

## The Environment - a “Silent Victim” of Armed Conflicts

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**Abstract:** The environment is an essential element of human existence, a result of the interference of natural elements, soil, water, air, climate, biosphere, with elements created by human activity. As in a domino effect, various issues such as pollution, ozone depletion, climate warming, drought, desertification, etc., have a significant negative impact on human health, life and safety. Ensuring environmental protection in times of peace or armed conflict is on the agenda of international and regional organizations as well as in the attention of the world states armies. For example, within the framework of their activities, the Romanian Armed Forces have attributions in the field of environmental protection. The article aims to highlight the fact that the environment becomes a silent victim in armed conflicts and that it is necessary to protect it in order to ensure sustainable development, well-being and peace in the world.

**Keywords:** environment; protection; armed conflicts; responsibility; victim; army

*“Nature never does anything without reason”.*

Aristotel

### Introduction

The environment is an essential element of human existence, a result of the interference of natural elements, soil, water, air, climate, biosphere, with elements created by human activity.

Armed conflicts have been and remain a source of risks and threats to the environment. Environmental protection during the preparation and conduct of armed conflicts is not a new rule; from ancient times has been applied in order to protect the natural resources essential to the survival of human beings.

In both peacetime and wartime, direct military actions and support activities for military action can in many ways become an important source of environmental risks and threats. Moreover, the environment is practically the “*battlefield*” (Eparu,

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2013, p. 5) in which military exercises and conflicts take place, making it vulnerable to the destruction caused by the means of fighting used in these situations (firearms, chemical, biological, nuclear, radiological weapons, etc.).

After 1945, which represented the end of the World War II, unlike the Vietnam War of the 1970s and then after the 1990s Iraq-Kuwait, the global security community's awareness of the world over the risks of wars in connection with environmental damage have gradually increased. Until now, although there is an international legal framework to protect the environment during armed conflicts and various actions are taking place in this respect, humankind should be more aware that the destruction or degradation of the environment directly affects health and people's security.

The purpose of this article is to highlight a reality that the environment becomes a silent victim in armed conflicts, that its protection is necessary for sustainable development, well-being and peace of humanity, and that the role of diplomacy must be increased instead of using destructive weapons to resolve divergent differences between different state and/or non-state actors.

## **1. Regulations and Actions for the Environmental Protection in case of Armed Conflicts - Some Examples**

The existing international legal framework contains many regulations that stipulate the direct or indirect protection of the environment and govern the use of natural resources during an armed conflict. These regulations have arisen precisely because of the awareness that the use of war means and methods can disrupt the composition, structure and/or dynamics of the environment.

In this respect, Additional Protocol I/1977 to the Geneva Conventions of 12 August 1949 provides: *"It is forbidden to use methods or means of combat that are designed to cause, or are expected to cause excessive, lasting and serious damage to the natural environment"* (Article 35); *"The war will be worn with the protection of the natural environment against long, lasting, and serious damage. This protection includes the prohibition to use methods or means of battle designed to cause or expected to cause such damage to the natural environment and thereby compromise the health or survival of the population"* and *"Retaliation attacks against natural environment are forbidden"* (Article 55, paragraphs 1 and 2).

ENMOD Convention on the Prohibition of Military or Any Other Use of Environmental Modification Techniques adopted by the United Nations General Assembly on 10 December 1976 and entered into force on 5 October 1978, provides that *"Each State Party to this Convention undertakes not to engage in the use for military purposes or any other hostile purpose of widespread environmental change techniques, long-term or serious, as a means of causing destruction, damage or prejudice to another State Party"* (Article 1, paragraph 1).

Other recommendation of the same organization designed for the protection of the environment in the event of armed conflict is contained in Principle 5 of the World Charter for Nature, adopted on 28 October 1982 by the UN General Assembly<sup>1</sup>, which states that “*Nature will be protected against degradation caused by war or other hostile activities*”. For the same purpose was issued Resolution 47/37 of 25 November 1992 entitled “*Protection of the environment during armed conflicts*” adopted by the UN General Assembly, which mentions that the use of certain means and methods of war may have terrible effects on the environment<sup>2</sup>.

On 5 November 2001, the UN General Assembly, by Resolution A/RES/56/4<sup>3</sup>, decided on November 6 to mark the *International Day for the Prevention of Environmental Exploitation during War and Armed Conflict*. The actions carried out on this day point out that environmental damage during armed conflicts affects seriously, and often irreversibly, individuals, ecosystems and natural resources. In fact, their effects often extend into space and time, namely by overcoming the boundaries of the national territories of the states that led to the armed conflicts and by affecting the next biological generations.

