



# Reflections on the Destruction of the Nova Kakhovka Dam from an International Law Perspective

CLIMATE & SUSTAINABILITY PROGRAMME

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### Summary

- The explosion and concomitant destruction of the Nova Kakhovka dam on 6 June 2023 unleashed a huge environmental disaster whose detrimental effects will require significant time and resources to properly evaluate, and more importantly, address.
- The available evidence suggests that the dam was blown out by Russia, but its destruction cannot be definitively attributed to either Ukraine or Russia.
- The Nova Kakhovka dam enjoyed protection under both environment-specific and general rules of international humanitarian law.
- Even though the applicability of certain international legal rules is fact-dependent, it is quite likely that the international humanitarian legal rules on proportionality and precautions have been violated.
- If the dam was destroyed by Russia, it is quite likely that the destruction amounts to a violation of its duties as an Occupying Power.
- The destruction of the dam could entail the individual criminal responsibility of the perpetrators and, further, prove to be the first test case of the environment-specific war crime enshrined in the Statute of the International Criminal Court.
- Domestic ecocide laws, including the ecocide provision of the Ukrainian Criminal Code could be applicable.
- Conflict-related environmental damage, including that flowing from the destruction of the Nova Kakhovka dam, should form part of the mandate of the International Register of Damage for Ukraine, which was established under the auspices of the Council of Europe.

## Introduction

*Water from the massive Kakhovka reservoir flowed through the destroyed dam, flooding agricultural areas as well as dozens of villages and cities. Thousands of people on both sides of the river have been evacuated, but the full scope of the calamity is unknown.*

The Kakhovka Hydroelectric Power Plant was located in the Kherson area, in the city of Nova Kakhovka. The city is currently occupied by Russia. The dam was erected during the Soviet era and was one of six along the Dnipro River, which runs from the country's far north to the Black Sea. Russia holds the left, or southern, bank of the Kherson area, while the right, or northern, bank is under Ukrainian control.

The dam used to hold back a massive reservoir, dubbed the Kakhovka Sea by locals since it is impossible to see the other bank in certain areas.<sup>1</sup> The Kakhovka Reservoir contained 18 cubic kilometers of water, which provided water for cooling the 5.7 GW Zaporizhzhya Nuclear Power Plant as well as for irrigation in southern Ukraine and northern Crimea via the North Crimean Canal, the Kakhovka Canal, and the Dnieper-Kryvyi Rih Canal.

During Russia's full-scale invasion of Ukraine on February 24, 2022, the Kakhovka Hydroelectric Power Plant was overrun by Russian forces, which placed it under their control. The dam's foundation was a massive concrete block. It was accessible from the dam's machine room via a tiny corridor. According to the evidence, an explosive charge detonated in this passageway in the early hours of June 6 destroying the dam. Specifically, seismic sensors in Ukraine and Romania recorded the telltale signals of huge explosions at 2:35 a.m. and 2:54 a.m. Witnesses in the vicinity reported hearing big explosions between 2:15 a.m. and 3 a.m.. In addition, immediately before the dam failed, infrared heat signals captured by American intelligence satellites indicate an explosion.<sup>2</sup> A large breach in the dam was captured on video, with water gushing through it and flooding downstream into Kherson. UkrHydroEnerho, the Ukrainian dam operator, stated that the Nova Kakhovka station was 'fully destroyed' and could not be rebuilt. Water from the massive Kakhovka reservoir flowed through the destroyed dam, flooding agricultural areas as well as dozens of villages and cities. Thousands of people on both sides of the river have been evacuated, but the full scope of the calamity is unknown.<sup>3</sup>

*Russia blamed Ukraine for the commission of an unimaginable war crime, while Ukraine blamed Russia for scorched earth tactics.*

Against this backdrop, this policy brief starts by briefly outlining the environment-related impacts stemming from the destruction of the Nova Kakhovka dam.<sup>4</sup> Subsequently, it addresses the relevant legal aspects, focusing on the need to ensure accountability. In this respect, it will delve into issues of state responsibility, stemming from potential violations of the applicable rules of international law, and individual criminal responsibility, including the crime of ecocide.

## The question of attribution

To start with, it should be recalled that the attribution question has not been definitively resolved at the time of writing. In the immediate aftermath of the explosion, with Ukraine and Russia exchanging accusations, the United Nations (UN) Security Council convened an emergency session. Russia blamed Ukraine for the commission of an unimaginable war crime, while Ukraine blamed Russia for scorched earth tactics. Dmitry Peskov, the Kremlin spokesperson, accused Ukraine of an act of 'sabotage' that would deprive the Crimean

<sup>1</sup> 'Ukraine Dam: What We Know about Nova Kakhovka Incident' *BBC News* (6 June 2023) <<https://www.bbc.com/news/world-europe-65818705>> accessed 26 June 2023.

