

# Damage to the Maritime Ecosystems from the Destruction of the Kakhovka Dam and International Mechanisms of its Assessment

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## ABSTRACT

The article focuses on possible mechanisms of international legal responsibility for the destruction of the dam of the Kakhovka Hydroelectric Power Plant that happened in 2023 during the Russian aggression of Ukraine, Russian occupation, and attempted annexation of the Kherson Region. The authors described the realization norms of international humanitarian, criminal, maritime, ecological, and human rights law in the current reality of Ukraine and other Black Sea states. The article describes the relevant demands of Regulations concerning the Laws and Customs of War on Land as annex to the Hague Convention (IV), Rome Statute and Geneva Conventions, Elements of Crime of International Criminal Court, UN Convention of the Law of the Sea and relevant ecologic conventions, activities of Ukrainian legal enforcement bodies and human rights defenders, also as ecocide crime conception. Authors stress the role of OSCE Parliamentary Assembly Vancouver Declaration, 2023, of PACE Resolution "Political consequences of the Russian Federation's war of aggression against Ukraine" 2506 (2023), of European Parliament Resolution "On the Sustainable Reconstruction and Integration of Ukraine into the Euro-Atlantic Community," 2023/2739 (RSP) and International Crimea Platform activities. The relevant ecologic and maritime legal procedures might not necessarily result in international courts and that the absence of international criminal responsibility for ecocide makes natural perspectives for relevant responsibility just in the framework of relevant war crime pointed out in Article 8(2)(b)(iv) of Rome Statute or on a national legal level. At the same time, a set of international bodies' resolutions adopted mentioned the Kakhovka case. It connected it with ecocide, an international crime that shall make a relevant impulse for developing relevant international legal concepts at a minimum on a doctrinal level.

## CITATION

Babin, B., Plotnikov, O., & Prykhodko, A. (2023). Damage to the Maritime Ecosystems from the Destruction of the Kakhovka Dam and International Mechanisms of its Assessment. *Lex Portus*, 9(5), 23–32. <https://doi.org/10.26886/2524-101X.9.5.2023.2>

## KEYWORDS

crimes against the environment, Dnipro River, ecocide, international justice, Kakhovka dam, Rome Statute, Russian aggression, maritime ecosystems, war crimes



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## Introduction

The 2008 UN Secretary-General's Report on the Oceans and the Law of the Sea only incidentally mentions armed conflicts as a threat to maritime security. Events like the intentional conflict-related destruction of a major dam, entailing the discharge of cubic kilometers of polluted water into an enclosed sea basin, seemed highly improbable. However, this is now a reality that Ukraine and other Black Sea states face. The collapse of the Kakhovka dam on the river Dnipro, which was caused by activities of Russian troops (Association of Reintegration of Crimea, 2023f), resulted in catastrophic flooding of a densely populated area, massive pollution of the Black Sea with industrial and agricultural waste, as well as change of its salinity due to vast volumes of freshwater (Ustun & Aydin, 2023). It is worth noting that the environment in the northern part of the Black Sea has already been negatively impacted by the Russian occupation of Crimea since 2014, including significant pollution due to occupiers' uncontrolled activities (Babin et al., 2021; Radulescu, 2023). The situation further aggregated

after the start of hostilities (Kormych & Averochkina, 2022). Experts stressed that the Black Sea, already Europe's most polluted water body, is a region of high importance to its other coastal neighbors: Bulgaria, Romania, Turkey, and Georgia. All they all depend on the Black Sea for tourism, trade, travel, and industrial and energy development, so accelerated sea pollution after the destruction of the Kakhovka dam will harm each of those nations (Pahwa, 2023). Bulletin of the Atomic Scientists reflects the opinion of Dr. Adrian Stanica, director of the Romanian National Institute of Geology and Marine Geoecology, that the Kakhovka "dam burst caused a huge number of sediments to wash away containing various pollutants, organic materials, and waste. He says the most significant environmental impact will be evidenced in Odesa Oblast and at the mouth of the Dnipro River" (Savitskaya et al., 2023). Ukrainian and Georgian experts add that freshwater fish that depended on the Kakhovka reservoir have washed away as well, and it is likely they will die once they hit the saltwater-heavy Black Sea. They add that "little in Ukraine has been spared: not the national parks, not the shellfish or aquatic plants, not the planting soil that's being salinated by the floods, not the endangered mammals that depend on the Dnipro" and point to warning the Ukrainian Nature Conservation Group that the fallow lands left behind from the disaster may soon be overrun with invasive species (Pahwa, 2023). All this has far-reaching environmental consequences for the Black Sea, with unclear prospects for overcoming them. For example, the planned amount of project financing according to Ukraine's National Recovery Plan within the strategic goal: "Re-build clean and safe environment," is minimal and amounts to about USD 20 billion by 2032, only 2.7 % of the total Plan's funding (Naumenkova et al., 2023), which is incomparable to environmental damage already caused.

