradation during war time, laws protecting the environment during armed conflict that help the attainment of the objectives of this research, will be given prominence. Any issue that does not help the attainment of this research will not be considered except where the circumstances demand.

In other words, the scope of this work is circumscribed by its objectives. Thus, international law which includes international human rights law, international environmental law, international humanitarian law, these laws that provide the existing legal framework protecting the environment during armed conflict, will be assessed. Also, individual criminal responsibility for war crime will be examined within the framework of the research problem.

Although the legal provisions contained within the four main bodies of international law identified above will be examined, the scope of the examination and analysis will be limited to specific provisions of the laws that provide direct or indirect legal protection to the environment in times of war. The research is located within the international environment law so, it is expected that territorially, the work should be international. While attempt is made to cite relevant examples across the globe where applicable, most of the examples of the impact of war on the environment are drawn from recent armed conflicts for example, The Persian Gulf War of 1991. The reason for this is that it is the best studied case with relatively good pre and post war data.

Other armed conflicts are deficient in this regard. For this reason and due to space and time constraints, this research focuses only on recent and well studied armed conflicts.

1.6 Research Methodology and Sources of Information

This research adopts doctrinal methodology i.e. content analysis. In other words, treaties, conventions, domestic statutes, case law, maxim and other relevant literature or data will be analyzed. Therefore, this study is largely a library- oriented research.

Also, this research uses both primary and secondary sources. The primary sources here include various Treaties Conventions and Case Laws. The secondary source of data for this research includes the soft laws, published and unpublished work of scholars relevant to the research. These include books, journals, articles, seminar papers, newspapers and other periodicals.

1.7 Justification of the Research

This work is justified by the problems raised by the statement of the problems contained in section 1.3 of this work above. The work is also justified by its relevance to law students, law lecturers and the general public.

While it is an axiom that armed conflict is inevitable, it is equally true that environmental damage is inevitable during wartime, effort is therefore required to be made to ensure that the environmental impact of war is reduced to the barest minimum. This research aims to raise awareness of the fact that damage to the environment during armed conflict degrades the environment long after the period of the conflict, and most often extends beyond the limits of national territories and the present generation. The environment is crucial for ensuring enduring peace and

sustainable development. There can be no durable peace if the environment that sustains livelihoods is damaged or destroyed.

Consequently, it is important to strengthen the legal framework that protects the environment during armed conflict. This research is an effort in that direction and therefore very relevant and timely.

1.8 Organizational Layout of the Research

This thesis is divided into five chapters. The first chapter is the general introduction showing among other things, the general introduction of the research and its scope. It also discusses the statement of research problems, significance of the research and the research methodology.

Chapter Two examines the nature and scope of environmental degradation during armed conflict as well as the classification and types of environmental damage occasioned by armed conflicts.

Chapter Three identifies and analyses the legal regimes on the protection of the environment during armed conflict.

Chapter four considers enforcement mechanisms of the legal framework on the protection of the environment during armed conflict. It in addition, examines remedies for environmental damage during war time.

Chapter Five which is the last and concluding chapter of this research, presents the major findings and recommendations of the research.

Chapter Two

Nature and Scope of Environmental Degradation during Armed Conflict

2.1 Introduction

Since the early 1970, the steady deterioration of the environment has given rise to widespread awareness of man's destructive impact on the environment. One of the most environmentally damaging human activities is armed conflict. Armed conflict has always left its mark, sometimes long lasting, on the environment. It is on record that as at today, some battle fields of the World War I and World War II are unfit for cultivation or dangerous to the population because of the unexploded land mines.¹ This Chapter examines with examples, the nature of damage inflicted on the environment as a result of war. But before that, the chapter identifies and defines some key concepts on this discourse.

2.2 Definition and Clarification of Some Key Concepts and Terms

Although definition is generally subjective, it however enhances a better understanding of the terms and concept as used in a particular context. In this regard, we will attempt to define some concepts like, "environment", "armed conflict", "international armed conflict" and non international armed conflict. This is to facilitate a better understanding of the subsequent discussions.

¹ Bouvier, A. Protection of the Natural Environment in Time of Armed Conflict. International Review of the Red Cross no. 285, 1991, p.1

2.2.1 Meaning of Environment

Environment includes the physical, chemical and biological conditions that make possible and are proportions to the life of living creatures such as human, animal and plant². Environment has also been defined to include the three environmental media (land, air and water) and the flora and fauna which inhabit them. These two definitions appear to lay emphasis only on the natural environment. This is rather narrow.

A wider definition of environment is provided in the International Convention on Civil liability for damage resulting from activities dangerous to the environment to include the natural resources both biotic and abiotic, thus covering not only the natural environment but also the manmade landscapes, buildings and objects which form part of man's cultural heritage.³ This definition is not only holistic, it also recognizes the important relationship that exists between the natural and man-made environment.

It is clear from this definition that environment is very important to man and his development. The environment is the source of the materials which mankind transforms into goods and services. It also acts as a vast link for the wastes and polluting substances he generates. It provides a number of basic conditions needed for a stable climate.

2.2.2 Armed Conflict

Traditionally armed conflict (war) commenced formally with previous and explicit warning namely declaration of war or similar or ultimatum with conditional declaration of war. In modern times, armed conflict commences informally with the

² Verri, P. Dictionary of the International Law of Armed Conflict, International Committee of Red Cross ICRC Geneva 1992 p. 27.

³ Thornton, J & Beckwith, S. Environmental Law Sweet and Maxwell, Sydney, 1997, p. 3

existence of a situation of confrontation rendering the law of armed conflict applicable⁴.

2.2.2.1 Non-International Armed Conflict (NIAC)

Non-International Armed Conflict (NIAC) arises where there is armed conflict occurring in the territory of a state between the armed forces of a state and dissident or rebel forces. Traditionally, the law applicable in such conflicts was considered as internal matter for the states. Though Article 3 common to the fourth Geneva Convention of 1949, set out basic principles to be respected in such conflicts, it did not define NIAC. Article 1 of Protocol II of 1977 defines NIAC as a conflict which takes place in the territory of a state between its armed forces and dissident armed forces or other organized armed group which under responsible command, exercise such control over part of the territory as to enable them to carry out sustained and concerted military operations and to implement the provisions of International Humanitarian Law (IHL).⁵

Situation of internal disturbance and tension such as riots, isolated and sporadic acts of violence and other acts of a similar nature are not considered as armed conflicts. However, NIAC may become internationalized if (a) a state victim of an insurrection recognize the insurgents as belligerents ;(b) one or more foreign states came to the aid of one of the parties with their own armed forces; and, (c) two foreign states intervene with the respective armed forces, each in aid of a different party.

⁴ See Article 1 Additional Protocol II 1972 to the Geneva Convention

⁵ The Nigerian Civil War also known as the "Biafran War" 1967-1970 is a good example of NIAC

2.2.2.2 International Armed Conflict (IAC)

To constitute IAC, no minimum of intensity of violence or fighting, no minimum of military organization and no minimum of control of territory is required. There can be low level combat actions or even no combat action, small-scale incursion into enemy territory, declaration of war or similar actions. Under the Geneva Conventions, IAC is the type of conflict in which the armed forces of two or more states oppose each other even though one of them may not admit to the existence of a state of war. Also according to Article 1(4) of protocol in addition to the Geneva Convention, struggle and liberation movement may be considered as an IAC. The Article also defines IAC as armed conflict in which people are fighting against colonial domination and alien occupation as well as against racist regimes in the exercise of their self-determination. Once the liberation movement has made the necessary declaration, all the provisions of the Four Geneva Conventions are applicable.

The distinction between IAC and NIAC armed conflicts is very significant to this research. In fact, most of the rules of armed conflict regulate entirely IAC. The Four Geneva Conventions of 1949 and the Additional Protocols of 1977 only made oblique reference to NIAC. Unfortunately, most of the armed conflicts today with devastating consequences on the environment are NIAC. This means that NIAC with its attendant damage to the environment as can be seen in illegal exploitation of natural resources, as well as induce human migration common in most civil wars around the world is largely unregulated by IHL. The significance of this distinction between IAC and NIAC vibrates throughout this research.

2.3 Environmental Effect of War

Perhaps it is true that war is inevitable, it is equally true that environmental damage during wartime is inevitable. How has armed conflicts affected the environment? And which of the environmental media do armed conflicts affect most? Before any attempt to answer these questions, we will discuss classification of environmental effects of war.

The attempt as classifying environmental effect of war is significant in understanding the real impact of war on the environment. Over the years scholars have offered various classification methods, which include the following:

2.3.1 Scientific Approach

Under this classification, the environment is categorized into physical, chemical and biological components. The physical environment includes subject matter such as weather and climate, soil conditions and vegetation, water sources as well as human infrastructure such as water supply and sanitation, transportation and communication networks. The chemical environment includes components affecting air, land and water quality, and the biological environment refers to micro and microorganisms and their ecological interaction over time.⁶ This approach may be useful for those recording war-related damage⁷. For this approach to be useful, it requires the fieldwork of experts such as geophysicists, organic chemists, marine biologists and atmospheric climate researchers. In practice and for reasons discussed below, there are no such standard studies on environmental effect of war.

⁶ Levy, et al, *The Environmental Consequences of War* in Barry, S. et al (eds.) *War and Public Health* Oxford University Press, New York 1997 p. 52.

⁷ Brauer, J. *The Effect of War on the Natural Environment*, www.aug.edu/sbajmb. accessed 20th 12 2010

2.3.2 Dahl's Approach

Dahl classifies war related environmental damage into six groups: 1. Destruction of the human environment; 2. Destruction of the cultivated environment; 3. Destruction of the natural environment of economic importance; 4. Destruction of the natural environment of non economic values; 5. General environmental degradation; and, 6. Environmental manipulation as a tool in warfare. According to him, war might legally aim at (1) and 2 above. This is rather too restrictive because war⁸ whether legal or otherwise, affect the six groups listed above as they are part of the environment.

2.3.3 Lanier-Graham's Approach

He classifies environmental effect of war into three namely: 1. International direct destruction of the environment during war; 2. Incidental direct destruction; and, 3. Indirect or induced destruction as a medium or long term consequence of war but still attributable to war.⁹ An example of intentional direct destruction is deliberate setting of oil-fires during the Persian Gulf War. An example of incidental direct destruction would be soil erosion as a result of massive movement of troops and war machines. In this case, environmental damage is collateral but not the primary objective of the action taken. Indirect or induced destruction may occur as a result of human migration induced by wars that, in turn, exert environmental stresses.

2.3.4 A Severity Classification

⁸ Dahl, A.W. Environmental Destruction in War *Disarmament*, 1992 vol. 15 No. 2 pp 113-115.

⁹ Lanier-Graham, S.D. *The Ecology of War: Environmental Impacts of Weaponry and Warfare*, Walkard Company, New York, 1993.

