

CONTRACTUAL BASIS OF MINE ACTION AS A COMPONENT OF THE RESTORATION OF UKRAINE'S NATURAL RESOURCE POTENTIAL

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Received: 22 February 2025 | **Reviewed:** 24 March 2025 | **Revised:** 26 March 2025

Accepted: 31 March 2025 | **Published:** 21 April 2025

ABSTRACT

In the context of Russia's full-scale armed aggression and the widespread contamination of Ukraine's territory with landmines and other explosive remnants of war, the legal regulation of contractual relations in the field of humanitarian demining is of critical importance for ensuring the effective and transparent implementation of demining activities and the sustainable restoration of the country's natural resource potential. The aim of this study is to identify the specific features of contractual regulation in humanitarian demining as a key component of post-conflict ecological recovery, to reveal existing legal gaps, and to develop practical recommendations for improving the regulatory framework for mine action within the broader environmental security context. The research adopts a desk-based methodology, focusing on the analysis of current Ukrainian legislation, international treaties, environmental and legal policy frameworks, and reports by national

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authorities (e.g., the Ministry of Environmental Protection and Natural Resources, the Ministry of Defence of Ukraine) and international institutions such as the Geneva International Centre for Humanitarian Demining. Particular attention is paid to the practice of public procurement in the field of humanitarian demining (via the Prozorro system), which allows for the identification of common contract models, clarification of their legal regulation, and diagnosis of key obstacles to implementation. Through a comparative approach, the study also reviews international documents, including the International Mine Action Standards (IMAS), the UN PERAC Guidelines on environmental assessments in post-conflict settings, and the provisions of the Ottawa Convention and the Convention on Cluster Munitions. The interdisciplinary framework of the study enables an integrated understanding of demining contracts not only as legal instruments but also as tools for the sustainable management and restoration of damaged ecosystems. The findings of the research can be integrated into Ukraine's national policy on post-war recovery and contribute to enhancing the legal and institutional foundations of environmental safety.

Keywords: Land restoration; Environmental security; Ecological rehabilitation; Humanitarian demining; Sustainable development; Legal mechanisms

Editor-in-Chief: Prof. Dr. Kamrul Hossain | *Deputy Editors-in-Chief:* Dr. Evgeniya Kopitsa, Prof. Dr. Ngozi Finette Unuigbe | *Executive Editor:* Dr. Hasrat Arjjumend

How to cite this paper: Hanna Anisimova, Olha Donets, Anton Donets, Kyrylo Anisimov, and Hasrat Arjjumend, 'Contractual Basis of Mine Action as a Component of the Restoration of Ukraine's Natural Resource Potential' (2025) 05 (01) Journal of Environmental Law & Policy 229-257, <<https://doi.org/10.33002/jelp050109>>

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1. INTRODUCTION

In the legal doctrine, contaminating territories with remnants of war, in particular, mines, cluster munitions together with other explosive objects, is reckoned as having a long-term and detrimental impact on the environment.¹ Armed actions not only pose a direct threat to human life and health but also result in the destruction of natural landscapes, imbalance in ecosystems, their degradation, as well as the accumulation of toxic and radioactive substances in the environment, hence, exceeding safe levels in addition to creating severe hazards to ecosystem stability and overall environmental security.

According to the United Nations Environment Program (UNEP) and the Explosive Weapons in Populated Areas (EWIPA) initiative, Ukraine has joined the list of countries suffering large-scale environmental losses due to armed conflicts, namely, Afghanistan, Iraq, and Syria.² According to the international reports, the level of contamination with explosive ordnance in Ukraine is estimated as "massive, though unidentified."³ In the de-occupied territories alone, at least 139 thousand square kilometres (km²) are mined. However, due to the ongoing hostilities along with the occupation of more than 10.7% of the country's territory, it is yet not possible to accurately assess the overall level of pollution.⁴ It should be noted that mining territories have been documented in 11 out of the 27 regions of Ukraine, particularly, in Chernihiv, Dnipropetrovsk, Donetsk, Kharkiv, Kherson, Kyiv, Luhansk, Mykolaiv, Odesa, Sumy, and Zaporizhzhia⁵ ones. The vast majority of the above-mentioned areas are unique natural ecosystems, specifically, protected areas, wetlands, woodlands or agricultural lands with fertile chernozem soils, mine contamination of which not only prevents conducting economic activities and restoring biodiversity but also leads to devastating considerable territories.

In this context, humanitarian demining is of significance in ensuring the safe restoration of ecosystems, return of agricultural land to economic circulation as well as restoration of economic activity. In compliance with the recent advances in the specified area, the gradual implementation of large-scale measures can be indicated; to exemplify, in 2024, 3,152.52 km² were surveyed, more than 2,500 km² of which have already been cleared of explosive objects. To elucidate, a crucial milestone was the implementation of the Action Plan for Humanitarian Demining of the De-Occupied

¹ "Post-Conflict Mine Actions. National University of Life and Environmental Sciences of Ukraine" (*Nubip.edu.ua*) <<https://nubip.edu.ua/node/107513>> accessed February 22, 2025.

² "Environmental Legacy of Explosive Weapons in Populated Areas" (Unep.org) <<https://www.unep.org/es/node/30417>> accessed February 22, 2025.

³ "Landmine Monitor" (*Reliefweb.int*) <<https://shorturl.at/FAMrz>> accessed February 22, 2025.

⁴ "The Area of Ukraine's Territories Potentially Contaminated by Mines and Explosive Objects Decreased by 17,000 km² in 2024" (*Mod.gov.ua*) <<https://mod.gov.ua/news/ploshha-teritorij-ukrayini-potencijno-zabrudnenih-minami-ta-vibuhonebezpechnimi-predmetami-zmenshilas-na-17-000-km-u-2024-rozzi>> accessed February 22, 2025.

⁵ "Landmine Monitor" (*Reliefweb.int*) <<https://shorturl.at/qwvPR>> accessed February 22, 2025.

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Territories of Ukraine, within the framework of which a non-technical survey was carried out in 165 communities of 7 regions – almost three times more than had been planned. In addition to that, 2,291 sites of presumably contaminated areas with a total area of 302.9 km² were identified, thus, highlighting the scale of the problem together with the need for further coordinated efforts to clean up the territories and restore ecosystems. An important aspect of the aforementioned process is to contractually regulate mine action. Determining the rights and obligations of the parties in the mine clearance process, responsibility for the quality of the work performed, as well as financing and international cooperation mechanisms are necessary prerequisites for the efficient restoration of territories and ecosystems contaminated by the remnants of the armed conflict.

The study aims to identify the features of the contractual regulation of mine action as a component of restoring the natural resource potential of Ukraine, to analyze international experience in the stated area, in addition to defining legal gaps and developing recommendations for improving the regulatory support of humanitarian demining and environmental rehabilitation of territories.

The chosen aim led to the formulation and solution of the following tasks:

1. To analyze the national legislation of Ukraine on mine action in terms of its effectiveness, compliance with international standards together with the role of contractual regulation in the mentioned process;
2. To study the practice of concluding contracts in the field of humanitarian demining, to determine their features, essential terms, and obligations along with mechanisms for monitoring their implementation;
3. To identify the major problems of the contractual regulation of demining in Ukraine, in particular, legal conflicts, lack of common standards, difficulties in financing as well as coordination between state and international structures;
4. To outline promising and effective means of improving the contractual regulation of mine action in Ukraine, including legislative changes, implementation of international practices and mechanisms of interaction between public and private entities;
5. To assess the prospects for using the treaty mechanism for ecological restoration of territories contaminated with explosive remnants of armed conflict in addition to integrating these processes into the overall sustainable development policy of Ukraine.

