Recovering Territory:
The Thick Geopolitics of Demining in Postwar Bosnia-Herzegovina and Wartime Ukraine

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ABSTRACT

Demining is not only a technical matter, but also a geopolitical one. Landmines pose a violent threat to human and non-human life alike, and have enduring material effects on territories and ecologies. They defy the spatio-temporal limits of battlespaces and entrench the territorial logic of wars by inscribing it on land. They render space dangerous, disrupt land-tenure patterns, and degrade the biosphere.

Put differently—landmines kill, disable, territorialize, and remake ecologies. The removal of this violent threat to human and non-human life and livelihood is an act of governance. What lives and livelihoods get protected and restored through demining is a geopolitical question, determined by the international, national, and local correlation of forces shaping the context in which it takes place. Demining is thus ultimately an act of governance—and it is imbued with spatial logic and territorial imperatives.

This dissertation advances an understanding of demining as a territorial practice. In doing so, it develops a concept of "territorial recovery"—a process by which a particular socio-spatial order is restored and safeguarded to ensure the viability of future life. By presenting a contrasting study between Bosnia-Herzegovina (BiH) and Ukraine, this dissertation shows that demining, which has historically emerged in post-conflict settings as part of the efforts to "reverse the effects of war", can also evolve in substantially different contexts in ways that further war.

Demining in BiH emerged in the aftermath of conflict, and in an uncontested U.S.-led "international liberal order". In Ukraine, this process is unfolding amid active conflict, in a context marked by multipolar rivalries and contestation of the "liberal world order". Through examination of the demining process in these contrasting circumstances, this dissertation argues that the geopolitical context—or multiscalar correlation of international, national, and local

forces—transforms the nature, meaning, and impact of the demining process as a territorial practice. A geopolitical context anchored around a peace settlement, and shaped by liberal humanitarian norms and practices, facilitates demining as a territorial recovery process tied to ecological restoration and economic growth. A geopolitical context anchored around war-fighting, and shaped by liberal war coalition and support practices, constructs demining as a territorial practice tied to terrain securitization and war-fighting imperatives.

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GENERAL AUDIENCE ABSTRACT

Demining is not only a technical matter, but also a geopolitical one. Landmines pose a violent threat to human life and livelihood, and the process of their removal is an act of governance. What lives and livelihoods get protected and restored through demining is a geopolitical question, determined by a correlation of international, national, and local forces shaping the context in which demining takes place. Demining is thus ultimately an act of governance, and it is imbued with spatial logic and territorial imperatives.

This dissertation advances an understanding of demining as a territorial practice. By presenting a contrasting study between Bosnia-Herzegovina (BiH) and Ukraine, this dissertation shows that demining, which has historically emerged in post-conflict settings as part of the efforts to advance peace, can also evolve in substantially different contexts in ways that further war.

Through examination of the demining process in these contrasting circumstances, this dissertation argues that the nature, meaning, and impact of the demining process are determined by the geopolitical context in which it takes place. A geopolitical context shaped by liberal humanitarian norms and practices facilitates demining as a territorial recovery process tied to ecological restoration and economic growth. A geopolitical context anchored around war-fighting constructs demining as a territorial practice tied to terrain securitization and war-fighting imperatives.

To my mentors, Dr Gerard Toal and Dr Adis Maksić,

who made all the difference.

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III. List of Abbreviations

AP / APL / APLs	Anti-personnel landmine(s)
APMBC	Anti-personnel Mine Ban Convention
AOAV	Action on Armed Violence
ARBiH	Armija Republike Bosne i Hercegovine (*en. Army of the Republic of Bosnia and Herzegovina*)
AT / ATL / ATLs	Anti-tank landmine(s)
AV / AVL / AVLs	Anti-vehicle landmine(s)
BHMAC	Bosnia and Herzegovina Mine Action Centre
BiH	Bosna i Hercegovina (*en. Bosnia and Herzegovina*)
CCM	Convention on Cluster Munitions
CHA	Confirmed Hazardous Area
CCW	Convention on Conventional Weapons
DCA	Danish Church Aid
DRC	Danish Refugee Council
DDG	Danish Demining Group
DMZ	Demilitarized Zone
DOS	United States Department of State
EC	European Community

EOD	Explosive Ordnance Disposal
EU	European Union
EUFOR	European Union Force in Bosnia and Herzegovina
FBiH	Federacija Bosne i Hercegovine (*en. Federation of Bosnia and Herzegovina*)
FSD	Fondation Suisse de Déminage (*en. Swiss Foundation for Demining*)
FUCZ	Federalna Uprava Civilne Zaštite (*en. Civil Protection Administration of the Federation of Bosnia and Herzegovina*)
GICHD	Geneva International Center for Humanitarian Demining
GIS	Geographic Information System
HALO	Hazardous Area Life Support Organization
HI	Handicap International
HRW	Human Rights Watch
HVO	Hrvatsko Vijeće Odbrane (e*n. Croatian Defense Council*)
IACG-MA	Inter-Agency Coordination Group on Mine Action
ICBL	International Campaign to Ban Landmines
ICRC	International Committee of the Red Cross

IDP	Internally Displaced Person
IEBL	Inter-Entity Boundary Line (*bos. Međuentitetska linija razgraničenja*)
IFOR	Implementation Force
IHL	International Humanitarian Law
IMAS	International Mine Action Standards
IMAS RB	International Mine Action Standards Review Board
IMAS SG	International Mine Action Standards Steering Group
IMSMA	Information Management System for Mine Action
MAC	Mine Action Center
MAG	Mines Advisory Group
MDD	Mine Detection Dog
MgM	Menschen gegen Minen (*en. Men Against Mines*)
MI	Medico International
MMC	Manual Mine Clearance
MSP	Minsko sumnjiva površina (*en. Mine suspected area*)
NGO	Non-governmental organization
NMAA	National Mine Action Authority
NMAS	National Mine Action Standards

NPA	Norwegian People's Aid
NTS	Non-technical Survey
OS	Oružane snage (*en. Armed Forces*)
PHR	Physicians for Human Rights
POW	Prisoner of War
PRC	People's Republic of China
RS	Republika Srpska (en. Republic of Srpska)
RUCZ	Republička Uprava Civilne Zaštite (*Civil Protection Administration of the Republic of Srpska*)
SHA	Suspected Hazardous Area
SESU	State Emergency Services of Ukraine
SFRY	Socialist Federal Republic of Yugoslavia
SOP	Standard Operating Procedure
TS	Technical Survey
UA	Ukraine
UDA	Ukrainian Deminers Association
UN	United Nations
UNGA	United Nations General Assembly
UNMAS	United Nations Mine Action Service

UNMIBH	United Nations Mission in Bosnia and Herzegovina
UNSC	United Nations Security Council
UNSG	United Nations Secretary-General
USSR	The Union of Soviet Socialist Republics
UXO	Unexploded Ordnance
VRS	Vojska Republike Srpske (*en. Army of the Republic of Srpska*)
VVAF	Vietnam Veterans of America Foundation
WB	Western Balkans
WFP	World Food Programme
WHO	World Health Organization
WW1	World War 1
WW2	World War 2

Chapter 1

Laying Landmines for Peace

1.1 Introduction

If they are such awful weapons, why do we use them? I asked the deminer.
"Because they work," he answered bluntly.[1]

In a joint statement on March 18th 2025, four countries bordering Russia—Poland, Estonia, Latvia and Lithuania—announced a collective decision to withdraw from the 1997 Mine Ban Treaty.[2] The current security situation, argued countries' defense ministers, necessitated that their defense forces be given "flexibility and freedom of choice" in the use of weapons to defend their "territories and freedom" amid potential Russian aggression.[3] The Finnish defense minister applauded the decision, and reiterated Finland's aspiration to follow in the four countries' footsteps.[4]

This collective and co-ordinated repudiation of a major international achievement of international law by four developed European states is a significant exit from what is widely known as the "liberal international order". Furthermore, the withdrawal is justified in the name of the very values of that order.

Since its inception in 1997, and ascension to binding international law in 1999, no country has withdrawn from the Mine Ban Treaty. In fact, the treaty had long been hailed as a landmark achievement in humanitarian disarmament for which its creators, the International Campaign to Ban Landmines (ICBL) and its leader Jody Williams, won a Nobel Peace Prize.

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[1] Stew, Magnuson. 2020. "A Hard Look at the Landmine Issue." *National Defense Magazine*, October 8, 2020. https://www.nationaldefensemagazine.org.
[2] Toby Luckhurst. 2025. "Poland and Baltics to Quit Landmine Treaty over Russia Fears." *BBC News*, March 18, 2025. https://www.bbc.com/news/articles/cjryp19884yo.
[3] Ministry of National Defense, Republic of Lithuania, "Lithuania Withdraws from the Anti-Personnel Mine Ban Convention." *Ministry of National Defence, Republic of Lithuania*, March 18, 2025. https://kam.lt/en/lithuania-withdraws-from-the-anti-personnel-mine-ban-convention/.
[4] Andrius Sytas, and Barbara Erling. 2025. "Poland and Baltic Nations Plan to Withdraw from Landmine Convention." *Reuters*, March 18, 2025. https://www.reuters.com/world/europe/poland-baltic-nations-pull-out-landmines-convention-2025-03-18/.

