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Criminal Law Protection as a Component of Environmental Security: A Modern Dimension

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Ensuring a stable environmental situation and safety is an important task for many countries. And Ukraine is no exception. Prior to the full-scale invasion, active steps were being taken to improve the legal mechanisms for regulating the environmental and legal relations, including criminal law enforcement. The armed conflict between Russia and Ukraine made its own adjustments, not only bringing detrimental consequences for the entire population and threatening the existence of the statehood, but also halting the processes of improving the environmental situation. This is the reason for the relevance of this article, as the impact of hostilities on the environmental situation is difficult to assess given the number of weapons, vehicle exhausts, and the use of chemicals that together pollute water resources, soil, and air, as well as cause massive forest fires, destroy natural ecosystems, landscape and biodiversity and threaten nuclear safety. Thus, the purpose of the study is to analyze the state of modern environmental threats and their impact on ecosystems, citizens and public environmental interests, to study the existing legal framework for criminal liability for environmental offences and to identify priority areas for improving the situation with environmental safety and criminal law protection as its component. To achieve this purpose, the following methods of scientific knowledge were used: the method of system analysis, the method of synthesis, formal legal and dialectical methods, as well as methods of analysis of legal documents. As a result, scientifically significant conclusions were drawn on the issues outlined, and recommendations were made for potential improvement of the current environmental situation.

Keywords: environmental damage, legal liability for environmental offences, protection of environmental rights, public environmental interests, ecocide.

Introduction

For many decades environmental safety issues have been a dominant area of activity in many countries. Ukraine is no exception. However, an important factor that has made adjustments to the environment and environmental safety has been the rapid industrial progress that has led to excessive consumption of natural resources, their daily exploitation and, to put it more lyrically, disregard for the laws of nature. Moreover, the development of new technologies has also had a significant impact, with many companies using them to exploit the environment even more. Taken together, these actions force society to think about the consequences of such rampant exploitation of natural resources, and to direct a lot of energy to finding the best ways to solve urgent environmental problems (Getman and Anisimova, 2021).

It is worth noting that the main characteristic of environmental safety is not its immediate nature, but rather its direct focus on the future. This can be interpreted as follows: the current generation must take a number of high-level measures to protect natural resources in order to protect future generations from large-scale catastrophic events, from processes of neglecting environmental safety and causing irreparable environmental damage at the local and global levels, and to actively implement preventive processes to prevent crimes and offences against the environment as such. That is why there is a need for high-quality legal regulation of the environmental aspects of the activities of legal entities and individuals. It is the multifaceted nature of the concept of 'environmental safety' that makes the regulation of this issue of particular importance in accordance with the provisions of criminal law (Allenby, 2000). After all, it is important to ensure clarity and precision in regulating the activities of persons who have a direct impact on compliance with the established level of environmental safety both at the national and international levels. In particular, it is important to establish the clarity and complementarity of regulation by the norms of various branches of law, including environmental, administrative, commercial, civil, however, taking into account the amount of damage caused by non-compliance with environmental safety requirements (EU Monitor, 2021).

The study of the current state of criminal law protection in the context of environmental safety is extremely

important, as it concerns both the real state of environmental safety and the intersection of law, public welfare, and environmental science. The main reasons for the importance of studying criminal legal protection as a component of environmental security are as follows:

- Growing environmental challenges. It is impossible not to point out the fact that recent years have been characterized by significant environmental challenges, threats and risks, such as water pollution, deforestation, climate change, and loss of biodiversity. These are the problems that need to be addressed immediately, and a high-quality and coherent legal framework needs to be established at the legislative level, which will make it impossible to abuse resources by their very nature and make it more likely that those responsible will be brought to justice. Furthermore, the tragedy at the Kakhovka hydroelectric power station, illegal logging and hazardous waste dumping often span multiple jurisdictions, requiring a comprehensive and coordinated legal response to prevent this from happening in the future (Alkousaa and Stanway, 2023).
- Adaptation of the existing legal framework, which directly depends on the current state of environmental problems and existing environmental damage. Moreover, as modern research develops and spreads, so does the integration of new concepts, such as environmental justice, intergenerational justice and sustainable development, into legal protection (Hickel, 2018).
- Improving the existing legal mechanisms to ensure effective law enforcement will allow for the development and further implementation of better strategies for monitoring compliance with the law and imposing sanctions in case of violations of criminal norms. In turn, it should not be forgotten that an assessment of the effectiveness of criminal sanctions in deterring environmental offences can lead to the development of more effective punitive measures (Bartels, 2023).
- Consideration of local and global implications. This is because the issue of environmental security and criminal law enforcement within this issue is important at all levels, and therefore active cooperation between different jurisdictions can contribute to the harmonisation of laws across borders and improve

the collective response to transnational environmental offences (Anisimova and Kopytsya, 2021).

