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RESEARCH PAPER
CURRENT STATE AND PROSPECTS
OF THE COMMERCIAL MARKET FOR
HUMANITARIAN DEMINING IN UKRAINE

DataDriven would like to thank the State Emergency Service of Ukraine, the Ministry of Economy, the Estonian Rescue Board, Fondation Suisse de Déminage, the Geneva International Centre for Humanitarian Demining, Kyiv School of Economics, NIBULON, and Aspichi for their assistance in preparing the research paper.

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Current state and prospects of the commercial market for humanitarian demining in Ukraine

1. Introduction. Relevance of the issue

The Russian full-scale invasion provoked a significant use of various kinds of explosive devices and ammunition, which resulted in the mining of more than [174 thousand](#) square kilometers of territory, i.e. more than 28% of the territory of Ukraine. The urgency of humanitarian demining combines the need to ensure the existence of a safe living space with the critical need to return the affected areas to an economic asset. [The World Bank estimates that the total cost of demining procedures in Ukraine will amount to USD 37 billion.](#)

For comparison, the total amount of expenditures of the state budget of Ukraine for 2024 is about [77 billion dollars](#). Thus, the implementation of the full demining of the territories requires not only significant involvement of equipment and personnel, but also significant financial injections.

Another important issue for understanding the likely long-term benefits is the issue of de-mining the waters (outside the Grain Corridor) that are key to Ukraine's maritime exports, not only of grain but also of goods from other key industries. In fact, according to official data, the cost of one day of non-operational ports is about [170 million US dollars](#).

The Danube River also poses a threat to the water space, with explosive devices repeatedly being found in its course. As of July 2023, the Danube ports accounted for about [20% of all Ukrainian exports](#). The government classifies the issue of de-mining as extremely difficult due to the de facto complete absence of players in the industry.

The existence of a significant number of state and non-profit organizations with the status of certified mine action operators allows to meet a certain share of the primary needs of mine survey (in terms of private houses in the liberated territories, roads, and explosive devices discovered by citizens). However, the capacities of these organizations are too small to ensure the demining of such large areas of territory that need it.

It is the high level of involvement of various non-profit organizations that is one of the key features of the current situation. It is for such organizations that it is easier to pass the certification procedure and work without significant investments from donors. At the same time, it is indicative that the world's largest humanitarian demining charity, the [HALO Trust, has cleared about 3.15 square kilometers of territory since 2022, which is about 0.0018% of the mined area.](#)

Thus, the need for a market that would allow private commercial entities to participate in humanitarian demining is becoming increasingly important.

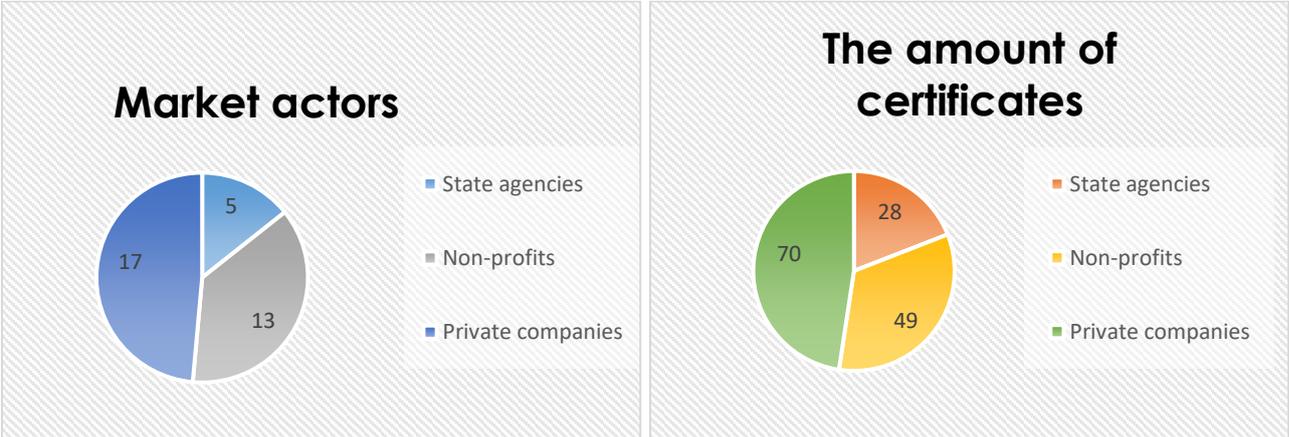
2. Operator certification procedure. Certified operators

To enter the Ukrainian humanitarian demining market, the key legal element is the certification of a mine action operator.