It has been argued that the effects of war on the environment may be classified on the basis of severity of the damage, such as depletion, degradation and destruction. If full natural or human-assisted reconstitution can be expected, we might refer to this damage as environmental degradation. Where only partial reconstitution is possible or expected, we might refer to that as environmental depletion and where there is no possibility of reconstitution, we might refer to that as environmental destruction.¹⁰

2.3.5 Active and Passive Approach

Another classification is the active and passive damage. Active environmental warfare requires the intentional use of the environment as a weapon of waging armed conflict. This categorization aligns with Lanier-Graham's intentional direct destruction of the environment during armed conflict. For example, in 1672, the Dutch King ordered dikes opened to flood the marching routes of advancing French troops. The Dutch thus repelled the attack even as their lands were flooded with salt water. Also in World War II, the German's deliberately flooded 17 percent of Dutch territory with salt water¹¹. The passive environmental warfare includes acts not specifically designed to use the environment for a particular military purpose but that have a degrading effect on the environment. This categorization coincides with Lanier-Graham's incidental environmental damages. For example, movement of heavy equipment and digging of trenches.

In summary, classification has its advantages as it may be relevant for the purpose of placing liability and prosecution of persons liable for environmental damage. The

¹⁰ Brauer, J. op cit pp 5-8 El.Baz. etal

¹¹ Lanier-Hraham, S.D op cit p. 24

major problems with classification of environmental effects of war and assessment of the impact of war on the environment are: (1) Apart from the Persian Gulf War of 1991, there is no detail and scientific study of any armed conflict¹² (2) As a result, most of the literatures are anecdotal. And, (3) There is, in many instances, no sufficient baseline, i.e. pre- war data to which to compare war induced environmental effects¹³. In few instances, where baseline data are available, political circumstances can make collection of war-related assessment impossible. It is on record that people who tried to investigate damages in relation to civil war in El-Salvador were threatened with violence, and some were killed, and in Vietnam, authorities confiscated collected data and sample¹⁴. During the Persian Gulf War, Iraqi forces deliberately destroyed large quantities of scientific instruments¹⁵.

2.4. Actual and Potential Environmental Damage in Armed Conflict

Environmental damage in whatever form or degree is inevitable during armed conflict. Yet assessment of the scope of environmental damage occasioned by war is imprecise and at times impossible. Despite this drawback attempt is made here to show, using mainly the Persian Gulf War of 1991 as a reference point, the actual effect of armed conflict on the environmental media. The Persian Gulf War of 1991 is chosen because it is the best scientifically studied armed conflict, with relatively good pre and post war data. However, where applicable, examples of other armed conflicts will be cited

¹² Brauer, J. op cit

¹³ Bruch, C. 1998, Addressing Environmental Consequences of War, Background Paper for the First International Conference on Addressing Environmental Consequences of War; Legal, Economic and Scientific Perspectives: June 1998. Washington, D.C. Environmental Law Institute p. 10.

¹⁴ Ibid P. 11

¹⁵ Bloom et al (eds.) Hidden Causalities: Environmental Health and Political Consequences of the Persian Gulf War. Arms Control Research Centre and North Atlantic Books, Berkeley, C.A. 1994 p. 133. Canby, T. After the Storm National Geographic 1991 vol. 180, No. 2 p. 16

to show the effect of war on the three environmental media and the flora and fauna that which inhabits them.

2.4.1 Land Degradation and Destruction of Vegetation and Animal

Following the Persian Gulf War of 1991, the Greenpeace Mission found total Petroleum hydro carbons in soil of 14 percent and outside plant oil over of up to 34.5 percent around the Burgan Oil Field in Kuwait and 0.24 percent and 0.017 percent, respectively around the Kahfji Oil Field in Saudi Arabia. In addition, the mission report notes the use of fuel air bombs to clear minefields, pulverizing top soil and vegetation, desert soil compression by tanks and heavy equipment, as well as leaving of large quantities of refuse, toxic materials and between 45 and 54 million of gallons of sewage in sand pit¹⁶. The potential impact on the food chain (soil to plants to livestock to human) is very obvious. Also it was reported that area west of Abu Ali mangroves in some sample sites were almost completely destroyed¹⁷

Another example is during the second Sino-Japanese War of 1937-1945. In June 1938, China dynamited the Huayuankow dike of the Yellow River near Changehow, drowning not only several thousand Japanese soldiers and stopping thousand Chinese as well as damaging millions of square kilometers of farm land, crops and topsoil.¹⁸

During the second Indo -China War in Vietnam, Cambodia, and Laos, Thomas reports that by 1983, Vietnam had lost half of the forest standing 40 years before.¹⁹ During

¹⁶ Greenpeace, *The Environmental Legacy of the Gulf War*. Amsterdam: Greenpeace International 1992 pp. 22-36

¹⁷ Boer, B. Anomalous Pneumatophores and Adventitious Two Years After the 1991 Gulf War Oil Spill in Saudi Arabia" *Marine Pollution Bulletin* (1993) Vol. 27 pp. 207-208.

¹⁸ Westing, A.H *The Environmental Modification Convention* in Burns, A. (ed.) *Encyclopedia of Arms Control and Disarmament* Scribner's Sons, New York, 1993 p. 950.

¹⁹ Thomas, W. *Scorched Earth: The Military Assault on the Environment*. New Society Publishers Philadelphia, P.A 1995 P. 113

the German occupation of Norway, German troops destroyed about half of the then 95,000 strong reindeer population. Similarly, during the Persian Gulf War, about 8,000 camels from total population of 10,000 were killed.²⁰ Thomas also reports that “South Vietnam’s lobster industry was wrecked by over- production to provide this delicacy for American soldiers. The tiger population was similarly decimated for the souvenir trade”.²¹

Armed conflicts have in some instances, forced human migration. In this regard Brauer said:

In as much as war is fought by humans against humans, denial of territory to undermine a population’s economic sustenance induces movement to pristine areas, thereby depleting its capabilities further. The human population shifts resulting in deforestation by cutting or fire, draining of wetlands, nutrient depletion, crowding, overfishing along coastal areas and the lakes, leading to unsustainable economic practices.²²

It is on record that there was rapid increase in US food production to feed fighting European allies during World War I. Vast expanses of pristine US Land were brought under commercial production. Natural reservoirs and wetlands were destroyed in the North West to make room for wheat crops. Native grasses were plowed under in the southwest to create new wheat farms. Cotton was overplanted in the south, depleting the soil of nutrients. Timber forests in Minnesota, Wisconsin, and Michigan were destroyed to meet wartime needs. The birds’ populations were decreasing dramatically

²⁰ Lanier-Graham, S.D. opcit pp 23-48

²¹ Thomas, W. op cit

²² Brauer, J op cit p.9

as a result of the loss of wetlands and unchecked hunting”.²³ Another environmental damage is over-exploitation of, illegal exploitation of natural resources which has become common in civil wars especially but not limited to Africa, where warring groups deplete diamonds, gold mines or cut down timber to finance their armed forces and for acquisition of weapon.

2.4.2 Water Pollution

Water which includes the flora and fauna inhabitation is one of the environmental components commonly affected by armed conflict. During the Persian Gulf War, Iraqi troop pumped oil from installations in Kuwait and from tankers into the water of the Persian Gulf, causing among other things, large oil slicks and damage to marshland wildlife fishing desalination plants, and offshore oil operations. It was reported that this affected marine life. For example, by February, 1993, about 25,000 to 30,000 oceanic seabirds were killed,²⁴ common dolphin dugongs and calves were found dead. In the past, dolphin and dugong die-offs had been associated with oil spills in the western Gulf in 1983 and 1986. In fact, a survey conducted counted the number of humpbacks, bottlenose, and common dolphins as well as dugongs and the number of calves. The number of observed calves was small relative to the number of observed calves in other marine environment of the world such as the Gulf of Mexico, California and South Africa.²⁵

As regards fish, Abdali and Yakoob detected levels of heavy metals concentration in edible fish that were higher than minimum world ranges from samples taken between

²³ Lanier-Graham, S.D. op cit pp 20-21

²⁴ Greenpeace Report 1992 op cit p. 67

²⁵ Price, A.R.G et al, The Gulf: Its Biological Setting, Marine Pollution Bulletin (1993) VI. 27 p. 13

July and September 1991.²⁶ Generally, it was also observed that there has been some decline in the number of fish species. Most of the fish were juvenile and sub- adults. Although replenishment was not threatened, the observation suggests that the oil must have caused a mass die-off of adult fish. Another likely direct consequence of the oiling of the Persian Gulf waters during the war was sharp decline in the number of Sandi Arabian Prawn (large shrimp)²⁷

Other examples of armed conflicts that have adverse impact on water and source of water is the second Indo-China War. By October, 1989, just when it started final withdrawal from Cambodia, Vietnam granted rapacious timber and gain concessions to a Thai company that immensely enriched the Khmer Rouge and their Thai trading partners. Subsequently, the Sangke River, formerly pristine, turned into mud laden slurry whose sedimentary outpourings were destroying the Great Lake, the ecological heart of the Cambodian nation²⁸

Similarly, decade of protracted armed conflict in the Gaza strip for example, have severely affected ground water supply upon which about 1.5 million Palestinians depend for drinking and agriculture.²⁹

2.4.3 Air Pollution

²⁶ Abdali Fatima & Sami Al-Yakoob, Environmental Dimensions of the Gulf War: Potential Health Impacts in El-Baz Maharita, M (eds.) The Gulf War and the environment. Gordon and Breach Science Publishers Lausanne, 1994 pp. 99

²⁷ Price, A.R.G op cit

²⁸ Davies, P and Dunlop, N. War of the Mines: Cambodia, Landmines and the Impoverishment of a nation. Pluto Press, London, 1994 p. 44

²⁹ See Message of the UN Secretary – General Ban Kimoon on the International Day for Preventing the Exploitation of the environment in War and Armed Conflict. 6 November 2009, reproduced on www.unep.org 22 December, 2010.

During the Persian Gulf War, it was reported that the Iraqi troop deliberately set on fire over 600 oil wells in Kuwait causing a pall of smoke across the country. One report suggested that the fires released numerous toxins, including the emission of sulphur dioxide and hydrogen sulphide from the burning oil fields.³⁰

The Persian Gulf War stands out as a good example of the negative effects of armed conflict on the environment, particularly air pollution. In mid March 1991, air samples were taken with the three air samplers that remained in Kuwait following the Iraqi invasion. They showed a sharp increase in sulphur dioxide level. High concentrations of particulates found by a British Meteorological Office tests are implicated in respiratory ailment in human.³¹ The oil-free smoke plumes reached between 10,000 and 22,000 feet. The potential impact on the food chain is obvious.

