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Impact of Armed Conflicts on the State of Ecological Security

Key words: armed conflicts, weapons of mass destruction, destruction of the natural environment, migrations

Abstract

Contemporary armed conflicts, although not as global in scope as the two world wars in the 20th century, create serious threats in many dimensions. One of the areas of their influence is the natural environment.

In fact every armed conflict, also one that takes place in a relatively small territory, causes a number of negative consequences in the natural environment. These, in turn, may have further consequences.

Apart from the damage caused by military operations, accompanying phenomena appear on a large scale. In recent years, a series of armed conflicts in Africa and West Asia resulted in huge migrations of millions of people. In addition to the resulting humanitarian crises, large-scale environmental problems are observed.

Thus, it clearly shows that even potentially minor military conflicts can lead to serious disturbances of the natural environment.

The author shows the various consequences of armed conflicts for the natural environment over the last half century.

Introduction

War can be considered in many aspects: social, political, economic, military, historical or legal. This is due to the complexity of this phenomenon. This complexity concerns the causes, course and effects of war. Each war therefore has its own complex, economic, social, political and even psychological causes. It also has a different course from other wars. The effects, both primary and secondary, are not limited to one political, social or economic plane. In general, most of these effects are devastating and irreversible. The destructive effects of war affect not only the products of human civilization and culture, societies and individual people, but also the natural environment. Warfare is carried out in

specific areas in which there are complex, sometimes unique ecosystems¹.

Causes of environmental damage

Damage and destruction to the environment resulting from war operations may be caused by:

- a) the use of weapons and war means of high destruction potential, e.g. weapons of mass de-

¹ The term ecosystem should be understood as a fragment of the biosphere consisting of living organisms and inanimate elements (an area inhabited by living organisms). see.: B. Poskrobko, T. Poskrobko, K. Skiba, *Ochrona biosfery*, Warszawa 2007, p. 10.

- struction, incendiary weapons or geophysical weapons;
- b) deliberate destruction of environmentally hazardous infrastructure such as nuclear, hydro and conventional power plants, chemical plants, tanks of poisonous chemicals, etc.;
- c) accidental destruction of the above-mentioned facilities;
- d) natural and technical disasters that have been impossible to remove warfare;
- e) inability to utilize or improper utilization of the resulting ones warfare on waste, including destroyed military equipment and combat means;
- f) war economy carried out without keeping environmental protection standards;
- g) social processes and phenomena, which include the migration of large masses of the population and the demoralization of society.

The use of weapons of mass destruction in warfare may be particularly harmful to the environment. As experts from the field of military technology emphasize, this weapon has the property that its action can spread in an unpredictable manner, destroying the lives in its field of destruction². According to the commonly accepted classification, weapons of mass destruction include nuclear, biological and chemical weapons³.

Of these, atomic weapons are perceived as the most destructive, even threatening the existence of our entire planet. The first atomic bomb dropped on Hiroshima on August 6, 1945 destroyed more than 90% of the city's surface and contributed to the deaths of around 140,000 people, some of whom died as a result of radiation some time after the attack⁴.

Damage occurs as a result of the impact of heat radiation, shock wave, penetrating radiation and radioactive contamination arising during a nuclear explosion. The heat pulse causes the matter to evaporate in the immediate vicinity of the explosion and then burn it. The shock wave causes extremely strong and destructive gales, while penetrating radiation has a deadly effect on living beings⁵. In addition, during the impact of nuclear radiation on living organisms, the apparatus regulating all processes in the cell and determining

the heredity of DNA and RNA molecules is violated, which contributes to the generation of genetic changes passed on to generations⁶.

Radioactive contamination persisting in water reservoirs as well as in grass, fruit and soil may be particularly dangerous for people and animals⁷. Relevant research into the long-term effects of nuclear explosions on the Japanese population was conducted by the Atomic Bomb Casualty Commission (ABCC), established in 1946. Unfortunately, this commission did not provide victims with any treatment⁸.

