The Effectiveness of International Humanitarian Law (IHL) in the Environmental Protection at Armed Conflict Areas

Dr. Enas Al-zahrani
Assistant Professor, Prince Sultan University, Riyadh, Saudi Arabia

Abstract
The essential need for human protection and care for the survival requirements at all times is the main motive that encouraged the researcher to write this paper. Man is the essence of life, and the basis of his survival is his sense of security and peace and guarantees his freedoms and respect for his dignity at all times. As human rights expand, this is reflected in the provisions of international humanitarian law, which is one of the most important branches of international public law, because it is closely linked to human. It has thus far saved millions of people provided that they abide by this law and abide by its rules and provisions. This paper aims to identify and determine whether the provisions of International Humanitarian Law (IHL) are beneficial to the protection of the natural environment through the collection of previous studies and consideration of conferences, treaties and international conventions dealing with international humanitarian law.

Keywords: human protection, international humanitarian law, environmental protection.

Introduction
Since the circumstance in the world fluctuates between conflict, peace, agreement and war, in various political, intellectual, social, military and even geopolitical aspects, there has to be legal rules which defines the dimensions of this conflict and crystallizes it and seeks to end it by all available means. In order to reduce the destructive effects of any conflict of any kind, and even to put the violator under international accountability in case of violation of the laws and rules of this conflict (Dale, 2001).

Hence, the development of international humanitarian law from the beginning of the last century has been an important and justified development. It has become more humane and more interested in the subject of discrimination between persons involved in military operations and the civilian population. Since it is difficult to enact any law or legislation that comes to prevent war or armed conflict, war becomes a reality that cannot be ignored or an incalculable phenomenon. Therefore, it was necessary to intervene to calm the impact of these wars on human beings in general and the victims of wars in particular (Koskenniemi, 2014).

Wars also damage and have devastating effects on the environment. So, the preservation of the environment and the prohibition of pollution have become a burden on States at all times, both in times of peace and in times of war, and whether the relations between them are normal or tense. There is no doubt that this commitment is most urgent in times of war and armed conflict (Gautier, 2007).

In general, wars affect the environment, whether soil, water, vegetation or air. For example, destruction of soil and the depletion of fertility will lead to poor productivity, food shortages, famine, poverty, and disease. In addition, humanity has faced a new kind of disaster that was not known before the beginning of human exploitation of nuclear energy more than fifty years ago. All the languages of the world included new terms that were unheard of, such as radiation protection and nuclear dangers. Nuclear risk issues have attracted attention at all levels because of the nuclear horror of the bombing of the first atomic bomb in Hiroshima, Japan, and a Nagasaki bomb at the end of World War II at 1945. Scientists working in nuclear physics and political and military officials have also realized the dangers of nuclear power and its destructive properties (Ghoneim, 2011).

In fact, the protection of the natural environment in times of war and armed conflict has gone through several stages at the level of rules and regulations. The international commitment to non-pollution of the environment has become a well-established principle in international relations in the past few years. With the emergence of nuclear energy and the wide range of its use in military purposes and the attendant damage and dangers threatening the human race and its natural resources, intensive international efforts have been active at the scientific and legal levels in an effort to prevent the human environment the risk of pollution resulting from nuclear explosions, or resulting from the disposal of radioactive wastes, especially in the marine environment (Afriansyah, 2010).

Hence, the importance of this paper is in studying the impact of wars and armed conflict on the environment, and the important role played by international humanitarian law in the protection of the environment.

Study Significance
The importance of protecting the environment from the dangers of nuclear weapons, wars, and their aftermath is an important goal for humans, natural, and legal right to live in a healthy environment at any time, and everywhere in the world. The humanitarian and legal duty obliges all countries to take preventive and curative measures to protect, maintain and improve the environment.
This research contributes to the warning of the increasing of environmental dangers that surround the Earth, in order to reduce the probability of contamination by the most dangerous contaminants in different areas of the aquatic, terrestrial or aerobic environment, and to alert to the dangers of nuclear weapons, their uses and their destructive effects on humans and the environment.