<sup>2</sup> James Glanz and others, 'Why the Evidence Suggests Russia Blew Up the Kakhovka Dam' *The New York Times* (16 June 2023) <<https://www.nytimes.com/interactive/2023/06/16/world/europe/ukraine-kakhovka-dam-collapse.html>> accessed 26 June 2023.

<sup>3</sup> 'Ukraine Dam: What We Know about Nova Kakhovka Incident' (n 1).

<sup>4</sup> For a recent and comprehensive account of such environment-related impacts, see PAX, 'A Preliminary Environmental Risk Assessment of the Kakhovka Dam Flooding', *Environment and Conflict Alert Ukraine*, 28 June 2023.

peninsula, which Russia annexed in 2014, of water, while Ukrainian President Zelenskyy tweeting that '[t]his is just one Russian act of terrorism. This is just one Russian war crime. Now Russia is guilty of brutal ecocide.'<sup>5</sup>

*Ukrainian President Zelenskyy tweeting that '[t]his is just one Russian act of terrorism. This is just one Russian war crime. Now Russia is guilty of brutal ecocide.'*

Martin Griffiths, the UN humanitarian envoy, emphasized that the dam was a critical source of water required for agriculture in south Kherson as well as for livestock, and that its removal would be a huge blow to food production and a clean water supply in Crimea. He warned that the chances of mine and explosive ordnance contamination have increased as fast-moving water washed both into regions that were previously deemed safe, putting people in even more perilous situations.<sup>6</sup>

Given the satellite and seismic detections of explosions in the area, the most probable cause of the collapse, according to two American engineers, an explosives expert and a Ukrainian engineer with extensive experience of the dam's operations, was an explosive charge placed in the maintenance passageway or gallery that runs through the concrete heart of the structure. Therefore, even if it cannot be ascertained who destroyed the dam with complete certainty, it appears that this destructive act could be attributed to Russia, whose underlying goal would have been to delay the ongoing counter-offensive launched by the Ukrainian armed forces.<sup>7</sup>

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## Flood-related evacuations

Many villages and towns were flooded, with some completely submerged beneath the water. According to local officials, as of June, a total of 8,600 square kilometers of land had flooded, 32% of which were on the right—Ukrainian-controlled—bank. Because of the magnitude of the inundation, inhabitants had to be evacuated immediately, which meant under Russian fire. Flooding hit not only Kherson oblast, but also nearby Mykolaiv oblast, threatening thirteen communities. Some communities on the occupied left bank of the Dnipro, such as Oleshky, have been entirely submerged.<sup>8</sup>

On 15 June 2023, a report was published which presented the findings in the flooded territories—and specifically the settlements of Korsunka, Kozachi Lageri, Nova Kakhovka, and Rayske—following the explosion of the Kakhovka Hydroelectric Power Station. Using satellite imagery, open-source data, and other available sources, it was reported that:

1. A total of 7,206 buildings were identified as having been possibly flooded, representing an estimated flooded area of approximately 1,173,856 m<sup>2</sup>;
2. A total of 9,573 buildings were identified as having been completely flooded, representing a total flooded area of approximately 1,040,165 m<sup>2</sup>;

<sup>5</sup> Володимир Зеленський [@ZelenskyyUa], 'This Is Just One Day of Russian Aggression. This Is Just One Russian Act of Terrorism. This Is Just One Russian War Crime. Now Russia Is Guilty of Brutal Ecocide. Any Comments Are Superfluous. The World Must React. Russia Is at War against Life, against Nature, Against...' <https://t.co/CUd1UNmcW5> <<https://twitter.com/ZelenskyyUa/status/1666050733773299714>> accessed 26 June 2023.

<sup>6</sup> Patrick Wintour and Patrick Wintour Diplomatic editor, 'Russia Floundering in "Mud of Lies" over Kakhovka Dam Destruction, Ukraine Tells UN' *The Guardian* (7 June 2023) <<https://www.theguardian.com/world/2023/jun/07/russia-accused-of-floundering-in-lies-at-un-security-council-after-claiming-ukraine-behind-dam-destruction>> accessed 26 June 2023.

<sup>7</sup> David Hastings Dunn and Stefan Wolff, 'Ukraine War: What We Know about the Nova Kakhovka Dam and Who Gains from Its Destruction' (*The Conversation*, 6 June 2023) <<http://theconversation.com/ukraine-war-what-we-know-about-the-nova-kakhovka-dam-and-who-gains-from-its-destruction-207130>> accessed 26 June 2023.