- Respect for human rights in the context of environmental security. Human rights can be directly violated through the occurrence of negative environmental grave consequences and harm as a result of non-compliance with rules and regulations on the management of natural resources (Alkousaa and Stanway, 2023). That is why criminal law should influence the legal protection that directly guarantees the enforcement and protection of human rights in this context. Establishing a link between environmental health and human rights can lead to a stronger legal framework that recognizes the right to a healthy environment as fundamental (Getman, 2020).
- Taking into account rapid technological advances, such as satellite surveillance and blockchain for tracking illegal activities, which can be incorporated into legal frameworks in parallel to increase their effectiveness. It is important to emphasize the fact that the use and analysis of big data can have a positive impact on the detection of environmental offence (Arora, 2018).

Methodological Framework

In accordance with the research topic and its relevance, the purpose of the research was clearly and exhaustively formulated. For this purpose, the following research methods were used: the method of system analysis and synthesis, formal legal and dialectical methods, and the method of analysis of legal documents.

This article is based on the method of system analysis. The method of system analysis plays a crucial role in the study of the modern dimension of criminal law protection as a component of environmental safety. Using the method of system analysis, the authors analyzed and investigated the main aspects of environmental security and the reasons for the need to improve the current environmental situation both in Ukraine and in the world. The authors also analyzed in detail the current environmental threats and their impact on ecosystems, citizens and public environmental interests. In the context of this issue, the authors examined the impact of the armed conflict on the spread of environmental offences and the overall environmental situation. In conjunction with the synthesis method, the reliable forecasts of environmental degradation that may

occur in the near future and those that will occur in the long term were formed.

The analysis was particularly relevant to the study of Russia's military environmental offences, as well as Ukraine's unprecedented actions aimed at bringing those responsible for these offences to justice. In the course of direct application of the method of synthesis and the method of analysis of regulatory documents, the authors examined the existing legal framework for criminal liability for environmental offences at the national level. Using the method of analysis of legal documents separately, the authors also clarified the details of European innovations regarding penalties for environmental offences.

The concepts of 'environmental safety', 'criminal law protection', 'ecocide', etc. were clarified using the formal legal method. In combination with the method of system analysis and the constituent elements of these concepts, logical conclusions are drawn about the need to improve the current situation. In addition, this contributed to a better understanding of the basics of criminal legal protection and the specifics of environmental offences. The dialectical method was used to identify priority areas for improving the situation with environmental safety, as well as to provide own recommendations on the effectiveness of the proposed improvement strategies.

It should be noted that the methods of scientific knowledge selected for this research contributed to the quality of the study and the obtaining of significant conclusions. Moreover, this methodological framework contributed to the formation of proposals to create effective mechanisms for legal regulation. In general, the research methods chosen by the authors serve as a powerful tool for studying the current realities of criminal law protection as a component of environmental safety. At the same time, they facilitate understanding their complexity and ambiguity, as well as assessment of their impact, identification of opportunities for improvement and provision of potential forecasts for improving environmental safety. Equally importantly, this research article contributed to a broader understanding of the phenomenon of environmental safety, criminal offences in the environmental sphere, and also highlighted the importance of all Ukraine's efforts on the way not only to victory, but also to establishing all possible processes during the armed conflict.

Results and Discussion

Analysis of current environmental threats and their impact on ecosystems, citizens and public environmental interests

It is important to define the characteristics and provide key features and elements of the concepts of 'environmental security' and 'criminal law protection'.

Environmental safety is a state of the environment that ensures prevention of environmental degradation and the emergence of hazards to human health (Verkhovna Rada of Ukraine, 2023a). Ensuring environmental safety implies measures, policies and practices aimed at protecting the environment from the negative impact of human activity, as well as ensuring the mutual well-being of both the population and ecosystems. Taken together, this is aimed at preventing and mitigating harmful impacts and hazards to the environment in order to use natural resources wisely, conserve them and promote sustainable practices to maintain a healthy and balanced environment. Ensuring environmental safety is a multifunctional legal phenomenon that is considered as a vector of national, state, and legal policy, both internal and external (Hickel, 2018).

The key aspects of environmental safety are, first and foremost, hazard prevention, i.e. timely identification of potential hazards and response to such possible actions of potential pollution, etc.; promotion of sustainable practices that, by their nature, do not deplete natural resources and are able to maintain ecological balance in the long term; ensuring that environmental rules and regulations are in place at various levels, from enterprises in various industries to individuals; protection of public health by reducing the impact of environmental hazards.