Yet striking as it was, the withdrawal decision was yet another step in a series of changing attitudes and measures regarding landmines. Several months earlier, on November 19, 2024, the U.S. President Joe Biden made public his decision to supply Ukrainian government forces with anti-personnel landmines (APLs).[5]

Ukraine requested landmines three years earlier, but the sitting administration's response was to instead tighten the policy on APLs, and limit their use to the Korean Peninsula.[6] The landmines, reasoned Lloyd Austin, then-U.S. Secretary of Defense, were needed to strengthen Ukraine's defense lines and thwart Russia's battlefield advances. In a change of tactics, Russia's forces were reported to be making "alarming" territorial gains by deploying individual ground troops instead of forces in armored carriers. Landmines, claimed U.S. officials, were the one thing that could help Ukraine's faltering war effort amid this change.

As human rights groups began to voice their shock and disapproval of the decision to supply and allow usage of this "widely hated" and "widely banned weapon", the CEO of the world's largest humanitarian demining organization, James Cowan of the HALO Trust, endorsed and defended Biden's decision. In an opinion piece for the British newspaper *The Standard*, Cowen wrote: "As the CEO of HALO, you might expect me to come out and categorically condemn the US decision to give anti-personnel mines to Ukraine. You may be surprised to read that I'm not going to do that".[7] In his statement of support, Cowan reasoned that landmines were now critical to Ukraine's survival:

> During the last few months, the tide of war has turned in Russia's favour. The possibility exists that unless Ukraine's defences can be strengthened, the very survival of the country may be at stake. In giving these landmines, the United States is therefore choosing the lesser of two evils [...] this is a moment of moral reckoning for the international

[5] Michael Birnbaumand and Alex Horton. 2024. "Biden Approves Antipersonnel Mines for Ukraine, Undoing His Own Policy." *The Washington Post*, November 20, 2024. https://www.washingtonpost.com.
[6] The White House, "FACT SHEET: Changes to U.S. Anti-Personnel Landmine Policy." *The White House*, June 21, 2022. https://bidenwhitehouse.archives.gov
[7] James Cowan. 2024. "Don't Condemn the US Decision to Give Anti-Personnel Mines to Ukraine." *The Standard*, November 21, 2024. https://www.standard.co.uk/comment/landmines-ukraine-russia-war-us-halo-trust-b1195403.html.

> community. We must support Ukraine in its struggle for survival while ensuring that the tools of war do not become permanent fixtures of its landscape.[8]

By the time this decision was made public, Ukraine, a signatory of the Mine Ban Treaty, had already acquired the dubious title of the most mined country in the world.

What was less recognized is that over forty agencies are working to clear the mines amid the active conflict.[9] President Biden's decision and the four countries' treaty withdrawal signaled a remarkable policy shift—landmines are no longer to be condemned. Their presence is now welcomed and necessary, rather than detested.[10]

But Cowan's endorsement illuminated something more shocking: that humanitarian demining, rather than being a peacebuilding tool of liberal humanitarianism, has become part of the war effort. Instead of advancing reconciliation, disarmament, and "restoration of peace and security at the community level", humanitarian demining is explicitly advancing war-fighting imperatives of only one party to the conflict.[11]

In response to Cowan's statement of support, the Action on Armed Violence (AOAV), a British charity investigating armed violence against civilians, wrote: "Cowan's stance also sets a dangerous precedent [...] Neutrality is central to humanitarian action, yet Cowan's argument strays dangerously from this principle".[12] Cowan's endorsement and defense of landmines had thus marked an unprecedented situation in the history of humanitarian demining.

These developments prompt a crucial inquiry: How did it come to this?—that is, how did we arrive at a juncture where landmines, once nearly-universally reviled weapons, are now not only being re-embraced by liberal democratic states, but endorsed by humanitarians tasked with clearing them?

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[8] James Cowan. 2024. "Don't Condemn the US Decision to Give Anti-Personnel Mines to Ukraine." *The Standard*, November 21, 2024. https://www.standard.co.uk/comment/landmines-ukraine-russia-war-us-halo-trust-b1195403.html.
[9] Ministry of Economy of Ukraine. n.d. "List of Operators." *Demine Ukraine.* https://demine.gov.ua.
[10] Chris Panella. 2025. "NATO Allies Say Anti-Personnel Mines Are Fair Game in Warning to Russia." *Business Insider*, March 18, 2025. https://www.businessinsider.com
[11] United Nations Mine Action Service. n.d. "5 Pillars of Mine Action." *UNMAS.* https://www.unmas.org
[12] Iain Overton. 2024. "An Indefensible Defence of Landmines: A Response to James Cowan of the HALO Trust and His Plea Not to 'Condemn the US Decision to Give Anti-Personnel Mines to Ukraine'" *AOAV*, November 22, 2024. https://aoav.org.uk.

1.2 Research Question and Argument

This dissertation elucidates this puzzle by tracing the genealogy of humanitarian demining and its transformation from a nominally apolitical act of humanitarian assistance to a geopolitical tool furthering war and protecting landmine usage.

Demining is a process of locating, removing, and neutralizing landmines and other explosive remnants of war. Whether in peace or war, demining reopens space. It permits the movement of people, habitation, agriculture, and other productive uses of space by people. As such, it reconfigures territories from lethal zones to functional zones.

Demining is, therefore, a form of territorial practice—it serves as a way to reassert or reorganize control over space.

Humanitarian demining emerged in the late Cold War and early 1990s, in a geopolitical context widely characterized as the "U.S. unipolar moment"—a context shaped by liberal humanitarian norms and practices.[13] Demining has been conventionally conceptualized as a humanitarian effort aimed at restoring peace and security, recovering spaces, and reversing the effects of war. Since its emergence in the 1990s, humanitarian demining has come to embody the Western liberal idea of peacebuilding, inherently antithetical to the territorial logic and violence of war.

Yet, demining can emerge amid active conflict; it can also absorb the geopolitical imperatives permeating the wartime context. In this sense, demining can be subject to procedures of prioritization which render its form strategically territorial, rather than just humanitarian and impartial. Therefore, demining can become a part of the wider war effort and resemble, more closely, acts of war-making than acts of relief.

This challenges conventional understanding of demining by revealing a counterintuitive geopolitical dimension within what is typically viewed as an apolitical and anti-geopolitical act. This further underscores the complex interplay between military strategy and humanitarian

[13] Alexander Cooley and Daniel Nexon. 2020. *Exit from Hegemony: The Unraveling of the American Global Order*. Oxford: Oxford University Press. P. 18 ;
Charles Krauthammer. 1990. "The Unipolar Moment." *Foreign Affairs* 70 (1): 23–33. https://doi.org/10.2307/20044692. P. 23

assistance in a way that demands critical examination of the demining processes, their goals, priorities, and outcomes.

To understand the current juncture and elucidate the transformation of humanitarian demining, this dissertation examines how geopolitical context shapes demining as a form of territorial practice. The primary research question of this dissertation is thus:

> *How does the geopolitical context shape demining as a form of territorial practice?*

More specifically, this dissertation asks how contrasting geopolitical contexts shape the process of demining:

> *How do contrasting geopolitical contexts—an uncontested Western geopolitical order shaped by liberal humanitarian norms and practices, and a contested geopolitical order shaped by liberal war coalition and war-fighting imperatives _ shape goals, priorities, forms, and outcomes of demining, and what does this reveal about demining as a practice of territory?*

This dissertation argues that the geopolitical context, contested or uncontested, postwar or wartime, is bound to produce functionally different forms of demining. More specifically, the dissertation argues that geopolitical context is critical to specifying and understanding the form, process, and impact of demining as a territorial practice. The dissertation advances this argument by developing a contrasting study between postwar demining in Bosnia-Herzegovina (BiH) and wartime demining in Ukraine.

A geopolitical context shaped by liberal humanitarian norms and practices facilitates demining as a territorial recovery process tied to peacemaking, ecological restoration, and economic growth. Postwar demining in BiH represents the apogee of this form of demining. A geopolitical context anchored around war-fighting, and shaped by liberal war coalition and support practices, constructs demining as a territorial practice tied to terrain securitization and war-fighting

imperatives. Wartime demining in Ukraine marks the apogee of the new regime and form of demining.