<sup>8</sup> 'The Kakhovka Dam Disaster: Responsibility and Consequences | Wilson Center' <<https://www.wilsoncenter.org/blog-post/kakhovka-dam-disaster-responsibility-and-consequences>> accessed 26 June 2023.

*The head of the Red Cross weapon contamination unit, Erik Tollefsen, said they had lost track of where the landmines were: 'All we know is that they are somewhere downstream.'*

3. A total of 2,189 buildings were identified as having been partially flooded, representing a total flooded area of approximately 318,441 m<sup>2</sup>;

4. In all, 18,968 buildings were identified as having been possibly, completely or partially flooded, representing a total flooded area of approximately 2,532,462 m<sup>2</sup>.<sup>9</sup>

Moreover, floodwaters are also dislodging landmines, representing a peril for both Kherson inhabitants and those who sought to help them. The head of the Red Cross weapon contamination unit, Erik Tollefsen, said they had lost track of where the landmines were: 'All we know is that they are somewhere downstream.'<sup>10</sup>

### Agriculture and water scarcity

Communities that rely on the Kakhovka Reservoir for drinking water and irrigation may find it difficult, if not impossible, to replace this water resource, according to Volodymyr Starodubtsev of Ukraine's National University of Life and Environmental Sciences.<sup>11</sup> Scientists in Ukraine reported that the loss of reservoir supplies will cause drinking water scarcity in four oblasts—Dnipropetrovsk, Kherson, Zaporizhzhya, and part of Mykolaiv—as well as Crimea. In addition, contamination has further exacerbated the situation: the explosion damaged turbines and other mechanical equipment at the hydroelectric powerhouse, pouring between 150 and 450 tons of motor oil into the Dnipro river, making it dangerous to drink any water downriver of the dam. Scientists also warned that harmful compounds and bacteria could be present in the bottom reservoir. As a result, poisoned water flows could contaminate groundwater, exacerbating the problem of drinking water scarcity in the surrounding areas.<sup>12</sup>

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Furthermore, the Ukrainian Agrarian Council has reported that the Kakhovka dam tragedy could result in a 14% decrease in Ukraine's grain exports. The country is the world's fifth-largest wheat exporter, which means there will be major ramifications for countries that rely on imports. On a related note, the destruction of the reservoir means that no water will be available for irrigation, over and above its direct impact on agricultural areas and ecosystems. Some previously verdant places will most likely suffer desertification. According to the ministry, the tragedy will cut off water to thirty-one irrigation systems that supply crops in the oblasts of Dnipropetrovsk, Kherson, and Zaporizhzhya. By 2021, these systems would have irrigated half a million hectares, yielding four million tons of grain and oilseeds valued at around \$1.5 billion. Fisheries and animal husbandry businesses will be impacted, as well.<sup>13</sup>

<sup>9</sup> 'Partial Analysis of Flooded Territory Following the Kakhovka Hydroelectric Power Station Explosion: Conclusions and Results | United Nations Development Programme' (UNDP) <<https://www.undp.org/ukraine/publications/partial-analysis-flooded-territory-following-kakhovka-hydroelectric-power-station-explosion-conclusions-and-results>> accessed 26 June 2023.

<sup>10</sup> 'Ukraine Dam: What We Know about Nova Kakhovka Incident' (n 1).

<sup>11</sup> Chris Baraniuk, 'The Kakhovka Dam Collapse Is an Ecological Disaster' *Wired* <<https://www.wired.com/story/kakhovka-dam-flooding-ukraine/>> accessed 26 June 2023.

<sup>12</sup> 'The Kakhovka Dam Disaster: Responsibility and Consequences | Wilson Center' (n 8).

<sup>13</sup> *ibid.*

## Detrimental impacts on the natural environment, wildlife and protected areas

*These losses are anticipated to have an impact on the Black Sea and Sea of Azov ecosystems, which are fed by the Dnipro. According to the Ukrainian Nature Conservation Group, the recovery of species harmed by dam destruction could take many years.*

Professor Efthymios Lekkas, President of the Greek Earthquake Planning and Protection Organization, summarized some of the significant environmental consequences as follows:

- The wildlife and flora of a fairly large area extending for roughly 400 km along both banks of the Dnieper River, from Zaporizhzhya almost all the way to Odessa, and around 50 km in breadth, have been completely destroyed;
- Massive amounts of silt, potentially contaminated with high levels of heavy metals, have also been washed over to already polluted areas;
- The groundwater and groundwater aquifer status have changed dramatically, both qualitatively and quantitatively;
- Rural and urban regions have been permanently covered in mud up to two meters deep, with long-term negative effects on primary--and particularly food--production;
- The microclimate of areas near the Dnieper River has been permanently altered, with ramifications for wider areas; this reinforces the already grave phenomena that comprise the climate catastrophe.<sup>14</sup>