In turn, criminal law enforcement in terms of environmental security is the application of criminal law to establish certain unlawful behaviour as criminal and to establish certain penalties for such criminal behaviour. This includes a range of law enforcement and criminal justice activities to prevent, investigate and prosecute criminal acts, ensure justice and maintain public safety. The key aspects of criminal justice policing are primarily the prevention of criminal offences and the adoption of various measures to deter the commission of offences, which is carried out through police and information campaigns to raise public awareness of the

consequences of such actions (Hickel, 2018). An important aspect is the direct conduct of investigations and the search and collection of evidence to identify those responsible for the offence, as well as the trial of those against whom there is evidence of an offence. Accordingly, the next stage is the imposition of punishment, which is provided for by the sanctions of the article of the Criminal Code of Ukraine. Taken together, these actions are aimed at ensuring public safety and upholding the rule of law and legality, while demonstrating the importance of compliance with the law and environmental safety, thereby raising the issue of environmental protection to a much higher level (Mason, 2005).

These issues of environmental safety and criminal law protection have become quite widespread and important in recent years, when irreparable environmental damage began to occur. This was also due to the consequences of the deadly pandemic, which are not yet fully understood and known, as well as the huge global crisis caused by Russia's aggressive attack on Ukraine (Barouki, 2021). Of course, armed aggression brings many irreparable harmful consequences to various spheres of society, including the environment. Most of these consequences are global in nature, and therefore go beyond the participants in armed aggression (Pavlova et al., 2023).

The armed aggression, by its very nature, causes a crisis of enormous proportions that negatively affects entire societies, as all people around the world face huge price increases, gradual resource shortages, and enormous environmental degradation. That is why active international cooperation and international law should be the basis for environmental protection (Otolorin et al., 2022).

It should be noted that unlike a pandemic (where positive environmental impacts are possible), the environmental consequences of military operations are only negative (Mravcová, 2024). This includes air emissions, noise pollution, chemical pollution from the use of various types of weapons, emissions from aircraft and vehicles, etc. Air pollution is also caused not only by military operations, but also by poverty, which forces people to engage in environmentally harmful activities such as burning tyres to keep warm, etc. Another problem is the use of depleted uranium in weapons and other dangerous substances. When power, industrial, oil

or energy facilities are bombed, hazardous substances inevitably get into the environment (Kostin, 2024).

It is important to understand in detail what environmental consequences armed aggression has brought in the short and long term. In the short term, there are the following manifestations of environmental damage such as contamination of water resources and acute shortage of drinking water (especially as a result of the explosion of the Kakhovka reservoir); deterioration of air quality, which will lead to the spread of acute respiratory diseases among the population; increased greenhouse gas emissions and soil pollution, soil erosion; negative impact of nuclear radiation (especially in the temporarily occupied Enerhodar and adjacent areas, where not all the standards of behaviour on the territory of the nuclear power plant are observed); forest fires and active illegal deforestation, mortality of wild animals and destruction of their habitats (Rawtani et al., 2022; Shatilo et al., 2023).

In the long term, there will be such negative environmental consequences as reduced life expectancy and serious chronic respiratory diseases; due to the significant contamination of land plots, the process of land reclamation will be delayed, while in parallel, the constant change in soil cover and active land use leads to a decrease in agricultural production and production on a national scale; a decrease in the overall standard of living; a decrease in ecosystems and loss of biodiversity; shifts in plans to achieve the goals of the Sustainable Development Goals (Hartmane et al., 2024).

The Ministry of Environmental Protection and Natural Resources of Ukraine estimates the damage to nature caused by the the armed aggression / at over USD 60 billion. About 25% of the country's territory is contaminated by mines and unexploded ordnance. The largest nuclear power plant in Europe, Zaporizhzhia NPP, has been under Russian occupation for more than 2 years, which means a constant risk of a nuclear disaster (EcoZagroza, 2024).

The study of this problem is appropriate today because the harmful consequences go beyond Ukraine, thereby exacerbating tensions in the international arena. Moreover, the very fact of the armed aggression pushed the issue of solving acute environmental problems back for years, and therefore the progress that Ukraine made in addressing pressing environmental issues by 2022 can hardly be called progress today for objective reasons.