Figure 1.1. *A diagram of the dissertation's argument: the geopolitical context (Independent Variable X) determines the form of demining (Dependent Variable Y).*

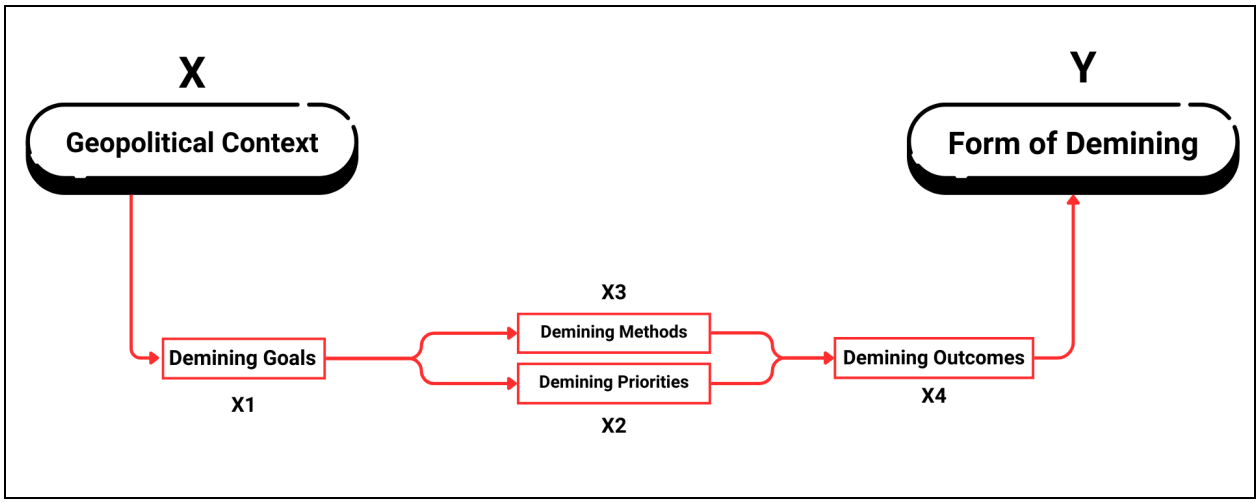


Figure 1.2. *A diagram of the dissertation's argument, including the pathway (Intervening Variables x1, x2, x3, and x4) through which geopolitical context (X) determines the form of demining (Y).*

Demining is inherently spatial, and geopolitical context shapes the form it takes. It does so by determining the goals of the demining process, which in turn determine demining priority sites and methods used. Demining goals, methods, and priority sites determine outcomes of demining, which determine the overall form of the demining process.

The dissertation's argument is derived from the empirical evidence and data collected through a multi-method, qualitative research on the demining processes in BiH and Ukraine.

Empirical evidence shows that demining in BiH emerged in the aftermath of the Cold War, shortly after the end of the Bosnian War was negotiated by the U.S. and European Community (EC). The geopolitical context in which demining in BiH emerged was characterized by an unchallenged "single pole of world power", consisting of the U.S. attended by its Western allies.[14] The demining process in BiH was provisioned by the U.S-brokered peace settlement, and initiated by two peacekeeping missions deployed in the country: Implementation Force (IFOR), a NATO-led peace enforcement force, and United Nations Mission in Bosnia and Herzegovina (UNMIBH), a UN-led peacekeeping force formed by the United Nations Security Council (UNSC). Since its inception, the Western-led demining program in BiH was envisioned as a tool of peacemaking and peacekeeping. It mandated former belligerents to demine together to support "civilian peace implementation, humanitarian assistance, refugee return, and economic revitalization and reconstruction".[15]

On the contrary, empirical evidence shows that demining in Ukraine emerged amid active conflict, and in a contested geopolitical context where U.S. unipolarity was under sustained attack. The Ukrainian government initiated emergency demining operations amid the Donbas conflict in 2014. However, the escalation of conflict into an interstate war in 2022 briefly interrupted the clearance process before transforming demining into a concerted, industrial-scale effort. Since 2022, demining in Ukraine has been financially and logistically supported by member states of NATO, the European Union (EU), and international humanitarian demining organizations funded by individual governments of Western states.[16] In fact, demining equipment

[14] Charles Krauthammer. 1990. "The Unipolar Moment." *Foreign Affairs* 70 (1): 23–33. https://doi.org/10.2307/20044692. Pp. 23-24.
[15] U.S. Department of State. "Implementing the Dayton Peace Agreement: Demining." *Bureau of Public Affairs*, June 21, 1996. https://1997-2001.state.gov/regions/eur/bosnia/bosnia_demining.html#:~:text=The%20demining%20program%20provides%20real,IFOR%2C%20civilian%20peace%20implementation%2C.
[16] Kateryna Denisova. 2025. "Ukraine to Receive $730 Million for Demining Equipment from Partners by 2034." *Yahoo News*, February 27, 2025. https://www.yahoo.com/news/ukraine-receive-730-million-demining-083403464.html.

has been an integral part of "military aid" packages sent to Ukraine by its Western allies.[17] Local and international demining operators work exclusively in Ukrainian government-controlled areas, whereas the Ukrainian military employs military-type demining of battlefields and frontline territories. Local and international demining operators alike understand their demining missions as part of Ukraine's war effort against Russia.[18] Despite the use of humanitarian action discourses by the Ukrainian government, international NGOs, and Ukraine's Western allies, empirical evidence shows that demining operations in Ukraine exist as a hybrid civil-military system actively working to further the aims of one party to the war in opposition to another. As such, demining operations in Ukraine are functionally different from humanitarian demining and represent an apogee of a new international demining regime.

1.3 Dissertation Outline

This dissertation consists of sixteen chapters. This chapter outlines the research puzzle, research question, and the key argument of the study.

Chapter 2 discusses the conceptual and analytical framework of the dissertation, including key concepts and secondary concepts. Chapter 3 contextualizes the topic of this dissertation. The chapter discusses the structure of global landmine governance and the genealogy of humanitarian demining. Chapter 4 lays out the research methodology of the dissertation, including process tracing, interview research, and fieldwork research.

Chapter 5 discusses war territories and landmines. First, the chapter outlines ways in which warfare remakes territories. Then the chapter discusses the origins of landmines and mine-laying as tools of war, and how acts of mine-laying amount to "spatialization of death".

Chapters 6 and 7 discuss the processes by which BiH and Ukraine were mined. Chapter 8 shifts to focus on the materiality of landmines, interrogating ways in which these weapons exceed and challenge the intentions of their users and those tasked with clearing them. Chapter 9 discusses

[17] Viktor Karvatskyy. 2024."Humanitarian Demining Poses a Business Opportunity for Ukraine's Allies and a New Direction for Development Aid." *Wilson Center*, June 12, 2024. https://www.wilsoncenter.org/blog-post/humanitarian-demining.

[18] Eleanor Porritt (Fondation Suisse de Déminage, Program Director for Ukraine), interviewed by the author, February 28, 2025 ;
Tymur Pistriuha (Ukrainian Deminers Associations/Demining Solutions, Director), interviewed by the author, March 5, 2025.

ways in which minefields can be conceptualized as assemblages with necropolitical and biopolitical power.

Chapter 10 discusses the technical aspects of humanitarian demining, or the specific procedures of humanitarian demining, which emerged from the international humanitarian demining regime. Chapter 11 discusses demining as a territorial practice centered on the idea of territorial recovery, illustrating ways in which clearance efforts reverse war effects or further war-fighting imperatives.

Chapters 12 and 13 discuss the demining process in BiH. Chapter 12 shows the timeline of the demining operations in BiH, and how this process was shaped by the uncontested geopolitical context in which it emerged, a context characterized by U.S. primacy, and proliferation of norms and rules associated with international liberalism. Chapter 13 discusses the demining process in BiH at local and national scales.

Chapters 14 and 15 shift the focus to the demining process in Ukraine. Chapter 14 presents the timeline of demining in Ukraine and how this process became a large-scale effort amid the escalation of conflict with Russia in 2022. Chapter 15 demonstrates ways in which the contested geopolitical order in which demining in Ukraine emerged shaped the process into an integral part of the war effort.

Finally, chapter 16 summarizes the key empirical findings of the dissertation and presents a list of theoretical contributions the dissertation puts forward. The chapter reasserts the dissertation's central argument that demining is a geopolitically-scripted process and project of territorial recovery whose goals and techniques shift with the ordering logics in which it is embedded. This contrast tracks a wider transformation from humanitarian, risk-averse, community-oriented clearance to post-humanitarian, machine-heavy, corridor-oriented land release. Theoretically, the dissertation advances a layered concept of geopolitical context, reframes territorial recovery as anticipatory and open-ended, exposes "technical regime capture" in post-humanitarian demining, foregrounds the material agency of mines within dynamic assemblages, and shows how biopolitical life-protection and necropolitical exposure operate simultaneously through clearance algorithms and uncleared belts. Demining is, therefore, recast as a spatial technology of power that materializes competing futures.

Chapter 2

Conceptual and Analytical Framework

2.1 Introduction

Several areas of scholarship provide concepts and analytical frameworks to examine the thick geopolitics of demining in postwar BiH and wartime Ukraine—or how contrasting geopolitical contexts shape demining as a form of territorial recovery.