In the United Nations Environment Program statistics, it has been found that during the last 60 years, 40% of all internal conflicts have been caused by the exploitation of natural resources<sup>4</sup>. Also, the Resolution adopted by the United Nations Environment Program of the United Nations Environment Program of May 2016<sup>5</sup> recognizes the role of healthy ecosystems and sustainable resources in reducing the risk of armed conflict.

In collaboration with the Economic Commission for Europe, the “Linköping Document”, which contains recommendations on the conduct of military activities that may affect the environment, was drafted in June 1995 under the same UN program.

Environmental actions in the event of armed conflicts include those leading to the elaboration and publication of the *Global Environment Outlook (GEO)*<sup>6</sup> reports by

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<sup>1</sup> *World Charter for Nature*, United Nations General Assembly, A/RES/37/7, at the 48th plenary meeting on 28 October 1982, available online at: <http://www.un.org/documents/ga/res/37/a37r007>, accessed on 27 June 2018.

<sup>2</sup> Guidelines for Military Manuals and Instructions on the Protection of the Environment in Times of Armed Conflict”, article in *International Review of the Red Cross*, No. 311, International Committee of the Red Cross, 30 April 1996, available online at: <https://www.icrc.org/eng/resources/documents/article/other/57jn38.htm>, accessed on 28 June 2018.

<sup>3</sup> *Resolution adopted by the United Nations General Assembly, A/RES/56/4*, 13 November 2001, available online at: [http://www.un.org/en/ga/search/view\\_doc.asp?symbol=A/RES/56/4](http://www.un.org/en/ga/search/view_doc.asp?symbol=A/RES/56/4) accessed on 25 June 2018.

<sup>4</sup> Ziuă internațională pentru prevenirea exploatării mediului în timpul războaielor și conflictelor armate”, Agerpress, 6 November 2017, available online at: <https://www.agerpres.ro/flux-documentare/2017/11/06/ziua-internationala-pentru-prevenirea-exploatarii-mediului-in-timpul-razboaielor-si-conflictelor-armate-14-50-40>, accessed on 25 June 2018.

<sup>5</sup> *Protection of the environment in areas affected by armed conflict*, United Nations Environment Assembly of the United Nations Environment Programme, second session, Nairobi, 23–27 May 2016, available online at: <http://undocs.org/UNEP/EA.2/Res.15>, accessed on 25 June 2018.

<sup>6</sup> Details at: <http://web.unep.org/geo/>, accessed on 26 June 2018.

the United Nations Environment Programme, by which integrated analyzes of major trends which have influenced the environment are achieved and therefore giving to world leaders options in setting up the immediate and necessary measures to address environmental issues by putting environmental discussions into practice. Regarding the subject of scientific analysis, the 2007 edition of this report<sup>1</sup> highlights that natural resources can play an important role in armed conflicts, being often a means of financing the war or can be used as a means of gaining access to resources; armed conflicts are always associated with rapid and widespread destruction of environmental value.

At national level, the military field cannot be excluded from the environmental risk factors category due to the transformations taking place there, the environmental impact of the military training process and the insufficient financial resources allocated to environmental actions and programs (Surdu, 2006, p. 24). We mention that, in this field, environmental protection during military activities is achieved by: complying with environmental legislation; limiting the means of fighting with excessive damage to the environment; pollution prevention; waste, toxic and dangerous substances management; conservation of resources; protection of natural, cultural, archaeological and historical resources; protection of flora and fauna, especially in protected natural areas.

On the line of environmental protection, according to the law, the Ministry of National Defence has attributions such as: elaboration of specific norms and instructions for its fields of activity, in accordance with the legislation on environmental protection; overseeing compliance by own personnel with environmental protection rules for military activities; controlling actions and applying sanctions for personnel's violations of environmental protection legislation in the military field; informing competent authorities in the field of environmental protection on the results of self-monitoring of pollutant emissions and environmental quality in the impact area, etc.

According to the "Guidelines for Organizing and Carrying Out the Environmental Protection Activity in the Romanian Armed Forces" no. M.14 of 19.02.2008, environmental protection "*is an ensemble of institutionalized activities, aiming to improve the state of the environment and the quality of life by preventing and reducing pollution in the areas of responsibility or action of the armed forces in accordance with the principles that govern this activity*". This document stipulates that the responsibility of organizing the environmental protection activity, according to the normative acts elaborated at national level, with the NATO standards in the field, with the EU regulations and the military regulations in force, rests with the commanders/heads of the military units/formations.