2.5 Potential Environmental Damage in Armed Conflict

Apart from actual environmental damage in armed conflict, it is observed that technologically advanced nations through their armed forces, have the ability and potential to devastate large areas in a matter of seconds. The US use of incendiary weapons in Vietnam and its attempt to manipulate weather in Indo-China to hamper land movement in North Vietnam, clearly show the capabilities of states to manipulate or modify the environment for armed conflict. Roots³² reviewed five main categories of potential environmental modification targets; environmental effects of nuclear

³⁰ U.N. Dept of Public Information, Kuwait Report to the Secretary-General on the Scope and Nature of Damage Inflicted on the Kuwait Infrastructure during the Iraqi Occupation at 27 U.M. Doc. DP1/1157 1991.

³¹ Camby, T. After the Storm National Geographic, 1991 Vol. 180 No. 2 pp. 2.35

³² Roots, E.F, International Agreements to Prohibit or Control Modification of the Environment for Military Purposes: A Historical Overview and Comments on Currents Issues in Scheifer H.B (ed.) Verification Research Units. Arm Control and Disarmament Division external Affairs and International Trade Canada, verifying Obligations respecting Arms control and the environment: A Post Gulf War Assessment P. 18

warfare; deliberate modification of the weather for purposes of causing events such as drought, forest fires and climatic changes. This practice has led to the possibility of localized rain- making which in principle, could be used to enhance rainfall or snowfall in selected areas in order to increase the chance of avalanches and major floods in enemy territory,³³ modification of ecosystems including forest destruction and soil contamination. This category includes scorched earth actions such as the intentional destruction of forest and farmlands in Finland and Norway during the World War II, and deliberate defoliation of forests during the Vietnam War, Modification of geophysical processes such as earthquakes and violence eruption. This may appear far- fetched; theoretically states can use both earthquakes and tsunamis for military purposes. Despite the fact that most earthquakes occur in localized, well -defined locations, there are a number of “trouble spot” around the world where military tensions are high that are also prone to earthquakes- such as the Middle East, South Asia. Thus; the temptation for states to use earthquakes for military purposes exists as well as modification of ocean conditions, such as alterations affecting currents and causing persistent fog.

All these may seem more like science fiction than reality. Theoretically, the potential exists, and States with help of advanced technology can modify the environment to achieve military advantages. These possibilities provided the catalyst for the promulgation of the 1977 United Nations Convention on the Prohibition of Military or any other Hostile Use of Environmental Modification Techniques (En-Mod).³⁴

³³ Ibid at 29-30

³⁴ May 18, 1972 31 U.S.T 333, 1108 UNTS 152, see also Adams R & Guelff R (eds) Document on the Law of War. Oxford University Press London 3rd ed. 2000, pp 377-385. This will be discussed in chapter 3 of this thesis.

In summary, despite problems associated with the classification, environmental effects of wars and assessment of environmental effect of armed conflict, environmental damage in whatever form or degree is inevitable during armed conflict. Consequently, it is prudent to have legal framework to protect the environment during armed conflict.

Chapter Three

Principles of Environmental Law of War

3.1 Introduction

Right from time beyond human memory, the destructive effect of armed conflict on the environment is well known and has equally received attention. The Quran and the Bible contain provisions that prohibit environmental damage during armed conflict. For example, Allah says: And do not act corruptly, making mischief in the earth.¹ The Prophet (SAW) further said “No wanton killing of livestock and animals; No burning or destruction of trees and orchards. No destruction of wells”.² The Old Testament provides “when you are at war, and lay siege to a city for a long time in order to take it, do not destroy its trees by taking axe to them, for they provide you with food; you shall not cut them down. The trees of the field are not men that you should besiege them.”³ According to Grotius:

*First do not destroy anything in areas you occupy and the enemy does not. Second, do not destroy anything when it appears that victory is likely and imminent. Third, do not destroy anything the enemy can obtain from somewhere else forth, do not destroy anything the enemy cannot use to wage war. Finally, manmade objects ... are to be treated in accordance with the first four principles.*⁴

¹ Quran 2:60. This verse means prohibition of the destruction of civilian objects or property in war because it will amount to mischief in land.

² Quoted by Sherifa-Zahur, Y.H.A Islamic Rulings on Warfare cited in Chiroma, M et al: An Overview of Islamic Perspective of Humanitarian Law (2010) 8 U. Maid L.J. p. 79.

³ Deuteronomy 20:19-20

⁴ Hugo Grotius in his magisterial on Law of War and Peace Published in 1625 cited in Dycus, S. National Defense and the Environment, University Press of New England 1996 o. 140.

The development of international environmental law has greatly impacted on modern warfare and International Humanitarian Law (IHL). According to the Stockholm Declaration man and his environment must be spared the effects of nuclear weapons and all other means of mass destruction.⁵ The World Charter for Nature and the Rio Declaration takes position similar to the Stockholm Declaration. The World Charter for Nature states that “nature shall be secured against degradation caused by warfare or other hostile activities.”⁶ Also, the Rio Declaration provides that international law should guide states to protect the environment during armed conflict and that states will, when necessary, reevaluate this framework.⁷ Although these principles are not binding on states, the widespread acceptability indicates that they may assume customary international status. These principles have shown emphasis placed on environmental protection—the desire of the international community to protect the environment during armed conflict. The law of armed conflict or International Humanitarian Law (IHL) has also placed emphasis on the protection of the environment during wartime because of the serious environmental damage caused by certain methods and means of modern warfare.

This Chapter examines legal framework particularly the rules of IHL for the protection of the environment during armed conflict. IHL is the specific rules of international law that regulate conduct of hostility. International environment law is essentially applicable to the environment during peace time; severe environmental

⁵ Principle 26 Stockholm Declaration on the Human Environment adopted by the United Nations Conference on the Human Environment, 16th June 1972 U.N. Doc. A./CONF. 48/14.

⁶ General Principle, World Charter for Nature, U.N. GAOR 37th Session, Agenda Item 21 at 7, U.N. Doc. A/Res/37/7

⁷ Principle 24 United Nations Conference on Environment and Development: Rio Declaration on Environment and Development, 14 June, 1992 31 I.L.M. 874.

damage could render illusory the protection afforded civilians under IHL. For these reasons, respects for the rules of IHL for the protection of the environment are imperative.

3.2 Principles of IHL and Environmental Protection during Armed Conflict

Any discussion on the general principles of IHL applicable to the protection of the environment during armed conflict must necessarily begin with the Martens Clause. The Martens Clause a general provision that first appeared in the preamble to the 1899 Hague Conference and thereafter contained in the Preamble of the 1907, Hague Convention IV, The Martens Clause goes as follows:

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 nations, as they result from the usages established among civilized people, from the laws of humanity and the dictates of public conscience⁸.

The clause broadens the range of applicable laws on armed conflict because where gaps exist in the international framework governing specific issues for example armed conflict and the protection of environment, the Martens Clause stipulates that states should respect a minimum standard as established by the standards of “humanity and the public conscience”. The relevance of the Martens Clause further lies in the fact that it is a fundamental principle of IHL and has assumed customary international law.⁹ Other principles of IHL that have relevance to the protection of the environment during

⁸ Cited in Verwey, W. Observation on the Legal Protection of the Environment in times of International Armed Conflict (1994) Vol. 7 Hague Yearbook of International Law p. 44

⁹ Later Codification of Law adopted Similar Language of the Martens Clause. Each of the Four 1949 Geneva Conventions adopts Similar Language

armed conflicts are; principle of distinction, military necessity, proportionality and humanity.

3.2.1 The Principle of Military Necessity

The principle of military necessity provides that a combatant is justified in applying any force necessary to secure complete submission of the enemy as soon as possible.¹⁰

The principle also seeks to prohibit military actions that do not serve any evident military purpose. The principle of military necessity is reflected in the 1907 Hague Convention IV; in Article 23 (g) it provides that it is forbidden “to destroy or seize the enemy’s property unless such destruction or seizure be imperatively demanded by the necessities of war”. This provision has significant environmental relevance as “enemy property” may include protected areas of the environment and natural resources all of which could therefore be granted indirect protection. By this principle, it can be argued that Iraqi actions of destroying oil installations in Kuwait during the Persian Gulf War violated the principle of military necessity and Article 23(g)¹¹.

However, the principle of military necessity has been rightly criticized on the basis that it affords combatants with justification of suspending the application of laws of armed conflict.¹²

¹⁰ McClintock, A.D. Comment, The Law of War: Coalition Attacks on Iraqi Chemical and Biological Weapon Storage and Production Facilities (1993) No. 7 *Emory Int. L. Rev.* pp. 633-646

¹¹ Schmitt, M.N War and the Environment: Fault Lines in the Prescriptive Landscape in Austin, J.E and Bruch, C.E (eds) *The Environmental Consequences of War; Legal, Economic and Scientific Perspectives*. Cambridge University Press, Cambridge, 2000, p. 33

¹² McClintock, A.D op cit at 641-645

3.2.2 The Principle of Distinction or Discrimination

The principle of distinction is a cornerstone of IHL and the first test to apply in warfare. It incorporates care in the selection of methods of weaponry, and of targets. In other words, it distinguishes between military and civilian persons and objects and prohibits indiscriminate attacks and direct attacks against civilian objects. Article 52(2) of Additional Protocol I defines military objects as those that “by 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”. Therefore, targeting for destruction environmentally significant sites and protected areas, would be contrary to the principle of distinction and Article 52(2).

In practice, however, the application of this principle and subsequently Article 52(2) is problematic. How do we resolve issues arising from targeting of objects that may have some or indirect military advantage? For example, targeting of industrial facilities such as power plants or chemical factories could have important environmental impacts but, would be seen as a direct contribution to ongoing military actions.¹³ Perhaps until judicial bodies or a policy forum gives us a clear interpretation of the Article and the circumstances for the application of the principles of distinction, debate as to their meaning and scope continues.

¹³ Bondasky, D. Legal Regulation of the Effects of Military Activity on the Environment. German Federal Environment Agency, Dessau-Roblau 2003, p. 34

3.2.3 The Principle of Proportionality

The principle of proportionality requires that the use of force be relative to the objective sought¹⁴. In other words, the means the combatants employ in armed conflict must be balanced against the overall pursued objective. The principle of proportionality is codified in Article 57 of Additional Protocol 1. It provides that disproportionate attacks are those in which the “collateral damage” (means the loss of life of, or injury to civilians or other protected persons and damage to or the destruction of the natural environment or objects that are not themselves military objects)¹⁵ would be regarded as excessive in relation to the anticipated direct military advantage gained. Therefore, much environmental damage such as destroying an entire village or burning an entire forest to reach a single minor target would be considered a disproportionate strategy in relation to the military gain. The US used over 55,000 tons of chemical defoliant on forests and crops during the Vietnam War.¹⁶ The actual damage done to the environment is still unknown but the potential damage to the food chain is very obvious.