As illustrated in Chapter 1, concepts of geopolitical context and territorial recovery are foundational to this study, while thick geopolitics is the primary analytical framework of inquiry. The concept of "demining" is critical to this dissertation, but the study treats it as a category of practice, rather than a category of analysis; hence, it is not discussed or treated as a social scientific concept in its own right.

Several other concepts inform this research, including its guiding question and argument. These include concepts of humanitarianism, material agency, necropolitics, biopolitics, and the concept of assemblage with its attendant notions of deterritorialization and reterritorialization.

While the dissertation treats these concepts as secondary or working concepts, they are important to this research because they sharpen the analytical purchase of this study. Concepts of material agency and assemblage elucidate the multi-scalar character of territorial recovery and geopolitical contexts, while attending to the multiple sources of agency within. Concepts of humanitarianism, necropolitics, and biopolitics help trace the mechanisms and logic through which the process of territorial recovery operates. This chapter outlines the conceptual and analytical framework of the dissertation and discusses the related existing scholarship.

2.2 Key Concepts

This section discusses the dissertation two key concepts, geopolitical context and territorial recovery, as well as thick geopolitics as a mode of inquiry. Geopolitical context establishes the broader spatial, political, social, and temporal setting in which efforts to recover territories take place. Thick geopolitics elucidates the situatedness of demining as territorial practice and ways in which it is articulated at different scales.

2.2.1 Geopolitical Context

In broad terms, the study defines "geopolitical context" as a set of entangled and multiscalar social, political, and spatial environments, practices, and structures that can be temporally delineated and that shape socio-political phenomena therein embedded. Geopolitical context can be understood as the "configuration or juxtaposition of stimuli [...] within a relevant space-time matrix".[19]

Here, the dissertation draws on Giddens' and Massey's conceptualizations of context to argue that space, structure, and time are conjoined in a geopolitical context that is constructed through interrelations of its elements. Importantly, drawing on Burke's argument about the logical status of context as a concept, this dissertation treats geopolitical context as layered, or composed of multiple "narrower" contexts.

Two elements are crucial to the nested concept of geopolitical context used in this study: international order and socio-spatial dynamics. The two are interrelated. The first element is informed by the idea of "international ordering", or what Nexon and Cooley describe as patterns of relations and practices in world politics. The second draws on the "geopolitical field", one of the key conceptual foundations of critical geopolitics, which Toal conceptualizes as "both the sociospatial context of statecraft and the social players, rules, and spatial dynamics constituting the arena".[20]

Context matters. Environments, circumstances, conditions, and connections between the parts and the whole matter when we study socio-spatial-political phenomena. Employing "context" as a category of analysis means recognizing the "situated character of social life" which involves "coexistence, connections and 'togetherness' as a series of associations and entanglements in time–space".[21] It also means that failure of critical attention to such entanglements in time-space can lead to analytically unsustainable inferences. This is what Hägerstrand calls the contextual

[19] John Agnew. 1996. "Mapping Politics: How Context Counts in Electoral Geography." *Political Geography* 15 (2): 129–46. https://doi.org/10.1016/0962-6298(95)00076-3. P. 131
[20] Gerard Toal. 2017. *Near Abroad : Putin, the West, and the Contest over Ukraine and the Caucasus.* New York: Oxford University Press. P. 9
[21] Derek Gregory, Ron Johnston, Geraldine Pratt, Michael Watts, and Sarah Whatmore. 2009. *The Dictionary of Human Geography*. John Wiley & Sons. P. 111

approach—where "objects and events are treated in their immediate spatial and temporal setting and attributed a property of 'togetherness' that must not be split asunder".[22]

Social scientists have long underscored the importance of "context" in studying and understanding socio-political phenomena. Indeed, Bryman et al. note how "sensitivity to context is especially attractive to researchers in a variety of fields".[23] Scholars have used this notion to refer to the importance of histories, cultural frameworks, discourse, geographic factors, gender, international norms and rules, and institutional structures and architectures in social scientific research.

For instance, for Hägerstrand, context and contextuality form a key part of the "ontological and epistemological basis of time-geography".[24] For Giddens, context denotes features which inherently construct social life—"all social activity is formed in three conjoined moments of difference: temporally, structurally and spatially; the conjunction of these express the situated character of social practices".[25] Drawing on Giddens' ideas on context, both Pred and Simonsen place similar emphasis on temporal, structural and spatial contingencies of social life.[26]

Thrift, on the other hand, emphasizes the dynamic features of context, describing it as "performative social situations, plural events which are more or less spatially extensive and more or less temporally specific".[27] Massey takes this dynamic vision further, and focuses on the relational qualities of context, conceptualizing it as an "ever-shifting constellations of trajectories, constructed out of their interrelations and throwntogetherness".[28] Notably, a number of scholars also connect context and contextuality to epistemology, describing knowledge and ideas as socially situated. The primary sources which inform such approaches and arguments

[22] Gregory et al. 2009. *Dictionary of Human Geography*, 111.
[23] Alan Bryman, Mike Stephens, and Charlotte à Campo. 1996. "The Importance of Context: Qualitative Research and the Study of Leadership." *The Leadership Quarterly* 7 (3): 353–70. https://doi.org/10.1016/s1048-9843(96)90025-9. P. 354
[24] Gregory et al. 2009. *Dictionary of Human Geography*, 111.
[25] Anthony Giddens. 1981. *A Contemporary Critique of Historical Materialism,* vol. 1: Power, property and the state, London: Macmillan. P. 30
[26] Allan Pred. 1984. "Place as Historically Contingent Process: Structuration and the Time-Geography of Becoming Places." *Annals of the Association of American Geographers* 74 (2): 279–97. https://doi.org/10.1111/j.1467-8306.1984.tb01453.x. ; Simonsen, Kirsten. 1991. "Towards an Understanding of the Contextuality of Mode of Life." *Environment and Planning D: Society and Space* 9 (4): 417–31. https://doi.org/10.1068/d090417.
[27] Nigel Thrift. 1996. *Spatial Formations.* London: Sage.
[28] Doreen Massey. 2005. *For Space*. London: Sage.

include works by Heidegger, Wittgenstein, Foucault, Mannheim, and Haraway.[29] In fact, Burke suggests that "in the last generation or so, we have been living through what might be called a "contextual turn," on the analogy of so many other turns".[30]

The notion of context, however, can be analytically problematic. Burke contends that the "contextual turn", although yielding substantial insights, has led to "inflation or dilution of the central concept, which is sometimes used—ironically enough, out of context—as an intellectual slogan or shibboleth".[31] For Burke, there is a trend in social scientific scholarship to use the concept without sharp definition or precision. Indeed, Gregory et al. note how context has "always contained some double sense of circumstances and connections".[32] Nearly anything can be "context", because "what counts as a context depends on what one wishes to explain".[33] Context is not "found", it is rather selected or constructed by a "process of abstracting from situations and isolating certain phenomena in order to understand them better".[34] Context is thus open-ended and its numbers infinite, which can complicate the analytical purchase of the term.

One way to mend this issue is to embrace the inherent open-endedness and plurality of the term, instead of forcing more narrow and precise conceptualizations, and treat context as plural—as "a" context, not "the" context. For social scientific research, this means emphasizing that for any given phenomenon, contexts are multiple and, crucially, layered or nested. In other words, social scientific research should employ "nested contexts", and try "to place the narrower context within a wider and wider context which might be represented as a series of concentric circles, recognising in principle that an infinite series of such circles may be distinguished".[35]

Thus, the geopolitical context in this study is "nested", and composed of two main elements—international order, and socio-spatial dynamics—or "international ordering", and "geopolitical field". There exists some conceptual overlap between the two given the shared

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[29] Gregory et al. 2009. *Dictionary of Human Geography*, 112.
[30] Peter Burke. 2022. "Context in Context." *Common Knowledge* 28 (1): 11–40. https://doi.org/10.1215/0961754x-9713549. P. 22
[31] Ibid, 11.
[32] Gregory et al. 2009. *Dictionary of Human Geography*, 111.
[33] Ibid, 29.
[34] Ibid. ; James Clyde Mitchell. 1987. "The Situational Perspective." *Cities, Society, and Social Perception: A Central African Perspective*, 1–33. P. 7 ; Robert D. Hume. 1999. *Reconstructing Contexts: The Aims and Principles of Archaeo-historicism.* Oxford: Oxford University Press. P. 137-41.
[35] Burke. 2022. "Context in Context", 32.

connotational elements—both "international ordering" and "geopolitical field" comprise social players and rules. However, the former places emphasis on how norms, rules, values, practices, relationships, flows and routine interactions constitute, shape, and change international order(ing). Whereas the latter focuses on spatial outcomes of power structures, and how they produce "spaces and places, territories and landscapes, environments and social agents".[36] For this reason, both international ordering and the geopolitical field are important elements of "geopolitical context"—international ordering practices drive state behavior and they have spatial outcomes; both are subject to contestation which adds a mutable character to geopolitical context.