### **Methodology**

Methodologically, the article will explore various international bodies' legal regulations and practices on assessing environmental damage to the maritime environment and their applicability to the Kakhovka case. The research focuses on the international and legal implications and the mechanisms of assessment of environmental damage caused to the Black Sea via global and regional mechanisms. It compares the options available to the international mechanisms with their actual responses to the catastrophe. The authors argue that the reactions could have been more active, as the international and regional mechanisms needed to demonstrate their full potential to answer an unprecedented and blatant challenge. Hence, we reveal the aspects of possible mechanisms of international legal responsibility for the destruction of the dam of the Kakhovka Hydroelectric Power Plant that happened in 2023 during the Russian aggression of Ukraine, the Russian occupation, and the attempted annexation of the Kherson Region. Thus, the article describes the relevant demands of Regulations concerning the Laws and Customs of War on Land as annexes to the Hague Convention (IV), Rome Statute and Geneva Conventions, Elements of Crime of International Criminal Court, UN Convention of the Law of the Sea and relevant ecologic conventions, activities of Ukrainian legal enforcement bodies and human rights defenders, also as ecocide crime conception.

### **1. Kakhovka Dam Case and International Criminal and Humanitarian Law**

The explosion of the Kakhovka dam may be reflected in the framework of international humanitarian, criminal, maritime, ecologic, and human rights law, and global and regional international mechanisms may be used. Regulations concerning the Laws and Customs of War on Land as an annex to Hague Convention (IV), 1907 points in its Article 23 that in addition to the prohibitions provided by particular Conventions, it is especially forbidden

to destroy the enemy's property unless such destruction be imperatively demanded by the necessities of war but solving disputes or establishing facts on violations the Hague Convention (IV), obligatory for Ukraine and Russia, is possible as in conditions of full-scale peace agreement that ends the interstate conflict, so in framework of the activities of International Red Cross Committee; both options are now quite far from reality. International humanitarian law (IHL) contains several prohibitions against environmental harm; the most striking is Article 55(2) of Additional Protocol I, whereby "attacks against the natural environment by way of reprisals are prohibited." However, its criminalization has not been explored in the jurisprudence of international courts (Gillett, 2023).

International criminal law today determines relevant attacks as war crimes in part 2 of Article 8 of the Rome Statute, as such grave breaches of the Geneva Conventions of August 12, 1949, as the extensive destruction of property, not justified by military necessity and carried out unlawfully and wantonly, point (a) (iv) so as other serious violations of the laws and customs applicable in international armed conflict, within the established framework of international law, namely, including any intentionally launching an attack in the knowledge that such attack will cause incidental loss of life or injury to civilians or damage to civilian objects or 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, point (b) (iv).

The Rome Statute was not signed or ratified by Russia; also, it was not ratified but was partially recognized by Ukraine (The States Parties to the Rome Statute, 2023). Rome Statute's Elements of Crime determine that war crime of excessive incidental death, injury, or damage, Article 8(2)(b)(iv) foresees that the perpetrator launched an attack and the attack was such that it would cause incidental death or injury to civilians or damage to civilian objects or widespread, long-term and severe damage to the natural environment and that such death, injury or damage would be of such an extent as to be clearly excessive in relation to the concrete and direct overall military advantage anticipated. The remark 36 clarifies that the expression "concrete and direct overall military advantage" refers to a military advantage that is foreseeable by the perpetrator at the relevant time. Such advantage may or may not be temporally or geographically related to the object of the attack. The fact that this crime admits the possibility of lawful incidental injury and collateral damage does not justify any violation of the law applicable in armed conflict. It does not address justifications for war or other rules related to *jus ad bellum*. It reflects the proportionality requirement in determining the legality of any military activity undertaken in an armed conflict. The elements of crime determine that such crime's perpetrator knew that the attack would cause incidental death or injury to civilians or damage to civilian objects or widespread, long-term, and severe damage to the natural environment and that such death, injury, or damage would be of such an extent as to be clearly excessive in relation to the concrete and direct overall military advantage anticipated. Remark 37 stipulates that this knowledge element requires that the perpetrator make the value judgment as described therein. That value judgment must be evaluated based on the requisite information available to the perpetrator at the time. Also, the conduct must occur in the context of and was associated with an international armed conflict and the perpetrator must be aware of factual circumstances that established the existence of an armed conflict.