*...pollutants may be mobilized by winds, as a result of exposed sediments. The effects of the dam's destruction on wildlife and ecosystems cannot be overstated.*

Many hectares of protected areas which are crucial for fish spawning and provide habitat for birds and animals have also been destroyed. A huge fish die-off was seen in a few regions. These losses are anticipated to have an impact on the Black Sea and Sea of Azov ecosystems, which are fed by the Dnipro.<sup>15</sup> According to the Ukrainian Nature Conservation Group, the recovery of species harmed by dam destruction could take many years. Some species, such as mute swans, may recover in three years, but others, such as marsh harriers (birds of prey), may take a decade.<sup>16</sup> The Nature Reserves Fund's forty-eight protected sites, which together cover 120,000 hectares, will be entirely or partially affected. The spectacular Black Sea Biosphere Reserve, which has been protected since 1927 and is part of the UNESCO World Biosphere Reserve network, is one of these locations.<sup>17</sup> In addition, pollutants may be mobilized by winds, as a result of exposed sediments.<sup>18</sup> The effects of the dam's destruction on wildlife and ecosystems cannot be overstated.

## The energy sector and industrial production

In October 2022, the Russians cut the Kakhovka facility off from the Ukrainian power grid. Since the destruction of the dam, all the other hydroelectric power plants in Kakhovka have had to change their operating regime in order to reduce their water usage, and this will have an impact on the power system. Furthermore, numerous energy facilities, including the cogeneration thermal power plant in Kherson, two solar power plants in

<sup>14</sup> 'Ukraine: Chersona "sank" after the dam blew up - Shocking frames of the water disaster' (7 June 2023) <<https://www.news247.gr/kosmos/oykrania-i-chersona-vythistike-meta-tin-anatinaxi-toy-fragmatos-sygklonistika-kare-apo-tin-ydatini-katastrofi.10070631.html>> accessed 26 June 2023.

<sup>15</sup> 'The Kakhovka Dam Disaster: Responsibility and Consequences | Wilson Center' (n 8).

<sup>16</sup> 'The Consequences of the Russian Terrorist Attack on the Kakhovka Hydroelectric Power Plant (HPP) for Wildlife' (Ukrainian Nature Conservation Group, 7 June 2023) <<https://uncg.org.ua/en/the-consequences-of-the-russian-terrorist-attack-on-the-kakhovka-hydroelectric-power-station-hps-for-wildlife/>> accessed 26 June 2023.

<sup>17</sup> 'The Kakhovka Dam Disaster: Responsibility and Consequences | Wilson Center' (n 8).

<sup>18</sup> Conflict and Environment Observatory (CEOBS) [@detoxconflict], 'While the Dam's Construction Damaged Habitats, a Large Drop in Its Water Level Will Impact the Ecology That Has Subsequently Developed. Including in Dnipro Protected Areas. Exposed Sediments May Result in the Mobilisation of Pollutants by Winds.' <<https://twitter.com/detoxconflict/status/1665964195458711553>> accessed 26 June 2023.

*...numerous energy facilities, including the cogeneration thermal power plant in Kherson, two solar power plants in Mykolaiv oblast, and 129 transformer substations, were swamped with water, resulting in a reduced power supply.*

*...the situation at the Zaporizhzhya nuclear plant appears to be under control. Even after the water level in the reservoir has fallen below the level of the valves, some water can still be sucked out with mobile pumps.*

Mykolaiv oblast, and 129 transformer substations, were swamped with water, resulting in a reduced power supply.<sup>19</sup>

The water used to cool the Zaporizhzhya nuclear power plant, Europe's largest, is drawn from the Kakhovka reservoir downriver of the breached dam; however, the reservoir's water level is now rapidly falling. The Russian military captured the Zaporizhzhya facility in March 2022, and its six reactors have been in 'shutdown' mode for more than eight months. This means they are considerably below their working temperature, but they still require water to cool them. Five are in a state of 'cold shutdown', but the sixth reactor is in 'warm shutdown' mode, which means it needs additional water.<sup>20</sup>

Nevertheless, the situation at the Zaporizhzhya nuclear plant appears to be under control. Even after the water level in the reservoir has fallen below the level of the valves, some water can still be sucked out with mobile pumps. Water can also be diverted from the Enerhodar municipal network. Consequently, the International Atomic Energy Agency, which has a team of monitors at the plant, has stated that there is 'no immediate risk' to the facility.<sup>21</sup>

## The applicable legal framework

The following section outlines the international legal framework pertaining to the destruction of the Nova Kakhovka dam in the context of the armed conflict between Ukraine and the Russian Federation. The analysis touches upon various branches of international law, primarily focusing on International Humanitarian Law (IHL) and International Criminal Law, but also drawing insights from International Environmental Law and International Human Rights Law, where applicable. It should be clarified at the outset that the following analysis is not intended to provide an exhaustive treatment of the issue at hand; rather, the main objective of this endeavour is to identify paths towards ensuring accountability for the environment-related impacts of the abovementioned destruction.