It may be interesting to note that the issues of the functioning of human civilization after the global nuclear war are of interest not only to scientists but also to creators of culture. The current touching this subject is referred to as post-apocalyptic fantasy. Examples of post-apocalyptic literature include the publishing series "Metro 2033" and the novels by Cormac McCarthy "Road" and "Neville Shute" "The Last Bank". The classic of post-apocalyptic films is the American production from 1983, "The Day After".

Chemical weapons are another weapon of mass destruction that is extremely dangerous to the environment. This term should be understood to mean both combat poisonous substances and incendiary agents, as well as the means used to transfer them. Chemical weapons are characterized by toxic effects and the ability to spread over long distances and penetrate into various objects. However, its operation depends on weather conditions⁹.

Generally, chemical weapons are associated with highly toxic war gases with paralytic convulsive (Tabun, Sarin), asphyxiant (Phosgene), stinging (Iperite) or general attack¹⁰. However, as the history of wars proves, other chemical substances other than poisonous war gases may be used as chemical weapons with destructive effects on man and the surrounding nature, including herbicides usually used in agriculture.

For example, during the Vietnam War (28.05.1962–11.11.1975), Americans sprayed eighty million liters of

² D. Harding (ed.), *Encyklopedia broni*, Warszawa 1995, p. 264.

³ P. Żurawski vel Grajewski, *Bezpieczeństwo międzynarodowe wymiar militarny*, Warszawa 2012, p. 325.

⁴ J. Black, *Narzędzia wojny jak broń zmieniała świat*, Warszawa 2008, p. 283.

⁵ *Encyklopedia broni*, op.cit., p. 272.

⁶ I. Obierak, *Wybuchy jądrowe i ich konsekwencje ekologiczne*, (Politechnika Warszawska, 1999), www.if.pw.edu.pl/~pluta/pl/dyd/mtj/za199/obierak/str6.htm (access 04.03.2017)

⁷ J. Użycki, *Wojna konwencjonalna w Europie*, Warszawa 1989, p. 166.

⁸ A. Mikamo, *Odrodzić się z popiołów*, Warszawa 2016, p. 209–211.

⁹ M. Laprus (ed.), *Leksykon wiedzy wojskowej*, Warszawa 1979, p. 53.

¹⁰ *Encyklopedia broni*, op.cit., p. 268.

highly concentrated herbicides over Vietnam for over 9 years, which chemically burned the plant cover on an area of about 2.2 million hectares¹¹. About 20% of tropical forests and 30% of wetland mangrove forests have been destroyed¹². In addition, those containing poisonous dioxin herbicides were also highly harmful to humans and animals. According to the Vietnamese authorities, these chemicals caused death or serious illness of about 0.4 million people and the birth of about 0.5 million physically and mentally handicapped children¹³.

Chemical weapons, both the basic (combat poison agents) and the auxiliary (used in high concentrations of herbicides), should be undeniably considered destructive not only for the biosphere, but also for complex ecosystems. Among other things, and therefore, on 13 January 1993, a convention was drawn up in Paris on the prohibition of research, production, storage and use of chemical weapons and on the destruction of its stock, which already in the first article obliges signatories not to produce and accumulate toxic agents, and, above all, not to use chemical weapons in combat operations¹⁴. Unfortunately, chemical weapons are still used, including in ongoing conflicts in the Middle East, in Iraq and Syria¹⁵.

Chemical weapons also include incendiary agents. In this case, fuel and air charges are mentioned as particularly dangerous for the natural environment, the explosion of which causes heat radiation as well as a strong shock wave and high vacuum. This combination of destruction factors is deadly to all living organisms within the range of this weapon¹⁶.

Biological weapons, i.e. various types of pathogenic bacteria, viruses and microorganisms (fungi, rickettsia, protozoa), and toxins produced by living organisms (botulinum, ricin) are also no less dangerous for

people¹⁷. They can endanger both the lives of humans and animals, and even plants. Mutated organisms may prove to be particularly dangerous, as they may not only be more deadly, but also difficult to eradicate. Despite the high potential for destruction, biological weapons also have their limitations. Its effectiveness depends on many factors, including environmental conditions, the infectivity of the biological agent and the rate of its degradation¹⁸.