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<sup>1</sup> *Global Environment Outlook GEO environment for development 4*, United Nations Environment Programme, 2007, p. 51, 111, available online at: [https://na.unep.net/atlas/datas/sites/default/files/GEO-4\\_Report\\_Full\\_en.pdf](https://na.unep.net/atlas/datas/sites/default/files/GEO-4_Report_Full_en.pdf), accessed on 30 June 2018.

For the purpose of implementing the NATO joint doctrine on environmental protection at the national level, in 2011, the document entitled “Environmental Protection during Military Activities - P.Med.-3” was developed, which applies during the NATO-led military activities, as well as during military activities carried out or in which forces from the Romanian Armed Forces participate in the national territory and/or outside the territory of the Romanian State and fully implements the provisions of STANAG 7141 EP Ed.5 “The NATO Doctrine for the Protection of the Environment During the Military Activities Led by NATO”.

## **2. Effects of Armed Conflict on the Environment - Examples**

Academic research and speeches about the direct and indirect consequences of armed conflict over the environment have increased significantly.

To emphasize that during the preparation and conduct of armed conflicts, the environment that is of strategic importance becomes a “silent victim” and that effects over it may in some cases be irremediable, we will draw some examples.

The US Armed Forces have used a diverse range of herbicides in *Vietnam* for more than 4.5 million acres to destroy the forests and agricultural crops used by North Vietnamese troops as hiding places. More than 45 million liters of Orange Agent containing the toxic dioxin compound were sprayed in a vast area in the centre and south of Vietnam, unleashing a slow-onset disaster, poisoning the soil, river systems, lakes and rice crops, allowing the toxic chemical substance to enter the food chain; the devastating effect of this agent on the environment health is also felt today. Over 50% of the country’s mangroves, which protect the shores of typhoons and tsunamis, have been destroyed; the destruction of Vietnamese forests has also proved irreversible, and the natural habitat of rare species (such as tigers, elephants, bears and leopards) has been jeopardized<sup>1</sup>.

*The Gulf War*, by its disastrous consequences on the environment, is among the ecological scourges of the 20th century. In fact, referring to the effects of this war, John Briscoe showed in a paper that “*every element of the environment has been affected - the air, the earth, the water flowing on the ground, the underground water, the places where the earth is meeting with the sea, but also the sea itself*” (Moore & Norton, 1999, p. 113). In this respect, an example is the destruction of the four water treatment plants at Rig’i, Jahra, Riqqa and Failak by the Iraqi occupation forces, which made up to 330,000 m<sup>3</sup> of water which had to be daily purified to be discharged directly into the Gulf, infecting it with microbes, viruses and harmful bacteria (Moore & Norton, 1999, p. 116). In addition, the Gulf has

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<sup>1</sup> Agent Orange, exposed: How U.S. chemical warfare in Vietnam unleashed a slow-moving disaster”, *The Conversation*, 4 October 2017, available online at: <https://theconversation.com/agent-orange-exposed-how-u-s-chemical-warfare-in-vietnam-unleashed-a-slow-moving-disaster-84572>, accessed on 28 June 2018.

been polluted by the so-called “black rains”, caused by precipitation of smoke from the clouds of ignited oil wells.

Another example is the opening by the Iraqi troops in retreat from Kuwait of the taps from the huge oil reservoirs, followed by the burning of the oil wells, triggering the largest pollution of this kind in history, among the ecological effects recorded being also the decrease of the average temperature with 10°C<sup>1</sup>. Also among the destructive consequences on the environment were due to the large number of bunkers, trenches and hiding places that provoked the breakage of the gravel layers that allowed the dunes to stop, but also the tanks and trucks that have been stinging the fragile soil during the military actions and harmed the vegetation. These are obvious examples of the polluting effects of the Gulf War on Kuwait, but not only this state has been affected, but also other states in the region such as Saudi Arabia, neighbouring it.

The environmental damage following the *bombing of Belgrade* (in 1999) was enormous. Dangerous chemicals have been spilled into the air, water and soil from the petrochemicals facilities. Ammonia and plastics plants have released chlorine, hydrochloric acid, vinyl chloride and other chlorine substances, which has led to local air pollution and various health problems. Water sources have been polluted by oil spills from refineries, and the Danube has been severely polluted with oil. The dust and particles transported by the air currents following the bombing of Serbia (since 1999) affected the cross-border environment with neighbouring countries (Romania, Bulgaria, Greece, Hungary, Macedonia, Bosnia and Herzegovina and Slovenia)<sup>2</sup>.

In *Sudan*, environmental factors are associated with a number of other social, political and economic problems, and the connection between the conflict and the environment is two-way. On the one hand, the long history of the conflict has a significant impact on the environment, with indirect consequences. On the other hand, environmental issues have been and continue to contribute to maintaining the existing situation - the competition for oil and gas reserves, Nile waters and wood resources, as well as access to farmland and associated water resources are determinant factors of the perpetuation of Sudan conflicts<sup>3</sup>.