3.2.4 The Principle of Humanity

The principle of humanity prohibits inflicting unnecessary suffering, injury and destruction. Thus a party cannot use starvation as a method of warfare, or attack, destroy, remove or render useless such objects indispensable to the survival of the civilian population. According to this principle, the poisoning of water, wells and the

¹⁴ Caggiano, M. The Legitimacy of Environmental Destruction in Modern Warfare: Customary Substance over Conventional Form. (1993) Vol. 20 B.C. *Envtl Aff.L Rev* p. 479 at 495.

¹⁵ See Section V San Remo Manual on International Law Applicable to Armed Conflicts at Sea. Cited in Roberts, A & Guelff, R (eds.) Documents on the Laws of War 3rd ed. Oxford University Press, New York, 2000 p. 577.

¹⁶ Westing, A.H. Warfare in a Fragile World: Military Impact on the Human Environment. International Peace Research Institute Stockholm Taylor & Francis London 1980 p. 79.

destruction of agricultural land and timber resources that contribute to the sustenance of the population could be considered inhumane means of warfare. This principle is codified in Article 23(e) 1907 Hague Regulations.

It should be noted that the Marten's Clause also refer to the "law of humanity", thus, the International Union for Conservation of Nation (IUCN) has proposed the expansion of the clause to include environmental considerations.¹⁷

3.2.5 Grave Breaches of IHL

In addition to the general principles discussed above, the grave breaches of IHL enjoy high level of protection and equally form the core of IHL customary law. These grave breaches of IHL include the extensive destruction of property, not justified by military necessity and carried out unlawfully and wantonly. This is also codified in Geneva Convention I Article 50, Geneva Convention II Article 51 Geneva Convention IV, Article 147 the launching of an indiscriminate attack affecting civilian objects in the knowledge that such attack will cause excessive damage to civilian objects. This is codified in Additional Protocol I Article 85(3) (c) and attacks against works and installations containing dangerous forces, also codified in Additional Protocol I, Article 85(3) (c). Although, grave breaches relate to treaty law obligations and refers to International Armed Conflict IAC, Article 8(2) (b) and (e) of the Rome Statute shows that there are similar rules or Non-International Armed Conflict (NIAC) in Customary Law.

¹⁷ IUCN, A Martens Clause for Environmental Protection, World Conservation Congress Resolution 2.97 October 2000: Cited in UNEP Protecting the Environment During Armed Conflict UNEP Report. 2009, p. 13.

The main advantage of these general principles is that they originate in the general practice of states accepted as law; they are binding on all states as part of customary international law.

3.3 Treaties, Provisions Affording the Environment Direct Protection during Armed Conflict

In this part, treaties specifically aimed at protecting or affording the environment direct or specific protection during armed conflict are examined. The following treaties are of major importance:

3.3.1 United Nations Convention on the Prohibition of Military or Any Other Use of Environmental Modification Techniques (ENMOD)

The ENMOD was adopted in 1976. It was adopted in response to the means and methods of warfare employed by the US during the Vietnam War. These include plans for large scale environmental modification techniques that had the ability to turn the environment into a weapon for instance by triggering tsunamis, earthquakes or changes in weather patterns. The Convention was also a reaction to the use of large quantities of chemical defoliant (known as Agent Orange, White and Blue), which resulted in extensive human suffering (death, cancer and other illnesses, mutations and birth defects) and long term environmental contamination, as well as very significant destruction of forests and wildlife.¹⁸

The objective of ENMOD is to prohibit the use of environmental modification techniques as a means of warfare otherwise known as “geophysical warfare”. Thus

¹⁸ Hulme, K. War torn Environment: Interpreting the Legal Threshold, Martinus Nijhoff, Leiden, 2004 p:5

Article 1 is to the effect that “each state party to this Convention undertakes not to engage in military or any other hostile use of environmental modification techniques having widespread, long-lasting or severe effects as the means of destruction, damage or injury to any other party. Article 2 defines environmental modification techniques as “any technique for changing, through the deliberate manipulation of natural process – the dynamics, composition or structure of the Earth, including its biota, lithosphere, hydrosphere and atmosphere, or of outer space”.

The quantum of damage necessary to fall within the scope of ENMOD must be widespread, long-lasting or severe effects. The disjunctive phrasing of the effect means that the presence of anyone of these elements will suffice.¹⁹ These elements have been defined as follows:

- a. “Widespread”: encompassing an 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 exclusively 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.²⁰ The

¹⁹ Simonds, S.N Conventional Warfare ad Environmental Protection: A Proposal for International Legal Reform Stan J. Int’l Law (1992) Vol. 29 P. 165.

²⁰ A Geneva Conference of the Committee on Disarmament Understanding (CCD Understanding) gave the definition as a text accompanying Article 1 of ENMOD cited in Yuzon, E.F. Deliberate Environmental Modification Through the Use of Chemical and Biological Weapons: Greening” The International Laws of Armed Conflict to Establish an environmentally Protective Regime. Vol. 11 No. 5 AM. U.J. Int’l & Poly pp 806-807

Convention has been criticized on many grounds. Firstly, the terms “widespread, long-lasting or severe are so broad and vague as to place few limits on actual activities. In fact, some signatories to the ENMOD have not necessarily adopted the interpretation of the terms. For example, Turkey stated that “the terms ... contained in the Convention need to be more clearly defined. So long as this clarification is not made (Turkey) will be compelled to interpret itself the terms in question and consequently it reserves the right to do so as and when required. Furthermore, the Government of Turkey believes that the difference between “military or any other hostile purpose” and peaceful purposes” should be more clearly defined so as to prevent subjective evaluation”.²¹

Secondly, the convention only prohibits the use of the environments the it does not seem to prohibit testing and development.

Thirdly, the control obligation of the convention is also unclear regarding the phrase “as a means of destruction, damage or injury” because the phrase raises serious questions regarding an offending state’s intention to cause the damage. For example, a state may escape liability by asserting lack of intention in causing any of the environmental damages. Similarly, if a state admits to intentionally causing a portion of the environmental damages, the state could also be liable for the excess amount of damage unforeseen or unintended.²²

²¹ Roberts, A & Guelff, R op . cit p. 417

²² Leibler, A. Deliberate Wartime Environmental damages: New Challenges for International Law (1992) vol. 23 Cal. W. Int’l L.J. at 83

Fourthly, the Convention does not provide clear standards by which to judge the degree of severity or the degree to which the environmental modification is a deliberate act for hostile purposes.²³

Another criticism is the issue as to whom the Convention applies? From the wording of the Convention, party states may arguably use environmental techniques against non-party states and perhaps against a state's own population without violating the terms of ENMOD. In this regard, Kuwait upon accession stated that the Convention only binds it towards signatory states, and that Kuwait's obligations under ENMOD end with respect to a hostile state that does not abide by the convention's prohibition.²⁴

Finally, the Conventions investigation and settlement of disputes mechanisms are weak because of the possible use of veto in the UN Security Council.

It must be stated however that despite these criticisms, the Convention has been relatively successful, because no other Vietnam scenarios of large scale environmental modification methods have been reported since the adoption of the Convention in 1976.

3.3.2 Protocol I Additional to the Geneva Conventions of 1949

The adoption of Additional Protocols I and II to the Geneva Conventions came at a time when there was growing concern on the environmental protection during armed conflict following experience arising from various wars of national liberation and the Vietnam war. Consequently, Article 35(3) and Article 55(1) are included in

²³ Yuzon, E.F op.cit p. 807

²⁴ See Reservations in respect of ENMOD cited in Roberts, A and Guelff R (eds.) op cit

Additional Protocol I that specifically address environmental harm. In fact, it is interesting to note that the draft protocols submitted by the International Committee of Red Cross ICRC to the Diplomatic Conference on the Reaffirmation and Development of International Humanitarian Law applicable to Armed Conflicts CDDH made no reference to the environment. The two articles were introduced at the conference itself.²⁵ This in itself shows the growing environmental awareness and concern over military tactics employed in armed conflict.

Article 35(3) provides that it is prohibited to employ methods or means of warfare which are intended, or may be expected to cause widespread, long –term and severe damage to the natural environment. The Article protects the natural environment by limiting the methods and means of warfare. The Article protects the natural environment *per se* which is not contained anywhere before, and applies not only to intentional damage but also to expected collateral damage. Importantly, specific intent is not necessary.

Article 55(1) states that:

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.

Article 55(2) attacks against the natural environment by way of reprisals are prohibited.

²⁵ Bouvier, A. Protection of the Natural Environment in time of Armed Conflict accessed 16-12-2010.

These provisions provide specific protection for the environment within the context of the protection granted to civilian objects. It also explicitly prohibits attacks on the environment by way of reprisals.

Therefore, the two provisions show the desire of the international community to protect the environment during armed conflict. Unlike other preceding legal regimes, Protocol I does not include language of military necessity, thus precluding arguments of proportionality relative to military objectives.

Despite this advantage and novelty of these articles, they suffer from the following problems. The text of protocol I fails to define 'widespread', 'long term' or 'severe'. One may be tempted to apply similar interpretations of these elements that the ENMOD uses but as the Conference of the Committee for Disarmament in its understanding has dictated such interpretations apply only to ENMOD. Consequently, the interpretation of these elements has been a subject of disputes.

Another problem with these provisions concern the threshold of materiality of military operations a party must transcend to fit within the scope of prohibited activity. Both Articles 35(3) and 55 reveal a conjunctive nature of the element. Therefore, in order for a material breach of these articles to occur, all three elements –widespread, long term and severe must be present.²⁶

The provisions of Article 35(3) have been criticized on the basis that it would:

²⁶ Lijnzaad, L and Tanja, G. Protection of the Environment in terms of Armed Conflict: The Iraq Kuwait War. 1993 Vol. 40 Netherlands International Law Review P. 180.

*Not impose any significant limitation on combatants waging conventional warfare. It seems primarily directed instead to high level decision maker and would affect such unconventional means of warfare as the massive use of herbicides and chemical agents which could produce widespread long term and severe damage to the natural environment.*²⁷

However, Yuzon²⁸ is of the view that this criticism is a fallacy because the drafters did not intend the protocol to apply to chemical, biological and nuclear warfare. With due respect to Yuzon, additional Protocol I applies to all types of warfare except the one's the Protocol clearly exempts e.g. Non International Armed Conflict (NIAC). Chemical and biological warfare is nothing but a method of prosecuting armed conflict. Therefore, Protocol I applies to all international armed conflicts by whatever method.

Another important drawback on Articles 35(3) and 55 is the fact that they are not applicable to non international armed conflicts because Protocol I does not embody customary international law as indicated by the numerous reservations that states have suggested upon signing the Convention and in many instances, states have failed to ratify the Convention.