In the case of weapons of mass destruction, it should also be borne in mind that not only their direct use in combat operations, but also the destruction of their compositions as a result of conventional attack may have dangerous consequences for the natural environment¹⁹.

Weapons of mass destruction can also be used in irregular activities by various types of terrorist groups. In the case of chemical weapons, they can be mainly used in industry and agriculture, and thus the so-called chemical agents available on the market. dual purpose²⁰. Simple, commercially available biological toxins, e.g. nicotine, and even some pathogenic bacteria can also be used to carry out terrorist attacks²¹. As for nuclear weapons, terrorists are most likely to use radiological material or spent nuclear fuel²².

Not only individual ecosystems, but all life on Earth can be threatened by geophysical weapons. It can cause strong earthquakes, cyclones, violent storms and tsunamis. Just weather anomalies would contribute to the degradation of the natural environment and the disorganization of preventive and rescue human activities. The factor causing these phenomena is to be, among others strong electromagnetic radiation affecting the upper layers of the Earth's atmosphere and various layers of the planet's mantle²³. Research on geophysical weapons is carried out, including as part of the joint US Air Force and US Navy research program – HAARP.

¹¹ J. Borkowski, *Rozważania o zagrożeniach*, Warszawa 2014, p. 27.

¹² P. Ostaszewski, *Wojna wietnamska 1965–1975*, [in:] P. Ostaszewski (ed.), *Konflikty kolonialne i postkolonialne w Afryce i Azji 1869–2006*, Warszawa 2006, p. 353.

¹³ J. Borkowski, *op.cit.*, p. 28.

¹⁴ Konwencja o zakazie prowadzenia badań, produkcji, składowania i użycia broni chemicznej oraz o zniszczeniu jej zapasów, (Dz. U. z 1999 r. Nr 63, poz. 703), p. 3.

¹⁵ *Chemical weapons were, among others used by Islamic State militants in the Mosul battle*. see.: W. Taranik, *Bojeviki IG primenili protiv armii Iraka khimicheskoye oruzhiye*, defence.ru/article/bojeviki-ig-primenili-protiv-armii-iraka-khimicheskoe-oruzhie/ 14.03.2017).

¹⁶ J. Użycki, *op.cit.*, p. 176.

¹⁷ *Encyklopedia broni*, *op.cit.*, p. 277.

¹⁸ J. Adamski, *Nowe technologie w służbie terrorystów*, Warszawa 2007, p. 78.

¹⁹ J. Użycki, *op.cit.*, p. 167.

²⁰ Dual-purpose chemicals should be understood as those compounds that are commonly used, but at the same time can be used as precursors at various stages of the production of poisonous warfare agents. See.: J. Adamski, *op.cit.*, p. 62.

²¹ Anthrax, gas gangrene and staph experiments were conducted by Al-Qaeda. *Ibidem*, p. 76.

²² *Ibidem*, p. 86.

²³ Polski Serwis Naukowy, s.v. HAARP, encyklopedia.naukowy.pl/HAARP (access 03.03.2017).

During the war, damage to the natural environment may not necessarily result from the use of weapons of mass destruction. Equally destructive effects can be caused by the intentional or accidental destruction of the weapon's warehouses. You do not need too much imagination to realize how dramatic the consequences would be for the environment damage to nuclear cargo or large depots of toxic warfare agents.

During the modern war, apart from military facilities, important strategic infrastructure facilities are also destroyed, including power plants, production plants, strategic material depots (fuels, raw materials for industrial production, food), rail and road junctions, etc. Experts indicate that in the modern war various types of subversive and terrorist groups will attack nuclear power plants and chemical plants in the first place. The purpose of these attacks will not only be to destroy these facilities, but also to cause as many casualties as possible among the civilian population²⁴. Expert opinions have already confirmed reality. During the anti-terrorist operation conducted in Belgium in March 2016, materials were obtained showing that terrorists associated with the Islamic State planned an attack on one of the Belgian nuclear power plants²⁵.