2. LITERATURE REVIEW

The scientific study of the contractual principles of mine action as a component of restoring the natural resource potential of Ukraine is based on

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theoretical and applied works of domestic together with foreign scientists who analyze the legal, environmental as well and organizational aspects of humanitarian demining. It is worth noting the exponential increase in the number of studies published in Ukraine on both environmental restoration and humanitarian demining. Analyzing the Google Scholar database for keywords such as "ecological restoration," "humanitarian demining," "agricultural land clearance," "mine action," and "lands/ecosystems demining" demonstrates a steady enhancement in the number of publications in the above areas, exceptionally after the outbreak of the armed conflict in eastern Ukraine in 2014. For instance, the quota of those dedicated to land and soil restoration has significantly gone up, to precise, from 183 articles in 2000-2001 to more than 8000 in 2023-2024. However, until 2020, general issues of land restoration were under greater consideration, while current research is mainly focused on the consequences of the armed conflict in addition to challenges associated with post-war land restoration.

The number of scientific works devoted to humanitarian demining also manifests a gradual upward trend, to be precise, 241 papers had been published within a thirteen-year time scale (namely, from 2000 to 2013); their quantity had considerably improved by 1,230 in the following decade. Only during the period from 2022 to February 2025, 4,190 works had been brought out. Due to the relevance of the specified topic for Ukraine along with other post-conflict regions, a particularly noticeable increase in research in this area occurred after 2022. However, the legal aspect of humanitarian demining, especially the contractual principles of mine action in Ukraine, remains largely under-ascertained because most studies are focused on technical issues of demining, risk assessment together with environmental impacts. To exemplify, the issue of determining the priority of demining territories has been considered by Bespalko et al.;⁶ general prospects for developing mine action in Ukraine and the content of NATO standards have been studied by Lappo et al.,⁷ Drobot et al.;⁸ public administration in the aforementioned area has been analyzed by Poteriaiko et al.;⁹ economic as well as legal aspects have

⁶ Ruslan Bespalko, Taras Hutsul, Ivan Kazimir and Kateryna Myronchuk, "Modern Approaches to Assessing the Sequence of Humanitarian Demining of Territories" (2023) 1(31) Technical Sciences and Technologies 146-157 <[https://doi.org/10.25140/2411-5363-2023-1\(31\)-146-157](https://doi.org/10.25140/2411-5363-2023-1(31)-146-157)>.

⁷ Iryna Lappo, Yevgenii Biriukov, Oleksii Zhurakhov and Yurii Dobryshkin, "The Mine Activities Centre: The Main Aspects of Activity and Development Prospects" (2023) 1(15) Collection of Scientific Works of the State Research Institute of Testing and Certification of Weapons and Military Equipment 74-80 <<https://doi.org/10.37701/dndivsovt.15.2023.10>>.

⁸ Olha Drobot and Maryna Rudenko, "Algorithm of Implementing the Experience in Organizing a Technical Regulation System for Assessing Conformity and Certification of Weapons and Military Equipment. Testing and Certification of Weapons and Military Equipment" (II scientific-Technological Conference of State Research Institute of Testing and Certification of Weapons and Military Equipment, Cherkasy, December 2023) 448-449.

⁹ Serhii Poteriaiko and Anatolii Okipniak, "Mechanisms of State Management of Mine Action in Ukraine" (2022) 2(12) Scientific Bulletin: Public Administration 304-321 <[https://doi.org/10.33269/2618-0065-2022-2\(12\)-304-321](https://doi.org/10.33269/2618-0065-2022-2(12)-304-321)>.

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been investigated by Ustymenko et al.;¹⁰ challenges and needs arising while mine clearance have been the subject of research by Zadorozhnyi et al.¹¹

It should be emphasized that the analysis of scientific research indicates a significant interest of the scientific community in mine detection, and application of artificial intelligence for risk assessment, in addition to the introduction of unmanned technologies in the demining process (Camacho-Sanchez et al.).¹² Furthermore, technological difficulties, issues, priorities together with prospects for using robotics in demining have been considered by Habib;¹³ The relationship between humanitarian demining and sustainable land management in post-conflict regions has been investigated by Gunawardana et al.¹⁴ Particular attention is paid to the need for prompt clearance of territories to minimize the negative long-term consequences along with the impact of mines on the safety of the civilian population and the environment, as well as hurdles when restoring damaged areas (Pedraza;¹⁵ Robinson et al.¹⁶).

At the same time, regardless of the considerable number of scientific papers dedicated to humanitarian demining together with environmental consequences of armed conflicts, the issue of comprehensive contractual regulation of the mentioned area remains insufficiently developed. In terms of restoring Ukraine's natural resource potential requiring coordinated legal, environmental, in addition, management mechanisms, the relevance of examining the contractual principles of mine action is growing, which, in turn, involves determining the optimal interaction between state institutions, international partners and the private sector. Taking into account international experience along with the specifics of Ukraine's current security challenges, such a study will contribute to developing efficient legal instruments to ensure transparent contractual regulation of mine action, hence, promoting the environmental restoration of the affected areas.

¹⁰ Volodymyr Ustymenko, Yuliia Rohozian, Oleksandr Trehub, Pavlo Liashenko and Dariia Zablodyska, "Economic and Legal Dimension of Humanitarian Demining of Ukraine: Problem and Research Prospects" (2023) 12(65) *Amazonia Investiga* 287-295 <<https://doi.org/10.34069/AI/2023.65.05.27>>.

¹¹ Volodymyr Zadorozhnyi, Myhailo Faifura and Vasyl Tsegelynyk, "Challenges and Needs of Ukraine during Demining of Territories Affected by the War in 2022" (2023) 1(113) *Young Scientist* 10-13 <<https://doi.org/10.32839/2304-5809/2023-1-113-3>>.

¹² Carolay Camacho-Sanchez, Ruben Yie-Pinedo and Gina Galindo, "Humanitarian Demining for the Clearance of Landmine-Affected Areas" (2023) 88(101611) *Socio-Economic Planning Sciences* 1-13 <<https://doi.org/10.1016/j.seps.2023.101611>>.

¹³ Maki Habib, "Humanitarian Demining: The Problem, Difficulties, Priorities, Demining Technology and the Challenge for Robotics" (2008) 5(1) *International Journal of Advanced Robotic Systems* 1-18 <https://www.researchgate.net/publication/257873861_Humanitarian_Demining_Innovative_Solutions_and_the_Challenges_of_Technology> accessed February 22, 2025.

¹⁴ Harshi Gunawardana, Dammika Tantrigoda and Anura Kumara, "Humanitarian Demining and Sustainable Land Management in Post-Conflict Settings in Sri Lanka: Literature Review" (2016) 6(3) *Journal of Management and Sustainability* <<https://doi.org/10.5539/jms.v6n3p79>>.

¹⁵ Diana Pedraza, "Ethical Disconcert and the Politics of Troublemaking" (2023) 50(3) *American Ethnologist* 462-473 <<https://doi.org/10.1111/amer.13198>>.

¹⁶ Toby Robinson and Rosanna O'Keeffe, "The Challenges of Humanitarian Mine Clearance in Ukraine" (2019) 23(1) *The Journal of Conventional Weapons Destruction* 17-23 <<https://commons.lib.jmu.edu/cisr-journal/vol23/iss1/8>> accessed February 22, 2025.

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3. METHODOLOGY

This study adopts a qualitative legal research methodology combining doctrinal legal analysis with policy-oriented and interdisciplinary environmental approaches. The research primarily relied on desk-based methods, including a comprehensive review of legal documents, national legislation, and international treaties relevant to mine action and environmental rehabilitation in Ukraine. A systematic analysis of statutory instruments, governmental strategies, and official regulations—such as the Law of Ukraine "On Mine Action," the National Mine Action Strategy until 2033, and the Ministry of Environmental Protection's Strategic Action Plan—was undertaken to assess the contractual dimension of mine action.