The legal importance of this research is through its presentation of the international and regional texts and the humanitarian rules and principles currently applied, both during peace and during armed conflicts. The research deals with a fundamentally new legal subject, but political factors and international relations cannot be excluded because they overlap and influence different international legal centers and contribute to the legal protection of the environment from the effects of weapons of war and destruction.

**Study Objectives**

This paper aims to achieve main aim, which is:

**Study the Effectiveness of International Humanitarian Law (IHL) in the Environmental Protection at Armed Conflict Areas**

It aims also to achieve different sub-objectives, which are:

1. Identify and determine whether the provisions of International Humanitarian Law (IHL) are beneficial to the protection of the natural environment.
2. Study the international interest in protecting the environment within the framework of international conventions and organizations.
3. Identify the objectivity and regulatory aspects of environmental protection in International Humanitarian Law (IHL).

**Study Questions**

This paper aims to ask the following questions:

1. Are the provisions of International Humanitarian Law (IHL) beneficial to the protection of the natural environment?
2. What is international interest in protecting the environment within the framework of international conventions and organizations?
3. What are the objectivity and regulatory aspects of environmental protection in International Humanitarian Law (IHL)?

**War Effects on Environment**

Wars and conflicts spread daily on the earth, causing great human, material, and environmental losses. These wars can only be described as corruption, destruction, and tampering in the air, sea, and land.

The impact of wars on the environment not necessarily happens directly. The opposing forces do not target certain targets to destroy them and affect the environment. Chance may play the biggest role in influencing as long as there are many possibilities, for example Germany did in World War II when a ship sank which is carrying a million pounds of mustard gas (Austin & Bruch, 2000). This is a very serious environmental disaster, and it may be one of the most dangerous dangers of war on the environment because this poisonous gas has spread in the surrounding waters. This means that its effect will last for at least four centuries. During the war between Allied forces and Japan, more than thousand ships has been smashed and flooded, including ships carrying supplies and fuel, and they all sank in the Pacific Ocean, which means the occurrence of pollution on a large scale. As well as, in July 2001, after fifty-seven years on the sinking of ships, a hurricane occurred on an island close to the contaminated area and led to widespread pollution, which hit areas vital to fishing marine animals (Birnie, Boyle, & Redgwell, 2009).

Wars cause direct contamination of the soil, which has a clear effect on its fertility, leading to plant weakness and death, which causes lack of food and the spread of ignorance, poverty, and disease. The use of modern nuclear weapons leads to the contamination of the dust with toxic chemicals, which are transmitted to the human body directly through the treatment of these plants, and cause the burning of forests and trees (Koppe, 2008). Figure [1] shows an example of a soil pollution resulted from wars and armed conflicts.
Wars also affect water resources mainly through naval fleets and submarines that launch missiles and nuclear explosions from underwater, which cause water pollution with chemicals, radiation, and harmful exhaustions that are fundamentally harmful to human health (Gleditsch, 1996). Many of the chemicals produced by wars have trapped the temperature in global earth, thus reducing rainfall and increasing drought, and increasing the size of the hole in the weight. Figure [2] shows an example of a air pollution resulted from wars and armed conflicts.

The developments of modern technology and the resulting harmful industries such as missiles have directly affected the air and its purity, which is essential for the continuity of life for humans, and the plant through the process of photosynthesis (Koppe, 2008).

What must be said about the impact of war on the environment is the mine-laying. The first planned mine-laying was carried out by a German military named Freihir von Fleming in 1726, but mines were only used as weapons in war in the second half of the 19th century. In the early 20th century, mines were widely used. Mines capable of blowing up tanks or causing significant damage to them have. At first it was not easy for the warring forces to locate mines during or after the end of the war, so it is a weapon that can explode in any time, and explosions mean more of pollution and further damage to infrastructure, wildlife and plants (Draulans& Van Krukelsven, 2002).

Hazardous waste used in the manufacture of weapons is also one of the most important factors in the impact of war on the environment. It is known that hazardous waste is one of the most difficult things to deal with, and disposals is difficult and result in many damage. Residues can result from normal processes such as incineration and ash accumulation, so increasing their size due to weapons manufacturing will contribute to increasing the size of the problem. The superpowers also take the burden of hazardous waste on developing and poor countries, such as Somalia, Haiti and others (Walsh, 1992). Previously, such waste was periodically dumped by paying small sums to state governments or even through deception and diversion of waste while ships were moving. These actions were interrupted only when the Basel Convention at 1989 was operationalized and signed by all the superpowers (except for the United States, which had ratified but not yet done so) (Kummer, 1999).

