Environmental and human-caused threats in hybrid warfare

Four years of ongoing conflict in eastern Ukraine have led to an estimated 20,000 deaths and affected 3.4 million people. But the effects of war on the environment, including the deliberate flooding of mines and shelling of infrastructure, threaten the water supplies of thousands more people, explains **Serhii Ivaniuta**

In June this year the UN's Emergency Relief Co-ordinator, Stephen O'Brien, issued a statement raising alarm over the lack of safe drinking water for hundreds of thousands of people on both sides of the so-called contact line in Donetsk Oblast of eastern Ukraine. Some 400,000 people had been prevented from accessing water, owing to shelling of the South Donbass Water Pipeline's First Lift Pumping Station.

"The conflict, now in its fourth year, is denying vulnerable people of their most basic need – water," O'Brien said, calling on all parties to abide by their obligations under international law and ensure that civilian areas and infrastructure are not targeted.

On September 28, 2018, Xinhua news agency among others, reported that at least 117 people had been hospitalised for tap water poisoning in the non-government-controlled city of Makiivka in Ukraine's eastern Donetsk region. Local media reported that people had fallen ill after drinking tap water contaminated by manganese and they showed symptoms such as stomach ache, vomiting, chills and fever. Reports said that the incident was likely to have been caused by a malfunction in the central water treatment system.

Some of the extensive damage to the Privolnyanskaya mine in Donbass, eastern Ukraine, author image

Indeed, military operations have greatly increased the risk of emergencies in the region's industrial enterprises and infrastructural elements. In particular, the main threats to the environment, taken within the context of hybrid warfare, are due to environmental pollution, whether caused by accidents or serious violations in industrial and other enterprises as a result of hostilities.

Hazardous industrial waste

The critical situation in the Donetsk and Luhansk regions, which cover an area of about 30,000 km^2, is down to military operations in this large industrial region that is home to a high concentration of mines, metallurgical, chemical and energy industries and consequent hazardous industrial waste. The destruction of these industries poses a threat both to the population and the environment.

The military conflict has affected the mining regions of the Donbass and has significantly exacerbated existing ecological problems associated with abnormal pollution of air, land, water and biotic resources. Numerous mining, coke and power plants have been damaged or destroyed in the fighting, increasing the threat of emergencies on critical infrastructure sites, with massive consequences for the population and the environment.

More than 23 per cent of potentially hazardous facilities in Ukraine are concentrated in the territories of Donetsk, Luhansk (also known as Lugansk) and Kharkov regions, in terms of spatial density, which is three times higher than average.

At the same time, the vast majority of these are classified as elements of critical infrastructure, and are being exploited in conditions that are leading to excessive wear and tear (up to 70 per cent). They are also experiencing dangerous lowering of rocky foundations through flooding and the effects of corrosion on the structural elements of oil and gas pipelines, bridges and underground communications.

Among the main factors of the technogenic changes in the Donbass environment, one can distinguish the following:

- Chemical pollution of landscapes;
- Significant reduction of groundwater levels and adulteration of surface water bodies;
- Aggressive discharge of highly mineralised mine water into the river system;
- Acceleration of the manifestation of dangerous exogenous geological processes (landslides, karsts and flooding), subsidence of the earth's surface developing, complicated by the state of engineering and geology of residential and industrial facilities;
- Reduction of the seismological stability of rock mass as a result of mining activity;
- The formation of a large number of waste heaps, which are sources of water and soil pollution; and
- The elimination of groundwater intakes owing to deterioration of equipment.

The inevitable consequences of large-scale damage to mines through conflict, can include floods and subsidence in surrounding areas, threatening water supplies for local people

author image

The primary environmental threats in the eastern Ukraine military conflict zone include the following: Pollution of water sources; reduced reliability of water supply; and deterioration of access to drinking water for the population.

Water pollution has been occurring as a result of emergencies in water supply facilities and a lack of control over the operations of industrial enterprises in the temporarily occupied territories. The numerous tailings of industrial enterprises are especially dangerous and the destruction of dams is a threat, both to the environment and to humans.

The problem of surface and underground water contamination also remains acute. As a result of the fighting, surface water facilities, as well as engineering structures to supply drinking water, have suffered.

Restoring water supply systems and power lines in combat areas is often subject to great delays, significantly lowering the quality of drinking water available to consumers. Reducing the water levels of the Seversky Donets River greatly increases the risk of poor water supply. It also slows down the flow rate, leading the river to silt up.

Much of the liberated territory of Donetsk and Luhansk oblasts – comprising a total area of about 7,000 km^2 – is also contaminated with explosive objects and needs reconnaissance and demining activities.