The research also employed content analysis of official procurement databases, particularly the ProZorro electronic public procurement system, to identify and analyze existing contract types, structures, and implementation issues in humanitarian demining. This allowed for a deeper understanding of current practices, compliance challenges, and areas lacking regulation in contractual relations concerning mine action. To ensure a comparative perspective, international standards such as the International Mine Action Standards (IMAS), PERAC principles adopted by the United Nations, and environmental components of global treaties (e.g., the Anti-Personnel Mine Ban Convention, Convention on Cluster Munitions) were examined. Case studies and best practices from international mine action programs were incorporated to contextualize Ukraine's current practices within global trends and to derive recommendations for national improvements.

The interdisciplinary nature of the research integrates environmental law and natural resource management, highlighting the ecological consequences of war contamination and the legal instruments necessary for sustainable land rehabilitation. The research findings are grounded in the critical analysis of legal frameworks and policy documents, supported by up-to-date statistical and institutional data, ensuring the relevance and applicability of the proposed recommendations for Ukraine's post-conflict ecological recovery.

4. RESULTS

4.1. Mine Action and Environmental Protection: International and National Dimensions

Mine action is a crucial component of global security addressing threats caused by mines and explosive remnants of armed conflicts, which, in turn, seriously affect the lives of the civilian population, infrastructure development along the environmental condition of the affected areas. In addition to that, recognizing the long-term and serious risks as well as threats posed by mine hazards to the population, environment, and social stability together with the economic development of countries affected by armed

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conflicts, the UN General Assembly called on international, regional and national programs to include mine action, mine clearance in particular, in their rehabilitation along with recovery initiatives (Resolution A/RES/60/97¹⁷). The aforementioned approach is reflected in modern international practice, where demining is regarded not only as a means of eliminating military threats but also as a key component of restoring the affected territories and ecosystems, ensuring their safe use together with the sustainable development of the country.

In the context of post-conflict settlement, the concept of "jus post bellum" is gradually becoming more and more relevant.¹⁸ The latter concerns ensuring a just transition from a state of war to peace covering legal mechanisms aimed at restoring the affected regions, particularly, environmental rehabilitation. The doctrine of law emphasizes the multiplicity of approaches to comprehending the above concept, noting that the specified has a dual nature, to be precise, on the other hand, the latter contributes to correcting military consequences, and on the other hand, it promotes creating conditions for sustainable peace.¹⁹ At the same time, the concept of "jus post bellum" is also considered through the prism of ecological restoration, reflected in international law. To exemplify, UN Protocol V CCW/MSP/2003/2 "On Explosive Remnants of War to the Convention on Prohibitions or Restrictions on the Use of Certain Conventional Weapons Which May be Deemed to be Excessively Injurious or to Have Indiscriminate Effects" enshrined the responsibility of "High Contracting Parties and Parties to an armed conflict concerning all explosive remnants of war in the territory under its control" (Art. 3²⁰). The stated provision was further updated and expanded in UN Resolution

¹⁷ UN General Assembly Resolution A/RES60/97 "On the Report of the Special Political and Decolonization Committee (Fourth Committee) A/60/473" (18 January 2006) <<https://documents.un.org/doc/undoc/gen/n05/493/42/pdf/n0549342.pdf?OpenElement>> accessed February 24, 2025.

¹⁸ Carl Bruch, "Considerations in Framing the Environmental Dimensions of the Jus Post Bellum" in Carsten Stahn, Jens Iverson and Jeniffer Easterday (eds), *Environmental Protection and Transitions from Conflict to Peace: Clarifying Norms, Principles, and Practices* (Oxford Academic, 2017) 29-39 <<https://doi.org/10.1093/oso/9780198784630.003.0002>>; Karen Hulme, "Using a Framework of Human Rights and Transitional Justice for Post-Conflict Environmental Protection and Remediation" in Carsten Stahn, Jens Iverson and Jeniffer Easterday (eds), *Environmental Protection and Transitions from Conflict to Peace: Clarifying Norms, Principles, and Practices* (Oxford Academic, 2017) 119-142 <<https://doi.org/10.1093/oso/9780198784630.003.0006>>; Kirsten Stefanik, "The Environment and Armed Conflict: Employing General Principles to Protect the Environment" in Carsten Stahn, Jens Iverson and Jeniffer Easterday (eds), *Environmental Protection and Transitions from Conflict to Peace: Clarifying Norms, Principles, and Practices* (Oxford Academic, 2017) 93-118 <<https://doi.org/10.1093/oso/9780198784630.003.0005>>; Carsten Stahn and Jens Iverson (ed.) *Just Peace after Conflict: Jus Post Bellum and the Justice of Peace* (Oxford University Press, 2021) <<https://doi.org/10.1093/oso/9780198823285.001.0001>>.

¹⁹ Carsten Stahn, Jeniffer Easterday and Jens Iverson (ed.), *Jus Post Bellum: Mapping the Normative Foundations* (Oxford University Press, 2014) <<https://doi.org/10.1093/acprof:oso/9780199685899.001.0001>>

²⁰ UN Treaty Series 2399, Protocol V CCW/MSP/2003/2 "On Explosive Remnants of War to the Convention on Prohibitions or Restrictions on the Use of Certain Conventional Weapons Which May be Deemed to be Excessively Injurious or to Have Indiscriminate Effects" (November 12, 2006) <https://treaties.unoda.org/t/ccw_p5> accessed February 24, 2025.

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A/RES/77/104,²¹ enshrined the PERAC Code of Principles, namely, a document of twenty-seven principles at protecting the environment in the context of armed conflicts, involving provisions applicable in the post-conflict period (Principles 22-27). The aforementioned principles provide for including environmental rehabilitation in peace processes, exchanging information on the environmental consequences of hostilities, conducting environmental assessments and restoration measures, as well as "the earliest possible elimination or neutralization of toxic or other dangerous remnants of war, which <...> cause or may cause damage to the environment. Such measures should be carried out by the current norms of international law" (Principle 26).

Furthermore, the International Committee of the Red Cross (ICRC) 2020 Guidelines²² define minimum customary standards for using landmines and explosive remnants of war, designed to reduce their impact on the civilian population along with the environment. Thus, within the framework of Norm 24. A, it is stipulated that parties to the conflict should be exceptionally cautious when using landmines, hence, minimizing their indiscriminate action as well as preventing negative impact on the natural environment (to elucidate, the mentioned norm is applied to a small number of States that are not parties to the 1997 Convention "On the Prohibition of Anti-personnel Mines" or Protocol II (1996) as amended to the Convention "On Prohibitions or Restrictions on the Use of Certain Conventional Weapons"²³). Moreover, a party to the conflict using mines should, if possible, register their placement, and after the end of active hostilities, remove or otherwise make the latter safe for the civilian population or contribute to demining (to highlight, the given requirement applies to all armed conflicts, i.e. both international and non-international ones). States Parties to the first provided Convention have even more severe obligations, including a complete ban on using such mines, the need to destroy their stockpiles in addition to the obligation to clear up areas contaminated with anti-personnel mines under their jurisdiction or control. It should be emphasized that any use of landmines is governed by general customary norms of distinction, proportionality together with precautions.

The issue of belittling the impact of explosive remnants of war, specifically, unexploded cluster munitions, is also of great importance for legal regulation. According to Norm 25 of the ICRC Guidelines, States Parties of Protocol V to the Convention "On Certain Conventional Weapons" shall

²¹ UN General Assembly Resolution A/RES/77/104 "On the Report of the Sixth Committee (A/77/415, Para. 12)" (December 7, 2022) <<https://digitallibrary.un.org/record/3998322?v=pdf>> accessed February 24, 2025.