Military factories increase the burden of pollution and in some cases, maybe environmental disasters, such
as at the JOAAP, which is an American factory in Elwood, Illinois, which was opened in 1940 during World War II. After the war, the factory was suspended, but it was re-operated because of the Korean War and the Vietnam War. The factory produced large amounts of explosive TNT, which contributes to severe air pollution. But, the real disaster occurred at 2:45 am on June 5, 1942, when a major production line exploded at the factory, killing 48 workers, and the population is bursting 97 kilometers north. Were it not for the government’s commitment to establish major production lines in separate locations, the disaster would have been doubling, and economic losses in excess of $30 million. The government did not give any numbers for the environmental pollution, but of course, it is very clear how big a harmful impact an explosive plant can produce.

The first thing to notice is that this pollution led to a dangerous reversal in the cosmic system, where the seasons were mixed. Summer is not known from winter, autumn or spring due to the continuous increase of carbon dioxide, which also causes moving air masses around the globe, storms, and natural disasters. In addition to increasing the level of rainfall in some areas causes floods, and confined in other areas causes drought.

Protection of the environment within the framework of international conventions
The world has developed many conventions, treaties, and protocols to mobilize international efforts to address issues related to the environment and its resources. The number of conventions has reached about 250 legal acts in the field of international environmental law since 1921 (Juma, 1994).


The 1982 UN Convention on the Law of the Sea was devoted to the protection of the marine environment. It stipulated that States be obliged to take appropriate measures to prevent pollution of the marine environment through the best possible means (Al-Rashidi, 1992).

The ozone layer protection agreement was signed in Vienna in 1985, and in 1973 the CITES Convention on International Trade in Endangered Species of Wild Animals (Arab Organization for Agricultural Development, 1999). In the 1990s, the most important international agreements in the field of the environment were adopted, namely the Convention on Biological Diversity, adopted in Rio de Janeiro in 1992, and the International Convention to Combat Desertification in 1994 (Arab Organization for Agricultural Development, 1999).

The growing international interest in the environment has many reasons, as the seriousness and problems of the environment of political, economic and security have increased. Environmental degradation has become a source of political turmoil and international tension in Latin America, Africa and Asia. The international interest in human rights issues has increased and the scope of these rights has not only been limited to traditional rights and freedoms, such as freedom of belief, expression and political participation, but also to the right to life in a healthy environment (Aderson, 1992).

The problem of the environment is related to the problem of development. Development and the environment are two interrelated issues. Development cannot be based on a degraded environmental resource base, nor can the environment be protected when development loses its costs of destroying the environment. In which, it leads to the need to create a balance between the requirements of development and the requirements of conservation of the environment which requires a common international effort (Fadlallah, 2001).

The inadequacy of national efforts in the field of environmental protection is a reason for the growing international interest in the environment. The erosion of the ozone layer and global warming is one of the most serious environmental problems, and it is impossible to limit its problem to specific areas (Fadlallah, 2001).

International Humanitarian Law Sources and the Legal Nature of Its Rules
The habits of war among the ancient peoples are, for the most part, indicative of the various types of rules governing war. These rules, which distinguish between categories of enemies, include the rules that define the conditions and ceremonies for the start and end of war, the authority that possesses the declaration of war and its cessation, the rules that determine the persons involved, the times and places in which it may be imposed (Savage, 2013).

All these armed conflicts were organized with a wide range of rules to mitigate their effects. However, these rules differed from period to period in terms of detail or nature in terms of being customary, and then codified in the form of general international conventions, with the development and elaboration at each stage (Savage, 2013).

At first there were rules derived from the customs that governed armed conflicts, and gradually detailed bilateral treaties emerged. States sometimes ratified them after the fighting ended, and there were also regulations issued by states to their forces, such as the Libre Code which issued on 24 April 1863, also known as
the Government's Instructions to the US Army, or Lipper's instructions. It was signed by President Abraham Lincoln of the United States federal forces during the American Civil War, which states how soldiers should act in time of war. The name of these instructions is a reflection of its owner, the German-American legal scholar and the political philosopher, Francis Lieber (The New York Times, 2013).