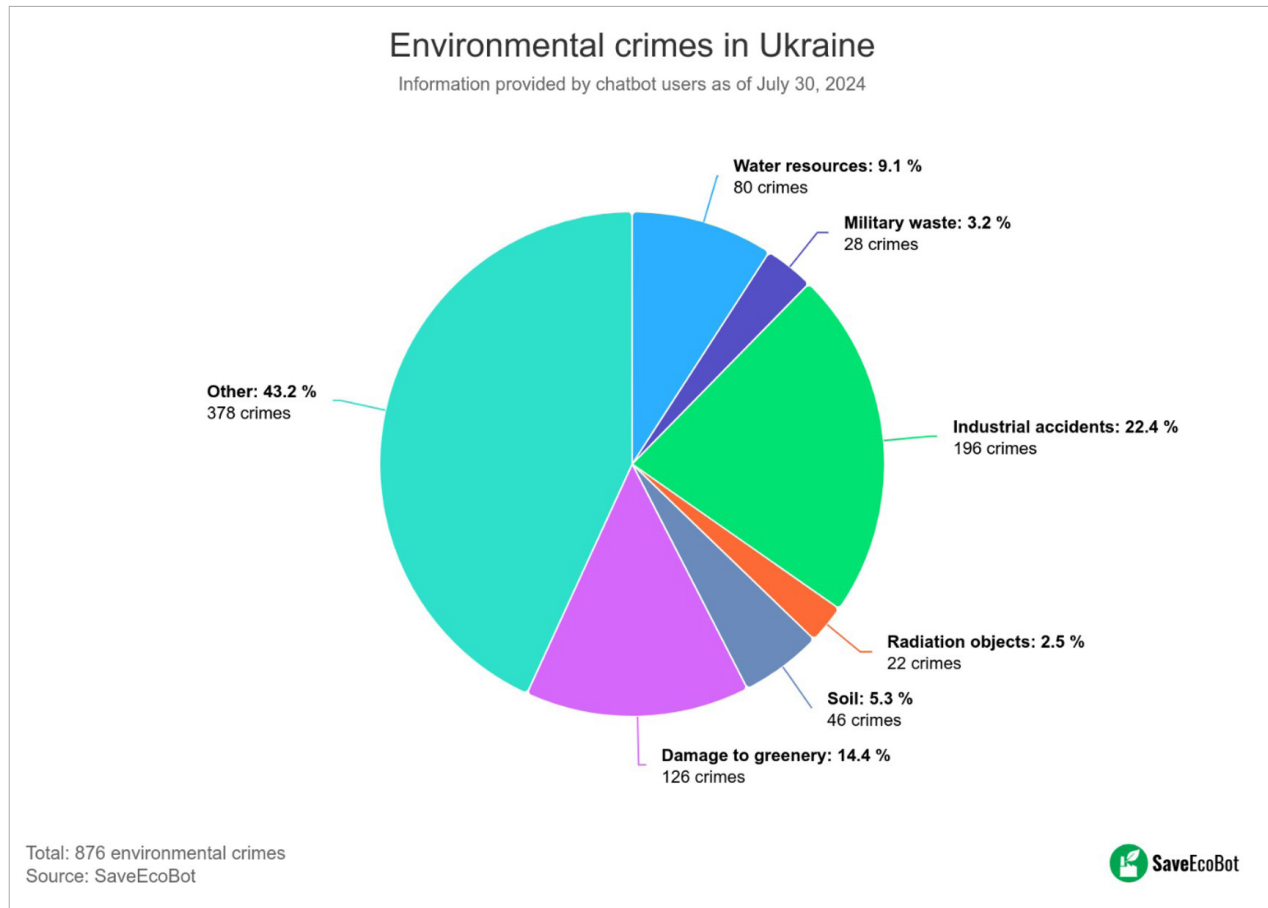
However, this does not mean that no action is being taken in this direction (Orobets, 2022). An example is the amendments to the Law of Ukraine 'On Environmental Impact Assessment' to simplify the mechanism of conducting, reducing the timeframe, amending the list of objects for which EIA is not required (On Environmental Impact Assessment, 2017).

Taking into account the fact that the war is not over, and at the international level institutions have not yet been formed that allow the first review of ecocide to be started, data collection on the ecological consequences of the war is underway in Ukraine today. One of the main platforms is the official resource of the Ministry of Environmental Protection and Natural Resources of Ukraine – Ecozagroza. It not only presents data collected by the Ministry, but also provides an opportunity for citizens of the country to provide information about recorded environmental crimes. As of August 10, since the beginning of the full-scale invasion, the site received 2477 requests, of which 2321 were verified.