The hostilities between Ukraine and Russia qualify as an international armed conflict under the laws of war/law of armed conflict (or IHL, which is now the most widely used term), pursuant to the common article 2(1) of the four 1949 Geneva Conventions.<sup>22</sup> The qualification of the situation under consideration is therefore based on objective criteria; for our purposes, the crux is whether "a resort to armed force between States"<sup>23</sup> has occurred. This is clearly the case here.

In international armed conflicts, all four 1949 Geneva Conventions (GCs) and the 1977 Protocol I Additional to them (AP I) apply. Both Ukraine and Russia are Contracting Parties to the above-mentioned legal instruments and are hence bound by them. Furthermore, since the Russian Federation is occupying Ukrainian territory, including the broader area where the Nova Kakhovka Dam was located, the relevant treaty articles of the aforementioned international treaties are pertinent to our purposes. Alongside treaty IHL,

<sup>19</sup> 'The Kakhovka Dam Disaster: Responsibility and Consequences | Wilson Center' (n 8).

<sup>20</sup> 'How the Breach of Ukraine's Kakhovka Dam Could Affect a Nuclear Plant' *The Economist* <<https://www.economist.com/the-economist-explains/2023/06/07/how-the-breach-of-ukraines-kakhovka-dam-could-affect-a-nuclear-plant>> accessed 26 June 2023.

<sup>21</sup> *ibid.*

<sup>22</sup> Common article 2(1) of the four Geneva Conventions provides that each 'Convention shall apply to all cases of declared war or of any other armed conflict which may arise between two or more of the High Contracting Parties, even if the state of war is not recognized by one of them.'

<sup>23</sup> ICTY, *Prosecutor v. Duško Tadić*, Case No. IT-94-1-AR72, Appeals Chamber, Decision on the Defence Motion for Interlocutory Appeal on Jurisdiction, 2 October 1995, para 70.

*In international armed conflicts, all four 1949 Geneva Conventions (GCs) and the 1977 Protocol I Additional to them (AP I) apply. Both Ukraine and Russia are Contracting Parties to the above-mentioned legal instruments and are hence bound by them. [...] Alongside treaty IHL, customary IHL continues to apply, and therefore this section looks at the pertinent rules of the 2020 International Committee of the Red Cross Guidelines on the Protection of the Natural Environment in Armed Conflict.*

customary IHL continues to apply, and therefore this section looks at the pertinent rules of the 2020 International Committee of the Red Cross Guidelines on the Protection of the Natural Environment in Armed Conflict (2020 ICRC Guidelines),<sup>24</sup> which aim to restate the applicable customary IHL in this area. Finally, to the degree that they reflect existing international law, this section draws on the 2022 UN International Law Commission Principles on the Protection of the Environment in Relation to Armed Conflicts (PERAC principles). The PERAC principles were taken note of by the UN General Assembly in a resolution adopted without a vote, to which they were also annexed, and the UN General Assembly brought them to the attention of States, international organizations and all who may be called upon to deal with the subject, encouraging their widest possible dissemination.<sup>25</sup>

### The prohibition on attacking dams under IHL and its exceptions

Pursuant to Article 56 of API, works or installations containing dangerous forces, namely dams, dykes and nuclear electrical generating stations, may not be made the object of attack, even where these objects are military objectives, if such attack *may cause* the release of dangerous forces and consequent severe losses among the civilian population.<sup>26</sup> Article 56(2) introduces very specific conditions under which the preceding prohibition is not applicable.

For our purposes, the applicability of this prohibition may prove to be controversial. On the one hand, if we assume that the destruction of the dam was perpetrated by the Russian Federation, then it is not clear to what extent the mining and internal explosion would qualify as an ‘attack’, which is a term of art under IHL.<sup>27</sup> On the other hand, if the destruction is attributed to Ukraine, and given that that State enjoys sovereignty over the broader area, irrespective of whether the latter has been placed under the control of Russia, it could be argued that ‘the destruction of a Party’s *own* dam, for instance, to flood a potential avenue of attack by the enemy’ shall not be outlawed by virtue of the prohibition under consideration.<sup>28</sup> In any event, if the destruction of the Nova Kakhovka dam is to be qualified as an attack, it could be considered a grave breach of API and thus be regarded as a war crime, provided that i) the attack was launched in the knowledge that it would cause excessive loss of life, injury to civilians or damage to civilian objects; ii) that it was committed wilfully; and iii) that it caused death or serious injury to body or health.<sup>29</sup>

### Environment-specific protection

Turning to the environment-specific provisions, it is forbidden to use means or methods of warfare that are intended, or may be expected, to cause widespread, long-term and

<sup>24</sup> ICRC, ‘Guidelines on the Protection of the Natural Environment in Armed Conflict: Rules and Recommendations Relating to the Protection of the Natural Environment Under International Humanitarian Law, with Commentary’ (ICRC 2020).