So, the explosion of the Kakhovka dam may be the subject of proceedings in the International Criminal Court (ICC) case. In ICC Report A/78/322 to the UN General Assembly 79th Session, the Court stressed that its Office of the Prosecutor continued its investigation, engaging actively and maintaining a near-constant presence on the ground in Ukraine

and the region. The Office engaged in cooperation and coordination efforts with various domestic and international stakeholders, including state parties, notably in the context of the joint investigation team established under the auspices of the European Union Agency for Criminal Justice Cooperation and international and regional organizations. The ICC Registry and the Office of the Prosecutor worked with Ukrainian authorities to establish a country office of the Court in Ukraine based on an agreement signed between the Court and Ukraine on March 23, 2023.

However, besides the fact that representatives of the ICC Office of the Prosecutor were one of the few international officials that visited the area of consequences of the explosion of the Kakhovka dam from its Ukraine-controlled part, there were no statements that the proceeding started precisely regarding Article 8(2)(b)(iv). Also, we should remember that such war crime is just a short distance from the ecocide concept and the idea of criminalizing conduct that negatively impacts the environment. The term "ecocide" is not new in international law. The concept of ecocide emerged during the Vietnam War, however only in 2021 an Independent Expert Panel proposed an amendment to the Rome Statute with the definition of the crime as "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" (Mwanza, 2023).

Russia introduced the term into its criminal code in 1996, followed by some post-Soviet countries, including Ukraine, which copied the definition. Nevertheless, their courts pronounced no sentences for ecocide for a quarter of a century. In 2021, however, the Russian Investigative Committee, the primary federal investigating authority in Russia, initiated a "case on ecocide," allegedly resulting from the blocking of the North Crimean Canal by Ukraine. Ukraine also runs ecocide investigations, although less obviously linked to the conflict (Babin & Plotnikov, 2023).

Experts discussed Ukraine's national proceedings on the destruction and damage of Ukrainian ecosystems in the side event "The Impact on Climate Change: Crimea, Indigenous Peoples, and International Crimes," organized by the Crimean Tatar Resource Center at the 2022 UN Climate Change Summit (COP27). The possible correlation of such proceeding with the ICC activities was stressed (Babin, 2022). In June 2023, a representative of the Ukrainian General Prosecutor's Office stressed what Ukrainian legal enforcement officials use in proceedings, the term "war crimes against the environment" as it covers a broader range of crimes against the environment than "ecocide." Nevertheless, the Ukrainian General Prosecutor's Office is bringing individual military personnel and officials of the Russian Federation to individual criminal liability both for war crimes and crimes of ecocide, and more than 190 criminal proceedings have already been launched, of which 14 are specifically under Article 441 of Ukrainian Criminal Code, "Ecocide" (International Renaissance Foundation, 2023). In October 2023, the General Prosecutor's Office organized training regarding relevant current proceedings on ecocide challenges, but it reflected a duty to elaborate a shared vision on this issue (Association of Reintegration of Crimea, 2023k).

However, the absence of international mechanisms regarding crimes of ecocide makes utopian the perspectives of relevant international proceedings regarding the explosion of the Kakhovka dam and the chances of relevant universal jurisdiction proceedings in democratic countries where the ecocide is criminalized on a national level are also not so high. Such issues were discussed by authors at the Lviv Book Forum, 2023, with Professor Philippe Sands, the possible prospects for prosecution for acts of ecocide under universal jurisdiction by third countries, and in the format of investigations by the International Criminal Court for war crimes (Association of Reintegration of Crimea, 2023i). Also, those

issues were mentioned in the World for Ukraine Summit held in Poland, Rzeszow-Jasionka on September 28 (Association of Reintegration of Crimea, 2023h), and at the conference “Special tribunal for the crime of aggression against Ukraine. Justice to be served” in Kyiv on August 21.

