

# Russia's war on Ukraine: High environmental toll

The environmental impact of Russia's war on Ukraine has been rapidly growing with every month of full-fledged invasion. The destruction of the Kakhovka Dam further increased the harm inflicted on nature, while bringing international attention to the environmental dimension of the war. Together with its international partners, Ukraine is now looking into the legal options to hold Russia accountable for the environmental damage it has caused, which many refer to as 'ecocide'. However, the potential legal pathways are all but straightforward.

## Estimating the impact of the war on the environment

Since the 2014 hostilities and especially since Russia began its full-scale invasion of Ukraine on 24 February 2022, the war has not only [caused](#) thousands of casualties, a refugee crisis and an economic shock but it has also been highly [detrimental](#) to the environment. Thousands of [instances](#) of air, water, land and soil pollution, as well as damage to ecosystems, have been [identified](#), including hazards to neighbouring countries. The [war](#) has also had a negative [impact](#) on Ukraine's rich [biodiversity](#). [Forest fires](#) and acts of [deforestation](#), explosions, the building of fortifications, and the poisoning of the soil and water all impact [wildlife](#) and destroy natural [habitats](#), including those protected in the biosphere reserves and national parks, many of which are also a part of the pan-European [Emerald Network](#).

In July 2022, to record the environmental crimes committed by Russia, Ukraine's Ministry of the Environment and Natural Resources launched EcoZagroza – a website [developed](#) with support from 'Apena 2', a project funded by the European Union (EU). According to EcoZagroza, as of 18 July 2023, there have been [2 450](#) reports (2 317 verified) of military actions with a direct environmental effect. Estimates based on Ukraine's environmental inspections show that Russia's invasion has inflicted roughly €52.4 billion (UAH2 071 billion) in environmental damage.<sup>1</sup> This includes €27 billion in damage to air, €23.6 billion in damage from waste pollution, €1.5 billion in damage to water, and €0.3 billion in damage to soils. According to the [preliminary monitoring](#) of the United Nations Environment Programme (UNEP), which, at the request of the Ukrainian government, has been assessing the environmental impacts of the war, Ukraine faces 'a [compounded](#), multi-dimensional environmental crisis that has either exacerbated existing issues or added new ones'. UNEP stresses the presence of 'multiple crises associated with chemicals, munitions and military equipment, the presence of a range of pollutants ... damage inflicted to fuel storage facilities, industrial infrastructure, key infrastructure such as water, energy and waste management systems, urban areas, agricultural and natural areas'. It concludes that 'the country and the region risk being burdened with a toxic legacy long after the conflict ends'.

The war has compromised Ukraine's [agricultural](#) production, which is vital for the country's economy and [global](#) food security. Three major types of damage – physical degradation, widespread chemical pollution from mines and affected industries, as well as exploded ammunition – have severely impacted millions of hectares of Ukrainian farmland. In particular, as the International Committee of the Red Cross (ICRC) [notes](#), contamination caused by weapons poses a long-term problem, addressing which requires significant resources, takes a long time and involves risk. Before this happens though, a significant part of arable land would be unusable for years.

## Attack on the Kakhovka Dam

The [destruction](#) by Russian forces, as [suggested](#) by evidence, of Ukraine's largest dam – Kakhovka – on 6 June 2022, will have long-term [environmental](#) and [health](#) impacts. Many, [including](#) the [EU](#) and its institutions, condemned the destruction, [qualifying](#) it as ecocide and the [worst](#) environmental [disaster](#) in Europe since Chernobyl. The event [resulted](#) in a [catastrophic flooding](#) submerging thousands of hectares of land, claiming dozens of human [lives](#) and [displacing](#) thousands, and prevented normal access to drinking water and irrigation systems. Many [pets](#), farm animals and [wildlife](#) perished in the [flood](#), and numerous, often protected, natural habitats were destroyed. Some [150 tonnes](#) of toxic industrial lubricants were

<sup>1</sup> Conversion rate used: 1 EUR = 39.48576 UAH (average exchange rate for June 2023, source: [InforEuro](#)). The values are rounded.