To further specify and elucidate the concept of geopolitical context, this section discusses Nexon and Cooley's idea of "international ordering", and Toal's notion of "geopolitical field".

Turning first to Nexon and Cooley's "international ordering" or patterns of relations and practices in world politics.[37] These patterns enable, constrain, and channel behaviors of political actors, but they also emerge from actors' behaviors, transnational movements, and international institutions.[38]

Nexon and Cooley contend that "international order" is best understood as a verb, rather than a noun.[39] The latter implies that international order is a "stable thing", whereas there exist only relative stabilities in relations and practices among international actors. Instead of a fixed architecture imposed by a hegemon, international order is an ongoing process of international ordering. To think of international order as "international ordering" means acknowledging fluidity and multiplicity of the matter—there is "no single international order (...) international ordering varies across issue areas and specific relationships".[40]

Nexon and Cooley further contend that international order(ing) is best understood in terms of ecologies or ecosystems, composed of architectures and infrastructures. Here, architectures refer to the "guiding principles, norms, rules, and values".[41] Drawing on the work by Ikenberry, Nexon

[36] Toal. 2017. *Near Abroad,* 9.
[37] Cooley and Nexon 2020. *Exit from Hegemony,* 32.
[38] Ibid, 31.
[39] Ibid*,* 32.
[40] Ibid.
[41] Ibid, 35.

and Cooley describe the architecture as a set of rules and arrangements which include "basic procedures for resolving disputes", and "specific norms and rules concerning, for example, the legitimate use of force, the conduct of trade and finance, and how governments should treat their citizens".[42]

Infrastructures on the other hand, refer to "practices, relationships, flows, and routine interactions".[43] In other words, infrastructure represents the "ongoing, often everyday relations, flows, arrangements, and practices that serve as sinews of international orders".[44] These two aspects, architectures and infrastructures, shape each other in a dynamic ecosystem, while international organizations are simultaneously part of both. They embody rules and norms, serve as "sites of contestation and negotiation over those rules", and provide goods and services that "undergird the international order".[45]

To describe variations and changes in international ordering, Nexon and Cooley consider two aspects: the "relative density of ordering infrastructure", and the "degree that related architecture is conflictual or congruent".[46] This argument provides a counterpoint to the theory of hegemonic stability, as articulated by Kindleberger, Gilpin and Krasner who posit that variations in international order are a direct result of the presence or absence of a hegemon.[47] While states can ascend to positions of hegemons, and create and uphold international orders, Nexon and Cooley suggest that variations in international ordering result from sparse and conflictual ecologies. More precisely, while ecologies with dense and complementary infrastructures tend towards stability, sparse ecologies where ordering infrastructures are more conflictual "may be ripe for geopolitical competition".[48]

Thus, rather than a discrete hegemonic construct, international order emerges through these interlinked normative frameworks and material networks of interaction. This view aligns with Bull's notion of order as a "pattern of activity that sustains the elementary or primary goals of the

[42] Cooley and Nexon. 2020. *Exit from Hegemony,* 35.
[43] Ibid, 34.
[44] Ibid, 36.
[45] Ibid.
[46] Ibid, 38.
[47] Michael Webb and Stephen D. Krasner. 1989. "Hegemonic Stability Theory: An Empirical Assessment." *Review of International Studies* 15 (2): 183–98. https://doi.org/10.2307/20097178.
[48] Cooley and Nexon. 2020. *Exit from Hegemony,* 40.

society of states"—a pattern maintained by myriad institutions and practices rather than by any single actor or moment.[49]

The idea of an ongoing, heterogeneous international order is important to the concept of geopolitical context—it offers a framework to understand how global orders are built and how they change. International order is not a static equilibrium but a process, produced through networked interactions and sustained by regimes that regularize behavior. It is also inherently spatial—an aspect that leads us to the second key element of geopolitical context: the notion of the geopolitical field, which foregrounds the spatial and positional dimensions. While international ordering highlights the normative and institutional architecture of global politics, the concept of a geopolitical field emphasizes the spatial-relational setting in which statecraft unfolds.

Drawing on the work of Bourdieu, who conceptualized "field" as a "structured arena of conflict on which a series of differently positioned actors compete over a variety of prized resources", Toal extends the term to describe the multiscalar, spatial-relational character of statecraft.[50]

In so doing, Toal notes three associations that are helpful in understanding what the term *field* implies. These include a "spatial setting, a configuration of forces, and a positional game".[51] The first association relates to the material-spatial foundation, comprising both the "earthly foundations" or the dynamic Earth systems and planetary geophysical processes, as well as human terraforming practices—dwelling, cultivation, and labor.

The second association, a "configuration of forces", relates to the idea of a "field as configuration of actors and positions, a field of forces that struggle on multiple fronts for valued resources".[52] Because this association implies multiplicity of forces, fronts, and "resources" over which actors engage in a competitive struggle, it also invokes the idea of multiple "narrower" fields. Toal describes these as "four major fields"—strategic, economic, sociocultural, and diplomatic.[53]

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[49] Ian Clark. 2013. *The Vulnerable in International Society*. Oxford University Press.
[50] Gerard Toal. 2024. *Oceans Rise, Empires Fall: Why Geopolitics Hastens Climate Catastrophe."* New York: Oxford University Press. Pp. 87-91.
[51] Ibid, 88.
[52] Ibid.
[53] Toal. 2024. *Oceans Rise Empires Fall,* 88.

Here, social actors struggle over security and territorial protection within the strategic field.[54] In the economic field, characterized by "patterns of production, labor, investment, trade, and consumption", actors engage in a struggle over the "rules governing the economy" and "various practices of capital accumulation".[55] The sociocultural field features "heterogenous imagined communities and bonds of affection and antagonism" where social actors compete over "standing, status, and prestige" as they pursue particular forms of identity and belonging.[56] And the diplomatic field comprises a hierarchy of "perceived power and influence", and it is a such the "most powerful coordinating level" among the group of fields.[57]

The third and final association with the term *field* is a "positional game", or the idea of "playing a competitive game". Toal contends that this association is the most dominant understanding of the notion of geopolitics—the idea that constructs geopolitics as simply a competitive game between states.

Importantly, within this "competitive game", agency requires "consciousness of the rules of the game and the prizes at stake".[58] However, a key feature of this "game" are struggles over how the rules of the game are understood and applied where social actors may attempt to challenge and change the rules and redefine the game. This idea of struggle over the understanding and application of rules relates to Nexon and Cooley's notion of architecture[s] of international order[ing] where social actors contest and struggle over rules and norms that define "international order" through international organizations.

Therefore, Toal's notion of "geopolitical field" encompasses three key elements: an enviro-spatial foundation, a configuration of social actors with their respective spatio-political positions, and a nexus of social, political, and spatial struggles and competitions which are shaped, among other things, by certain rules and understandings of those rules.

As such, a geopolitical field is the "relative power geometry of international relations, the socially produced space, players and rules of the practice of statecraft across the uneven surface

[54] Toal. 2024. *Oceans Rise Empires Fall,* 88..
[55] Ibid, 89.
[56] Ibid.
[57] Ibid.
[58] Ibid.

of the planet".[59] It is a structured setting in which social actors operate, shaped by both material power, such as military forces, economic power, geographic position, and ideational factors, such as historical narratives, legal norms about borders, spheres of influence doctrines. In short, Toal's notion of geopolitical fields refers to the "material landscapes made by histories of human settlement upon the Earth".[60]

A critical feature of the notion of a geopolitical field is the entangled, multiscalar and historically-contingent character of its elements—and these features are also crucial to the concept of geopolitical context developed in this section.

Namely, it weaves together strategic, sociocultural, economic and diplomatic arenas to describe how the dynamics of statecraft and other socio-political processes within the geopolitical field are shaped by these different concerns. These actions and interactions—strategic, sociocultural, economic and diplomatic—take place at different scales: global, regional, national and local which are embedded within the planetary scale as the "most determinative materialist context".[61] And crucially, all these areas of struggle, action, and interaction at different scales are historically-contingent, or influenced by "prior configurations and spatial histories" which shape current understandings and socio-political dynamics.[62]

The entangled, multiscalar and historically-contingent features yield a category of analysis that is conceptually thick because it is attentive to the heterogeneity of contextual factors which shape social, spatial, and political phenomena.

Therefore, what I conceptualize as "geopolitical context" here crystallizes precisely at the juncture where the normative-institutional ecologies of Nexon and Cooley's international order[ing] meet the power-geometries of Toal's geopolitical field.