²² International Committee of the Red Cross (ICRC), "Guidelines on protection of natural environment in armed conflict" <<https://www.icrc.org/en/document/guidelines-protection-natural-environment-armed-conflict-rules-and-recommendations-relating>> accessed February 24, 2025.

²³ International Committee of the Red Cross (ICRC), Protocol "On Prohibitions or Restrictions on the Use of Mines, Booby-Traps and Other Devices as Amended on May 3, 1996 (Protocol II to the 1980 CCW Convention as Amended on May 3, 1996)" <<https://ihl-databases.icrc.org/en/ihl-treaties/ccw-amended-protocol-ii-1996>> accessed February 24, 2025.

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provide recordings on the use of explosive ordnance, transmit the latter after the end of hostilities, and ensure identifying places where explosive remnants of war are as those contaminated, neutralized or destroyed. At the same time, the States Parties to the Convention "On Cluster Munitions" have an absolute obligation not to apply such ammunition, though to destroy all their stockpiles as well as leading to their disposal by environmental standards.

It is pertinent to add that the Convention "On the Prohibition of the Use, Stockpiling, Production and Transfer of Anti-Personnel Mines and on Their Destruction"²⁴ and the Convention "On Cluster Munitions"²⁵ claim the requests for extending time limits for clearing areas contaminated with anti-personnel mines together with cluster munitions to contain specific information on the environmental consequences of such an extension. Both Conventions either require States Parties to provide reports on measures taken, involving references to applicable safety along with environmental standards to be complied with.

In the above-described context, peculiar attention should be paid to the "Do No Harm" approach, widely used in international humanitarian practice, including mine action. The specified approach implies the need to reduce any negative impact on the environment while demining and post-war rehabilitation of territories, which, in turn, is of particular relevance both in the context of land management and in terms of environmental safety. It should be elucidated that the International Mine Action Standards (IMAS)²⁶ take the given approach into account, stipulating that national authorities as well as mine action operators shall comply with environmental norms and standards. For instance, IMAS 10.70 explicitly states that mine clearance operations should be carried out not only with minimal environmental impact but also with safe handling of contaminated areas. In addition, special attention is paid to environmental protection, emphasizing the responsibility of national authorities along with mine action organizations to minimize the impact of mine clearance activities on the environment. The mentioned Document also stipulates the thing that after the completion of the stated operations, the area should remain suitable for further use due to its intended purpose. Thus, the above Standard directly enshrines the principle of "Do No Harm". In addition, the regulatory framework is complemented by the International Ammunition Technical Guidelines (IATG)²⁷ together with the standards of the International Organization for Standardization (ISO), aimed

²⁴ Convention "On the Prohibition of the Use, Stockpiling, Production and Transfer of Anti-Personnel Mines and on Their Destruction" (1997) <<https://legal.un.org/avl/ha/cpusptam/cpusptam.html>> accessed February 24, 2025.

²⁵ Convention "On Cluster Munitions" (2024) <<https://www.clusterconvention.org/>> accessed February 24, 2025.

²⁶ International Mine Action Standards (IMAS), "Discover the IMAS" <<https://www.mineactionstandards.org/standards/>> accessed February 24, 2025.

²⁷ UN Office for Disarmament Affairs, "International Ammunition Technical Guidelines" <<https://disarmament.unoda.org/convarms/Ammunition/IATG/>> accessed February 24, 2025.

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at improving mine action and ensuring its environmental sustainability.²⁸ Based on the enumerated Documents, the mine action sector has developed a wide range of operational mine actions targeted at belittling the harmful impact of demining on the environment.

It should be highlighted that one of the key methods of environmentally sound demining is the "land release" system provided for by IMAS 07.11. The latter is based on a gradual survey of those territories, in which complete clearance is applied only in cases of confirmed contamination. Although IMAS standards do not contain particular points on environmental impact, the aforementioned approach may significantly reduce the environmental hazards associated with demining. It is also worth noting complementary measures aimed at lowering the detrimental impact of the above operations on the environment, which include the following: 1) conducting a comprehensive environmental assessment when planning land clearing operations; 2) determining the future intended use of the territory prior to mechanical clearance; 3) coordinating mine clearance schedules to ensure rapid use of post-clearance areas to restore vegetation cover and prevent erosion; 4) planting local flora immediately after clearing the territories; 5) planning mine clearance activities so as to avoid demining during strong winds or downpours; 6) leaving vegetation strips 3-4 meters wide in order to prevent erosion processes; 7) applying mechanized equipment only at the stage of land preparation, without destroying the upper fertile soil layer, and subsequent cleaning – manually or with the help of alternative technologies; 8) restoring the treated soil layers in the correct order so as to promote the fertile topsoil remaining on the surface.

The IMAS also contains recommendations for the prevention of chemical contamination. Mine action organizations should thoroughly select refuelling sites to in order prevent fuel along with lubricants from entering water sources. In addition, there should be introduced comprehensible rules for replacing such liquids and measures for safely disposing of waste. It is worth mentioning that effective planning of mechanized mine clearance activities should include environmental management, involving both cooperation with local communities and the development of environmental impact control measures. The said approach will not only minimize the harmful environmental effect of demining operations but also contribute to the rational use of cleared areas in future. Furthermore, taking into consideration the fact that ammunition disposal operations can negatively affect the environment due to soil and water pollution, it is reckoned appropriate to use nature-based oriented approaches in mine clearance and neutralization of hazardous materials. Specifically, the use of bioremediation together with phytoremediation can ensure the effective cleaning of

²⁸ IMAS has been developed in accordance with the Recommendations and Processes contained in ISO Quality Management Systems (ISO 9001: 2008) in addition to the ISO Risk Management System (ISO Guide 51). – See: International Mine Action Standards (IMAS), "01.10 Guide for the Application and Development of International Mine Action Standards (IMAS)" (July 3, 2024) <<https://www.mineactionstandards.org/standards/01-10/>> accessed February 24, 2025.

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contaminated areas by applying natural recovery mechanisms.²⁹ Moreover, an alternative to the conventional method of open detonation of ammunition is believed to be the use of controlled closed detonation systems able to reduce emissions of toxic substances into the atmosphere. In general, the experience of international humanitarian demining programs demonstrates the feasibility and the necessity of applying an ecological approach to the disposal of explosive ordnance, which, in turn, includes monitoring the sites of explosions, using special absorbing materials to minimize the spread of pollutants and restore local ecosystems after the work completion. At the same time, scientists claim that "the issue of the environment is not yet a priority in international humanitarian treaties together with meetings related to mine action."³⁰ The stated manifests the existing imbalance between the securities, humanitarian as well as environmental aspects of mine clearance, requiring peculiar attention from the international community. To elucidate, the environmental consequences of using and destroying mine-explosive devices can be long-term, affecting biodiversity, soil quality, water resources and the health of the local population. Therefore, the integration of the environmental dimension into humanitarian demining is not only eligible but also necessary for achieving sustainable peace and security.

To emphasize, in Ukraine, mine action is not only a priority of state security but also a component of the national policy of restoration and environmental rehabilitation of territories. Thus, the Strategic Work Plan of the Ministry of Environmental Protection and Natural Resources of Ukraine for 2024-2028 contains provisions determining the relationship between humanitarian demining as one of the components of mine action along with environmental restoration. The specified Document defines the demining of territories, including protected areas and territories contaminated with explosive ordnance, among the measures and indicators for achieving Strategic Goal 1 "Post-war reconstruction of Ukraine according to the European Course," in addition to Strategic Goal 15 "Development of territories in the exclusion zone and unconditional (mandatory) resettlement." It should be highlighted that by the given Document, the final determination of the territory together with measures for the rehabilitation (renaturalization) of territories, the approval of the plan for restoring the latter, as well as the implementation of priority measures for the rehabilitation (renaturalization) of them is possible only after their final clearance.