<sup>25</sup> UN General Assembly, ‘Protection of the Environment in Relation to Armed Conflicts’, UN Doc. A/77/104 adopted on 7 December 2022 without a vote.

<sup>26</sup> See also Rule 11, 2020 ICRC Guidelines [emphasis added].

<sup>27</sup> Marko Milanovic, ‘The Destruction of the Nova Kakhovka Dam and International Humanitarian Law: Some Preliminary Thoughts’ (*EJIL: Talk!*, 6 June 2023) <<https://www.ejiltalk.org/the-destruction-of-the-nova-kakhovka-dam-and-international-humanitarian-law-some-preliminary-thoughts/>> accessed 26 June 2023. Article 49(1), API provides that: “‘Attacks’ means acts of violence against the adversary, whether in offence or in defence.”

<sup>28</sup> Michael N Schmitt, ‘Attacking Dams - Part II: The 1977 Additional Protocols’ (*Lieber Institute West Point*, 2 February 2022) <<https://lieber.westpoint.edu/attacking-dams-part-ii-1977-additional-protocols/>> accessed 26 June 2023.

<sup>29</sup> Art. 85(3)(c), API.



...it is forbidden to use means or methods of warfare that are intended, or may be expected, to cause widespread, long-term and severe damage to the natural environment.

severe damage to the natural environment (Article 35(3) API; Rule 2, 2020 ICRC Guidelines; PERAC principle 13(2b)). The preceding prohibition has been construed as setting a high threshold for its application, since the three qualifiers of the prescribed environmental damage are articulated in a cumulative manner. In light of the environmental impacts outlined above, it may well be the case that this provision has been violated, but more time will be needed to reach a definite conclusion on this matter, especially, but not only, in light of the 'long-term' requirement.

It should be noted that such conduct has been criminalized under the International Criminal Court (ICC) Statute, subject to certain additional requirements and when undertaken in the context of an international armed conflict, or, to put it simply, an interstate war, which is the case at hand. Accordingly, Article 8(2)(b)(iv) of the ICC Statute stipulates that instrument's only environment-specific war crime, namely: '[i]ntentionally 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.' This provision establishes individual criminal responsibility and, apparently, draws from the wording of the above-mentioned Article 35(3) API.

In a more recent development, the Office of the Prosecutor (OTP) of the ICC has issued a Policy Paper on Case Selection and Prioritisation that demonstrates the OTP's heightened interest in 'prosecuting Rome Statute crimes that are committed by means of, or that result in, *inter alia*, the destruction of the environment, the illegal exploitation of natural resources or the illegal dispossession of land'.<sup>30</sup> Granted, this provision has never been applied in practice. It holds equally true, though, that the destruction of the Nova Kakhovka could well prove to be the first test case of the application of the environment-specific war crime enshrined in the ICC Statute. At this juncture, it is important to note that the ICC can exercise its jurisdiction over incidents of interest which have taken place in Ukraine since 20 February 2014, even though the latter is not a State party to the ICC Statute, by virtue of a [declaration](#) submitted to the ICC by Ukraine. Second, the applicability of the environment-specific war crime provision is fraught with the difficulty of qualifying the destruction of the dam as an 'attack',<sup>31</sup> as elaborated above.

...the destruction of the Nova Kakhovka could well prove to be the first test case of the application of the environment-specific war crime enshrined in the ICC Statute.

Similarly, the related obligation to take care to protect the natural environment from widespread, long-term and severe damage (Article 55(1) API; PERAC principle 13(2a)) assumes a broader scope, because it applies beyond the use of means and methods of warfare, but is still subject to the same high threshold of application. On a related note, the ICRC Guidelines contain a rule that drops any threshold of prescribed environmental damage, stating that '[m]ethods and means of warfare must be employed with due regard to the protection and preservation of the natural environment'.<sup>32</sup> In this regard, two issues warrant further treatment: i) the extent to which this rule reflects customary international law, and is thus applicable to all States including Ukraine and Russia; ii) whether the destruction of the dam falls within the notion of 'means and methods of warfare', especially within the latter prong of the term.