In the course of the military conflict, incidences of damage to infrastructure and coal-mining enterprises being disconnected from electricity supplies have been recorded repeatedly. In turn, this has led to mine water drainage systems being shut down, and culminated in some mines becoming completely flooded.

Today, more than 30 mines in the region are partially or completely flooded and can no longer be exploited. Some damaged mines, or mines where works have halted, have been illegally dismantled.

The inevitable consequence of large scale mine flooding will lead to floods and subsidence in the areas that surround them. This will eventually result in buildings, structures and communications having to be decommissioned, including underground gas pipelines, sewage and water supply systems. When mines flood, they pollute surface and underground water with iron, chlorides, sulphates, other mineral salts and heavy metals.

> Local media reported people had fallen ill with stomach ache, vomiting, chills and fever after drinking tap water contaminated by manganese

Another specific threat involves mines that have been used as waste storage facilities, such as the Alexander-Zakhid and Vuglegirskaya mines. In 1979, in order to free trapped gas, the Soviet Union detonated a small nuclear bomb in the Young Communard (Yunkom) mine. In April 2018, an OSCE Special Monitoring Mission warned about pumps being shut down. It is estimated around 500 cubic metres of radiation-contaminated mine water could be released into the water table, so this mine becoming flooded has significantly increased the risk of radionuclides leaching into water and soil.

The fighting in the Donetsk and Luhansk regions has also led to land pollution and violation of the nature reserve fund's landscapes. Natural reserves, nature parks, regional landscape parks and steppes have all been seriously damaged by the construction of fortifications, forest plantations being felled and forest and steppe fires.

Hybrid aggression in eastern Ukraine makes it difficult to conduct a reliable assessment of the transboundary transport of pollutants in the event of emergencies, which can significantly slow response down in the event of an accident. To solve this problem, it is obviously necessary to restore and develop a system of environmental monitoring, including the use of satellite remote sensing data, as well as obtaining assistance from influential international experts.

The current situation in the Donbass requires immediate action to identify existing environmental problems caused by military action, in order to analyse the level of danger, localise each of the problems and develop a detailed plan for their elimination, depending on the level of security or the dynamics of progression.

The improvement of the ecological situation in the eastern Ukraine requires systematic consideration within the framework of the Tripartite Contact Group of the Minsk negotiation process (a group of representatives from Ukraine, the Russian Federation and the OSCE, formed to facilitate a diplomatic resolution to the war). It also requires measures to reduce the risk from environmental hazards, including preventing the negative environmental and geological consequences of flooding coalmines. It is also extremely important to restore environmental monitoring, environmental pollution control and environmental reporting in the military conflict zone.

Particular attention should be paid to mines being flooded in temporarily occupied territories, since an uncontrolled process will lead to flooding across surrounding territories, along with surface subsidence. This can cause the destruction of buildings and structures, engineering networks and communications, as well as groundwater pollution, which in turn could bring about further negative and unpredictable consequences.

Among the environmental threats occurring in the military conflict zone, the most urgent is that of large-scale pollution of water sources which reduces the reliability of water supply and leads to deteriorating access to drinking water for the population.

Water pollution occurs when elements of the water supply system are affected by emergencies, as well as a lack of control over the actions of industrial enterprises operating in the occupied territories.

Among the technogenic threats in the military conflict zone in the east of Ukraine is the fact that drainage and ventilation in some mines have been stopped. Many of these are connected to water systems. Therefore, if these mines are subject to uncontrolled flooding, large areas will be inundated. Surface water intakes will suffer massive contamination from mine water, critical infrastructure could be destroyed on a large scale by subsidence and explosive methane from the mines could find its way into cities and towns.

Epidemiological situation

Water pipes have been destroyed by shelling during the war, which has stopped water supply systems from functioning and caused deterioration in the provision of drinking water. The poor quality of water is a real health threat, a factor that significantly impairs the sanitary and epidemiological situation in the region.

The prospects for reducing the level of environmental and technogenic threats in eastern Ukraine under the conditions of hybrid actions are directly related to introducing an effective and functioning monitoring system to observe and track the environment in the conflict-affected territory. Without objective information on the state of the environment, it is impossible to make sound management decisions to protect the population from threats of natural and human-caused origin.

The solution lies in the context of deepening co-operation with international organisations, including the UN and OSCE, on environmental monitoring of the area in and around the Donbass region, as well in identifying priority measures for restoring critical infrastructure and eliminating the negative consequences of emergencies related to military action. C·RJ

Sources

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Author

SERHII IVANIUTA *is Doctor of engineering sciences, Senior Research Fellow and Deputy Head of the Energy and Technogenic Security Department, National Institute for Strategic Studies, Kyiv, Ukraine*