The aforementioned provisions are also reflected in the state policy of Ukraine in the field of mine action, based on the priority of national interests

²⁹ Some plant species, such as sunflower, mustard or poplar, have the ability to absorb heavy metals contained in explosive residues, reducing their concentration in soil and water. Also promising is the use of microorganisms that contribute to the breakdown of toxic substances, such as TNT or hexogen residues.

³⁰ Ursign Hofmann and Pascal Rapillard, "Do No Harm in Mine Action: Why the Environment Matters" (2015) 19(1) The Journal of ERW and Mine Action 4-9
<https://www.gichd.org/fileadmin/user_upload/Do_No_Harm_in_Mine_Action__Why_the_Environment_Matters_-_Copy.pdf> accessed February 24, 2025.

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and targeted not only at ensuring the safety of the population and its life but also at eliminating threats associated with explosive ordnance as well as reducing their impact on the environment and economic activities (Art. 4 of Law of Ukraine "On Mine Action in Ukraine" of 2018³¹). The latter is carried out based on several fundamental principles, including "the priority of protecting human rights along with their legitimate interests, the environment and State resources, in addition to ensuring national security when implementing measures in the field of mine action,"³² which, in turn, means that any demining activities should be conducted in compliance with environmental standards; whereas the process of restoring contaminated areas involves the integration of ecosystem approaches, sequentially, contributing to the sustainable use of natural resources, hence, preventing the re-degradation of land and ecosystems. Thus, combining mine action with environmental restoration is not only a strategic goal but also a fundamental factor in the country's sustainable development.

Furthermore, the National Mine Action Strategy until 2033 and the Operational Plan for its implementation for 2024-2026,³³ approved by the Cabinet of Ministers of Ukraine, details the integration of demining into post-war recovery. The stated Document provides for the clearance of about 80% of the de-occupied territories over the following decade, which is an important step to ensure the security together with sustainable development of the country. Moreover, at the level of the Strategy, the major components of forming a further "system of task prioritization in the specified field" are fixed, among which completing the primary non-technical survey of territories that pose a hazard of contamination with explosive objects, identifying, designating and fencing presumably polluted/contaminated areas. It should be noted that planned humanitarian demining activities will be carried out by the prioritization system, which, in turn, should take into consideration the indicators of industrial as well as agricultural significance of the contaminated area in addition to other environmental indicators. However, what is implied by the concept of "environmental indicators" in the regarded Document is not detailed. Technical requirements for mine clearance procedures are established by DSTU 8820:2023 "Mine action. Management processes. Basic provisions."³⁴

It is worth noting that the above National Mine Action Strategy until 2033 provides for the use of environmentally friendly mine clearance methods only in certain protected areas, in particular, on the lands of the

³¹ Law of Ukraine "On Mine Action in Ukraine" [2019] Vidomosti of the Verkhovna Rada 6/39 <<https://zakon.rada.gov.ua/laws/show/2642-19#Text>> accessed February 24, 2025.

³² Ibid.

³³ Cabinet of Ministers of Ukraine (CMU), Order 616-r "On Approval of the National Mine Action Strategy for the Period up to 2033 and Approval of the Operational Action Plan for its Implementation in 2024-2026" <<https://ips.ligazakon.net/document/KR240616?an=1>> accessed February 24, 2025.

³⁴ "DSTU 8820:2023 Mine Action. Management Processes. Basic Provisions" approved by State Enterprise "Ukrainian Research and Training Centre for Standardization and Certification Problems" (SEURTCSCP), Order 27 "On the Adoption of the National Standard" <<https://zakon.rada.gov.ua/rada/show/v0027774-23#Text>> accessed February 24, 2025.

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nature reserve fund, the Emerald Network, and wetlands of international importance along other similar zones. However, such a selective approach bears a bunch of significant drawbacks because limiting the scope of environmentally-oriented methods application contradicts the IMAS; in addition, the former may negatively affect the state of ecosystems and fertility of lands not enlisted as protected ones. It should either be taken into account that eliminating the consequences of contamination with explosive objects requires conducting peculiar activities, mainly characterized by a high degree of invasiveness (interference) in the ecosystem. The latter may include damaging as well as destroying vegetation in the area of the given activities, ploughing of the surface layer of the soil or it's compacting due to high pressure, which, in turn, has a detrimental impact on the environment both separately and as a whole. The mentioned circumstances necessitate carrying out a comprehensive analysis of pollution by explosive objects together with its impact on the environment to determine the nature and degree of the specified, the results of which should be reckoned when developing the procedure for restoring land and returning the latter to productive use as well as recommendations for considering the impact of explosive objects on the environment when planning and conducting operations with the stated. Of importance is the thing that Ukraine has not yet approved of regulatory documents that would bring such environmental assessments as part of mine action into regulation. The current strategic Documents in addition to operational plans do not contain provisions for the implementation of relevant environmental regulations, even in the long run, which is considerably different from international experience, namely, the approaches applied in the EU countries providing for the measures aimed at belittling environmental hazards.

Therefore, the integration of the environmental component into the national mine action system is a prerequisite for holding the sustainable recovery of the affected areas. The recognition of environmental standards at the legislative level will not only reduce the harmful impact on the environment but also contribute to the rational and balanced use of natural resources, which, in turn, is a crucial aspect of Ukraine's post-war reconstruction. For the aforementioned to be effectively implemented, of peculiar significance is the provision of a contractual framework for mine action, disseminating international standards along with best practices in the field of humanitarian demining, promoting the coordination of interstate cooperation, hence, attracting supplementary resources for the environmentally safe restoration of contaminated areas.

4.2. The Contract as a Regulator of Legal Relations in the Field of Humanitarian Demining

To commence with, ensuring the effectiveness of humanitarian demining activities in Ukraine is not rendered possible without involving non-state operators. It should be elucidated that, taking the scale of contaminating territories with explosive objects (explosive ordnance) into

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account, imposing the entire burden of mine clearance exclusively on State bodies is believed to be inefficient. Even with international partners' backing, forecasting quantitatively positive outcomes with the above approach may be estimated in several decades, which, in turn, is not acceptable for a country whose main national wealth as well as economic bases are land and other natural resources. Undoubtedly, under such circumstances, the National Mine Action Strategy should prioritize the development in addition to State assistance to the system of non-state subjects in the considered activity.

The non-state sector of mine action operators can naturally be divided into two broad groups. First and foremost, these are the so-called non-entrepreneurial societies (to precise, non-profit organizations), the main goal and objectives of which are to carry out relevant activities in the field of humanitarian demining at the expense of charity funds (to exemplify, donors, grants, charitable contributions, etc.). The second group should include business entities, particularly, those that have opted for humanitarian demining as their specialization. In both cases, the implementation of such activities is mediated by executing agreements between mine action operators and customers, to explicate, owners or legal users of the land plots together with objects located on the latter, that is, by concluding contracts.

To emphasize, by their nature, the above-stated contracts are obviously of a private law nature and, therefore, should be regulated by the norms of civil law, as well as any other contracts within property relations, based on the legal equality of the parties, their free will and property independence. The former stipulates the emergence with further implementation of obligations for conducting the humanitarian demining of certain territories between the customer of such activities and its executor. At the first approximation, such contracts should be qualified as those for performing works and/or providing services. It should be noted that in the Ukrainian legal field, there is currently a tendency to refer to such contracts as those to provide services, which, in turn, was a consequence of the regulatory requirements of special legislation bringing public procurement into regulation, to exemplify, Law of Ukraine "On Public Procurement,"³⁵ Order of the Ministry of Economic Development, Trade and Agriculture of Ukraine "On Approval of the Procedure for Determining the Subject of Procurement"³⁶ in addition to the "Unified Procurement Dictionary DC 021:2015,"³⁷ mine clearance activities are referred to DC90520000-8 - services

³⁵ Law of Ukraine "On Public Procurement" [2015] Vidomosti of the Verkhovna Rada 9/89 <<https://zakon.rada.gov.ua/laws/show/922-19#Text>> accessed February 25, 2025.