## **2. Kakhovka Dam Case and Resolutions of International Organizations**

The explosion of the Kakhovka Reservoir dam caused a broad reaction from the international community, expressed in a series of decisions and resolutions of international organizations condemning the actions of the Russian Federation. Significantly, several relevant instruments (including the OSCE Parliamentary Assembly, Parliamentary Assembly of Council of Europe, and European Parliament) have utilized the term “ecocide.”

OSCE Parliamentary Assembly stressed in July 2023 in article 35 of the Vancouver Declaration that it condemns the destruction of the Nova Kakhovka dam on the Dnieper River, which has destroyed its precious natural environment, has led to a drop in the level of the reservoir used to supply cooling water for reactors at the Zaporizhzhia Nuclear Power Plant (NPP) and thus constitutes a serious threat to the safety and security of the population of Ukraine, neighboring States. The international community denounces this act as a crime of ecocide and calls on the parliaments of OSCE participating States to enshrine this concept in national and international law (OSCE, 2023).

Parliamentary Assembly of Council of Europe stressed in its Resolution “Political consequences of the Russian Federation’s war of aggression against Ukraine” 2506 (2023) adopted on June 22, 2023, that the destruction of the Kakhovka Dam, on June 6, 2023, as the attack, aimed at delaying the Ukrainian counteroffensive, confirms the barbarism of Putin’s war machinery and constitutes both a war crime and ecocide. Not only has the Russian Federation brought a devastating war of aggression to Europe, but it has also pushed the limits of what can be used as a weapon, for example, migrants, energy, economic leverage, elite capture, ecocide, kidnapping of Ukrainian children and other citizens and the Russian “passportisation” of Ukrainian citizens in temporarily occupied territories, PACE stressed in that act (PACE, 2023).

European Parliament adopted the Resolution of June 15, 2023, “On the Sustainable Reconstruction and Integration of Ukraine into the Euro-Atlantic Community,” 2023/2739 (RSP), in which it condemned in the strongest possible terms the destruction by Russia of the Kakhovka dam on June 6 2023, which brought about extensive flooding, caused an environmental disaster and ecocide in Ukraine and constitutes a war crime; this Resolution reiterated that all those responsible for such war crimes, including the destruction of the dam, will be held accountable in line with international law. Some bilateral acts, such as the Ukrainian-Portuguese Joint Declaration of July 2023, also determined the Kakhovka dam explosion as an ecocide.

Ukraine pays much attention to that issue. Ukrainian experts stressed at the II Parliament Summit of Crimea Platform that the “aggressor is carrying out ecocide, restricting indigenous peoples’ rights to lands and resources, destroying landscapes and monuments of the cultural heritage of the peninsula” (Association of Reintegration of Crimea, 2023j). They discussed the Kakhovka dam destruction on a side event, “Role of Civil Society in Struggle against Discrimination on Russia-occupied Territories of Ukraine” in Vienna at the OSCE Supplementary Human Dimension Meeting “The Role of Civil Society in the Promotion and Protection of Tolerance and Non-Discrimination,” June 2023 (Association of Reintegration of Crimea, 2023d). Ecocide issues were reflected in reports of Ukrainian NGOs to UN human rights bodies such as the UN Special Rapporteur on the Rights to Water and Sanitation (Association of Reintegration of Crimea, 2023e), UN Special Rapporteur on the Right to Development (Association

of Reintegration of Crimea, 2023c), and the UN Special Rapporteur on the Human Rights of Internally Displaced Persons (Association of Reintegration of Crimea, 2023g).

However, in common, UN acts did not determine the Kakhovka dam destruction as ecocide, and UN human rights institutions avoid even mentioning this issue in their documents. The abovementioned UN Special Rapporteur on the Rights to Water and Sanitation recognized in its Report to UN General Assembly A/HRC/54/3 dated July 20, 2023, that he considers it critical to initiate discussions at the international level to explore the inclusion of systematic toxic contamination the aquatic ecosystems among the specific crimes defined in the Rome Statute as crimes against humanity, recognizing the magnitude of the harm inflicted and the need to hold the perpetrators accountable. In addition, the UN Special Rapporteur pointed out in the Report that the “above-described actions could also be considered ecocide for seriously affecting the health of aquatic ecosystems and public health,” but “this legal concept has not been approved or regulated in the international legal framework” (UN OHCHR, 2023).