The rules of the law of armed conflict have essentially one source, the teachings that the commanders of the armies gave to their soldiers, which formed the so-called "methods of dealing with warfare", which were customary by the armies of civilized nations.

Customary norms are the largest and oldest sources of international humanitarian law and are defined as the set of unwritten legal rules arising from the frequency of use by States against one another because they are convinced of the need to comply with them (Sorour, 2003).

This means that inherited customs on war were the secondary source of the law of war, and this remained until the middle of the nineteenth century. Where he began a massive codification process in which much of the unwritten customary law was transformed into a written convention law. Thus, the second source of international humanitarian law (IHL) is the Conventions. In addition to these two basic sources, there are a number of secondary sources (complementary) of this law (Emilie, 2007).

Written sources are basic sources of international humanitarian law. In the past, the rules of international humanitarian law that dealt with the wounded, sick, prisoners and other groups such as women, children and the elderly were dealt with in bilateral agreements (International Committee of the Red Cross, 2004). Where there was no systematic codification of rules to protect them from the effects of war takes the form of general international and multilateral conventions, until the second half of the nineteenth century, specifically in 1864, the date of the birth of the first international convention for the protection of victims of war and in particular the wounded and sick, For example, the bilateral treaty between the United States and Russia in 1785, which stipulated that in a state of war, the two forces should not only protect women and children, but also scientists, land farmers, industrialists, factory owners, and all other persons whose jobs were essential for the survival and benefit of the human race. They should be allowed to continue their business, allowing traders to stay for nine months to collect their debts and liquidate their businesses, and allow commercial vessels to pass through to ensure that individuals have access to their needs (Black, 2014).

The amended Geneva Convention, a 1906 Convention on the wounded and military patients, was expanded from the rules for the protection of prisoners and outlined the duties and rights of the occupying power. In the Fifth Convention, the duties of neutrals were described in the land war and in eight other conventions the subject of maritime warfare and the peaceful resolution of disputes were detailed (Carnahan, 1984).

The resolutions of the United Nations, in all its organs and bodies, are sources of assistance to international law in general, and at the same time are sources of assistance to the law of war and international humanitarian law.

International humanitarian law concerns the state, and states are the ones who make and implement it. International law is, therefore, only the outcome of the interests of parties (i.e. States). However, persons with power within the State, often under the pressure of public opinion, can exert positive influence in the drafting and application of the law (Brown, 2006).

The principles of international humanitarian law have been recorded by human rights in international conventions in precise terms. In addition, there are many human principles that have not been recorded but are present and derive from spiritual and moral sources as an expression of international custom. The basic principles of international law are the result of a balance between the two conflicting concepts of humanity and necessity. These principles are more or less invoked in The Hague Conventions of 1899-1907, the four Geneva Conventions for the Protection of Victims of War of 1949, and the Additional Protocols of 1977 (Crowe & Weston-Scheuber, 2013).

The Hague Convention is a set of conventions adopted by the International Peace Conference, held in The Hague, the Netherlands, which is enshrined in international conventions and international conventions relating to the limitations of the use of force in armed conflicts, and the use of certain weapons in the fighting is prohibited. However, the term remained attached to Hague because most of these conventions (Toman, 2017).

The most important principle of the Hague Conventions was the principle of restricting the freedom to attack persons. In which the civilian population has general protection against the dangers posed by military operations. The second principle is restricting the freedom to attack places; attacks on military targets must be limited 79. The third is the principle of restricting means of attack. It is prohibited to use weapons and methods of warfare that cause unnecessary injuries and pain (Dillon, 2003).