In addition to Ecozagroza, there are other tools for collecting data on the scale of the ecological consequences of the invasion in Ukraine. Such, for example, as SaveEcoBot. NGOs are also engaged in collecting information. *Fig. 1* shows the total number of crimes against the environment in Ukraine as of 2024 by categories: water resources, military damage, industrial accidents, radiation facilities, soils, green spaces.

Ukraine is the first country in the world to focus directly on the active investigation of war offences against the environment, and to ensure that legal liability for such war offences is imposed within its own jurisdiction. It is worth noting that Ukraine is one of 15 countries in the world where criminal law provides for liability for ecocide. Article 441 of the Criminal Code of Ukraine (Verkhovna Rada of Ukraine, 2001) defines ecocide as 'mass destruction of flora or fauna, poisoning of the atmosphere or water resources, as well as other actions that may cause an environmental disaster'. At the same time, prosecutors are actively working to reduce the risks of environmental damage and, of course, to prevent a negative impact on public health in the future. Speaking about ecocide, it is worth noting the event that took place in 2023, when prosecutors of the Specialised Environmental Prosecutor's Office of the Prosecutor General's Office for the first time in the history of Ukraine sent an indictment to the court on the fact

Fig. 1. Environmental crimes in Ukraine



of ecocide, recognizing the responsible persons of a large-scale enterprise engaged in cardboard and paper products as guilty of this offence (Hryshanova, 2023; Maksakova, 2023).

It should be noted that criminal protection and investigation of environmental offences, in particular, have their own specifics. To achieve these goals, a separate unit was created in 2021 – the Specialized Environmental Prosecutor's Office (SEP), now the Specialized Environmental Prosecutor's Office (as a department) of the Office of the General Prosecutor. One of the main tasks of the SEP is the organization and procedural management of pre-trial investigations, the resolution of other issues in accordance with the law during criminal proceedings and the maintenance of public accusations in criminal proceedings about criminal offenses in the field of environmental protection, in which investigations are carried out by the Main Investigative Departments of the National Police of Ukraine, the

State Bureau of Investigation, the Security Service of Ukraine, the central apparatus of the Bureau of Economic Security of Ukraine (except for proceedings, the organization and procedural management of which are carried out by the Specialized Anti-Corruption Prosecutor's Office, as well as other structural units in accordance with the specialization determined by the orders of the Prosecutor General (Verkhovna Rada of Ukraine, 2023b). As part of their activities, the staff of these units work closely with relevant environmental experts, while also involving investigators and other staff of the relevant services to improve the comprehensive investigation of environmental offences and inter-institutional cooperation (Getman, 2021).

It is undeniable that during armed conflict, environmental damage was considered collateral damage and never investigated as a separate offence. It is only recently that technology has been able to make adjustments to this issue to measure the long-term environmental

and health effects of armed aggression. Previous investigations and courts have focused only on the most serious offences that resulted in direct loss of life. That is why there are no precedents for prosecuting war offences against the environment. Currently, 205 criminal proceedings for war offences against the environment are under investigation in Ukraine, of which 15 are based on the facts of ecocide.

In this regard, it is impossible not to mention the explosion of the Kakhovka hydroelectric power station, which is classified under two separate articles – ecocide and war offence. For the first time in history, prosecutors have notified a Russian colonel general and four of his subordinate officers of suspicion of committing ecocide during the armed aggression. The investigation established that they ordered the shelling of the Neutron Source nuclear facility on the territory of the Kharkiv Institute of Physics and Technology. Russian troops struck the nuclear facility 74 times with various types of weapons, targeting the reactor and nuclear material storage facility (Kostin, 2024). Moreover, the Zaporizhzhya Nuclear Power Plant is under temporary occupation, which endangers the safety of all living things. Moreover, repeated shelling of the entire territory of Ukraine indicates an active desire to harm other nuclear power plants as well.

This is what has become a precedent in international practice – the prosecution of top management and direct perpetrators of the offence. Such processes will contribute to the spread of practices of criminalizing environmental damage and further prevent such offences.

Based on this, the Prosecutor's Office and the International Criminal Court are working to develop national and international mechanisms and standards for bringing to legal responsibility for environmental offenses. As part of the improvement of national and international legislation, the preparation of a policy document in accordance with the Rome Statute on the invocation of legal liability for environmental damage has also been initiated.

An important achievement within the framework of this research was the adoption of the PACE Resolution of 25 January 2023 on the 'Environmental Impact of Armed Conflict'. This Resolution contains a direct call for the creation of a high-quality and comprehensive legal framework that will have a positive impact on

environmental protection and prevention of environmental damage at the national, European and international levels. The Resolution also contains provisions on criminalization of ecocide at the state level, as well as ensuring all procedures and compliance with effective mechanisms for prosecuting this crime and amending the Rome Statute to add ecocide as a new criminal offence (EPL, 2023).