The United Nations Environment Program has highlighted a number of direct and indirect destructive or potentially destructive consequences of the conflicts over the

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<sup>1</sup> Victoria Cucerescu, “Răspunderea internațională pentru daune aduse mediului în conflictele armate: cazul războiului din Golf”, article published in *Anuarul științific*, Volumul XI, edited by Institutul de Relații Internaționale din Moldova, 2012, pp.246-247, available online at: [https://ibn.idsi.md/sites/default/files/imag\\_file/Raspunderea%20internationala%20pentru%20daune%20aduse%20mediului%20in%20conflictele%20armate.pdf](https://ibn.idsi.md/sites/default/files/imag_file/Raspunderea%20internationala%20pentru%20daune%20aduse%20mediului%20in%20conflictele%20armate.pdf), accessed on 28 June 2018.

<sup>2</sup> “The impact of war on the environment and human health”, *Lenntech*, September 2006, available online at: <https://www.lenntech.com/environmental-effects-war.htm>, accessed on 28 June 2018.

<sup>3</sup> *Conflict and the Environment*, The African Union Mission in Sudan (AMIS), June 2007, p. 95, available online at: [https://postconflict.unep.ch/publications/sudan/04\\_conflict.pdf](https://postconflict.unep.ch/publications/sudan/04_conflict.pdf), accessed on 28 June 2018.

environment. Thus, among the direct consequences were identified<sup>1</sup>: land mines and unexploded bombs remaining on the ground; the physical destruction of natural resources as a result of combat operations or specific military development and fortifications; premeditated destruction of the enemy's natural resources. Indirect consequences of the Sudanese conflict on the natural environment were related to population movement, plundering natural resources and extracting resources for the war economy; lack of efficient governance of environmental resources and lack of information on environmental issues; stagnation of nature development and conservation programs and insufficient financial investment in sustainable development.

In *Afghanistan*, environmental damage is widespread and diverse: it is estimated that ten thousand villages and their surroundings have been destroyed; drinking water has fallen due to the destruction of water infrastructure and resulted leakage, bacterial contamination and water theft; rivers and underground waters have been contaminated by waste dumps built in the vicinity of drinking water sources; pollution caused by the use of explosives has degraded air, soil and water, etc.<sup>2</sup>. The total forest area decreased by 38% between 1990 and 2007, deforestation being speeded up by illegal logging by the parties involved in the conflict<sup>3</sup>. As a result, animals have lost their habitats, plant species have disappeared, and desertification has become a growing problem.

Likewise, in the *conflict in Syria*, the environment proves to be a "silent victim". The effects on it are disastrous, with a direct and medium and long-term impact on the public health of the Syrian people. One small example is eloquent: the removal and processing of the scrapped infrastructure left in the cities of Aleppo and Homs (14.9 to 5.3 million tons of debris have accumulated in these cities) have generated additional environmental risks, consisting of in dust, carbon dioxide emissions and pollution of water resources<sup>4</sup>. Without going into detail, we state that the Syrian natural heritage has been decimated in all its dimensions (human population, flora, fauna, soil, air, subsoil, etc.).

*The armed conflict in Eastern Ukraine* started in 2014 has affected land, surface and underground waters, vegetation and wildlife in many ways. Environmental reports by specialists<sup>5</sup> showed that during the armed conflict there were disruptions

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<sup>1</sup> *Idem*, p. 88.

<sup>2</sup> "The impact of war on the environment and human health", *art. cit.*, accessed on 29 June 2018.

<sup>3</sup> "How Does War Affect the Environment?" in *Environmental Technology*, 8 September 2014, available online at: <https://www.envirotech-online.com/news/water-wastewater/9/breaking-news/how-does-war-affect-the-environment/31602>, accessed on 29 June 2018.

<sup>4</sup> \*\*\*, *The Toll of War: The Economic and Social Consequences of the Conflict in Syria*, World Bank Group, 2017, p. 27, available online at: <http://www.worldbank.org/en/country/syria/publication/the-toll-of-war-the-economic-and-social-consequences-of-the-conflict-in-syria>, accessed on 29 June 2018.