In the event of the destruction of nuclear power plants and research nuclear reactors, ecological damage equal to that caused by the use of nuclear weapons may occur. According to data obtained as a result of situational games conducted in the West, the consequence of the destruction of a nuclear power plant would be contamination of an area of approximately 100,000 square kilometers²⁶. Experts also warn that radioactive contamination resulting from damage or destruction of a nuclear power plant lasts much longer than that caused by a nuclear explosion. Deactivating it is also very difficult, as it can contaminate the area even to a depth of several dozen centimeters²⁷.

The concept of how dangerous environmental damage can be in chemical plants can be made on the example of two disasters that occurred in the 1980s in Basel (Switzerland) and Bhopal (India). As a result of

the first of them, about 60 tons of toxins leaked into the Rhine, which contributed to the total destruction of fauna and flora on the 250-kilometer stretch of this river. The Bhopal disaster caused the death of about three thousand people and serious health damage in 200 thousand²⁸. These disasters occurred in peace. During the war, these disasters would have much more dangerous consequences, if only because the war would hinder or even prevent the rescue operation²⁹.

Other deliberate destructive actions taken during the war, such as blowing up hydrotechnical facilities or setting fire to forest massifs or oil fields, may also have harmful effects on the natural environment. A negative example of what deliberate destructive action can lead to can be a huge ecological catastrophe that took place as a result of arson in February 1991 by the Iraqi military forces withdrawing from Kuwait, the Kuwaiti oil wells. As a result, about 550 kilometers of coastal areas overgrown with mangrove forests were destroyed³⁰.

Contrary to popular judgment, war is not one continuous series of battles and military operations. Also during her normal life goes on with the dangerous events that form part of it, such as rail and road accidents, failures of electricity or water supply networks, fires, as well as mining and construction disasters. These seemingly relatively minor in view of the enormity of war damage events also have some limited to a small area, destructive to the natural environment and dangerous to human life. For example, during transport disasters, hazardous chemicals may leak. In peacetime, the effects of such a disaster could be quickly neutralized by specialized emergency services.

Unfortunately, during the war, the activities of these services may be hindered, at least because of staff, equipment, material and financial shortages. For various reasons, one of the warring parties may also hinder the rescue operation.

Natural disasters, such as floods, earthquakes or violent hurricanes, may turn out to be much more dangerous in terms of consequences not only in the local dimension, but also in a broader sense – regional. As a result, damage may occur to industrial plants, fuel tanks, hazardous waste landfills, etc., contamination with chemical and biological substances. Also in this

²⁴ I.M. Popow, M.M. Hazmatow, *Wojny buduszczonego konceptualnyje osnovy i praktičeskie wywody*, Moskwa 2016, p. 244.

²⁵ The target of the terrorist attack in Belgium was to be nuclear power plants, 25.03.2017 Zmiany.na.Ziemii, zmiany-naziemi.pl/wiadomosc/celem-ataku-terrorystycznego-w-belgii-mialy-byc-elektrownie-atomowe (access 03.03.2017).

²⁶ D. Szwed (ed.), *Energia jądrowa mity i rzeczywistość o zagrożeniach związanych z energią jądrową i jej perspektywach w przyszłości*, Warszawa 2006, s. 128.

²⁷ J. Użycki, *op.cit.*, p. 162.

²⁸ *Ibidem*, *op.cit.*, p. 153.

²⁹ *Ibidem*, p. 149.

³⁰ M. Leśniewski, *Pustynna Burza wojna w Zatoce Perskiej 1990–1991*, [in:] P. Ostaszewski (ed.), *Konflikty kolonialne i postkolonialne w Afryce i Azji 1869–2006*, Warszawa 2006, p. 707.

case, preventing or eliminating the negative effects of these phenomena may be difficult due to the inability to organize and carry out an effective rescue operation. It is pointed out that the devastating effects of Hurricane Katrina, which devastated the southern coast of the US at the turn of August and September 2005, could have been smaller if the National Guard's engineering units had entered the operation. Unfortunately, at that time these units were delegated to conduct military operations in Iraq.