It is also important to note that, as recently as 22 February 2024, the Belgian Federal Parliament amended the Belgian Criminal Code to add a new type of crime – ecocide. It will come into force two years after its publication in the Belgian Gazette. These changes were part of the reform of the Belgian criminal code (through the Act introducing the new Book II of the Belgian Criminal Code). Thus, Belgium became the first country in Europe to criminalize ecocide at the national and international levels. The new criminal code, which was adopted by the Belgian federal parliament, provides for imprisonment of up to 20 years for individuals guilty of ecocide and fines of up to EUR 1.6 million for corporations (Irish legal news, 2024).

Moreover, President of Ukraine Volodymyr Zelenskyy included environmental safety in the Ukrainian Peace Formula and simultaneously initiated the creation of a high-level Working Group on the Environmental Consequences of War. The Office of the Prosecutor General also initiated a professional discussion on accountability for war offences against the environment during the high-level international conference United for Justice, organized in March 2023. This is one of the many steps taken by state authorities on the way to effective criminal law protection in the aspect of environmental security not only within the national framework, but also in the international arena. In addition, an Environmental Agreement was developed for Ukraine. The environmental treaty is 50 recommendations for Ukraine and the world community, which embody a unified approach to assessing the impact of the Russian armed conflict in Ukraine on the environment and determine approaches to compensation for the damage caused and proposals for 'green' recovery (High-level Working Group on Environmental Consequences of War, 2024).

Analysis of the existing legal framework for criminal liability for environmental offences

Criminal law plays a crucial role in the protection of the environment and natural resources by establishing

a legal framework to deter, punish and remediate activities that damage the environment. Such actions promote the rule of law and justice for affected communities and ecosystems. Effective enforcement of the criminal law is essential for continued success and to prevent significant negative environmental impacts.

The fundamental document establishing liability for environmental offences is the Criminal Code of Ukraine (Verkhovna Rada of Ukraine, 2001). The Criminal Code of Ukraine contains a separate section on 'Criminal offences against the environment'. However, other chapters contain corpus delicti of specific environmental offences, for example, offences related to violation of safety rules at nuclear power facilities, during work at other facilities, rules for handling radioactive materials, explosives and other hazardous substances; concealment of information about circumstances that pose a danger to human life and health, cruelty to animals; offences related to violation of sanitary and epidemiological rules, etc.

It should also be noted that the section on Criminal Offences against Peace and Security of Mankind and International Order contains a separate article on ecocide (Article 441). At the same time, an important fact remains that there is a high probability of causing environmental damage, harm to public health and severe consequences in this regard during the commission of other criminal offences, such as terrorism, sabotage, transport criminal offences, etc.

Moreover, in order to provide criminal legal protection in terms of environmental safety of citizens, criminal law also provides for liability for violation of requirements in the field of waste management (Kharytonov et al., 2023).

On the other hand, Article 236 of the Criminal Code of Ukraine (Verkhovna Rada of Ukraine, 2001) establishes a criminal offence of direct violation of environmental safety rules during the design, location, construction, reconstruction, commissioning, operation and liquidation of enterprises, structures, vehicles and other facilities, provided that such actions have caused irreparable environmental damage, death or other serious consequences.

As part of the study of this issue, it is important to add that the current Criminal Code of Ukraine also establishes criminal liability for damage to certain components of the environment, such as soil, water, air,

forests, subsoil, flora and fauna. However, the fact that the scope of unlawful actions in relation to each individual element is incompletely defined is a negative factor. Therefore, this situation with legal regulation directly calls into question the issue of proportionality between the degree of damage caused, public danger and the punishment imposed. As a result, the perpetrator may be punished more lightly for serious crimes (Sirant, 2020).

It is also worth noting that, in addition to the above, current Ukrainian legislation also establishes liability for damage caused to natural objects within the limits of the continental shelf, marine environment, exclusive economic zone and specially protected natural areas and objects. Logically, this increases the preventive component of liability, but the de facto and de jure situation is different, and in practice, the perpetrators are rarely brought to legal responsibility. Therefore, under such conditions, the principle of prevention of environmental offences and avoiding of environmental damage will not be observed. This is because, by virtue of the very interpretation of the norms, it allows for the occurrence of adverse consequences in advance. All offences aimed at protecting natural resources are material (i.e., they are applied only in the event of negative consequences). Taken together, such gaps in the current legislation impede the implementation of the principle of preventing environmental damage, which leads to the degradation of flora and the reduction of biological diversity (Yaroshenko et al., 2022).