The only available UN Reaction to the Kakhovka Dam explosion is the statement of the UN Office for the Coordination of Humanitarian Affairs (OCHA), which stressed on June 10 that the catastrophic effects of the flooding that followed the Kakhovka Dam destruction added to the immense human suffering caused by Russia’s war on Ukraine (UN OCHA, 2023). The competence of the UN Human Rights Committee seems vital as the destruction of the Kakhovka dam happened after Russia’s complete withdrawal from the European Convention for Human Rights, and the relevant mechanisms of the European Court of Human Rights are not applicable.

### **3. Kakhovka Dam Case and International Maritime and Ecologic Law**

Regarding international ecologic law, some relevant conventional mechanisms are not applicable, as Russia is not a member state of some international treaties ratified by Ukraine and by other regional states, such as Agreement on the Conservation of African-Eurasian Migratory Waterbirds, 1995; Berne Convention on the Conservation of European Wildlife and Natural Habitats, 1979; Convention on the Conservation of Migratory Species of Wild Animals, 1979 and Convention on Environmental Impact Assessment in a Transboundary Context, 1994 (Espoo Convention). The last one was not applicable between Ukraine and Russia, even if both conflict parties ratified it as the Kakhovka dam explosion happened far from Russian territory; anyway, third countries hypothetically may start communication with Ukraine on its compliance with Espoo demands as Russian attacks happened at Ukrainian territory.

Ukraine and Russia are both member states of the Ramsar Convention on Wetlands of International Importance, Especially as Waterfowl Habitat, 1971; UN Convention to Combat Desertification, 1994; UN Framework Convention on Climate Change, 1992; and the Convention on Biological Diversity, 1992 and Convention on the Protection of the Black Sea Against Pollution, 1992 (Bucharest Convention). One may assume Russia will not agree to start arbitration procedures in the relevant conventional mechanisms. However, discussions at Conferences of participating states and in the Commission on the Protection of the Black Sea against Pollution are possible.

On the other side, demands of the UN Convention on the Law of the Sea, 1982 (UNCLOS) regarding the maritime environment are violated for Black Sea ecosystems after the Kakhovka dam destruction. However, let us remind you that on September 16, 2016, Ukraine served on the Russian Federation a Notification and Statement of Claim under Annex VII to UNCLOS referring to a dispute concerning coastal state rights in the Black Sea, Sea of Azov, and Kerch

Strait and the Permanent Court of Arbitration acts as Registry in this arbitration (Permanent Court of Arbitration, 2023).

In this case No. 2017-06, Ukraine demanded *inter alia* that Russia is required to provide all due cooperation to Ukraine in the prevention and preservation of the marine environment, including supplying information relating to any oil spill or other pollution incident in the areas of the Black Sea and the Sea of Azov where the Russian Federation did not challenge Ukraine's jurisdiction and rights prior to February 2014. Nevertheless, in the Award on Preliminary Objections, 2020 arbitral tribunal upheld Russia's objection that the "Tribunal has no jurisdiction over Ukraine's claims, to the extent that a ruling of the Arbitral Tribunal on the merits of Ukraine's claims necessarily requires it to decide, directly or implicitly, on the sovereignty of either Party over Crimea" and rejected the other objections of Russia to its jurisdiction regarding part of the dispute that covers Black Sea (Permanent Court of Arbitration, 2020).

Let us point out that the Head of the State Service of Sea and Inland Water Transport and Shipping of Ukraine, Yevgen Ignatenko, stressed on June 8 that undermining the Kakhovka HPP will have catastrophic consequences for the future recovery of shipping in particular the Dnipro River will remain navigable beyond Dniproges, but below not for a long time; after the water level drops, the ships will run aground there, and this may threaten the spillage of fuel and lubricants. "Due to the sudden flooding of the territories, the infrastructure of ports and terminals located in the region was destroyed and disabled, many sunken ships. In addition, there are reports of a significant amount of grease and other dangerous and polluting substances entering the water, as well as unexploded mines and ammunition", Ignatenko emphasized, pointing that Kakhovka lock was the outermost Dnipro River lock that let all ships out to the open sea (Association of Reintegration of Crimea, 2023b).