Ordering architectures, such as rules, norms, and values, gain practical traction as they are routed through infrastructures of everyday transactions. Yet those infrastructures are *always* spatial: they transverse spatial arenas, positions and material landscapes that constitute the field. Conversely, the field's [competitive] struggles over security, territory, economics, identities, and status are

[59] Toal. 2017. *Near Abroad.*
[60] Toal. 2024. *Oceans Rise Empires Fall,* 88.
[61] Ibid, 89.
[62] Ibid, 90.

only intelligible against the background of architectures that [de]legitimize particular moves and infrastructures that sustain them. The two dimensions are thus mutually constitutive. International order[ing] supplies the "rulebook" and circuits through which social actors act, interact and compete, while the geopolitical field provides the "stage" where actions and moves are rendered possible, desirable, costly, and spatially uneven.

Framing geopolitical context as a concept which comprises elements of both international ordering practices and geopolitical field provides analytical leverage to trace how global patterns of authority manifest and sediment into place-specific arrangements, and how localized struggles can ripple outwards and rescript the said global order. And this, in turn, is important to interrogating the demining process as a spatio-political phenomena which has institutional-normative lineage and scalar, situated dynamics.

The concept of geopolitical context, as a composite of international ordering practices and geopolitical fields, recasts [humanitarian] demining as not only a technical process or a "moral imperative", but a relational practice which translates global normative architectures into situated spatial interventions. The Mine Ban Treaty, clearance deadlines and demining standards are [ordering] infrastructures which define what humanitarian demining is and what it should accomplish. Pipelines of funding and demining operator networks are [ordering] infrastructures which govern the circulation of demining expertise and authority. Both the architectures and infrastructures are shaped by scalar, historically-contingent and entangled power-geometries of geopolitical fields which filter, redirect and amplify ordering imperatives, therefore positioning the demining processes within broader strategic, economic, sociocultural and diplomatic struggles.

2.2.2 Thick Geopolitics

The notion of "thick geopolitics" represents a mode of social scientific inquiry which rests on a deep and context-rich understanding of international affairs. The term echoes Geertz's distinction between "thin" and "thick" description in ethnographic research—Geertz borrowed the term "thick description" from Ryle who used it to "contrast two different ways of describing the same

piece of behavior".[63] Echoing Geertz's notion of thick description, Toal introduces a distinction between "thin" and "thick" geopolitics.[64]

Thin geopolitics "thinks in universal abstractions and operates only with the most superficial regional geographical understanding", while thick geopolitics rests on the "recognition of the importance of spatial relationships and in-depth knowledge of places and people".[65]

More specifically, Toal contends that "thin geopolitics" often begins with preconfigured grand narratives, and thus "flattens" complex realities into simplistic tropes.[66] This flattening of complex realities involves forcing "heterogeneous places, states, and crises on the world political map" into homogenous categories, and explaining socio-spatial phenomena through metaphors and analogies that "appear universal".[67]

By contrast, thick geopolitics is grounded in the "messy heterogeneity of the world" as it strives to describe the "geopolitical forces, networks, and interactions that configure places and states".[68] Thus, thick geopolitics is attuned to the myriad forces that configure socio-spatial particulars of international affairs—it recognizes that "local conditions matter, that agency is rarely singular, that power is exercised geographically, and that location, distance, and place influence its operation".[69]

In practice, this means that a thick geopolitical approach involves deeply empirical and place-specific knowledge. It also involves sensitivity to scales, and attention to how multiple different scales—local, national and global—entangle and shape each other. In Toal's terms, we need to think about "geopolitics in multi-scalar terms, in terms that acknowledge local complexities & resist global scale determinism".[70] A thick geopolitical approach further involves

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[63] ScienceDirect. n.d."Thick Description - an Overview | ScienceDirect Topics." https://www.sciencedirect.com/topics/social-sciences/thick-description.
[64] Toal. 2017. *Near Abroad.*
[65] Ibid, 277-279.
[66] Ibid, 277-278.
[67] Ibid.
[68] Ibid, 279.
[69] Toal. 2017. *Near Abroad*, 279.
[70] Gerard Toal. 2014. "Airspace in de Facto States: Remarks on Ukraine Crisis at the New School, 3 October 2014." *Critical Geopolitics*, November 18, 2014. https://criticalgeopolitics.com/2014/11/18/airspace-in-de-facto-states-remarks-on-ukraine-crisis-at-the-new-school-3-october-2014/.

attention to the relational and networked character of socio-spatial phenomena—or recognition that places are nodes in networks of power, culture, and economy, and geopolitical processes are forged through interactions between actors and across places. Finally, the approach involves attention to discourse, identity, and geopolitical imaginations—or ways in which social actors perceive and understand their spatial identities, positions, and "missions in the world".[71]

Thick geopolitics provides a critical framework for understanding the relationship between a geopolitical context and the demining process as a form of territorial recovery. On one hand, demining is a highly localized activity: it takes place in distinct geographical areas. Each demining site is layered with its own histories of violence, and patterns of land-use, and settlement.

Yet demining is not solely a local affair. Demining process arises within—and is shaped by—an extensive architecture of international treaties, standards, and humanitarian networks. The national government's priorities, [international] donor guidelines, and global and national discourses on humanitarian demining all converge in determining where, how, and when demining unfolds on the ground.

This makes demining both a tangible intervention in specific places and an inherently multiscalar process, entangled with institutional regimes and strategic frameworks that span the local, national, and global scales. Understanding demining processes therefore requires a thick geopolitical perspective, one that goes beyond monocausal accounts to capture the webs of influence, historical grievances, power hierarchies, and everyday struggles that together shape how demining is conceived, negotiated, and ultimately carried out.

2.2.3 Territorial Recovery

Drawing on two foundational concepts in political geography—territory and territoriality—the dissertation defines territorial recovery as:

> The multiscalar process by which space is reconstituted by social actors who perceive their sovereign control over such space as legitimate and, crucially, as having been

[71] Toal. 2017. *Near Abroad,* 10.

compromised, diminished or entirely lost, in order to [re]claim and exercise governance over such space, so that territorial integrity may be restored and preserved.

Territorial recovery is, therefore, driven by a sense of legitimacy and sovereignty, ideals of territorial integrity and preservation, and contingent upon a sense of *unrightful* loss of the two, either partial or total. Importantly, there is a distinct temporal dimension to the process of territorial recovery: social actors practicing territorial recovery do so under the premise that, in the past, they commanded total control of particular space, that control is nonexistent or jeopardized in the present, and that [territorial] recovery efforts will restore such control in the future. Thus, space-time convergence is a critical component of this concept, and two temporal orientations emerge as key: restorative and anticipatory. The former is backward-looking, it operates under the logic of "return" to a previous status, whereas the latter is future-oriented, and aims to secure a desired [past] state in near or distant future.

Put simply, territorial recovery is a process by which social groups [attempt to] reclaim space so that it can be governed and used by a particular group of [human] actors "again".

As mentioned previously, this concept is informed by notions of "territory" and "territoriality" which the following discussion elucidates further.

The notion of territory is often used interchangeably with land or space, but Gregory et al. note that the dominant usage has always been "either political, in the sense of necessarily involving the power to limit access to certain places or regions, or ethological, in the sense of the dominance exercised over a space by a given species or an individual organism".[72] More precisely, Gregory et al. suggest that territory is a "unit of contiguous space that is used, organized and managed by a social group, individual person or institution to restrict and control access to people and places".[73]

Similarly, Painter notes that the territory should be understood as "land or space that has had something done to it—it has been acted upon".[74] He contends that territory is "land that has been

[72] Gregory et al. 2009. *Dictionary of Human Geography*, 746.
[73] Ibid.
[74] Joe Painter. 2010. "Rethinking Territory." *Antipode* 42 (5): 1090–1118. https://doi.org/10.1111/j.1467-8330.2010.00795.x. P. 1097

identified and claimed by a person or people [...] a bounded space in which there is a compulsion to defend and secure—to claim a particular kind of sovereignty—against infringements by others who are perceived to not belong".[75]

Importantly, Painter notes how for at least five hundred years, the concept of territory has also been intimately associated with the spatiality of the state.[76] Gottman, for instance, defines territory as a "portion of geographical space which coincides with the spatial extent of a government's jurisdiction", and "the physical container and support of the body politic organized under a governmental structure".[77] Indeed, Gregory et al. note how the concept of territory was largely confined to the "spatial organization of states" until Sack, in 1986, extended the understanding of the term as a "strategy available to individuals and organizations in general". Agnew, too, argues against the theoretical perspective binding territory to statehood, and describes this assumption as an "intellectual trap" or "territorial trap".[78] For Agnew, the "obsession with territory as the exclusive spatial modus operandi of world politics ignores the significance of other spatial modalities such as networks/flows and place making for understanding its organization".[79]

Other scholars provide similar critical interventions. Elden, for instance, conceptualizes territory as political technology—a "distinctive mode of social/spatial organization" which comprises "techniques for measuring land and controlling terrain".[80] Paasi contends that territory is actively constituted through social processes, and that bounded spaces are merely one type of the spatiality of power.[81] Similarly, Storey articulates a concept of territory combining components of land, control, and identity. Drawing on conceptualization put forth by Paasi and Penrose, Storey suggests that:

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[75] Painter. 2010. "Rethinking Territory", 1097.
[76] Ibid.
[77] Jean Gottmann. 1975. "The Evolution of the Concept of Territory." *Social Science Information* 14 (3): 29–47. https://doi.org/10.1177/053901847501400302.
[78] John Agnew. 1994. "The Territorial Trap: The Geographical Assumptions of International Relations Theory." *Review of International Political Economy* 1 (1): 53–80. ; Agnew, John. 2015. "Revisiting the territorial trap." *Nordia Geographical Publications* 44: 4, 43–48. P. 43
[79] Agnew. 2015. "Revisiting the territorial trap", 43.
[80] Stuart Elden. 2010. "Land, Terrain, Territory." *Progress in Human Geography* 34 (6): 799–817. https://doi.org/10.1177/0309132510362603. P. 810-811
[81] Anssi Paasi. 2009. "Bounded Spaces in a 'Borderless World': Border Studies, Power and the Anatomy of Territory." *Journal of Power* 2 (2): 213–34. https://doi.org/10.1080/17540290903064275. P. 214

> There is a material component such as land, there is a functional element associated with control of, or attempts to control, space and there is also a symbolic component associated with people's social identity. The social, cultural and political are brought together so that people identify with territories in such a way that they can be seen "to satisfy both the material requirements of life and the emotional requirements of belonging".[82]

In short, echoing Delaney's ideas, Storey suggests that territories "are more than simply bounded spatial entities; they can be seen as a fusion of meaning, power and space".[83]

The notion of territory which constitutes the dissertation's concept of territorial recovery is thus informed by works of Agnew, Paasi, Elden, and Storey. While the production of distinctly "bounded space" constitutes an objective of the process of territorial recovery, the dissertation treats this notion as a category of practice, rather than an analytical component or element of the concept itself. This can be further extended to the concept of territoriality.

For Gregory et al. territoriality represents "either the organization and exercise of power, legitimate or otherwise, over blocks of space or the organization of people and things into discrete areas through the use of boundaries".[84] Sack views territoriality as involving two distinct features—classification and differentiation.[85] While for Raffestin, territoriality "might be viewed as a process produced by the various relationships between individuals, groups and their wider social environment".[86] Deleuze and Guattari, on the other hand suggest notions of deterritorialization and reterritorialization to describe the "becoming" of spatial orders; whereas deterritorialization is simply a "breakdown of territoriality in thought and practice", it occurs simultaneously with reterritorialization or a becoming of a new spatial ordering.[87]

Here, the dissertation follows Raffestin, Deleuze and Guattari's conceptualizations of territoriality in defining the process of territorial recovery: it understands territoriality as a

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[82] David Storey. 2025. *Territories: The Claiming of Space*. 3rd Edition. Routledge. P. 21
[83] Ibid, 22.
[84] Gregory et al. 2009. *Dictionary of Human Geography*, 744.
[85] Storey. 2025. *Territories*, 16.
[86] Ibid, 17.
[87] Gilles Deleuze and Félix Guattari. 1987. *A Thousand Plateaus: Capitalism and Schizophrenia*. Bloomsbury.

process of simultaneous undoing and making of territories which involves individuals, groups, and their wider social and material environments.

The concept of territorial recovery is, therefore, a process by which space is reconstituted by social actors under the premise of compromised but legitimate sovereignty, with the objective being to restore it.

This process has multiple dimensions: material, discursive, political, and symbolic. More often than not, these dimensions intertwine and overlap—[re]building infrastructure, clearing rubble, and removing landmines and unexploded ordnance (UXO) are some material expressions of territorial recovery, but they are also simultaneously political and symbolic. Similarly, re-establishing "law and order", and reinstating borders or property rights represent material-political manifestations of territorial recovery, as do rituals of raising flags, returning IDPs to their homes, or ceremonies marking the "liberation" of the land.

Demining is a key component of territorial recovery in post-conflict and conflict contexts alike. A mined territory is lost territory—even if it lies within the borders of a state. As long as landmines litter the ground, the state's control and the population's access are limited. Landmines effectively exile a portion of territory from productive use, turning it into a liminal zone—it is *there*, but not fully accessible. Territorial recovery through demining attempts to end this liminality. It seeks to transform the minefield back into usable, controllable, or simply "governable" land—a field that can be farmed, a road that can be traversed, a place that can be inhabited, and space that can be governed.

In postwar contexts especially, there is a distinct "temporal thinking" associated with the notion of recovery: it is the undoing of war's socio-spatial damage. To recover territory is to move from war towards peace. In this sense, demining often symbolizes the end of conflict and the start of renewal and recovery. Clearing mines is necessary before internally displaced persons (IDPs) can return to their homes, before agriculture can resume, and before infrastructure can be reconstructed and used. International agencies, NGOs, and local authorities collaborate in these efforts explicitly as part of "reclaiming the peace". In other words, mine clearance is equated with restoring the conditions for normal territorial sovereignty and societal well-being.

Yet, territorial recovery operates as a hybrid temporal regime. The national and international policy discourses often presuppose a binary temporality: war ends, demining commences, and thus peace time begins—thereby instituting a linear chronology in which mine clearance functions as a punctual threshold event. Such binary and linear framings treat recovery as a discrete temporal switch. But the technical and organizational rhythms of demining render the process slow and protracted.

Crucially, while territorial recovery suggests a "positive return to normalcy", it is still geopolitical: different social actors [may] have different visions regarding how space is [re]ordered after conflict. The politics around which areas get priority in demining can be contentious: strategic roads or economically valuable land might be cleared first, while remote villages wait longer. This raises questions of "value" and power—a biopolitical calculus of whose lives and livelihoods are being safeguarded as a priority, or whose territory is recovered, and for whom?

Therefore, the concept of territorial recovery provides a vital lens through which to interpret demining as both a technical operation and an active [re]territorialization process.

Concepts of territory and territoriality are key: by emphasizing how space is socially produced and demarcated through power relations, "demining-as-territorial-recovery" shows that removing mines is not only about clearing lethal hazards but also about reinstating control, reshaping boundaries, and affirming sovereignty.

Demining thus becomes an enactment of territoriality, wherein social actors assert or [re]claim authority over physical terrain and the populations that inhabit it, aligning material-spatial practices with broader symbolic and political goals. In this way, employing the concept of territorial recovery unearths the stakes, strategies, and consequences bound up in efforts to transform mine-littered landscapes into "usable" spaces under renewed governance.

2.3 Secondary Concepts

The following section presents a concise discussion of a set of secondary concepts in this dissertation. Such concepts sharpen the analytical purchase of this study, as noted earlier in the chapter. Concepts of material agency and assemblage elucidate the multi-scala character of

territorial recovery and geopolitical contexts, while attending to the multiple sources of agency within. Concepts of humanitarianism, necropolitics and biopolitics help trace the mechanisms and logic through which the process of territorial recovery operates.

2.3.1 Humanitarianism

In broad terms, humanitarianism refers to efforts to alleviate the suffering of "others" based on a shared human solidarity. Conventional definitions of humanitarianism emphasize principles of humanity, impartiality, neutrality, and independence in providing relief. Thus, it represents both an ideology and practice concerned with "the imposition of humanitarian principles beyond national borders".[88] In other words, humanitarianism refers to the idea that those with the means have a responsibility to save strangers from harm.

However, as Barnett argues, humanitarianism is not a static or apolitical impulse. Rather, it has *always* been entangled with power and politics. Barnett suggests that "humanitarianism more closely resembles empire than many of its defenders might like, but because it is an emancipatory project this accusation does not fit quite as well as many of its harshest critics suggest".[89] In this view, humanitarian action echoes "imperial domination" even as it pursues morally emancipatory goals of saving lives and supporting human life, livelihoods, and welfare.

For Barnett, a central theme that illuminates the moral-political ambiguity of humanitarianism is paternalism. From its earliest incarnations, humanitarianism often assumed a paternalistic posture: outsiders acting as "saviors" for populations cast as helpless victims. The motivations were deeply moral: 19th-century abolitionists and missionaries were driven by genuine ethical convictions, yet the methods could be top-down and culturally imperialistic.

This paternalism reflects a broader tension in humanitarian ethics: the desire to do good can turn into doing good for others in a way that reinforces unequal power relations between donor and recipient, savior and saved. Thus, humanitarianism's moral ideal (alleviating suffering) has historically been shadowed by an undertone of hierarchy, raising questions about who defines what is "good" for whom. Barnett's framing of humanitarianism as an evolving political project

[88] Michael Barnett. 2011. *Empire of Humanity: A History of Humanitarianism*. Ithaca, New York: Cornell University Press.
[89] Ibid, 8.

confronts these ambiguities, recasting humanitarianism not as pure altruism but as a political project shaped by its historical and geopolitical contexts and power dynamics.