3.3.3 Convention on Prohibitions or Restrictions or the Use of Certain Conventional Weapons Which May Be Deemed to Be Excessively Injurious Or to Have Indiscriminate Effects (CCW).

The CCW also known as the Convention on Certain Conventional Weapons and the Inhumane Weapons Convention adopted in 1980 provides in its preamble that it is prohibited to employ methods or means of warfare which are intended, or may be

²⁷ Both, M et al. *New Rules for Victims of Armed Conflicts: Commentary on the two 1977 Additional Protocol to the Geneva Conventions of 1949*: Martinus Nijhoff. The Hague, 1982.

²⁸ Yuzon, E.F op cit at 822

expected to cause widespread, long-term, and severe damage to the natural environment". The scope of this particular convention is different from Additional Protocol I in that it applies or extends to non international armed conflict (NIAC). This is by virtue of an amendment to Article 1 of the Convention introduced in 2001. Also Article 2(4) of the CCW Protocol III on Prohibition or Restrictions on the Use of Incendiary Weapons²⁹ prohibits making "forest or other kinds of plant cover the subject of an attack by incendiary weapons except when such natural elements are used to cover, conceal, or camouflage combatants or other military objects, or are themselves military objects. This provision directly addresses environmental protection.

The phraseology of this provision shows various deficiencies that have plagued prior codifications of the law of armed conflict. For example, the triple cumulative standards and military necessity qualifies the prohibition of the use of incendiary weapon.

3.4 IHL Treaty Provisions that Indirectly Protect the Environment During Armed Conflict

In the first instance, it must be stressed that traditionally IHL's main focus is to protect human life and ameliorate human suffering. In fact, IHL texts adopted before 1970s made no reference to the environment as such as the concept did not even exist at the time. Nevertheless, various provisions relating for examples, to private property

²⁹ There are three Protocols to the CCW: 1- Non Detectable Fragments; 2- Prohibitions or Restrictions on the Use of Mines, Booby – Traps and Other devices; and 3 – Prohibitions on the Use of Incendiary Weapons.

afforded the environment some protection. As a result, the Conventions are devices that provide only indirect protection to the environment.³⁰ In this part, it is the ambition of this study, to identify IHL treaty provisions that afford the environment indirect protection during armed conflicts.

3.4.1 Limitation on Means and Methods of Warfare

It is a common principle of the law of war that choice of methods and means of warfare is not unlimited. Thus limiting the development and use of certain weapons that have the potential to cause serious and lasting damage to the environment can indirectly protect the environment during armed conflict. Some of the treaty provisions that limit the means and method of warfare include:

- a. The Hague Convention IV of 1907. Article 22 provides that the right of belligerents to adopt means of injuring the enemy is not unlimited. Also the Martens Clause which is contained in the preamble of the 1907 Hague Convention IV could be used to protect the environment.
- b. The protocol for the prohibition of the use in war of Asphyxiating poisonous or other gases, and of bacteriological methods of warfare. This protocol was adopted in 1925 as a response to the horrors of the use of chemical weapons during World War I. The “active” components of chemical weapons and substances known as chemical agents are defined as any chemical substance intended to kill, seriously injure or incapacitate humans due to its physiological effects. Some of these poisons and poisoned weapons are also highly damaging to the natural environment, damaging ecosystems and ground water supplies,

³⁰ Plant, G., *Environmental Protection and the Law of War*, Belhaven Press London, 1992 p. 246

and can cause long lasting damage. The major problem of this protocol is that it lacks control mechanisms and provisions for establishing responsibility for violations, thereby limiting its ability to serve as a deterrent.

- c. The Convention on the Prohibition of the Development Production and Stockpiling of Bacteriological (biological and toxic weapons and their destruction BWC. This convention went a step ahead of the 1925 Protocol by prohibiting without exception, the development, production, stockpiling or any other possession of microbiological agents, toxics and weapons. Biological weapons have been defined as living organisms that infect their victims, causing incapacitation and often death. Some can spread to other living entities, even those not initially attacked. They can contaminate soil and water. The environmental harm caused by chemical and biological weapons may exceed the damage caused by most explosive ammunitions.³¹

- d. Convention on Certain Conventional Weapons, particularly, Protocol II to the CCW which attempts to limit the harmful effect of landmines by requesting states to take positive measures such as recording the location of targets in order to allow for later collection of unexploded devices, and thereby facilitate substantial restoration to prior environmental conditions.

- e. Chemical Weapons Convention CWC of 1993 bans the use, development and production of chemical weapons and it imposes a requirement on states to

³¹ Kellman, B. The Chemical Weapons Convention: A Verification and enforcement model for determining legal responsibilities for environmental harm caused by war. In Austin J.E & Bruch, C.E (eds.) The Environmental Consequences of War: Legal Economic and Scientific Perspectives, Cambridge University Press, Cambridge 2000 p. 579.

destroy existing chemical weapons and production facilities. The Convention provide for mechanism for verification of state parties obligation under the Convention. It also provides for resolution of non compliance through peaceful means as well as referring the matter, in case of serious cases, to the UN General Assembly or Security Council.

Finally, article 36 of the Additional Protocol I to the Geneva Convention can be used to ban or prohibit any methods or means of warfare though not specifically mentioned but could cause superfluous injury or unnecessary suffering, have indiscriminate effects, or cause widespread, long term and severe damage to the natural environment. The Article requires states to ensure that new weapon, or means or method of warfare does not contravene existing rules of international law.

3.4.2 Protection of Civilian Objects and Property

The provisions that govern the protection of civilian objects and property could provide a more effective legal basis for protecting the environment during armed conflict. Some of the provisions are as follows

3.4.2.1 The 1907 Hague Convention. Convention IV

Respecting the laws and customs of war on Land provides a degree of protection to the environment. For example Article 23(a) which prohibits the use of poisonous weapons; Article 23(b) which prevent unnecessary suffering of civilians and combatants and Article 23 (g) which provides limited preservation of property. These provisions though salutary are not without some difficulties. Firstly there is difficulty

in ascertaining the scope of the protection afforded under Article 23 (g) which protects “property” of the enemy state. International law defines property as land and airspace, thus, the protection of property under Article 23(g) does not necessarily provide coverage for the destruction of the upper atmosphere. Secondly, Article 23(g) gives way to the doctrine of military necessity. For example, in the World War II, the German General Lothar Rendulic adopted a scorched earth policy in Norway in order to evade advancing Russian troops. General Rendulic ordered the evacuation of all inhabitants in the province of Finmark, and destroyed all villages and surrounding facilities. The Nuremberg Military Tribunal charged General Rendulic with wanton destruction of property but later acquitted him on the basis that military necessity justified his actions in the light of the military situation as he perceived it at the time.³²

3.4.2.2 The Fourth Geneva Convention of 1949

The fourth Geneva Convention relates to the treatment of civilian and property during armed conflict and occupation, declaring non-combatants “protected person” whose lives and livelihoods shall be kept safe. According to Article 147, extensive destruction and appropriate property not justified by military necessity and carried out unlawfully and wantonly” constitute grave breaches of the Convention. Similarly, Article 53 provides:

Any destruction by the occupying power of real or personal property belonging individually or collectively to individuals, or 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 operation.

³² Yuzon, E.F op cit p. 815

The problems of this convention are similar to those found in the 1907 Hague Convention. Apart from this, the efficacy of Article 53 is limited by the qualifying phrase “occupying power. The literal meaning of this phrase limits the prohibition of Article 53 to those instances when a state is actually within or occupying another state. It does not appear to cover aerial bombing for instance.

3.4.2.3 Additional Protocol I to the Geneva Conventions

Article 48 of Additional Protocol I provides indirect protection for the environment by stating that “in order to ensure respect for and protection of the civilian population and civilian object, 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. This principle affirms the principle of distinction.

Also Article 54(2) of Additional Protocol I indirectly protects the environment by prohibiting attacks against objects indispensable to the survival of the civilian population. The lists of protected targets are foodstuffs, agricultural areas, crops livestock and drinking water installations.

3.4.2.4 Additional Protocol II to the Geneva Conventions.

This protocol specifically addresses issues of protection during non international armed conflict (NIAC). The provisions that indirectly address environmental protection are Article 14 on civilian objects, Article 15 on installation containing dangerous forces and Article 16 on cultural objects and places of worship.

3.4.3 Protection of Cultural Objects

The Hague Convention for the protection of cultural property in the event of armed conflict and its two protocols of 1954 and 1999 offer some protection to the environment to the extent that such resources fall within the definition of cultural property under Article 1 of the Hague Convention. This convention in Article 4(II) prohibits the use of cultural property for any military purpose that is likely to expose it to destruction or damage during armed conflict. The 1999 Second Protocol extends the Hague Convention protection to NIAC. It also contains the environment, including the requirement for early warning systems, a clarification of the principle of necessity in relation to cultural objects and the establishment of individual criminal responsibility. Additional Protocols I and II to the 1949 Geneva Convention contain provision that protect cultural property, Article 38, 53 and 85 of Additional Protocol I and Article 16 of Additional Protocol II protect cultural property and by extension, the environment.

3.4.4 Protection of Works and Installation Containing Dangerous Forces

Installation Containing Dangerous Forces: Article 56 of Protocol I provides protection to works or installations containing dangerous forces namely dams, dykes and nuclear electrical generating stations. It further provides that since objectives still not be made the object of attack even where these objects are military objective if such attack may cause the release of dangerous forces and consequent severe losses among the civilian population. Paragraph 2 provides instances in which military forces may attack these objects.

First, the installation must be used in regular, significant and direct support of military operations. Second, the method of attack must be the only feasible means of terminating that support. Third, in the case of dams and dykes, the enemy forces must use the installations for purposes other than their normal functions. The major problem with this provision is enumeration of the types of installation so the coverage is an ordinary rule of interpretation limited to those types of installation and works only. Consequently, oil field, oil wells, pumping stations as well as chemical and biological weapon production facilities are excluded.³³

Finally, Article 15 of Additional Protocol II extends the protection in Article 56 of Protocol I to NIAC, thereby protecting dams etc from being targeted in these conflicts as well.

3.4.5 Limitations Based on Targeted Areas

These include territories under occupation, neutral territories and demilitarized zones. All these areas have been afforded some protection. For example, under Article 55 of the Hague Convention IV, although occupying power has the right to use the occupied property but not the right to damage or destroy it. Similarly, Article 53 of the fourth Geneva Convention prohibits destruction by the occupying power of property individually or collectively owned by inhabitants of the occupied territories, except in the circumstance of military necessity. Article 15 of the fourth Geneva Convention, Article 60 of Additional Protocol I and 56(7) attempts to protect formally identified

³³ Schmitt, M.N op cit p. 37 This Lacuna is evident in the destruction of these types of facilities during the Persian Gulf War, Kosoro Conflict and the 2006 Israel-Lebanon.

neutralized or demilitarized zones. Other areas protected from warfare include Antarctica and outer space.³⁴

These are some of IHL provisions that afford direct, indirect or specific protection to the environment during armed conflict. The main issue is not the lack of or absence of legal regime but the existence of effective enforcement mechanisms that will transform these laws into action.