The relevant procedure in Ukraine is currently carried out by three accredited institutions: The [Interregional Center for Humanitarian Demining of the State Emergency Service of Ukraine](#) (Zaluzhne (Vatutine) village, Kharkiv region), the Certification Center at the A2641 military base (Kamianets-Podilskyi, Khmelnytskyi region) and the [Center for Mine Action of the State Special Transport Service](#) (Chernihiv).

Until recently, the differences between them were limited to certain legal peculiarities of the process, and as of February 2, 2024, [the government has implemented a standard procedure for all certification centers](#). This innovation provides for a standard accreditation period of three years.

At the same time, it is interesting to note that the provision on the possibility to apply for certification in only one of the centers is retained.



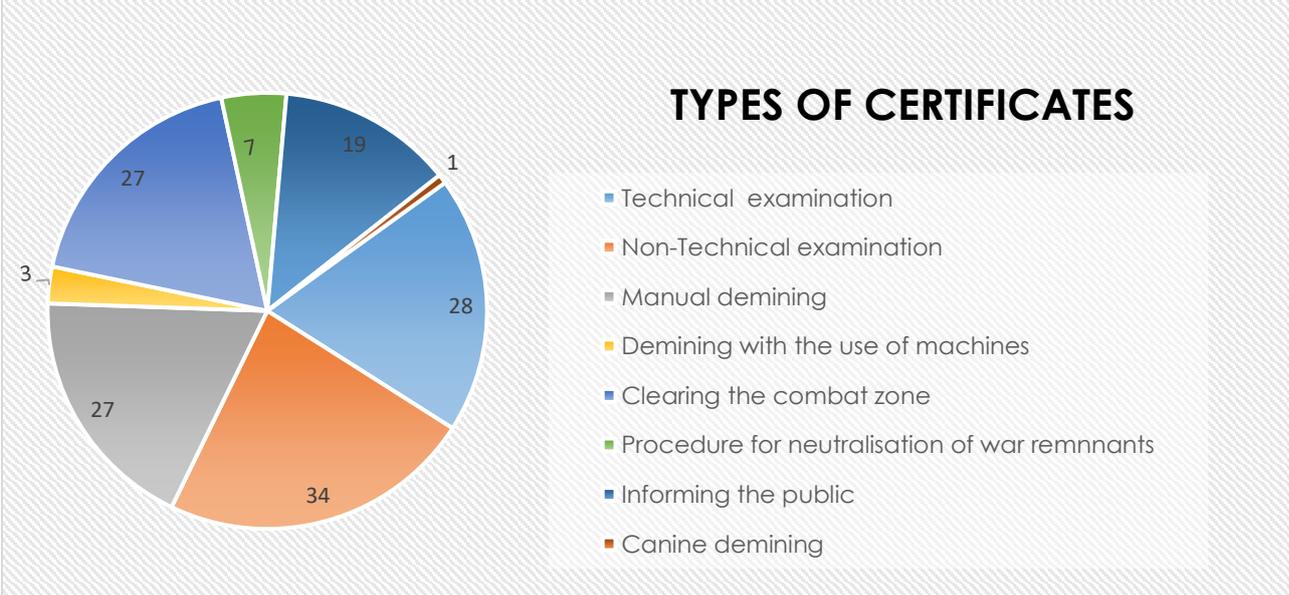
As of today, only two centers (the [IChD](#) and the [MAC](#)) have information on certified operators publicly available, but they are the most active in this area.

Of the existing ones, 26 belong to government agencies, 30 to profit-making organizations and 21 to non-profit organizations.

A total of 77 certificates are currently in force, two of which are outside the scope of the certification body's accreditation (application of canine calculations and demining with the use of machines).