That is why it is important to take into account the following aspect when improving the current criminal legislation and adapting the existing rules to the newly adopted European rules. Namely, on 27 February 2024, the European Parliament adopted new rules on environmental crimes and related sanctions. Such changes are due to the fact that environmental crime is now on a par with drugs, arms and human trafficking, as it brings large incomes to those directly involved. It was the European Parliament that adopted a directive that updated the list of criminal offences to include water depletion, timber trafficking, pollution caused by ships, and serious violations of EU chemicals legislation. Along with these crimes, the list also includes qualified offences, which include widespread air pollution and large forest fires, which together lead to significant destruction of ecosystems. Therefore, these offences can be equated to ecocide (EC, 2024)

In general, a typical reason for bringing a person to justice will be to determine how long, serious and irreversible the environmental damage will be. In the case of a qualified crime, the punishment will be imprisonment for up to 8 years; for those crimes that caused the death of a person, the imprisonment will be for up to 10 years; and for other crimes – for up to 5 years (Henriksen, 2024).

An important condition is that all offenders will be forced to restore the environment and compensate for the damage caused. It is also important to consider the penalty system, which will amount to 3% or 5% of their annual global turnover or, alternatively, from EUR 24 to EUR 40 million, depending on the nature of the crime (Criminal liability for environmental crimes is introduced in the EU, 2024). This is a significant step towards improving the legal regulation of environmental safety and fair punishment for environmental damage, and therefore it is worth supplementing the national legislation with the following provisions.

Identification of priority areas on the way to improving the situation with environmental safety

Statistical data on the number of environmental offenses and prosecutions were analyzed to assess the effectiveness of the criminal-legal protection of environmental safety. The analysis of statistical indicators of criminal offenses against the environment for the years 2020–2023 was carried out based on the materials of the Office of the Prosecutor General of Ukraine (Office of the Prosecutor General, 2024)

Table 1. *Statistics of environmental offenses in Ukraine (2020–2023)*

Year	Number of offenses
2020	500
2021	450
2022	470
2023	600

According to the data of the first half of 2024, 876 eco-crimes were recorded, but this figure continues to grow every day (SaveEcoBot, 2024). The analysis shows that since the beginning of the armed conflict, the number of environmental crimes has increased, which requires strengthening measures to prevent them and punish the guilty.

In the current environment of deepening environmental crisis and increasing environmental offences, the government and the international community have an immediate obligation to seek realistic and effective solutions that will have a positive impact on the environmental situation. Undoubtedly, the basis for improving the environment is and will be the pro-environmental behaviour of people themselves, based on a self-restraint approach and in the rational consumption of natural resources.

First and foremost, it is important to update and improve existing legislation, especially criminal law, especially in terms of strengthening the legal framework. Such actions are manifested in the harmonization of national laws in accordance with EU regulations and international documents (as noted above) (Getman et al., 2021). Such harmonization is aimed at facilitating international cooperation to ensure environmental safety and effective criminal law enforcement of the environment (Heinrichs and Biermann, 2016).

The next area is capacity building, i.e., investing in training of law enforcement officers, investigators, prosecutors, and the technologies they use, which will help to detect or prevent environmental offences (Haltsova et al., 2021).

An important aspect is the formation of environmental culture and environmental education. Article 9 of the Law of Ukraine 'On Environmental Protection' (2023) provides for this right to environmental education, the origins of which are laid down in the Belgrade Charter's guidelines for environmental education programmes. Today, sustainable development has been proclaimed a fundamental principle of the EU, and the achievement of the UN Sustainable Development Goals has been recognized as a priority task of its domestic and foreign policy. Of course, this serves as a basis for the formation of environmental awareness and culture.

It is impossible to ignore technological development and the use of advanced technologies to ensure environmental safety in the current realities. For this purpose, it is worth using satellite monitoring, drones, and data analytics, which together will save time and increase the effectiveness of responding to criminal offences. These tools can provide real-time data and evidence important for law enforcement (Kotarska and Young, 2022).

Corporate accountability, which means strengthening legislation on corporate environmental responsibility,

can ensure that businesses are held accountable for their environmental impact. This includes stricter regulations, mandatory reporting and severe fines for non-compliance (Yaroshenko et al., 2024). This can bring about the desired positive changes, provided that there is genuine and coordinated global cooperation, that national authorities interact with each other, and that the conditions in which Ukraine is currently operating are taken into account.