Devastation of the natural environment can occur not only due to war damage. Not a small problem may also be caused by the waste resulting from the war, including primarily hazardous waste. Hazardous waste should be understood as substances or objects which, because of their origin, chemical, biological composition and / or properties and circumstances pose a threat to human life / health or the environment³¹.

Therefore, hazardous waste is considered to have at least one of the following properties: explosiveness, flammability, infectivity, radioactivity, corrosive or suffocating effect, and may also cause congenital deformations and genetic changes. Environmentalists also include in the hazardous waste also those from which hazardous substances can be separated during their storage, e.g. corrosive acids or toxic gases³².

During the war, dangerous waste is generated by a whole bunch of different entities. First of all, it is a war-oriented economy. The pace and organization of production imposed by the war can lead to violations of environmental rigors. Waste treatment systems calculated for lower production may also be inefficient. Some waste incineration plants and sewage treatment plants can be destroyed as a result of war operations. Failure or damage to rendering systems may also make it difficult or even impossible to dispose of domestic and medical waste generated by large clusters of human beings, including those of infectious nature.

One of the effects of the war is the formation of large population centers. They can arise as a result of war migrations (refugees) as well as operational activities (concentration of troops, large prisoner-of-war camps). Due to the dynamics of warfare, refugee accumulation or concentration of troops may also occur in areas covered by nature protection (reserves, national parks). Such war settlements often lead to the degradation of the unique ecosystems found in these areas.

An example is the oldest in Africa, the Congolese national park of Wirunga, in which war refugees from Rwanda, a war-torn civilian settlement, and troops of Congolese government troops fighting against local guerilla are concentrated. The result is far-reaching destruction of the local fauna and flora. about 96% of the local hippo population³³.

War-induced displacements of large masses of the population or their temporary concentration in a relatively small space is also a serious epidemiological threat. Thus, during wars there are numerous epidemics of bacterial and viral infectious diseases, which the health service disorganized as a result of hostilities cannot cope with. These epidemics are usually associated with a very large number of victims, and are also able to effectively disorganize the functioning of not only local communities, but even entire countries. An example is the epidemic of Asian flu ("Spanish"), which in 1918, after the end of World War I, spread from Asia to the USA, Europe, and even further causing a sudden increase in mortality in the world³⁴. In today's urban world, the effects of the epidemic could be much more severe³⁵. Spreading the epidemic of infectious diseases could contribute to the destruction of municipal water and sewage infrastructure.

Chemicals or even radioactive substances that are hazardous to the environment can be released from damaged, damaged or abandoned combat equipment. In this group of war threats to the natural environment, sunken ships deserve special attention. Marine fuels (mazout, nuclear fuel) as well as cargo carried by ships, including weapons of mass destruction, can be dangerous to marine and coastal ecosystems. Disturbing is the fact that the threats posed by sunken ships can only be discovered many years after the war. An example of this can be found in 2003 off the coast of Norway, sunk at the end of World War II, the German submarine U 864, on whose board there was a large load of mercury³⁶.

Dropped ammunition and parts of it, such as fuses and depleted uranium cores, should be considered a kind of menacing and dangerous not only for people,

³³ Broken heart of Africa www.national-geographic.pl/national-geographic/ludzie/pekniety-serce-afryki (access 10.03.2017).

³⁴ R. Cameron, L. Neal, *Historia gospodarcza świata od paleolitu do czasów najnowszych*, Warszawa 2004, p. 367.

³⁵ According to the UN report, World Urbanization Prospect 2014 (New York 2015, p. 7), 3.9 billion of the population lives in cities, or about 54% of the Earth's population.

³⁶ K. Kęciek, *Sarkofag dla U 864*, „Tygodnik Przegląd”, January 14th 2007.

³¹ B. Poskrobko..., *op.cit.*, p. 231.