³⁴ See Antarctic Treaty of 1959 and Outer space Treaty of 1967.

Chapter Four

Enforcement of Environmental Law of War

4.1 Introduction

The most effective means of strengthening the legal framework governing environmental protection during armed conflict is through adequate enforcement mechanisms. Once the legal framework is fully implemented by giving it enough teeth to bite, the environment will cease to be the major victim of armed conflict. Because of the importance attached to enforcement of environmental laws, it has been reflected in major codifications of international environmental law from the Stockholm declaration and its progeny. Principle 2 of the Rio Declaration on Environment and Development embodies the notion of state responsibility which it carried over from the Stockholm Declaration. The notion of state responsibility as contained in the Rio Declaration allows for the recognition of state liability for activities that harm the environment. According to principle 13, “state shall 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 activities within their jurisdiction or control to areas beyond their jurisdiction”.

There are other laws and provisions for enforcing the provisions of IHL, particularly relating to damage to the environment in wartime. This chapter identifies and analyses these mechanisms for enforcement of laws protecting the environment during armed conflict.

4.2 State Responsibility

It is firmly established under international law that a state is responsible for environmental damage caused by activities within its jurisdiction or control areas beyond their jurisdiction. Under international law of state responsibility, a state is required to make reparation which may include compensation, restitution or satisfaction for damage caused by a wrongful act. In the International Court of Justice (ICJ) Advisory opinion on Nuclear Weapon, the ICJ after highlighting the uncertainties in applying international law especially IHL, to nuclear weapons, which can profoundly affect human health, society and the environment resolved thus: the Court recognized that the general obligation of state to ensure that activities within their jurisdiction or control respect the environment of other states or of areas beyond national control is now part of the corpus of international law relating to the environment. This principle, known as the Trail Smelter Principle was also reiterated in the 1972 Stockholm Declaration and 1992 Rio Declaration. The ICJ acknowledged that the principle now constitutes customary international law.

The facts leading to the establishment of the Trail Smelter Principle are: in 1941, an arbitration panel settled a dispute between the United States and Canada regarding trans-boundary air pollution A. Canadian Iron and Zinc Smelter Company in the town of Trail, located just a few miles north of the boundary between the two countries emitted air pollution that harmed the crops of farmers downwind of the smelter in the US state of Washington. The arbitrators determined that Canada should prevent

harmful trans-boundary air emissions from the Trail Smelter and was liable for any damage if such emissions incurred in the future.¹

This is also the underlying principle of the Corfu Channel decision by the ICJ.² In 1949 in which two British ships were damaged by sea mines while passing through the Corfu Channel off the coast of Albania. Although the court believed the mine was not been planted by Albanians, it found the state liable for the damages caused to the British ships, acknowledging every state's obligation not to knowingly allow its territory to be used for acts contrary to the rights of other states.

In some instances, problem may arise in determining exactly who is liable for environmental damage. It appears that the victor always determines who is liable and this has equally been influenced by intrigues and international politics. In the case of Yugoslavia v. NATO, despite clear evidence that North Atlantic Treaty Organization (NATO) bombing of oil refineries and chemical plant in breach of IHL obligation, ICJ did not hold NATO liable for the breaches.³ Similarly, Israel has not been held liable for illegal invasion and subsequent bombardment of Gaza strip in 2009, in the case of the Persian Gulf War, the extensive damage caused by Iraq was declared to have violated Article 23(g) of the Hague Regulations regarding the destruction of enemy property. As a result, United Nations Security Council (UNSC) Resolution 687 provided in paragraph 16 that "Iraq is liable under International law for any damage

¹ Trail Smelter Case (United States v. Canada) 3. R.I.A.A 1905 (1938/1941)

² Corfu Channel Case (United Kingdom v. Albania) Merit ICJ 4.22, 9 April 1949

³ See the Work of ICJ 1999-2000 p 182.

including environmental damage and the depletion of natural resources as a result of Iraq' unlawful invasion and occupation of Kuwait.⁴

With the Security Council establishing the illegality of Iraq's invasion and occupation of Kuwait, the United Nations Compensation Commission(UNCC) presumed Iraq's liability for all damages including those resulting from the Allies response and thus focused exclusively on assessing, valuing and providing compensation for this damage. As such, the UNCC differed from most other international tribunals which are also tasked with determining the fact of liability. Most importantly, the context of the UNCC was also different as it relates to enforcement in that the economic situation of the defendant (Iraq) made it practical to provide compensation for the damage. Perhaps it is doubtful, if UNCC would have succeeded if Iraq had won the war or Iraq is not an oil rich country. Generally, enforcement is costly and it can breed resentment to such degree that war breaks out all over again as in the case of Germany after World War I⁵

4.3 Individual Criminal Responsibility

Apart from state responsibility for environmental damage during armed conflict, the law of war imposes individual criminal responsibility for serious violations known as war crimes, including grave breaches under the 1949 Geneva Conventions and the additional protocol 1. In fact, it has been suggested that individual should be

⁴ UNSC Resolution 687 UN SCOR 46th Session 2981 Meeting, paragraph 16. Un Document S/RES/687 (1991)

⁵ Brauer, J op cit p. 33

prosecuted for an evolving genocide or ecocide.⁶ The following actions that cause environmental damage may give rise to individual criminal liability:

- a. Extensive destruction and appropriation of property not justified by military necessity and carried out unlawfully and wantonly;⁷
- 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 civilian or damage to civilian objects,⁸ and,
- c. Launching an attack against works or installations containing dangerous forces in the knowledge that such will cause excessive loss of life, injury to civilian or damage to civilian objects.⁹

However, these grave breaches are only identified in the law applicable to international armed conflict IAC. Neither common Article 3 nor additional Protocol II, which relate to Non-International Armed Conflict (NIAC) contain any provision on grave breaches or entail individual criminal responsibility. Consequently, we need to see whether the penalization of acts resembling these grave breaches in the context of NIAC is possible. Happily, this issue has been resolved in the Tadic case.¹⁰ In the Tadic case, the International Criminal Tribunal for Yugoslavia ICTY held that international humanitarian law on the means and methods of warfare was a part of customary law and therefore also applied to non international armed conflicts (NIAC).

In particular, the ICTY focused on the rules regulating the use of chemical weapons

⁶ Green, L.C., *The Contemporary Law of Armed Conflict*, Manchester University Press, New York, 1996, p. 289, Berat, L., *Defending the Right to a Healthy Environment: Towards a Crime of Genocide in Int. Law (1993)* *II B.U Int'l Law Journal* p. 340

⁷ See Article 147 fourth Geneva Convention 1949

⁸ Article 85(3)(b) Additional Protocol I 1977

⁹ Article 85(3)(c)

¹⁰ Tadic Case ICTY 1999 Paragraphs 119-126

and argued that the violations of these norms of customary law in the Tadic case entailed individual criminal responsibility. This ruling created an important precedent that can support the application to NIAC of treaty law focused primarily on IAC, to the extent that the provisions can be considered to be part of customary international law.¹¹

The International Criminal Court Statute (Rome Statute) in Article 8 has jurisdiction over war crimes, including grave breaches of the 1949 Geneva Conventions and their 1977 protocols. Article 8(2) (b) (iv) expressly prohibits damage to the natural environment, stipulating that it is prohibited to intentionally launch an attack in the knowledge that such attack will cause incidental loss of life or injury to civilians or damage to civilian objects or widespread, long term and severe damage to the natural environment which would be clearly excessive in relation to the concrete and direct overall military advantage anticipated.

In addition to this, Rome Statute also provides avenues for enforcing rules relating to damage to environment from both the IAC and the NIAC. In particular, environmental damage may constitute a material element of other crimes – for instance, burning a forest may constitute the basis for the crime of destruction of property. In addition, the consequences of environmental damage may also be considered as material element of a crime. For example, scorched-earth policy resulting in forced displacement.¹²

¹¹ United Nations Environment Programme UNEP Report 2009, P. 27

¹² This casual linkage has been successfully used in the past, particularly for prosecuting rapes as underlining acts of the crime of genocide. See the Akayesu case by the International Criminal Tribunal for Rwanda or of Torture in various ICTY Cases.

Consequently, destruction of the environment could be prosecuted under various categories of crimes contained within the Rome Statute including war crimes, crime against humanity and genocide.

4.3.1 War Crimes

The following specific provisions of the Rome Statute could be used to prosecute individual for war crime applicable to IAC

- a. Extensive destruction and appropriation of property not justified by military necessity and carried out unlawfully and wantonly. That is the provisions of Article 8(2) (a) (iv)
- b. Intentionally directing attacks against civilian objects Article 8(2) (b) (11)
- c. Intentionally directing an attack in the knowledge that such an attack will cause incidental loss of life or injury to civilians or damage to civilian objects, or widespread, long-term and severe damage to the natural environment that would be clearly excessive in relation to the concrete and direct over all military advantage anticipated, Article 8(2) (b) (iv)
- d. Employing poison or poisonous weapons Article 8(2) (b) (xvii)
- e. Pillaging a town or place, even when taken by assault Article 8(2) (b) (xvi)
- f. Employing asphyxiating poisonous or other gases, and all analogous liquids, materials or devices. Article 8(2) (b) (xviii) and
- g. Intentionally using starvation of civilians as a method of warfare by depriving them of objects indispensable to their survival, including willfully impeding relief. Article 8(2) (b) (xxv)

The following specific provisions of the Rome Statute are applicable to non international armed conflicts:

- a. Pillaging a town or place, even when taken by assault Article 8(2) (e) (v);
- b. Ordering the displacement of the civilian population for reasons related to the conflict, unless the security of the civilian involved or imperative military reasons so demand Article 8(2) (e) (viii); and,
- c. Destroying or seizing the property of an adversary unless such destructions or seizures be imperatively demanded by the necessities of conflict Article 8(2) (e) (xii).

Acts of pillage is also prohibited by the Articles 28 and 47 of the Hague Regulations. In the Revolutionary United Front (Liberia) case, the special court of Sierra Leone condemned the indicted for inter alia, the war crime of pillaging and burning¹³ and thereby violating common Article 3 of the Geneva Conventions and Additional Protocol II.

4.3.2 Crimes Against Humanity

The main crime that is relevant here is deportation or forceable transfer of population under Article 7(1) (d) which may arise from severe environmental degradation and depletion of natural resources that are essential to people's survival.