However, as Ukrainian NGO "Association of Reintegration of Crimea" pointed out in their submission to the International Maritime Organisation, the destruction of the Kakhovka HPP dam created danger for Ukraine's internal shipping and international navigation. An uncontrolled moment explosion of some cubic kilometers of water will change the navigational situation in the Northern part of the Black Sea adjacent to the Dnipro-Bug Estuary. Moreover, the destruction of the Kakhovka HPP caused pollution of the Northern part of the Black Sea adjacent to the Dnipro-Bug Estuary by hundreds of thousands of tons of floating rubbish, including wood and plastic constructions and trees from the flooded territory. Also, the epidemic and mine danger became higher in the Northern part of the Black Sea. Regarding Black Sea currents, in the following days, such dangerous conditions will appear in the territorial sea and exclusive economic maritime zones of Romania, Bulgaria, and Turkey. Said submission stressed that by the explosion and destruction of Kakhovka NPP Russia violated the demands of international humanitarian and human rights law, also as maritime safety, guaranteed by the UNCLOS, SOLAS, MARPOL, and STCW Conventions, and the immediate reaction of the international organizations was required (Association of Reintegration of Crimea, 2023a).

### **Conclusions**

Resuming the current challenges for international mechanisms of assessment of the damage to the maritime and other related ecosystems from the destruction of the Kakhovka dam, it may be stressed that relevant ecologic and maritime legal procedures may not necessarily result in international courts and that the absence of international criminal responsibility for ecocide makes natural perspectives for relevant responsibility just in

framework of relevant war crime pointed in Article 8(2)(b)(iv) of Rome Statute or on national legal level. At the same time, a set of international bodies' resolutions adopted mentioned the Kakhovka case. It connected it with ecocide, an international crime that shall make a relevant impulse for developing relevant international legal concepts at the minimum on the doctrinal level. It must become a ground for further scientific research.

**Acknowledgment.** The authors are grateful to Assistant Professor Andrii Chvaliuk for discussion and advice.

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**Бабін Б., Плотніков О., Приходько А. Шкода морським екосистемам від руйнування Каховської дамби та міжнародні механізми її оцінки. – Стаття.**

У статті розглянуто можливі механізми міжнародно-правової відповідальності за руйнування дамби Каховської ГЕС, що сталося у 2023 році під час російської агресії стосовно України, російської окупації та спроби анексії Херсонської області. Авторами розглянуто особливості дії норм міжнародного гуманітарного, кримінального, морського, екологічного права та права прав людини в сучасних реаліях України та інших причорноморських держав. У статті визначено відповідні вимоги Положення про закони і звичаї сухопутної війни, яке є додатком до Гаазької конвенції (IV), Римського статуту та Женевських конвенцій, Елементів складу злочину Міжнародного кримінального суду, Конвенції ООН з морського права та відповідних екологічних конвенцій, діяльність українських правоохоронних органів та правозахисників, а також концепцію екоцидного злочину. Автори підкреслюють роль Ванкуверської декларації Парламентської Асамблеї ОБСЄ 2023 р., Резолюції ПАРЄ “Політичні наслідки агресивної війни Російської Федерації проти України” 2506 (2023), Резолюції Європарламенту “Про сталу відбудову та інтеграцію України до євроатлантичної спільноти”, 2023/2739 (RSP) та діяльність Міжнародної Кримської платформи. Відповідні екологічні та морські судові процедури не обов’язково можуть призвести до початку провадження у міжнародних судах, а відсутність міжнародної кримінальної відповідальності за екоцид створює природні перспективи такої відповідальності лише у рамках відповідного військового злочину, зазначеного у статті 8(2)(b)(iv) Римського статуту або на національному рівні. Водночас у низці прийнятих резолюцій міжнародних органів згадується каховська справа. Це пов’язано з екоцидом, міжнародним злочином, який має дати відповідний поштовх для розробки відповідних міжнародно-правових концепцій як мінімум на доктринальному рівні.

**Ключові слова:** злочини проти довкілля, річка Дніпро, екоцид, міжнародне правосуддя, Каховська дамба, Римський статут, російська агресія, морські екосистеми, воєнні злочини.