³² *Ibidem*.

but even for the natural environment. Of these, a special threat to humans and the environment is the depleted uranium cores used in aerial artillery anti-tank ammunition. Evidence of their harmfulness was provided by conflicts that occurred at the turn of the 20th and 21st centuries in the Balkans and the Middle East. Uranium core shells were used mainly by US troops, including during the war in Iraq. According to a report prepared in 2010, in the region of Faluja, where particularly fierce fighting took place in March 2004 during which depleted uranium ammunition was used, 38 times higher than the average incidence of leukemia was noted, 10 times higher incidence of cancer breast cancer, five times higher infant mortality rate, and a significant increase in the number of malignant brain tumors in children under two years old³⁷.

The dangers of using ammunition with depleted uranium cores have been recognized and properly assessed by the international community. In 2008, the European Parliament adopted a resolution calling for a moratorium on depleted uranium weapons and called for a closer examination of the effects of its use. A similar appeal was received in November 2012 by the UN General Assembly. Only the USA, Great Britain, France and Israel voted against it³⁸.

Hazardous war waste can be found not only on the battlefields of recent conflicts. A deadly memento of both world wars is also found near Polish borders. This dangerous souvenir is the German poisonous combat agents sunk in the Baltic Sea. As demonstrated by tests carried out by Bundesmarine in the late 1990s, over 80% of this dumped chemical munitions are heavily corroded, which could release highly toxic substances contained in the sea³⁹. The leakage of these toxins abandoned after the war would not only mean the biological death of the Baltic Sea, but would also pose a serious ecological threat to the states on its coast.

The remains of war which are dangerous to humans and animals are mines, including above all anti-personnel mines. It is estimated that in the years 1975–1995 mines killed more than a million people in the world, and each month, wounds and deaths resulting from their explosion may suffer up to two thousand people.

It is also tragic that removing all mines left after previous wars and conflicts may take up to 1000 years⁴⁰. A kind of response to the threat posed by anti-personnel mines may be the Convention adopted in September 1997 prohibiting the use, storage, production and transfer of anti-personnel mines and their destruction (the so-called Ottawa Treaty⁴¹).

Modern war is a complex undertaking, engaging all the potential and strength of non-state and supra-national states and entities involved in it. Therefore, it requires the mobilization not of the armed forces, but also of the economy at risk of war. In short, this means, among others significant intensification of agricultural and industrial production, and extraction of natural resources needed by the war machine. It is rather certain that these activities will constitute a significant burden on the environment. The evidence can be the devastation of Korean forests as a result of the robbery, war economy of the Japanese occupants⁴². The need to quickly provide the armed forces with large amounts of various types of equipment, including armaments, medical supplies, food, etc., can also help violate strict environmental standards and regulations in peacetime.

Summary

As is apparent from the cited argument, the problem of environmental protection during warfare is quite complex. Due to the diversity and multiplicity of threats, it requires undertaking a whole series of projects on many different levels, including organizational, technical as well as legal. Unfortunately, in the international law of armed conflicts, the issues of preventing war devastation of the natural environment were practically not paid attention.

In various treaties and international conventions, for example in The Hague Regulations of 1907, you can find articles prohibiting the use of poisons or poisoned weapons, but they were not for the protection of the natural environment, but only soldiers and civilians of the warring parties⁴³. It was also dictated by

³⁷ R. Stefanicki, *Uran z wojennych pocisków zabija irackie dzieci?*, „Gazeta Wyborcza” 18.03.2016, wyborcza.pl/1,76842,13600136,Uran_z_wojennych_pociskow_zabija_irackie_dzieci_.html (access 12.03.2017).

³⁸ *Ibidem*.

³⁹ P. Miller, *Śmierć drżmiąca w głębinach*, „Komandos”, No 1/2008.

⁴⁰ K. Korzeniewski, T. Rostalski, *Miny i niewybuchy – afgańskie zagrożenie*, „Lekarz Wojskowy”, No 82 (1)/2006.

⁴¹ Dz.U. z 2012 r. poz. 1286.

⁴² P. Moranowski, *Przyroda a konflikty zbrojne*, www.ekologia.pl/ (access 12.03.2017).