4.3.3 Genocide

The most significant difficulty in prosecuting the crime of genocide is the requirement of proving the *mensrea* element of genocide intent. However environmental

¹³ In the case of Prosecutor V. Sesay, Kallon and Babao count 14 case ScSL 04-15-T cited in the UNEP Report 2009 op cit p. 31

degradation could be considered to constitute the underlying act of deliberately inflicting on the group, conditions of life calculated to bring about its physical destruction in whole or in part under Article 6(c) or causing serious bodily or mental harm to members of the group.

The case brought before the International Criminal Court ICC against President Omar Al Bashir of Sudan is illustrative of how environmental damaged could be used as an underlying act of an international crime. It is therefore necessary to examine how the linkages were established by the prosecution and appreciated by the court.

The ICC prosecutors indicted and charged President Omar Al-Bashir with the act of genocide under Article 6 (c) for deliberately inflicting on the Fur, Masalit and Zaghawa ethnic groups conditions of life calculated to bring about their physical destruction. These conditions of life resulted from severe environmental degradation and depletion of natural resources as related in the prosecutor's application (the attackers) destroy all the target groups means of survival, poison sources of water including community wells, destroy water pumps, steal livestock and strip towns and villages of household and community assets. As a result of the attacks, at least 2,700,000 people, including a very substantial part of the target groups attacked in their villages have been forcibly expelled from their homes.¹⁴

It was further stated in the application that

The attacks were designed to destroy the very means of survival of the groups as such. The goal was to ensure that those inhabitants not killed outright would not be able to survive without assistance. Ensuring adequate access to

¹⁴ Situation in Darfur, ICC-02/05-1 57-ANXA Public Redacted Version of the Prosecutor's Application under Article 58 of 14 July 2008 Paragraphs 14 and 15. Cited in UNEP Report Ibid

water has long been an essential component of livelihood strategies in Darfur. To facilitate access to water by both humans and animals, many villages dug communal wells or maintained other communal water sources. Militia/Janjaweed and the Armed Forces repeatedly destroyed, polluted or poisoned these wells so as to deprive the villager of water need for survival.¹⁵

On the strength of these, the prosecutor thus invited the judges to recognize that environmental degradation in Darfur constituted an underlying act of genocide. In the decision of the pre-trial chamber on 4 March 2009, which issued an arrest warrant against President Omar Al-Bashir, a majority of the judges dismissed the charge of genocide. In relation to the Prosecutor's assertion, the judges found that "though there are reasonable grounds to believe that (Government of Sudan) forces at times contaminated the wells and water pumps of the towns and villages primarily inhabited by members of the Fur, Masalit and Zaghawa groups that they attacked, there are no reasonable grounds to believe that such a contamination was a core feature of their attack".

What is very important here is that the judge did not deny the nexus between the environmental degradation and the crime of genocide, but rather challenged the systematic or "core feature" of these damages. In fact, in a dissenting opinion, which was attached to the arrest warrant Judge Usacka concluded that "the African tribes were subjected to conditions calculated to bring about the destruction of the group. She suggested that the charge of genocide must be analyzed in the context of Darfur's harsh terrain, in which water and food sources are naturally scarce. She also highlighted that in addition to the destruction of water sources, the court should

¹⁵ Ibid Para. 31

recognize the more general destruction of the means of survival which include food supplies, food sources and shelter. As a result she accepts the argument put forward by prosecutor stipulating that environmental degradation and the resulting deprivation of the population's means of survival was an act underlying the crime of genocide.

4.4 Mechanisms for Enforcement of Environmental Law of War

Aside from state responsibility and individual criminal responsibility, there are some institutions that ensure compliance with environmental law of law. These include international court of justice (ICJ), Tribunals, Commission, international political mechanism and internal mechanisms.

4.4.1 The International Court of Justice

The International Court of Justice is the judicial organ of the United Nations. ICJ's decisions are binding only on the parties to the dispute. The ICJ has over the years made important pronouncements in relation to environmental protection during armed conflict, for example, in the case between New Zealand v France.¹⁶ In 1995, Australia and New Zealand requested examination by the ICJ of a situation relating to the legality of nuclear testing by France in the Pacific Ocean. Before dismissing the case as moot due to France's voluntary cessation of its activities, the court issued interim relief. This is based on the recognition of the plaintiff's right to environmental protection.¹⁷

¹⁶ Newzealand v. France Case ICJ 288 22 September 1995

¹⁷ For contrary opinion see Schmitt, M.N War and the Environment Fault Lines in the Prescriptive Landscape in Austin J.E and Bruch, C.E (eds.) The Environmental Consequences of War: Legal, Economic and Scientific Perspective Cambridge University Press Cambridge, 2000 p. 45

In the case of Yugoslavia v. NATO: On 29 April, 1999, the Federal Republic of Yugoslavia filed complaints before the ICJ against the ten countries involved in the North Atlantic Treaty Organization (NATO) bombing campaign. In its application, the Federal Republic of Yugoslavia contended that the states inter alia, had; 1 – by taking part in the bombing of oil refineries and chemical plant, acted in breach of the IHL obligation not to cause considerable environmental damage; and 2 – by taking part in the use of weapons containing depleted uranium, acted in breach of the obligation not to use prohibited weapons and not to cause far reaching health and environmental damage. Although, the ICJ later dismissed the application, the articulation on the *ratione materiae* competence of the ICJ suggest that the court views cases related to environmental degradation in armed conflicts to be within its purview. As such, the decision indicates that the ICJ could be an appropriate forum for litigating such issues. The court notes however, that it only hears cases concerning state responsibility or those related to international organizations and it does not have competence for individual criminal prosecution.

Similarly, in Congo DRC v Uganda the ICJ found that the Republic of Uganda had failed to comply with its obligations as an occupying power in Ituri district to prevent acts of looting, plundering and exploitation of Congolese natural resources and therefore had violated its obligations of vigilance under international law particularly Article 43 of the Hague Regulations of 1907 which resulted in a duty of reparation. This recognized act of looting, plundering and exploitation by occupying powers as illegal. There exists a state duty of vigilance for preventing such acts from occurring

and that reparations are due for damage to natural resources in the context of an armed conflict.

4.2.2 International Tribunal

From the Nuremberg Tribunal to the most recent International Criminal Tribunals individuals suspected or accused of committing war crimes have been prosecuted in those tribunals. The International Criminal Tribunal for the Former Yugoslavia ICTY is illustrative of the relevance of international tribunal in enforcing international environmental law of war. In addition to filing suit before the International Court of Justice (ICJ), Yugoslavia brought the issue of environmental damage during the 1999 Kosovo conflict before the ICTY, which examined its claims against NATO forces. Although the prosecutor ultimately found no basis for opening a criminal investigation into any aspects of the NATO air campaign, the ICTY did examine the question of responsibility for environmental damage and use of depleted uranium from an environment perspective, thereby establishing a precedent that merits attention. The report of the special committee established to study the case stated that “the NATO bombing campaign did cause some damage to the environment mentioning the bombings of chemical plants and oil installations. Second, it is observed that Article 55 of Additional Protocol I may reflect current customary law, and therefore may be applicable to non parties to the Protocol such as France and the United States. With regard to the substance of the legal provisions contained in this Protocol, the committee stated that “Article 35(3) and 55 have a very high threshold of application. Their conditions for application are extremely stringent and their scope and contents

imprecise. Consequently, it would appear extremely difficult to develop a prima facie case upon the basis of these provisions. The Special Committee report maintained that the NATO air campaign did not reach the threshold of Additional Protocol I.¹⁸ The importance of this case lies in the fact that such tribunals have the jurisdiction of investigating environmental damages resulting from armed conflict.

4.4.3 United Nations Compensation Commission (UNCC)

During, the Persian Gulf War, extensive environmental damage caused by the Iraqi forces was condemned world-wide. As a result, United Nation Security Council passed resolution 687 which established the illegality of Iraq's invasion and occupation of Kuwait. It also held Iraq liable for all damages including those resulting from the Allies response. Paragraph 18 of the Resolution created a fund to provide compensation for claims that came under paragraph 16, and established the United Nations Compensation Commission (UNCC) to administer it.

The claims relating to environmental damage and depletion of natural resource fell into two broad groups under category F4¹⁹ as follows:

1. claims for environmental damage and the depletion of natural resources in the Persian Gulf Region, including those resulting from oil-well fires and the discharge of oil into the sea; and,
2. Claim for costs incurred by governments outside the region in providing assistance to countries that were directly affected by the environmental

¹⁸ See UNEP Report 2009, p. 26

¹⁹ The UNCC Categorized the claims it received into the six categories Category "F" claims are filed by governments and international organizations for losses incurred in evacuating citizens, providing relief to citizens damage to diplomatic premises and loss 'F', and damage to other government property and damage to the environment F4.

damage. This assistance included the alleviation of the damage caused by the oil well fires, the prevention and cleaning up of pollution and the provision of manpower and supplies.

The UNCC was only concerned with analysis, assessment and valuation of damage. The liability of Iraq was established by the UNSC Resolution 687. Out of 168 claims brought within the F4 category which amounted to USD 85 Billion, 109 were awarded compensation for USD 5.3 billion. The UNCC perhaps was very successful because of the economic and political situation of Iraq. It considered in the view of this writer, that one way to strengthen the international legal framework on environmental protection during armed conflict, would be to broaden the principles and approach taken by UNSC Resolution 687 creating the UNCC by establishing a permanent body in charge of evaluating and possibly compensating for wartime environmental damage. Such approach would be more effective, objective and legally sound than the isolated and subjective approach being the case presently.²⁰

4.3.4 Diplomatic Mechanisms

International sanction and condemnations also provide additional measures for the enforcement of environmental law of war. It can be used to address the behavior of persons and states participating in the illegal exploitation, pillaging, trade and depletion of natural resources. In fact, some non- governmental organizations have advocated for this measure.²¹

²⁰For example, President Omar AlBashir has been referred to the ICC but neither President Bush nor that of Israel been referred to ICC infrastructure damage to Iraq and damage done to Gaza Strip respectively.

²¹For example, Gobar Witness has called for Sanctions to bring about accountability or crimes committed during wartime cited UNEP Report op cit p. 64

The international sanctions such as asset freezes and travel bans have been used in the past in places like Liberia, Sierra Leone Congo just to state but a few, to address cases of resource looting and financial conflict. In addition to this, the UN Security Council can impose sanctions under Article 41 and 36 of the UN Charter. However, the efficacy of the UN Security Council resolution is doubtful in view of exercises of veto power by any of the countries with veto power.