Of the existing ones, there are 4 state organizations, 8 profit organizations, and 7 non-profit organizations.

This number of non-profit organizations is due to a kind of global trend: traditionally, the demining market is characterized by a strong presence of non-governmental actors, due to the exemption from certification fees and the ability to obtain funding from international organizations faster and easier.



The work performed by certified organizations is: 14 - technical surveys, 17 - non-technical surveys, 13 - manual demining, 13 - clearing the area of hostilities, 6 - the procedure for the disposal of remnants of war, 10 - informing the public, 2+1 outside the accreditation area - demining with the use of machines, 1 outside the accreditation area - the use of canine calculations.

The issue of the scope of accreditation of certification bodies, i.e. the ability of certain institutions to conduct accreditation in certain areas, is of particular interest here. It was to cover all types of certifications that the existence need for different certification centers was initially caused, a step that has been criticized by some market participants.

Today, the purpose of the targeted state policy is to expand the number of certification institutions to increase the level of efficiency through competition. In particular, it is proposed to implement the possibility of appropriate accreditation of private companies as certifiers provided for by law.

Such an opportunity may be attractive to large companies seeking market dominance and representation at all stages of the process. For example, today the global manufacturing company GSC has both a production license and an operator certificate, and in the future it may become a certifier.

Special attention should be paid to the misunderstanding by the majority of market players of the role of the National Mine Action Authority (an interagency advisory body) and the State Enterprise "Center for Humanitarian Demining" (the regulator to which certification bodies shall submit documents) and their roles in the process of humanitarian demining and operator certification.

3. Current state of the market component

Despite the existing certification procedure for mine action operators, the commercial market for humanitarian demining is only in its infancy - it is undergoing the stage of formation and implementation of an experimental unified certification protocol.

Market relations in this segment can be carried out in three key areas:

- Participation in state or regional tenders through the Prozorro open procurement platform (currently, such tenders do not involve private entities and are implemented in a mostly closed format)
- Bilateral contracts between private companies and radiation operators.

This form of interaction is not yet developed due to the lack of a clear offer for market participants, mechanisms of interaction between private actors and the state, and high demining costs.

- Organization of a company's own unit aimed at mine action as an alternative to outsourcing to other companies

Here we can recall the example of a large agricultural company NIBULON:

Having about 5,500 hectares of mined fields available for mine action (another 20,000 hectares are occupied territories or are part of the war zone), the company created its own department, which was certified as a demining operator.

Among a number of reasons that prompted NIBULON to invest in humanitarian demining, the main one was the following: The need to quickly bring its own territories back into use to minimize downtime losses, amid the state's focus on demining infrastructure with less attention to demining agricultural land.

In April 2023, the company received the status of a mine action operator and a certificate for non-technical survey of territories. This allowed the company to return 4.96 hectares of agricultural land to use. Subsequently, Nibulon also received a certificate for technical survey, manual demining and clearance of the area of hostilities.

Currently, the company is in the process of being certified to carry out demining using machines and mechanisms in the Chernihiv Emergency Medical Center, having attracted a €4.8 million grant from

the German government investment fund DEG under the developPPP program of the Federal Ministry for Economic Cooperation and Development of Germany for the purchase of special equipment and four GCS-200 demining machines (deliveries are expected to be completed by May 2024).

At this stage, NIBULON considers demining as an additional business activity, planning to provide demining services at cost price to agricultural companies and small/small farmers.

The main problem is the high cost of such work, which exceeds the value of the land plot itself (according [to the Kyiv School of Economics \(KSE\)](#), the price of a technical survey can reach more than 3,000 USD per hectare, and clearance - more than 30,000 USD) - as a result, small and medium-sized farms cannot afford demining without covering part of the costs through state funding or foreign grant programs.

Currently, government support for the market is focused on creating a tender mechanism that will cover part of the costs of demining for private firms. In particular, the government is preparing a pilot program to support private demining in the agricultural sector, due to the relative technical ease of demining in this sector and the direct economic benefits. As of today, it is planned to allocate about UAH 2 billion for the program, which, according to KSE's calculations, would be enough to completely clear 2.3 thousand hectares of territory, or to conduct a technical survey of more than 21.5 thousand hectares.