Lastly, assuming that the explosion of the dam is to be attributed to Russia, then it is quite likely that Russia has run afoul of its obligations as an Occupying Power. In this respect,

<sup>30</sup> OTP, Policy Paper on Case Selection and Prioritisation, 15 September 2016, para 41. Available at:

[https://www.icc-cpi.int/itemsDocuments/20160915\\_OTP-Policy\\_Case-Selection\\_Eng.pdf](https://www.icc-cpi.int/itemsDocuments/20160915_OTP-Policy_Case-Selection_Eng.pdf). Accessed 26 June 2023.

<sup>31</sup> Thomas Obel Hansen, 'Could the Nova Kakhovka Dam Destruction Become the ICC's First Environmental Crimes Case?' (*Just Security*, 9 June 2023) <<https://www.justsecurity.org/86862/could-the-nova-kakhovka-dam-destruction-become-the-iccs-first-environmental-crimes-case/>> accessed 26 June 2023.

<sup>32</sup> Rule 1, 2020 ICRC Guidelines.

*...assuming that the explosion of the dam is to be attributed to Russia, then it is quite likely that Russia has run afoul of its obligations as an Occupying Power. [...] An Occupying Power is required to comply with its extraterritorially applicable environmental-related international human rights obligations, such as the right to life and the right to private and family life under the International Covenant on Civil and Political Rights*

*... on the basis of the currently available information, no conclusion can safely be reached on the status of the dam as either a military objective or a civilian object in the sense of Article 48 API.*

the PERAC principles have adjusted the law of occupation to the present day, drawing on international environmental law and international human rights law, among other sources. PERAC principle 21 stipulates that '[a]n Occupying Power shall take appropriate measures to ensure that activities in the occupied territory do not cause significant harm to the environment of ... any area of the occupied State ...'. Furthermore, an Occupying Power is required to comply with its extraterritorially applicable environmental-related international human rights obligations, such as the right to life and the right to private and family life under the [International Covenant on Civil and Political Rights](#), and the rights to an adequate standard of living and the highest attainable standard of health under the [International Covenant on Economic, Social and Cultural Rights](#).<sup>33</sup>

### General rules of protection

Concerning the general protection afforded by IHL rules in relation to the conduct of hostilities, the cardinal IHL principles of distinction, proportionality and precautions apply to 'attacks'. On this account, if the act of destruction is eventually attributed to Ukraine, then the following analysis retains its relevance, but this is not the case if the destruction is attributed to Russia, as mentioned above. Against this backdrop, the principle of distinction requires parties to an armed conflict to distinguish between civilian objects and military objectives at all times, and to direct attacks against military objectives alone (Article 48 API). Nevertheless, on the basis of the currently available information, no conclusion can safely be reached on the status of the dam as either a military objective or a civilian object in the sense of Article 48 API.

The principle of proportionality provides that an attack against a legitimate military objective is forbidden, if it may be expected to cause incidental damage to civilians or civilian objects which would be excessive in relation to the concrete and direct military advantage anticipated (art 51(5b) API). Along the same lines of reasoning, it is no simple matter to pronounce whether the dam qualified as a military objective and, equally importantly, whether its destruction would not be excessive compared to the incidental damage ensuing from such destruction. However, as has been compellingly argued, 'even on a generous assumption that (say) Russian forces damaged the dam in order to somehow disrupt the ongoing Ukrainian offensive, the extent of the destruction and damage to the civilian population and objects downstream is such that the attack was in all likelihood disproportionate, and very clearly so.'<sup>34</sup>

The principle of precautions provides that constant care must be taken to spare the civilian population, civilians and civilian objects from harm during military operations (art 57(1) API). Notably, this rule explicitly applies in military operations and not only during 'attacks', a term which is narrower in scope than 'military operations'. Consequently, irrespective of whose armed forces destroyed the dam, it appears that this rule (on taking precautionary measures) has been violated. The principle of precautions also requires parties to the armed conflict to take all feasible precautions to protect civilian objects under their control against the effects of attacks (art 58(c) API); this requirement could only be triggered if Ukraine launched an attack against the dam and the dam qualified as a military objective in the circumstances ruling at the time.

<sup>33</sup> Daniil Ukhorskiy, 'Environmental Destruction in War: A Human Rights Approach' (*EJIL: Talk!*, 19 June 2023)

<<https://www.ejiltalk.org/environmental-destruction-in-war-a-human-rights-approach/>> accessed 26 June 2023.

<sup>34</sup> Milanovic (n 27).