4.3.5 Internal Mechanisms²²

One of the obligations of states is to take measure to prosecute grave breach and to assist the International Criminal Court and other special tribunals arrest as well as extradite war criminals. Similarly, states can also use their human rights laws and environmental laws to address conduct affecting the environment and natural resources during internal armed conflicts. However, difficult question arise when determining whether and to what extent human rights and environment laws are applicable during armed conflict. The current literature indicates that when international humanitarian right law does not provide clear guidance, human rights law may fill the gap. There are problems however with the application of internal mechanisms (human rights law and environmental law) to protect the environment particularly non international armed conflict. First, possibility exists for governments to derogate from several human rights obligation in times of national emergency including internal armed conflict. Secondly, there is always the problem of locus standing i.e. who can sue for environmental harm.²³ Under environmental law

²² Moir, Lindsay, *The Law of Internal Armed Conflict* Cambridge University Press, Cambridge, 2003 pp 232-277

²³ Usman, A.K., *The Place of Environmental Litigation in Environmental Protection in Nigeria being a Seminar Paper presented at the Faculty of Law, A.B.U., Zaria on 24 September, 2003, P. 2.*

litigation, locus standing is usually a big challenge because in most cases, environmental damage may not have a particular owner who can challenge the action in a court of law. For example, if air quality or water is affected by armed conflict, it is doubtful if individual can go to court to challenge such pollution particularly if common law rules determining locus standing are strictly adhered to. The position of the environment is even more precarious in the circumstance that the belligerent who engage in environmental warfare became victorious. In such instance, the environment will continue to be the silent victim because the belligerent that are now in charge will not take any action against themselves. Thirdly, there is generally lack of political commitment and popular support to fully implement legal regime to protect the environment. These are some problems that may confront effective utilization of internal mechanisms to protect the environment during wartime particularly non-international armed conflict (NIAC).

Chapter Five:

Conclusion

5.1 Summary

This thesis has examined the legal framework for international environmental protection under the law of armed conflict. Specifically, it considered the nature and scope of environmental degradation during wartime. It equally considered the means and methods of enforcement of the legal regimes on the protection of the environment during armed conflict as well as proffer practical solutions.

5.2 Findings

Based on the examination and analysis of the legal framework on the protection of the environment during wartime and the effect of war on the environment as well as the enforcement mechanisms of the legal framework, the thesis has made the following findings:

Firstly, armed conflicts whether international or non-international have negative effect on the environment. Unfortunately, there is no adequate pre and post-war data that will facilitate assessment of environmental damage occasioned by armed conflict.

Secondly, most of the laws that attempt to protect the environment during armed conflict provide only indirect or collateral protection to the environment. International humanitarian law which is one of the important legal framework for the protection of the environment during armed conflict is designed purposely to protect human life and ameliorate human suffering. In facts, all IHL adopted before 1970s made no reference

to the environment as such the concept did not even exist at the time. As a result IHL are devices that provide only indirect protection to the environment.

Thirdly, some of the treaty provisions that afford direct protection to the environment during armed conflicts are vague and imprecise. For example, Articles 35 and 55 of the Additional Protocol I to the 1949 Geneva Conventions do not effectively protect the environment during armed conflict because of high and imprecise threshold required to demonstrate damage. While these two articles prohibit “widespread” “long term” and “severe” damage to the environment, all the three conditions must be established for a violation to occur. In practice these cumulative standards have been impossible to achieve.

Fourthly, there exist great discrepancies in the interpretation and standards established by various treaty provisions that protect the environment during wartime. These discrepancies have affected the effective implementation of international environmental law of war. For example, Articles 35 and 55 of Additional Protocol I to the 1949 Geneva Convention on one hand and Articles 1 and 2 of the Convention on the Prohibition of the Use of Environmental Modification Techniques (ENMOD) on the other hand, contain identical terms such as “widespread, long-term and severe”, unfortunately different meanings have been attributed to these terms. Also, the definition of “long- term” ranges from several months or a season for the ENMOD to several decades for the Additional Protocol. Moreover, the conditions of being widespread, long-term and severe are cumulative in Protocol I, whereas each condition is sufficient in and of itself, for the ENMOD Convention to apply.

The thesis also found that majority of the international legal framework protecting the environment during armed conflict were designed for international armed conflict (IAC) and do not apply to non international armed conflict (NIAC). Given that most armed conflicts today are non-international or civil wars, much of the existing legal framework does not necessarily apply. This legal vacuum is a major obstacle for preventing the often serious environmental damage inflicted during internal armed conflict.

Lastly, the thesis equally found that there is no permanent international mechanism to monitor legal infringement and address effective enforcement of law relating to environmental protection during armed conflict. Finally this research also observed that there is inadequate political commitments and popular support on the part of government to ratify some international legal framework protecting the environment during armed conflicts for example, most states have not ratified the Additional Protocol 1 and II 1977 to the Geneva Conventions of 1949. This has created a huge gap because the provisions of Additional Protocols are yet to be part of customary international law that binds state whether or not they consent. As a corollary, states appear to lack political will to fully implement and enforce the laws that protect the environment during wartime.

5.3 Recommendations

It would have been observed in the course of this research that some solutions to problems were either proffered immediately after the problems were identified or at the end of the paragraph following the problem. However, for the sake of emphasis

and completeness, we would highlight some salient recommendations here. The main recommendations are discussed under the following heads.

5.3.1 New Legal Instruments

As it has been observed that the International laws of armed conflict provide only indirect protection to the environment, there is need to establish a new corpus of law of war designed to abolish the inherent problems in the current set of law on environmental protection during war time. Work in this regard has started with the London Conference of June 1991 which sought to establish a “Fifth Geneva” Convention on the protection of the environment during armed conflict. This new law should restate and consolidate the relevant rules of customary law concerning state responsibility in updating the current laws of war, as well as improving the language of the conventional sources of Geneva and Hague Laws.

The new law should also harmonize the distinction that exists between international armed conflict and non-international armed conflict. This will ensure effective application of legal regime to both conflicts. Also, the new law must address the notion of military necessity. The subjective nature of this principle has caused the suspension of the application of the current set of international laws of armed conflict. Providing military commanders with more objective criteria in appraising what constitute proper military targets may solve this problem.

Similarly, the new legal regime should harmonize the definition of “widespread, long term and severe” in Article 35 and 55 of Additional Protocol I to the 1949 Geneva Convention with definition of identical terms in the 1976 ENMOD.

Finally, the new law should also criminalize deliberate environmental modification for war advantage. The threshold of damage that must occur should be lower compared to ENMOD and Protocol I where the higher thresholds of damage must be met. By introducing an element of intent to the crime, the deliberate nature of environmental modification would render the state culpable for its conduct. Therefore any damage regardless of the degree whether direct, indirect, widespread, long-term, or severe would automatically render the state or its military or both, criminally liable.

5.3.2 Updating Military Manuals

There is need for state to adopt the International Committee of the Red Cross Guidelines on the protection of the environment during armed conflict 1994 as part of military manuals. In view of the rapid transformations in the methods and means of warfare as well as the increase in non-international armed conflict, adoption of ICRC Guideline is necessary. The Guidelines addressed the continued application of international environmental law during armed conflict. It equally examines the protection of the environment during non-international armed conflict. Once states adopt this guideline as military manuals as well as integrating them into the training of their armed forces, a new era of protecting the environment during wartime has thus being set.

5.3.3 Establishment of Demilitarized or Neutralized Zones

In view of the devastating nature of war on the environment and near extinction of some species, there is need to establish demilitarized zones so as to protect important locations and economically central ecosystems such as ground water, agricultural and grazing lands, national forests and habitats of endangered species. This can be

achieved if at the outset of any conflict, critical natural resources and areas of ecological importance would be delineated and designated as demilitarized zones. This has worked in some places. For example, the Korean Demilitarized Zone (DMZ) and a Civilian Control Zone (CCZ), a 5 to 20 km wide zone south of the DMZ in which commercial encroachment is limited. The zone and the DMZ have become a haven for rare and endangered species and now constitute a unique natural and preserved wildlife habitat in the world.

Consequently, it is the view held in this thesis that time has come for countries to adopt a draft convention on the prohibition of Hostile Military Activities in protected areas. This was developed following the Persian Gulf War in response to intensifying concern about environmental damages during armed conflict¹ The Draft Convention would require the UN Security Council to designate protected areas that would be marked “non target” or demilitarized area during conflicts. Unfortunately, the Draft Convention has not received the support of the UN Security Council.²

5.3.4 Establishment of UN Body to Monitor Violations and Enforcement

There is an urgent need to establish a permanent UN body to monitor violations and enforcement of laws protecting the environment during armed conflict. In the past, UN Compensation Commission (UNCC) was established by the Security Council to process compensation claims relating to the Persian Gulf War, there is need for the UN to establish a similar structure on a permanent basis. Such a body could

¹ The Draft was proposed by International Union for the Conservation of Nature (IUCN).

² For the reasons see Toasofsky, R.G. Protecting especially important areas during International Armed Conflict: A Critique of the IUCN Draft Convention on the Prohibition of Hostile Military Activities in Internationally Protected Areas”. In Austin, J.E and Bruch, C.E (eds.) *The Environmental Consequences of War: Legal, Economic and Scientific Perspectives* Cambridge University Press, Cambridge 2000, p. 567.

investigate and decide on alleged violations of international law during armed conflict of whatever nature, as well as handle and process compensation claim arising from such conflict.

5.3.5 Political Commitment and Popular Support

Countries need the political will and popular support to ensure full implementation of environmental law and all other laws that protect the environment during armed conflict. Countries must have the necessary desire to protect the environment which can be done by ratifying and subsequently domesticating the relevant international conventions that protect the environment during armed conflict. In this regard, countries must be encouraged and supported in keeping pre and post war data of the environment. This will help in assessing the actual impact of war on the environment. This will only happen when countries have the political commitment and popular support to implement the laws in times of peace or war.

5.3.6 Dissemination and Education

The legal regimes exist to regulate human conduct. Consequently, there is need that all the stakeholders' example, military commanders, soldiers, etc should be adequately informed of their obligation under international law. It is trite that there must be more likelihood of the relevant laws, being observed if those involved in the conflicts are aware in advance of their legal obligation. Steps towards encouraging compliance will therefore involve the dissemination of that law as required by both Additional Protocol II and the Geneva Conventions. Each of the Geneva Conventions of 1949 requires that the states, parties undertake, in time of peace as in time of war, to disseminate the text of the present convention as widely as possible in their respective

countries and in particular, to include the study thereof in their programmes of military and, if possible civil instruction so that the principles thereof may become known to the entire population. In view of this obligation, states are therefore required to disseminate and popularize the rules protecting the environment during armed conflict.

In conclusion, we must note that without a healthy environment, man can neither live nor carry out any development activities. Thus protection of the environment both in time of peace and war is imperative. In this respect, environmental protection has been raised in the more specific context of international human right law; In fact, the right to a healthy natural environment is gaining increasingly wide acceptance as a fundamental human right.

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