³⁶ Ministry of Economic Development, Trade and Agriculture of Ukraine (MEDTAU), Order 708 "On Approval of the Procedure for Determining the Subject of Procurement" [2020] <<https://zakon.rada.gov.ua/laws/show/z0500-20#Text>> accessed February 25, 2025.

³⁷ Ministry of Economic Development and Trade of Ukraine (MEDTU), Order 1749 "On Approval of the National Classifier of Ukraine DC 021:2015 and Cancellation of the National Classifier of Ukraine DC 021:2007" [2015] <<https://zakon.rada.gov.ua/rada/show/v1749731-15#Text>> accessed February 25, 2025.

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in the field of radioactive, toxic, medical as well as hazardous waste management.

Instead, the issue of the legal nature of the disputed contract seems to be at least debatable. To highlight, while a service should be comprehended as the implementation of such an activity, the beneficial effect of which cannot be separated from the activity itself, still consumed in the process of its implementation (that is, provision of the service); work in the civil law sense is regarded as performing a set of actions, the main purpose of which is the final materialized result (including the destruction of something, for instance, gross national product (GDP)). As it will be seen later, mine clearance as a subject of the contract in addition to part of mine action is carried out by mine action operators by performing non-technical and technical inspection of territories (such as land plots, movable and immovable objects located on the former), identifying, neutralizing and/or destroying explosive ordnance, etc. The specified provides for the right to emphasize the complex nature of such activities as demining together with the impossibility of its unambiguous attribution either to the concept of service or to that of work, which, in turn, should not significantly affect these relations, since there is no particular legal regulation of such contracts in the law of Ukraine at present.

It is worth noting that, despite the importance as well as the relevance of the issue of demining the territories of Ukraine, the inherent Law of Ukraine "On Mine Action" neither mentions such a contract nor defines its essential conditions. Furthermore, a model agreement in the above area has not yet been developed and approved. The only regulatory legal act affecting the conclusion of such contracts is the already mentioned Law of Ukraine "On Public Procurement," whose general provisions stipulate the need to conclude contracts for mine clearance in cases where such activities are carried out to meet the needs of the state, territorial communities along with united territorial communities or in other cases determined by law in compliance with a peculiar procedure providing for public procurement (bidding).

It is possible to study the state and features of contractual regulation in the field of humanitarian demining, exceptionally, by analyzing open data posted in the electronic public procurement system "Prozoro". Contracts concluded by mine action operators with private customers are currently not subject to systematic analysis due to the limited access of third parties, researchers included, to their content, except a significant segment of legal relations related to compensation of expenses for humanitarian demining of agricultural land, regulated by the provisions of the Resolution of the Cabinet of Ministers of Ukraine "On Approval of the Procedure for the Use of Funds Provided in the State Budget for Compensation of Costs for Humanitarian Demining of Agricultural Land"³⁸ (hereunder – Procedure). Within the

³⁸ Cabinet of Ministers of Ukraine (CMU), Order 284 "On Approval of the Procedure for the Use of Funds Provided in the State Budget for Compensation of Costs for Humanitarian Demining of Agricultural Land" (hereunder – Procedure).

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framework of the exemplified relations, contracts are also concluded, taking into consideration the public procurement (bidding) procedure. The specifics of such legal relations and relevant agreements will be discussed below.

As of February 2025, the electronic public procurement system "Prozorro" contains information on 73 conducted or planned procurements (tenders) related to mine clearance, 11 of which have been cancelled for various reasons (for example, non-compliance with land management documentation or in cases where the territories specified for demining to be applied have already been cleared, or no mining activity has been observed there). All the above may be divided into two surprisingly uneven groups.

The first category covers procurement (bidding), where the customers are state-owned enterprises together with other legal entities, to precise, JSC "UkrGasvVydobuvannya," a subsidiary of NJSC "Naftogaz Ukraine," 100% of the shares of which are owned by the State. At the same time, the objects of mine clearance are lands not related to agricultural land. A total of 8 such purchases have been recorded.

The second category covers only procurements made under the procedure of compensating expenses for humanitarian demining of agricultural land. The total number of such purchases is sixty-five. In addition to the fact that their object is agricultural land, the key feature of the specified group is the customer. The Center for Humanitarian Demining (hereunder - Center) is a budgetary institution belonging to the sphere of management of the Economic and Financial Department of the Secretariat of the Cabinet of Ministers of Ukraine. By the provisions of the aforementioned Procedure, the Center is responsible for not only managing the lower-level budget funds intended for compensation (Para. 2 of Clause 2) but also customizing under the relevant contract, concluded as a result of procurement (bidding) (Clause 10). In this regard, the Center acts as a legal representative of an agricultural producer who has submitted a corresponding application for compensating the costs of humanitarian demining of agricultural lands belonging to him, indicated in Clause 10 of the Procedure, the application for compensation, as well as the provisions of the contract itself with the mine action operator. However, it should be noted that the owner of the land plot/ plots is not identified either as a customer or as a third party in such a contract. Only when signing the Act of Acceptance and Transfer of the Services Provided, the parties to the contract should agree on the stated with the agricultural producer owning the relevant lands.

Additionally, as noted above, there is an uncertain but predictably huge range of relations in which a much wider list of entities can as a customer under the considered contract, which, in turn, can be either the owner of the territory contaminated with explosive ordnance, or its other legal owner, or a person responsible for financing mine clearance. The said statement also correlates with the provisions of Art. 8 of Law of Ukraine "On

Agricultural Land" <<https://zakon.rada.gov.ua/laws/show/284-2024-%D0%BF#n8>> accessed February 25, 2025.

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Mine Action," indicating the possibility of attracting funds from enterprises, institutions, and organizations, as well as funds from other sources of financing not prohibited by law to finance mine action, including individuals. Despite not directly elucidating the subject matter of the regarded contract, such wording outlines (very broadly) its boundaries on the part of the customer of the service.

Instead, the contractor under the humanitarian demining contract is always a special entity, the so-called mine action operator. The provisions of Clause 10 of Part 1 of Art. 1 of Law of Ukraine "On Mine Action" define the envisaged concept as follows: "mine action operators are authorized subdivisions of central executive authorities, enterprises, institutions as well as organizations regardless of the form of ownership, involving international and foreign ones, engaged in conducting mine action activities." In turn, the 2021 "Procedure for Keeping Records of Mine Action Operators"³⁹ claims for such entities to have a certificate of conformity, acquired by the procedure established by law (Clause 1). Moreover, there is the 2024 "Procedure for the Implementation of a Pilot Project on the Certification of Mine Action Operators and Mine Action Processes,"⁴⁰ regulating the conditions along with the procedure for passing certification in addition to obtaining permits for certain or all stages of humanitarian demining. To emphasize, introducing uniform certification rules contributed to the rapid certification of operators. The specified document standardized the conformity assessment procedure for all bodies involved in the certification of operators. To further simplify the certification procedure, it has been decided to introduce electronic document submission through the Diia portal, which will enable avoiding bureaucratic procedures and, hence, boost receiving certificates. The new system is expected to be operational in 2025.

To highlight, only specific organizations that possess the authority to certify mine action operators and issue the necessary permits are accredited in Ukraine. These include the following: conformity assessment bodies of Military Unit A2641, the Mine Action Center, the Interregional Center for Humanitarian Demining and Rapid Response of the State Emergency Service of Ukraine, and the State Certification Center of the State Emergency Service of Ukraine.⁴¹ As of February 2025, the list of mine action operators that have passed certification and possess at least one certificate (for one type of

³⁹ Cabinet of Ministers of Ukraine (CMU), Order 88 "On Approval of the Procedure for Keeping Records of Mine Action Operators" <<https://zakon.rada.gov.ua/laws/show/1150-2021-%D0%BF#Text>> accessed February 25, 2025.