The state program will provide for a three-tiered participation system: first, a farmer applies for participation, after which the State Enterprise "Center for Humanitarian Demining" will establish the expected cost of work, taking into account the peculiarities of the area and other factors. Subsequently, bidding takes place on the platform between private operators. The state will compensate 80% of the cost of the work - the remaining percentage will be covered by the farmer's private funds. However, it is worth noting that this program will mainly be addressed to enterprises with an area of more than 100 hectares, and the issue of demining small farms remains unresolved.

4. Mine action equipment and systems

Rapid and effective demining requires the involvement of a significant number of different types of equipment. In this context, we can speak of a separate market for technical equipment for humanitarian demining. Today, the main categories of players include:

- Manufacturers of equipment (demining machines) of international level. In particular, they include General Cleaning Solutions (USA), Dok-Ing (Croatia), HYDREMA (Denmark). They are certified manufacturers, and the latter two have already signed agreements to localise their production in Ukraine.
- National manufacturers that have designs and prototypes of similar machines and equipment aimed specifically at the production of mine action goods
- Companies that have made the production of mine action equipment one of their business diversification areas. These include, in particular, Metinvest, which launched mass production of [mine trawls](#) in October this year, or the aforementioned Nibulon, which offers a [prototype boat for mine clearance](#). At the same time, there is still a need for certification in a single international certification centre in Croatia.
- International and national start-ups in the field of applying modern technologies for mine action. Here, we can mention the example of Aspichi, which already has the capacity to produce about 100 VR devices per month to improve visibility for operators in trawls and drones, but is unable to attract state funding.

The Ministry of Economy is developing relevant regulations to enable the certification of mine action equipment in Ukraine. It is expected that due to the significant responsibility involved in the activities in this area, certification will be required for products, including technological products, designed to detect and map explosive objects.

However, a significant proportion of market participants still do not understand the requirements and are concerned that greater bureaucratisation of the process may lead to corruption risks.

Nevertheless, in the context of the unresolved certification issue, the state is taking measures to encourage Ukrainian producers in the industry at different levels of the peculiar industrial pyramid. For example, the Ministry of Economy, together with the Kyiv School of Economics, is implementing an [acceleration programme](#) for mine action start-ups, which involves taking a project from the idea level to a prototype that is subject to pitching.

With the acceleration of marking and survey work, the need for equipment and information systems will only increase - at this stage of market development, there are opportunities for both Ukrainian and domestic companies, including those that consider demining as just one of the areas of business diversification.

5. Conclusions and recommendations

5.1. Organisation and management of demining processes

It is necessary to improve communication and informational activities for potential operators concerning the activities of certification centers, as currently, a significant number of actors do not understand the meaning and role of certifiers and coordinating state bodies. It is recommended to introduce a kind of "roadmap" that would help to navigate the rapidly changing environment in the industry.

5.2 Organisation of the certification process

There is a need for further introduction of unified standards for the certification procedure, as well as total digitalisation of document submission and creation of digital certificates.

5.3. Financing

It is recommended to introduce grant programmes to finance demining services for small and medium-sized businesses to enable them to use the services of commercial mine action operators. Such funding activities should be carried out with the use of grants from foreign countries, continuing and deepening the state pilot programme for the agricultural sector.

5.4. State support for domestic producers

The state authorities should engage in an active dialogue with current and future producers in the context of understanding and helping to solve their problems (informational, legal, financial, technical). It is recommended to consider building public-private partnerships to scale up the production programmes of companies in the demining sector.

5.5. Supporting manufacturers at the testing stage

Create a state programme to evaluate start-ups and projects aimed at producing equipment necessary for the industry. In particular, provide opportunities to test products in an official manner at special training grounds.

5.6. Involvement of foreign manufacturing companies in production in Ukraine

In the context of Russian full-scale invasion, demining is one of the few areas where it is possible to attract foreign investments, setting an example for both purely military and industrial companies. Consultations on market entry, the opportunity to join industrial parks, or assistance with the acquisition/construction of industrial facilities will help localise production and create new jobs.