There are four principles in the Geneva Conventions; the first one is the principle of humanity, which calls for all acts to be in the interest of the human being and for the alleviation of cruel and brutal acts of fighting, especially if the use of such methods does not serve the purpose of war. The second principle is the principle of military necessity, which states that the use of methods of violence, cruelty and deception in the war stands to the extent of conquering the enemy and achieving the goal of war, which is the victory. The third principle is the
principle of protection of war victims, sick, wounded, and prisoners of the armed forces whose legal status has been determined by the Geneva Convention I (1949) on the Amelioration of the Condition of the Wounded and Sick in Land Forces of 1949. The fourth and last principle is the principle of impartiality, which stated that humanitarian assistance is never interference in the conflict (Mero, 2000).

The Effectiveness of International Humanitarian Law in Protecting the Environment during International and Non-International Armed Conflicts

The interest in protecting the environment during peacetime has been preceded in times of war. The subject of the environment has been a subject of concern for a long time, especially when the Stockholm Conference on the Human Environment was held. This was due to the deterioration of environmental problems and their emergence on the surface of global concern due to increasing environmental pollution of all kinds, the emergence of the ozone hole, the depletion of natural resources and high temperatures, so that the talk about the environment and the need to preserve it became urgent (MUSKIE, 1972).

The importance of protecting the environment during armed conflict has not received the importance it deserves despite the enormous environmental damage that the universe has suffered since the First and Second World Wars until the Diplomatic Conference 74/1977 called for by the International Committee of the Red Cross to confirm and develop international humanitarian law applicable in conflicts Armed forces (Mallison & Mallison, 1977). The rules on the protection of the natural environment during international armed conflicts were accepted by the Conference and were finally adopted in Article 50 and paragraph (3) of Article (35). Unfortunately, those relating to non-international armed conflicts were opposed, arguing that the priority in such conflicts should be the attention to human rights, and that the rebels will not pay any attention to these laws. Thus, non-international armed conflicts have remained without any international organization on the subject of protecting the environment (Baxter, 1975).

Thus, the rules of international humanitarian law dealt with the issue of environmental protection only in 1977 in Additional Protocol II (Junod, 1983).

In the wake of the armed conflict that raged in the Middle East in 1990-1991, many questioned the content, limits, and loopholes of the rules of international humanitarian law relating to the protection of the environment during armed conflict, as well as the means to improve such protection since there are general rules and principles under international humanitarian law that can be used to protect the environment in the period of armed conflict. These principles include the fundamental and first principle of international humanitarian law, which states that the right of parties to an armed conflict to choose methods and means of warfare is not unlimited. The second principle is the principle of proportionality, which distinguishes several provisions of this law (Crowe & Weston-Scheuber, 2013).

International humanitarian law also contains a set of rules that indirectly protect the environment, such as those relating to private property or the protection of civilian populations, the set of provisions for the implementation of certain types of chemical or bacteriological weapons, weapons of mass destruction, Indiscriminate effects, as well as anti-personnel landmines. Anطوان بوففيد، filament.

As for the special provisions that have been found to protect the environment specifically, two important treaties should be mentioned for this subject:


2. Additional Protocol I to the Geneva Conventions of 1977. The Protocol contains two articles dealing specifically with the protection of the environment in the period of armed conflict: a- Article 35, paragraph (3), which states: "The use of means or methods of combat intended or likely to cause widespread and long-term damage to the natural environment is prohibited." b- Article (55) stipulates that: 1. During the fighting, the protection of the natural environment from the widespread and long-term damage shall be observed. Such protection shall ensure the prohibition of the use of methods and means of warfare intended or expected to cause such damage to the natural environment, harming the health or survival of the population 2. Attacks against the natural environment are prohibited (Geneva Protocol, I, 1977).

It is noted that this article, which aims to protect the civilian population from the effects of hostilities, falls within the broader context of the protection of civilian property. This article is therefore not a repetition of article 35 (paragraph 3), because it contains a general obligation to take care of the protection of the natural environment during the conduct of hostilities, but this obligation depends on the protection of the civilian population, but article 35 (3) depends on environmental itself protection.

It should also be noted that some of the other provisions of Additional Protocol I directly contribute to the
protection of the environment in time of armed conflict, including article (54) "Protection of objects indispensable to the survival of the civilian population" and article (56) "Engineering works and installations containing dangerous forces must be protected" (Geneva Protocol, I, 1977).