⁴⁰ Cabinet of Ministers of Ukraine (CMU), Order 123 "On Realization of the Procedure for the Implementation of a Pilot Project on the Certification of Mine Action Operators and Mine Action Processes" <<https://zakon.rada.gov.ua/laws/show/123-2024-%D0%BF#Text>> accessed February 25, 2025.

⁴¹ "System of Conformity Assessment, Certification and Inspection of Mine Activity in Ukraine" ([Mil.gov.ua](https://www.mil.gov.ua/diyalnist/protiminna-diyalnist/cistema-oczinki-vidpovidnosti-sertifikacii-ta-inspektuvannya-protiminnoi-diyalnosti-v-ukraini.html)) <<https://www.mil.gov.ua/diyalnist/protiminna-diyalnist/cistema-oczinki-vidpovidnosti-sertifikacii-ta-inspektuvannya-protiminnoi-diyalnosti-v-ukraini.html>> accessed February 25, 2025.

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activity) includes 83 entities.⁴² It should be noted that the possibility of concluding the mentioned contract by the contractor is associated with the presence of the latter certificate for at least one of the actions, thus, making up the humanitarian demining complex. The vast majority of the studied contracts contained remarks about the delegability of attracting a co-executor/ co-contractor with the only condition that such a co-contractor shall possess an appropriate certificate.

It is appropriate to add that the certification body, by the National Standard DSTU 8820:2023 "Mine Action. Management Processes. Basic Provisions," carries out certification of the following mine action processes: 1) non-technical inspection; 2) technical one; 3) manual mine clearance; 4) that one applying machines together with mechanisms; 5) the use of canine calculations of the mine-detection service; 6) clearing areas of hostilities and combat operations; 7) demining of water areas; 8) neutralization (destruction) of mines along with explosive remnants of war (hereunder - MERoW); 9) informing the population about the hazards associated with the latter.

The above list fundamentally coincides with the definition of "mine clearance" according to the provisions of Clause 3 of Part 1 of Art. 1 of the Law of Ukraine "On Mine Action," namely, mine clearance (humanitarian demining) is a set of measures carried out by mine action operators to eliminate hazards associated with explosive ordnance, including non-technical as well as technical inspection of territories, mapping, detecting, neutralizing and /or destroying MERoW, marking, preparing documentation after demining, informing communities on mine action in addition to transferring the cleared territory. Moreover, the significance and content of the specified activities are articulated in the aforementioned National Standard or other regulations issued by the central executive authority. To clarify, non-technical survey-collection, analysis as well as evaluation of information on the territory for its further classification by hazard status, without using technical means of searching for MERoW; technical survey-collection, analysis of data applying technical means on the presence, type, distribution and surroundings of sites contaminated with MERoW to better determine the presence and/or absence of contamination in addition to supporting the prioritization of land unlocking and decision-making processes; destruction of MERoW – particular actions to transfer the considered into an incapacitated and/or safe state by detonation, incineration, mechanical or other complete or partial destruction, etc. To elucidate, the implementation of the aforementioned measures is usually the subject of the mine clearance contract. Most often, in the contract itself, the parties refer to the provisions of state or national standards, while the annexes to the regarded document (to specify, specifications, technical

⁴² "List of Miners who Have Been Certified" (*Ua.imsma.org*)
<<https://ua.imsma.org/portal/apps/webappviewer/index.html?id=f56cac5195da46118c0534c1554663c6>> accessed February 25, 2025.

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specifications) indicate peculiar measures when defining the scope of work/services.

As previously indicated, there is currently an absence of specialized legal regulation about the proposed contract. Accordingly, the legislation does not contain specific provisions or restrictions on other essential terms of the mine clearance contract, providing the parties complete freedom to determine the content of the above document at their discretion, which, in turn, poses certain hazards as well as legal uncertainty while executing the latter, in particular, regarding the liability of the parties, mechanisms for monitoring and guaranteeing the quality of work performed. Special attention should also be paid to the issue of the price of such a contract. Order of the Ministry of Economy of Ukraine no. 9180 of April 12, 2024, approved the "Methodological Recommendations for Calculating the Cost of Humanitarian Demining."⁴³ However, these recommendations were developed exclusively for the budgetary institution "Center for Humanitarian Demining" to determine the expected expenses of procuring mine clearance services for agricultural land. Additionally, the former merely bears a consultative⁴⁴ nature. Meanwhile, the lack of a unified approach to contract pricing in the studied area may create differences in approaches to pricing, thus, complicating the financing of the mentioned activities, which, in turn, leads to an uneven distribution of resources, a decrease in the competitiveness of mine clearance operators along with delays while implementing work, especially in the context of attracting international assistance and donor funds. It should be added that within the framework of the sectoral working group, it is currently underway to find solutions for financing demining projects in 2025 (it is planned to expand programs to larger areas, including forests together with reservoirs) and introduce innovative financing mechanisms, such as sustainable development bonds.⁴⁵

Overall, the study demonstrated the thing that the vast majority of contracts on humanitarian demining are drawn up in compliance with proper legal techniques. At the same time, a significant part of their attention is paid not so much to the conditions that would affect the fulfilment of the obligation to provide the service, but to warnings concerning conflicts of interest (anti-corruption clauses), confidentiality, and also force majeure. Even though the aforementioned provisions are of importance, they are not specific to the considered type of contract. Instead, in the majority of cases, the latter do not contain key provisions for the customer's obligation to

⁴³ Ministry of Economy of Ukraine (MEU), Order 9180 "On Approval of the Methodological Recommendations for Calculating the Cost of Humanitarian Demining"
<<https://zakon.rada.gov.ua/rada/show/v9180930-24#n9>> accessed February 25, 2025.

⁴⁴ The phrase "consultative nature" means that the recommendations or documents are not legally binding. They are advisory only and do not impose any legal obligations. In Ukrainian, we translate this as "рекомендацийний" or "консультативний" to emphasize that such guidelines serve only as a reference or advice, not a rule. In other words, they can be followed, but there's no requirement to do so. They are provided to support decision-making, not to enforce action.

⁴⁵ "Humanitarian Demining Program to Be Expanded in 2025" (Agrotimes.ua)
<<https://agrotimes.ua/agromarket/u-2025-rozchi-rozshyryat-programu-z-gumanitarnogo-rozminuvannya>> accessed February 25, 2025.

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ensure the necessary “front of work” or the demining operator’s one to insure its liability. The last aspect is of particular significance. According to Art. 31 of Law of Ukraine “On Mine Action,” it is mandatory to insure the liability of the mine action operator for damage caused to the environment, health or property of third parties under insurance class 13, defined by Art. 4 of Law of Ukraine “On Insurance.”⁴⁶ In detail, the procedure as well as conditions of such insurance may be determined by the national mine action authority in coordination with the National Bank of Ukraine. The insurance contract must be concluded before the start of the activity and, hence, be valid both for the period of work and for a decade after its completion. The minimum sum insured under the liability insurance contract is two hundred and fifty times the minimum wage. The amount of compensation for the damage caused is determined by agreement of the parties or in court. In addition to that, existing contracts with mine clearance operators generally do not severely regulate the given obligation, therefore, posing potential hazards for both the parties to the contract and the affected persons in case of incidents.