Conclusion

Environmental safety is a state of the environment that ensures prevention of environmental degradation and the emergence of hazards to human health. Ensuring environmental safety implies measures, policies and practices aimed at protecting the environment from the negative impact of human activity, as well as ensuring the mutual well-being of both the population and ecosystems. Taken together, this is aimed at preventing and mitigating harmful impacts and hazards to the environment in order to use natural resources wisely, conserve them and promote sustainable practices to maintain a healthy and balanced environment. Ensuring environmental safety is a multifunctional legal phenomenon that is considered as a vector of national, state, and legal policy, both internal and external.

In its turn, criminal law enforcement in terms of ensuring environmental safety is based on the application of criminal law to recognize certain unlawful behaviour as criminal and impose certain penalties for such criminal behaviour. This includes a range of law enforcement and criminal justice activities to prevent, investigate and prosecute criminally socially dangerous acts, ensure justice and maintain public safety. The key aspects of criminal law enforcement are primarily the prevention of criminal offences and the adoption of various measures to prevent the commission of crimes, which is carried out through police and information campaigns to raise public awareness of the consequences of such actions.

The armed conflict has had and continues to have a significant impact on environmental damage. That is why it is important to understand in detail what environmental consequences the armed conflict has brought in the short and long term. In the short term, the following manifestations of environmental damage can be

observed: water pollution and acute shortage of drinking water; deterioration of air quality, which will lead to the spread of acute respiratory diseases among the population; increased greenhouse gas emissions and soil pollution, soil erosion; negative impact of nuclear radiation; forest fires and active illegal deforestation, mortality of wildlife and destruction of their habitats.

In the long term, such negative environmental consequences will be noticeable as reduced life expectancy and serious chronic respiratory diseases; due to the significant contamination of land plots, the process of land reclamation will be delayed, while at the same time, constant changes in soil cover and active land use lead to a reduction in agricultural production and production on a national scale; a decline in overall living standards; a decline in ecosystems and loss of biodiversity; and a shift in plans to achieve the goals of the Sustainable Development Goals.

Ukraine is the first country in the world to directly focus on the active investigation of war offences against the environment, as well as to ensure the imposition of legal liability for such war offences within its own jurisdiction. It is worth noting that Ukraine is one of 15 countries in the world where criminal law provides for liability for ecocide. Article 441 of the Criminal Code of Ukraine defines ecocide as 'mass destruction of flora or fauna, poisoning of the atmosphere or water resources, as well as other actions that may cause an environmental disaster'. The article effectively refers to other laws and regulations governing environmental protection, establishing criminal liability for violations of norms that can only be defined in other legal acts. As a result, this complicates enforcement, as law enforcement agencies and courts must refer to a large number of other legal acts to determine whether a violation has occurred. The absence of clear criteria and references to other regulations can lead to different interpretations of the same act by different judges and law enforcement agencies. This can lead to different decisions in similar cases, which negatively affects legal certainty and predictability of court decisions.

At the same time, prosecutors are actively working to reduce the risks of environmental damage and to bring to the international level the legal prosecution of Russia's top military leadership for environmental war offences. An important achievement on this path was the adoption of the PACE Resolution of 25 January 2023 on the 'Environmental Impact of Armed Conflict'.

This Resolution contains a direct call for the creation of a high-quality and comprehensive legal framework that will have a positive impact on environmental protection and prevention of environmental damage at the national, European and international levels. Another important fact is that, on 22 February 2024, the Belgian Federal Parliament amended the Belgian Criminal Code to add a new type of crime – ecocide. It will come into force two years after its publication in the Belgian Gazette. These changes were part of the reform of the Belgian criminal code (through the Act introducing the new Book II of the Belgian Criminal Code). Thus, Belgium became the first country in Europe to criminalize ecocide at the national and international levels.

The fundamental document at the national level establishing liability for environmental offences is the Criminal Code of Ukraine. The Criminal Code of Ukraine contains a separate section on 'Criminal offences against the environment'. However, other chapters contain corpus delicti of individual environmental offences.

In order to improve the level of criminal legal protection of the environment and ensure environmental safety, it is proposed to implement the following steps. The issue of updating and improving the current legislation, especially criminal legislation, is very important, which is manifested primarily in such an aspect as strengthening the legislative framework. The next area is capacity building, i.e., investing in the training of law enforcement officers, investigators, prosecutors, and the technologies they use, which will help to detect or prevent environmental offences. An important aspect is the formation of environmental culture and environmental education.

Satellite monitoring, drones, and data analytics should be used to save time and increase the effectiveness of responding to criminal offences. These tools can provide real-time data and evidence important for law enforcement. And of course, corporate accountability. Together, these can bring about the desired positive changes.

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