<sup>5</sup> *Environmental damage in Eastern Ukraine and recovery priorities*, Ministry of Ecology and Natural Resources of Ukraine, 2018, p. 6, available online at: <https://menr.gov.ua/files/images/news/24012018/Environmental%20Damage%20in%20Eastern%20Ukraine%20and%20Recovery%20Priorities.pdf>, accessed on 30 June 2018.

in the operation of water supply and wastewater systems and installations and highlighted increased nitrogen and phosphorus concentrations in the rivers Siverskiy Donets, Kleban-Byk, Kalmius and Kalchyk, as well as the fact that extensive forest areas were lost due to forest fires, mechanical damage and illegal deforestation.

## Conclusions

The environment has always been a strategic element of armed conflicts, practically, representing the physical place of their deployment.

The effects of the means and methods used in armed conflicts are diverse and, in essence, they are detrimental - not only to humans but also to the environment. Planning and conducting armed conflicts in some cases provokes disastrous environmental effects: water pollution with chemical or nuclear substances, air pollution with toxic dust and greenhouse gas emissions, physical destruction and biological degradation of the landscape, destruction of natural habitats.

Given that natural resources, such as water, soil, forests, wildlife and flora represent the “richness of the poor”, their destruction during military action undermines, if not suppresses, the livelihoods of this population, acting as a driver of poverty and forced migration and creating the vulnerability of triggering local conflicts.

Frequently, international attention has been drawn to the need to protect the natural environment during armed conflicts and to comply with legal provisions in this regard.

By its messages, former UN Secretary General Ban Ki-moon is an ambassador of the natural environment presenting the main negative consequences of armed conflicts and at the same time urging the world’s states leaders to do more to achieve the common goal of protecting the environment by avoiding war.

For example, we deliver the following speeches: “*The environment has long been a silent casualty of war and armed conflict. From the contamination of land and the destruction of forests to the plunder of natural resources and the collapse of management systems, the environmental consequences of war are often widespread and devastating*”<sup>1</sup> and “*Armed conflicts are becoming more complex and require solutions that address root causes. Issues of poverty, vulnerability to climate shocks, ethnic marginalization, and transparent, sustainable and equitable*

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<sup>1</sup>“What's the environmental impact of modern war?” in *The Guardian*, 6 November 2014, available online at: <https://www.theguardian.com/environment/2014/nov/06/whats-the-environmental-impact-of-modern-war>, accessed on 3 July 2018.



*management of natural resources must be considered within and alongside peace agreements if we are to build more resilient and prosperous societies*"<sup>1</sup>.

Another message, equally impressive and enlightening, is as follows: "*Protection of the natural environment is one element necessary to give proper effect to the protection of civilian populations in times of armed conflict. Conscious of the profound effects of damage to the environment, caused during armed conflicts, has or may have on the health and survival of civilians and civilian populations, and recognizing that the scope and extent of legal protection of the natural environment merits analysis and where appropriate clarification*"<sup>2</sup>. By this discourse, the public consciousness is reminded of the direct symbiotic link between human and nature, which human civilization, by its mercantilist and selfish actions, seems to forget most of the time.

Besides, in the discourse, we all want peace and we criticise armed conflicts, we put emphasis on their impact on people's lives, infrastructure and various political relationships, but we leave in the shadow the essential framework in which we live, dwell, work - **the environment**.

What would be the solution(s)?

The key is the awareness of the present and future human generations about the risks posed by wars and the proliferation of armed violence. In this regard, we consider to be useful public relations campaigns that include educational programs that show the effects of armed conflicts on the environment and, as in a domino game, the effects on human health and safety. A solution at the level of political decision-makers is to amplify the role of diplomacy in resolving state conflicts that could generate conflicts.

Other useful measures are: strict adherence to international humanitarian law and more severe sanctions for violations in the matter of protecting the natural environment during military action; conducting studies, reports, etc. highlighting the effects of armed conflicts on the natural environment and their popularization in the political, academic world and among the population as a whole; equal punishment of those guilty regardless of whether the damage is caused to the environment by individuals, states, non-state groups or other entities that have the power in the world and the popularization of these sanctions; increasing the role of education in environmental protection or (utopian solution) - **shutting down arms**.

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<sup>1</sup> Secretary-General's message for the International day for Preventing the Exploitation of the Environment in War and Armed Conflict, United Nations Secretary General, 6 November 2014, available online at: <https://www.un.org/sg/en/content/sg/statement/2014-11-06/secretary-generals-message-international-day-preventing-exploitation>, accessed on 3 July 2018.

<sup>2</sup> Wim Zwijnenburg, Kristine Te Pas, *Amids de debris. A desktop study on the environmental and public health impact of Syria's conflict*, Colophon, Netherlands, October 2015, p.13, available online at: <https://reliefweb.int/sites/reliefweb.int/files/resources/pax-report-amidst-the-debris-syria-web.pdf>, accessed on 3 July 2018.

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