Returning to the analysis of the contract as a regulator of legal relations in the field of humanitarian demining, it is worth emphasizing some more crucial aspects, a critical issue of which is reckoned to be the legal mechanism for quality control in the above-mentioned field. By Art. 1 of Law of Ukraine “On Mine Action,” quality control is an element of the mine clearance quality management process, which ensures absolute compliance with the requirements for eliminating hazards associated with explosive ordnance, as well as monitoring adherence to the requirements for the quality of demining. In the stated context, it is appropriate to highlight that Ukraine provides the procedure for transferring responsibility for the cleared area from mine action operators to local state administrations together with local self-government bodies by issuing a certificate, after which the State becomes fully responsible for the absence of hazards associated with explosive ordnance in the relevant territory. Quality control of demining territories to be transferred from mine action operators to local state administrations along with local self-government bodies is carried out by an accredited inspection body free of charge. Moreover, the current legislation provides for controlling (in the form of surveys and inspections) work sites, production facilities, documentation, processes, procedures, personnel qualifications, and equipment of certified mine action operators involved in the implementation of mine action activities, as part of monitoring the compliance of the mine action operator with the certification requirements (due to Art. 30 of Law of Ukraine “On Mine Action”). Moreover, quality control in addition to reporting constitutes a mandatory part of the Report on the exclusion (unblocking) of the territory by non-technical inspection (according to Annex 8 to SOP 08.10/SES).⁴⁷

⁴⁶ Law of Ukraine “On Insurance” [2021] Vidomosti of the Verkhovna Rada 12-13/28
<<https://zakon.rada.gov.ua/laws/show/1909-20#Text>> accessed February 24, 2025.

⁴⁷ Standard operating procedure 08.10/SES. The procedure for conducting the bodies and units of civil protection of non -technical inspection of territories, probably contaminated with explosive

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Ukraine provides for an extensive control system in the field of humanitarian demining. To highlight, among the powers of the Center for Humanitarian Demining, monitoring the status of marking hazardous areas (Art. 25 of Law of Ukraine "On Mine Action") is enshrined. The Verkhovna Rada of Ukraine exercises parliamentary control in the relevant area (Art. 19 of Law of Ukraine "On Mine Action"), whereas the quality control of mine clearance is entrusted by accredited inspection bodies. Nowadays, quality management objectives can be performed by the Mine Action Center, the Center for Humanitarian Demining, the Interregional Center for Humanitarian Demining and Rapid Response of the State Emergency Service, and the Demining Center of the Armed Forces of Ukraine (Military unit A2641). It should be noted that such a branching provokes a blurring of responsibility in the envisaged area.

It is worth noting that the issue of liability for violating contract obligations in the considered field of humanitarian demining remains insufficiently regulated. In case the issue of compensation for damage to third parties as a result of the mentioned activity is subject to the regulation of special provisions of Art. 1187 of the Civil Code of Ukraine,⁴⁸ liability for improper performance of obligations under such contracts will be regulated strictly by the general provisions of the Civil Code of Ukraine in addition to those the parties agree on. The lack of specialized regulations renders it impossible to effectively prosecute operators for failing to comply with their obligations or infringing technical as well as environmental standards.

5. CONCLUSION AND RECOMMENDATIONS

Taking the above into account, it can be reduplicated that strengthening Ukraine's capacity in the studied field of humanitarian demining involves not only forming and developing authorized units of central executive authorities as mine action operators along with their entering into the market of mine clearance services, as stipulated in the National Mine Action Strategy for the period until 2033, but also the State's assistance in growing the private sector in the specified industry. The aforementioned statement outlines the necessity for enhancing methodologies and mechanisms for the legal regulation of mine action, particularly through a contractual framework. Additionally, the results of the regarded study imply considerable gaps in the legal regulation of contractual relations in the field of mine action.

To elucidate, lacking clarified legal mechanisms for the contractual principles of mine action, as well as environmental standards for

objects. State Emergency Service. Approved by SES Chairman of June 3, 2020. Introduced: Separate Order B-63 of the SES Chairman of June 3, 2020
<<https://dsns.gov.ua/upload/2/6/8/9/6/1/xT3qhVpB4aVBVdPMFL73JOFwlaOgumsm0N0z96I.pdf>> accessed February 25, 2025.

⁴⁸ Law of Ukraine "Civil Code of Ukraine" <<https://zakon.rada.gov.ua/laws/show/435-15#Text>> accessed February 25, 2025.

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humanitarian demining, ensures potential opportunities for improper fulfilment of obligations. Meanwhile, there are currently gaps in the quality management system in the envisaged field in terms of quality control and assurance, slackening the widespread use of clearance processes along with their transfer for use. Moreover, the capacity of quality control entities in mine action does not correspond to the needs of the present, which, in turn, leads to the untimely nature of the aforementioned actions. Of particular significance is external monitoring of all types of mine action, which will sufficiently enhance the quality assurance of demining, i.e. the given may ensure quality requirements are met. The current situation brings to the fact that the return of land by mine action operators in Ukraine is possible either with considerable delays or without compliance with quality requirements, which, hence, is a violation of the procedure for conducting the specified action in Ukraine.

Furthermore, the analysis of existing contracts manifests that the latter do not always contain provisions on ensuring the liability of mine clearance operators in addition to compliance with environmental standards, although such aspects are of key importance for the safety of both the local population and the environment. All the mentioned indicates the need for a comprehensive approach to improving the contractual regulation in the field of humanitarian demining. In this regard, developing and implementing the Model Contract on the Provision of Humanitarian Demining Services is reckoned as a reasonable step, the application of which will contribute to legal certainty as well as stability in the studied area. The provisions of such a contract should enshrine not only essential conditions, to specify, the operator's obligation to insure its liability, but also environmental standards for the mine clearance process to comply with. The above will not only regulate legal relations in the field of demining but also ensure an appropriate level of safety for the environment together with the locals. It should be emphasized that the integration of environmental standards into contractual practice is required to minimize the detrimental consequences of mine clearance and provide for the sustainable restoration of the country's natural resource potential. The application of the said measures will contribute to enhancing the legal regulation of humanitarian demining, boosting the level of safety and efficiency of work, as well as strengthening international cooperation in the considered area.

It should be stated that the environmental aspect of explosive ordnance pollution with its complex impact on the environment in Ukraine has not yet been systematically investigated. Meanwhile, the presence of both direct and indirect negative effects of contaminating the environment with explosive objects, including chemicals of the lands as well as crops grown on the latter, the state of local flora and fauna, the inability to access areas of ecological importance and their proper maintenance, hence, causing damage together with destruction of the former as a result of mine action activities, is indisputable. The enumerated factors necessitate a comprehensive analysis of the impact of pollution by explosive ordnance on the environment to

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determine its nature and scale. The outcomes of the specified analysis should be taken into consideration when developing measures for land restoration with their further use, in addition to formulating recommendations for belittling environmental hazards when planning and implementing explosive ordnance removal works.

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**AUTHORS' DECLARATION AND ESSENTIAL ETHICAL
COMPLIANCES**

Authors' Contributions (in accordance with ICMJE criteria for authorship)

Contribution	Author 1	Author 2	Author 3	Author 4	Author 5
Conceived and designed the research or analysis	Yes	No	No	Yes	Yes
Collected the data	Yes	Yes	No	No	No
Contributed to data analysis and interpretation	Yes	Yes	Yes	Yes	Yes
Wrote the article/paper	Yes	Yes	Yes	Yes	Yes
Critical revision of the article/paper	Yes	No	Yes	Yes	No
Editing the article/paper	Yes	Yes	Yes	Yes	Yes
Supervision	Yes	No	No	No	No
Project administration	Yes	No	No	No	No
Funding acquisition	No	No	No	No	No
Overall contribution proportion (%)	20	25	25	20	10

Funding

No funding was available for the research conducted for and writing of this paper.

Research involving human bodies or organs or tissues (Helsinki Declaration)

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