⁴³ Konwencja dotycząca praw i zwyczajów wojny lądowej, Haga 18 października 1907 r., Regulamin, Dział II Rozdział I Artykuł 23 pkt. a (Dz. U. z 1927 r. Nr 21, poz. 160 i 161).

humanitarian, not pro-ecological reasons, introduced by the Geneva Protocol of June 17, 1925, that the use of asphyxiant, poisonous or similar gases and bacteriological agents introduced in war⁴⁴. Also pro-ecological provisions in international maritime law, which refer to exclusive fishing zones, protect not the natural environment, but the interests of coastal states.

The first records that could be considered ecological began to appear in the armaments and ways of waging treaties and international treaties only after World War II. The pronouncement that is favorable for the natural environment can be found, among others, in the treaty made on December 1, 1959, making Antarctica a demilitarized zone, as well as in the system of February 11, 1971 on the ban on placing nuclear weapons and other weapons of mass destruction on the bottom of seas and oceans and in its substrate⁴⁵.

However, an explicit provision on the prohibition of incendiary weapons against forests and other vegetation was only found in Protocol III to the Geneva Convention of 10 October 1980 on the prohibition or restriction of the use of certain conventional weapons, which may be considered to cause undue suffering or having uncontrolled effects⁴⁶. Greenpeace made an interesting draft convention devoted entirely to environmental protection during war operations in the nineties. Unfortunately, the proposal of this organization did not meet with wider response⁴⁷. However, she indicated the direction in which the activities of the creators of international law should go. Worldwide events are not only confirming the fatalistic assumption that wars were, are and will be, but also show that each new war has increasingly devastating effects on the environment.

Looking from the angle of ecology, war should be considered a special kind of disaster with extremely destructive effects on the natural environment, of which man is also an integral part. Therefore, for the sake of our own security and even survival, we must take a number of multifaceted actions whose goal may not be to eliminate war altogether, because, like any catas-

trophe, it is a random event, but it will significantly reduce its destructive effects on the environment.

One of the planes on which active action should be taken is international law. Placing pro-ecological provisions in international war law, however, will not completely solve the problem. Other actions are also necessary, especially at the educational level. It remains to be hoped that political and military decision-makers with educated pro-ecological awareness and knowledge of the complexity of ecosystems will refrain in the event of war from too hasty decisions not only to use destructive weapons, but also to take war actions.

Bibliography

Legal sources

- Konwencja o zakazie lub ograniczeniu użycia pewnych broni konwencjonalnych, które mogą być uważane za powodujące nadmierne cierpienia lub mające niekontrolowane skutki, Genewa, 10 października 1980 r. (Dz. U. z 1984 r. Nr 23, poz. 104).
- Konwencja o zakazie prowadzenia badań, produkcji, składowania i użycia broni chemicznej oraz o zniszczeniu jej zapasów, Paryż, 13 stycznia 1993 r. (Dz. U. z 1999 r. Nr 63, poz. 703).
- Konwencja dotycząca praw i zwyczajów wojny lądowej, Haga 18 października 1907 r. (Dz.U. z 1927 r. Nr 21, poz. 160 i 161).
- Konwencja o zakazie użycia, składowania, produkcji i przekazywania min przeciwpiechotnych oraz o ich zniszczeniu, Oslo, 18 września 1997 r. (Dz. U. z 2012 r. poz. 1286).