*...irrespective of whose armed forces destroyed the dam, it appears that this rule (on taking precautionary measures) has been violated.*

*... customary IHL prohibits the destruction of the environment as a weapon by parties to the conflict.*

Lastly, the legality of the destruction of the Nova Kakhovka dam could be assessed with reference to the rules on enemy property. Article 53 of the 1949 Geneva Convention IV provides that '[a]ny destruction by the Occupying Power of real or personal property ... is prohibited, except where such destruction is rendered absolutely necessary by military operations.' On this account, even if the flooding by Russian forces would offer a significant military advantage, the requirement of absolute necessity sets the bar quite high. The detrimental environmental impacts should form part of the absolute necessity analysis, and thus 'even if Russia had taken extensive precautions, destroying the dam would almost certainly violate their duties as an occupying power.'<sup>35</sup>

## Ecocide

As mentioned above, President Zelenskyy accused Russia of committing ecocide in the aftermath of the destruction of the Nova Kakhovka dam. It thus bears noting that customary IHL prohibits the destruction of the environment as a weapon by parties to the conflict (Rule 3A, 2020 ICRC Guidelines). Accordingly, this prohibition could be applicable if the objective of the dam's destruction was dictated by the specific purpose of destroying the environment through the weaponization of the water. To this end, the 2020 ICRC Guidelines provide that the respective ecocide laws of either party to the armed conflict may be relevant.<sup>36</sup> In this respect, Ukraine's domestic prohibition on ecocide could prove to be of relevance.<sup>37</sup>

On a final note, it is noteworthy that the Stop Ecocide Foundation set up an Independent Expert Panel to propose a definition of ecocide with a view to it becoming the fifth international crime included in the ICC Statute. The Independent Expert Panel came up with the following definition in June 2021:

'For the purpose of this Statute [the ICC Statute], "ecocide" means unlawful or wanton acts committed with knowledge that there is a substantial likelihood of severe and either widespread or long-term damage to the environment being caused by those acts.'<sup>38</sup>

## Concluding observations

The explosion and concomitant destruction of the Nova Kakhovka dam on 6 June 2023 unleashed a huge environmental disaster with detrimental effects that will require significant time and resources to properly evaluate and, more importantly, address. Against this backdrop, the present contribution has provided a brief overview of the various types of environment-related impacts that resulted from the dam's destruction. Subsequently, the paper turned to the international legal implications of the dam's destruction. In this context, it first circumscribed the applicable legal framework, with an emphasis on the pertinent rules of IHL. Given that the act of destruction has still to be conclusively attributed to either Ukraine or Russia, the paper proceeded with an

<sup>35</sup> Ukhorskiy (n 33).

<sup>36</sup> ICRC (n 24), para 78.

<sup>37</sup> Article 441 of the 2001 Ukrainian Criminal Code prescribes the crime of ecocide: 'Mass destruction of flora and fauna, poisoning of air or water resources, and also any other actions that may cause an environmental disaster, - shall be punishable by imprisonment for a term of eight to fifteen years.'

<sup>38</sup> Stop Ecocide Foundation, 'Independent Expert Panel for the Legal Definition of Ecocide Commentary and Core Text', June 2021, available at <https://static1.squarespace.com/static/5ca2608ab914493c64ef1f6d/t/60d7479cf8e7e5461534dd07/1624721314430/SE+Foundation+Commentary+and+core+text+revised+%281%29.pdf>. Accessed 26 June 2023.

*...it will be important to ensure that conflict-related environmental damage, including that flowing from the destruction of the Nova Kakhovka dam, forms part of its mandate.*

examination of the applicability of the most relevant international legal rules to both scenarios. It thus demonstrated that the destruction of the dam raises challenging questions relating to both State and individual criminal responsibility.

To conclude, the UN General Assembly adopted a resolution in November 2022 acknowledging the need for the establishment, in collaboration with Ukraine, of an international reparation mechanism for damage, loss, or injury arising from the Russian Federation's internationally wrongful acts in or against Ukraine, and recommending the creation by Member States, in collaboration with Ukraine, of an international register of damage to serve as a record.<sup>39</sup> The International Register of Damage was eventually established under the auspices of the Council of Europe in May 2023.<sup>40</sup> In this regard, it will be important to ensure that conflict-related environmental damage, including that flowing from the destruction of the Nova Kakhovka dam, forms part of its mandate. All in all, this opportunity may prove pivotal in the quest to assign accountability for the destruction of the dam.

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<sup>39</sup> UN General Assembly, 'Furtherance of remedy and reparation for aggression against Ukraine', UN Doc. A/RES/ES-11/ 5, 14 November 2022.

<sup>40</sup> 'Council of Europe Summit Creates Register of Damage for Ukraine as First Step towards an International Compensation Mechanism for Victims of Russian Aggression - Portal' <<https://www.coe.int/en/web/portal/-/council-of-europe-summit-creates-register-of-damage-for-ukraine-as-first-step-towards-an-international-compensation-mechanism-for-victims-of-russian-aggression>> accessed 26 June 2023.