[reportedly](#) released alongside contaminants from sewage pits, petrol stations, and agrochemical and pesticide stores, as well as [dislodged landmines](#). The Minister of Environmental Protection and Natural Resources of Ukraine, Ruslan Strilets, has warned that these contaminants are [drifting down](#) the Dnipro River into the Black Sea, which washes the shores of six countries, including Romania and Bulgaria, and is connected to the Mediterranean Sea. This could affect the marine ecosystem in the region and other countries as well. The destruction has also [heightened](#) safety [concerns](#) for the Zaporizhzhia [nuclear power plant](#), as the dam was the primary source for its supply of cooling water, although alternative water [sources](#) do exist.

## Holding Russia accountable for the environmental damage

Ukraine has [stated](#) its [determination](#) to make Russia [pay](#) reparations, including for environmental damage. Together with its international partners, it has been [exploring](#) ways to ensure that Russia is held [accountable](#). While ecocide has been on the [Ukrainian Criminal Code](#) list of crimes since 2001, many [argue](#) that the case should be brought at international level to ensure an adequate level of accountability and compensation. However, [none](#) of the [avenues](#) for reparations is without [challenges](#). The task of collecting evidence and quantifying damage is problematic, especially amidst the ongoing war. In parallel, while there could be some possible legal [procedures](#) to obtain compensation for the environmental harm caused (as outlined by the International Court of Justice (ICJ), the UN Compensation [Commission](#) and [others](#)), the process is [complicated](#) and [all](#) but straightforward, with very [few](#) existing [precedents](#) of such reparations (e.g. [Iraq's reparations to Kuwait](#)). As for [accountability](#) for the destruction of the Kakhovka Dam, in addition to the general rules governing the conduct of hostilities, three special provisions are codified in Articles [54](#) (objects indispensable to survival), [35](#) and [55](#) (natural environment), and [56](#) (dams) of [Protocol I](#) Additional to the Geneva Conventions, to which both Ukraine and Russia are [parties](#). According to [several experts](#), even if the dam's destruction was not deliberate, any neglect that led to its destruction would likely be a breach of [Russia's positive duty](#) to ensure the protection of civilian infrastructure. If the destruction was deliberate, it would likely [qualify](#) as an act of indiscriminate violence against the civilian population and a violation of international law prohibiting intentional and wilful destruction of the natural environment.

There is currently no global legal [instrument](#) on ecocide, but along with the [core principles](#) of international humanitarian law (distinction, military necessity and proportionality), several international law [provisions](#) address [environmental protection](#) in wartime. For instance, while the International Criminal Court (ICC) does not recognise ecocide as a 'core crime' – the gravest type of crime – Article 8(2)(b)(iv) of its [Rome Statute](#) lists acts of 'intentionally launching an attack in the knowledge that such attack will cause ... widespread, long-term and severe damage to the natural environment, which would be clearly excessive in relation to the concrete and direct overall military advantage anticipated' as war crimes. Articles 35 and 55 of [Protocol I](#) to the Geneva Conventions prohibit both deliberate and unintentional widespread, long-term and severe damage to the environment, but their cumulative standard is [difficult](#) to achieve. The [Convention](#) on the Prohibition of Military or Any Other Hostile Use of Environmental Modification Techniques requires its states parties (including Russia and Ukraine) not to engage in any hostile use of environmental modification techniques 'having widespread, long-lasting or severe effects as the means of destruction, damage or injury to any other State Party'. These criteria are easier to meet owing to their alternative nature and [lower thresholds](#), but they still lack specificity and require deliberate action. It is thus challenging to build cases based on them. Some therefore [advocate](#) for i) [strengthening current provisions](#) on environmental protection in war; ii) making ecocide the [fifth international crime](#) under the ICC list; or iii) drafting a [new convention](#) on ecocide.

## Position of the European Parliament

On 19 January 2023, the Parliament adopted a [resolution](#) on the establishment of a tribunal on the crime of aggression against Ukraine (2022/3017(RSP)), which recognises the link between war and long-term damage to the natural environment and climate, and supports the UN General Assembly's [recommendation](#) on the creation of an international register of damage 'to serve as a record for future reparations for ... widespread and severe damage to the natural environment and the climate'. Its [resolution](#) (2023/2739(RSP)) of 15 June 2023 on the sustainable reconstruction and integration of Ukraine into the Euro-Atlantic community condemned 'the destruction by Russia of the Kakhovka dam', underlining that it caused ecocide and constitutes a war crime. Parliament also welcomed the [activation](#) of the [EU civil protection mechanism](#) and voiced support for the ICC [investigation](#) into the [destruction](#) of the dam.

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