Literature

- Adamski J., *Nowe technologie w służbie terrorystów*, Warszawa 2007.
- Antonowicz L., *Podręcznik prawa międzynarodowego*, Warszawa 2006.
- Black J., *Narzędzia wojny. Jak broń zmieniała świat*, Warszawa 2008.
- Borkowski J., *Rozważania o zagrożeniach*, Warszawa 2014.
- Cameron L., Neal R., *Historia gospodarcza świata od paleolitu do czasów najnowszych*, Warszawa 2004.
- Górska-Szymczak J., „More perfect Union” versus „ever closer Union” *Rozwój unii między państwowych w Stanach Zjednoczonych i Unii Europejskiej w pierwszych pięćdziesięcioleciach ich istnienia*, Toruń 2018.
- Harding D. (ed.), *Encyklopedia broni*, Warszawa 1995.
- Kenig-Witkowska M.M., *Międzynarodowe prawo środowiska wybrane zagadnienia systemowe*, Warszawa 2011.
- Kęciek K., *Sarkofag dla U 864*, „Tygodnik Przegląd”, January 14th, 2007 r.
- Korzeniewski K., Rostalski T., *Miny i niewybuchy – afgańskie zagrożenie*, „Lekarz Wojskowy”, No 82(1)/2006.
- Laprus M. (ed.), *Leksykon wiedzy wojskowej*, Warszawa 1979.
- Leśniewski M., *Pustynna Burza wojna w Zatoce Perskiej 1990–1991*, [in:] Ostaszewski P. (ed.), *Konflikty kolonialne i postkolonialne w Afryce i Azji 1869–2006*, Warszawa 2006.
- Mikamo A., *Odrodzić się z popiołów*, Warszawa 2016.
- Miller P., *Śmierć drzemiąca w głębinach*, „Komandos” 2008, No 1.
- Ostaszewski P., *Wojna wietnamska 1965–1975*, [in:] Ostaszewski P. (ed.), *Konflikty kolonialne i postkolonialne w Afryce i Azji 1869–2006*, Warszawa 2006.

⁴⁴ L. Antonowicz, *Podręcznik prawa międzynarodowego*, Warszawa 2006, p. 240.

⁴⁵ *Ibidem*, p. 234–235.

⁴⁶ Konwencja o zakazie lub ograniczeniu użycia pewnych broni konwencjonalnych, które mogą być uważane za powodujące nadmierne cierpienia lub mające niekontrolowane skutki, Genewa, 10 października 1980 r. (Dz. U. z 1984 r. Nr 23, poz. 104).

⁴⁷ M.M. Kenig – Witkowska, *Międzynarodowe prawo środowiska wybrane zagadnienia systemowe*, Warszawa 2011, p. 273.

- Popow I.M., Hazmatow M.M., *Wojny buduszcziego konceptualnyje osnovy i prakticzieskije wywody*, Moskwa 2016.
- Poskrobko B., Poskrobko T., Skiba K., *Ochrona biosfery*, Warszawa 2007.
- Szwed D. (ed.), *Energia jądrowa mity i rzeczywistość o zagrożeniach związanych z energią jądrową i jej perspektywach w przyszłości*, Warszawa 2006.
- Użycki J., *Wojna konwencjonalna w Europie*, Warszawa 1989.
- World Urbanization Prospect 2014*, UN, New York 2015.
- Żurawski vel Grajewski P., *Bezpieczeństwo międzynarodowe – wymiar militarny*, Warszawa 2012.
- Moranowski P., *Przyroda a konflikty zbrojne*, www.ekologia.pl/ (access 03.03.2017).
- Obierak I., *Wybuchy jądrowe i ich konsekwencje ekologiczne*, (1999), www.if.pw.edu.pl/~pluta/pl/dyd/mtj/za199/obierak/str6.htm (access 04.03.2017).
- Pęknięte serce Afryki*, www.national-geographic.pl/national-geographic/ludzie/pekniete-serce-afryki (access 30.04.2017).
- Polski Serwis Naukowy, s.v. HAARP, encyklopedia.naukowy.pl/HAARP (access 03.03.2017).
- Stefanicki R., *Uran z wojennych pocisków zabija irackie dzieci?*, „Gazeta Wyborcza”, wyborcza.pl/1,76842,13600136,Uran_z_wojennych_pociskow_zabija_irackie_dzieci_.html (access 03.03.2017).
- Taranik W., *Bojeviki IG primenili protiv armii Iraka khimicheskoye oruzhiye*, 14.03.2017, defence.ru/article/boeviki-ig-primenili-protiv-armii-iraka-khimicheskoe-oruzhie/ (access 15.03.2017).
- Internet sources**
- Celem ataku terrorystycznego w Belgii miały być elektrownie atomowe*, 25.03.2017 Zmiany.na.Ziemii, zmianynaziemi.pl/wiadomosc/celem-ataku-terrorystycznego-w-belgii-mialy-byc-elektrownie-atomowe (access 03.03.2017).