With regard to Additional Protocol II of 1977 on non-international armed conflicts, it does not contain direct and explicit provisions for the protection of the natural environment. This is a serious lacuna of Protocol II, because non-international armed conflicts are no less environmental-damaging than others, and the damage to the environment extends to the neighboring countries of the State of origin is not limited to damage alone (Bothe, Partsch, & Solf, 1982).

However, the protection of the environment is not entirely absent from Additional Protocol II, since Article 14, which provides for the protection of objects indispensable for the survival of the civilian population, provides protection for agricultural crops, livestock, drinking water facilities, and networks. In addition to Article 15, which provide for "the protection of works and buildings containing dangerous forces". It is therefore a source of protection for the natural environment, not just for civilians (Bothe, Partsch, & Solf, 1982).

The destructive power of the means of warfare used in armed conflicts increases the threat of serious environmental aggression. The rules of international humanitarian law relating to the protection of the environment in times of armed conflict must be respected, in addition to the importance of attention to the development and improvement of such protection, and striving to put rules for protecting environment during Non-international armed conflicts. This means developing the provisions of Additional Protocol II, while modifying the descriptions of environmental damage resulting from the international liability contained in articles 55 and 35 (3).

The 1991 Gulf War underscored the destructive power of modern technological weapons and their ability to destroy life-sustaining systems in general, as a result of the massive bombing of cities and their major infrastructure, and the large oil spill and large fires in the oil wells, Smoke and gas emissions spread over large areas, which had a direct impact on reducing solar radiation coming to Earth, a decrease in surface temperatures, the emergence of certain respiratory diseases, and other negative effects of the excessive use of modern weapons in combat (MacArthur, 2004). Figure [3] shows Kuwait oil fires as result of Gulf war at 1991.

The legal responsibility for harmful violations of the environment in the period of armed conflict can be moved in accordance with the rules of general international law with regard to the responsibility of infringing States as well as the criminal responsibility of natural persons who have committed violations as war crimes under international customary law. Article 19 of Protocol I The principle of legal responsibility for States parties which decide "to ask parties of a conflict in violation of the provisions of the Conventions or this Protocol to pay compensation where appropriate and to be responsible for all acts committed by persons forming part of his armed forces (Bothe, Partsch, & Solf, 1982).

Article 91 of Protocol I also decided that a deliberate indiscriminate attack on civilian objects, as well as an attack on engineering works or installations containing dangerous forces, would result in the knowledge that such an attack would cause serious loss of life, injury to civilians or damage to objects Civilians are considered grave violations and are therefore considered to be war crimes under international humanitarian law. This is confirmed in Article 8 of the Statute of the International Criminal Court (Pilloud, Sandoz, Swinarski, & Zimmermann, 1987).
Conclusion
The rules and provisions of international humanitarian law have evolved significantly. The law of war was limited to the organization of combat operations, but now its rules are especially concerned with the human being as a victim of these conflicts. The features of this development are manifested through the codification and dissemination of the rules of this law.

International law is based on a number of basic principles, the most important of which is the principle of the balance between military necessity and humanitarian considerations, the principle of ratification of the methods and means of warfare by the parties to the conflict and, finally, the principle of humane treatment.

The rules of international humanitarian law dealt with the issue of environmental protection only in 1977 in Additional Protocol II. It does not contain direct and explicit provisions for the protection of the natural environment.

International humanitarian law also contains a set of rules that indirectly protect the environment, such as those relating to private property or the protection of civilian populations, the set of provisions for the implementation of certain types of chemical or bacteriological weapons, weapons of mass destruction, Indiscriminate effects, as well as anti-personnel landmines.

In order for international humanitarian law to achieve its objectives by providing such protection, there must be means to implement this law. Despite the multiplicity of these means and their differing importance, the dissemination and respect of the texts of these conventions remains the most important and the first in terms of the possibility of implementation, whether in time of peace or war.

This study sheds light on the effectiveness of international humanitarian law in armed conflicts, whether international or non-international, in no way aimed at criticizing this law or propaganda against it. But the purpose is to clarify the universality of the rules of this law and its agents in providing protection, especially to civilians, because by its lofty principles, its effective mechanisms, remains the first umbrella under which the protectors of the law and their supporters.

References