To demonstrate ways in which "humanitarianism is a creature of the world it aspires to civilize", Barnett discusses three ages of humanitarianism: the imperial humanitarianism of the late 18th century and until WW2, the neo-humanitarianism of the Cold War era, and the liberal humanitarianism of the post-Cold War era.[90] Similarly, Mazower argues that humanitarianism must be understood at the intersection of moral norms, political power, and institutional contexts.[91] He contends that the idea of humanitarian intervention specifically "was not a late-twentieth-century invention", and has roots in imperial era precedents.[92]

Duffield pushes these ideas further and describes a "post-humanitarian" present. He contends that the 21st century humanitarianism has undergone a "post-humanitarian" mutation whereby the "classical ethics" of rescue are subsumed into a global architecture of risk management, resilience programming, and military-civilian fusion.[93] Here, rather than "working to eliminate precarity, post-humanitarianism is implicated in its reproduction and governance".[94] Post-humanitarianism therefore reframes aid as the pre-emptive governance of circulations rather than the alleviation of suffering. Read through Duffield's concept of post-humanitarianism, modern [humanitarian] demining epitomizes this shift: clearance becomes a modality of territorial risk management that simultaneously enables military movement, revitalizes export agriculture, and showcases donor technology, a strategic lever through which social actors [re]inscribe their security priorities onto contested spaces.

By grounding the analysis in the critical scholarship of Barnett, Mazower and Duffield, this dissertation situates demining as part of a broader humanitarian project that, though premised on moral imperatives of saving lives and alleviating suffering, is inevitably shaped by political power, historical legacies of empire, and paternalistic assumptions. In this sense, demining functions as a technology of [liberal] world-ordering, translating the geopolitical ambitions of

[90] Barnett. 2011. *Empire of Humanity*, 9.
[91] Mark Mazower. 2010. "SAVIORS & SOVEREIGNS: The Rise and Fall of Humanitarianism." *World Affairs* 172 (4): 39–48. https://doi.org/10.2307/20671474.
[92] Ibid, 46.
[93] Mark Duffield. 2018. *Post-Humanitarianism*. John Wiley & Sons.
[94] Mark Duffield. 2019. "Post-Humanitarianism: Governing Precarity through Adaptive Design." *Journal of Humanitarian Affairs* 1 (1): 15–27. https://doi.org/10.7227/jha.003. P. 15

hegemonic powers into the ostensibly apolitical language of risk reduction and humanitarian governance.

In so doing, it underscores how ostensibly neutral altruistic endeavors—commonly framed as "helping strangers"—both emerge from and reproduce asymmetrical relations of authority and control. This perspective reveals that humanitarianism, rather than a purely benevolent impulse, operates within the tensions of moral ambition and geopolitical interest, illuminating the complex, and sometimes contradictory, outcomes of interventions designed to "do good."

2.3.2 Material Agency

The concept of "material agency" qualifies non-human others, both inert and living, as agents. This idea is a key element of New Materialism—an interdisciplinary, theoretical approach in social sciences which argues against anthropocentric approaches in studying socio-political phenomena.

In re-conceptualizing matter as lively, proponents of New Materialism attempt, such as Bennett, Coole and Frost, Barry, Bille, and Klinke, encourage sustainable engagement with the capacity of "things—edibles, commodities, storms, metals—not only to impede or block the will and designs of humans but also to act as quasi agents or forces with trajectories, propensities, or tendencies of their own".[95]

For instance, Bennett suggests that the notion of "material agency" pushes for a more critical engagement with the concept of the agency itself, arguing that the capacity to produce ripples—to affect—is not only "localized in a human body or in a collective produced (only) by human efforts".[96] Echoing Olsen's ideas, Kirchhoff contends that material entities "have, ontologically and epistemologically, the quality of agency, only if all material entities have de facto existing qualities that affect and shape the way human beings perceive and understand the world".[97]

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[95] Jane Bennett. 2010. *Vibrant Matter: A Political Ecology of Things*. Duke University Press. Pp. 9-10.
[96] Ibid, 50.
[97] Michael Kirchhoff. 2009. "Material Agency." *Techné: Research in Philosophy and Technology* 13 (3): 206–20. https://doi.org/10.5840/techne200913323. P. 207

Material objects, thus, have a kind of "thing-power" which is independent of human use or design. By urging a reconceptualization of agency itself, New Materialism also attempts to reconfigure how we conceive of the "human—non-human relationship". The failure to recognize, and appreciate the thing-power leads to a (mis)understanding of non-human others as instrumentalized, mute, dead matter, which not only distorts the ontology of material and non-human entities, but also "feeds human hubris and our earth-destroying fantasies of conquest and consumption".[98]

This dissertation employs Bennett's conceptualization of material agency to discuss ways in which landmines transgress the intentions, and thus challenge the agency of their users and those who remove them. Chapter 8 elaborates on this theme further, elucidating ways in which landmines can be considered agents or "actants" in their own right, either by remaking ecologies, moving and migrating, or enlisting human and non-human responses.

2.3.3 Assemblage

The notion of "assemblage" in Deleuze and Guattari's terms, concerns the non-hierarchical field of agents with capacities to affect. It is a process by which a "collective entity (a thing or meaning) is created from the connection of a range of heterogeneous components"; an "aggregate with a certain consistency being created from an active, ad hoc, and ongoing entanglement of elements".[99] An assemblage is thus a heterogeneous entity; it is an ensemble of elements—material, discursive, organic—which form a [dys]functional whole.

The dissertation makes use of Deleuze and Guattari's concept of assemblage to argue that minefields exist as distinct socio-political, and spatial configurations. Employing Deleuze and Guattari's concept of the assemblage to interpret minefields as spatial configurations offers a robust theoretical framework that acknowledges the contingent, dynamic, and materially heterogeneous nature of these sites.

The assemblage perspective emphasizes the interplay of diverse elements—human labor, technological infrastructure, political pressures, and environmental factors—that coalesce to produce the "lived reality of the minefield". This approach resists reductive explanations by

[98] Bennett. 2010. *Vibrant Matter,* 50.
[99] Gregory et al. 2009. *Dictionary of Human Geography*, 38.

highlighting the relational processes through which actors, objects, and environments reciprocally constitute one another, thus revealing how power flows and circulates within and across boundaries.

It thereby clarifies the ways in which minefields cannot be understood purely as inert, fixed spaces, but rather as charged, evolving constellations of forces and practices. This theoretical orientation enables a more nuanced analysis that reflects the complexity of political, socio-technical, and environmental interactions, aligning with contemporary interdisciplinary research of New Materialism that transcends narrow disciplinary silos to account for the lively, emergent, and contested dimensions of space.

2.3.4 Biopolitics and Necropolitics

The dissertation makes use of concepts of biopolitics and necropolitics to analyze the "logic" through which demining and mine-laying operate in practice.

Broadly, the concept of biopolitics or biopower, developed by Foucault, refers to the "power over life". More specifically, it refers to ways in which power is exercised to make and sustain life.[100] Foucault developed the concept by tracing the various "institutional practices and knowledges" through which individual bodies, and collective body of the population are governed in terms of their biological and physical characteristics. Foucault developed his theoretical apparatus through the study of madness, medicine, prisons and human sexuality, but had less to say about geopolitics and imperialism in his formal published works.

Mbembe builds on Foucault's subsequently published university lectures to develop the narrower concept of necropolitics or necropower—a power, within the broader category of biopolitics, to make death and make die. For Mbembe, the "ultimate expression of sovereignty resides, to a large degree, in the power and the capacity to dictate who may live and who must die.[101] Necropolitics is thus the power involved in creating conditions for life and death, managing death-making apparatuses and death producing systems.

[100] Gregory et al. 2009. *Dictionary of Human Geography*, 48.
[101] Achilles Mbembe. 2003. "Necropolitics". *Public Culture*, 15(1), pp.11–40. P. 11

The dissertation uses the two concepts to argue that demining, along with humanitarian discourses, operates with a distinct biopolitical logic of saving lives and livelihoods, and ensuring the future viability of life through the clearance of landmines.

The dissertation also contends that both mine-laying and demining employ necropolitical logic—demining processes "make death" through prioritizing what territories receive demining attention and for whom. Similarly, processes of mine-laying are simultaneously biopolitical and necropolitical—militaries place landmines to "protect" a particular way of living, while, at the same time, ensuring that mined places become "death-worlds" for the "outsiders" who transgress mined territories.

Situating the practices of demining and mine-laying within frameworks of biopolitics and necropolitics illuminates the ways in which power manifests not only in the capacity to protect or foster life, but also in the ability to inflict death or abandon certain populations to lethality.

By engaging Foucault's biopower, the dissertation underscores how the clearance of mines functions as a strategic form of life-making, oriented toward preserving health, livelihood, and the promise of futurity in contested terrains.

At the same time, drawing on Mbembe's necropolitics foregrounds the active orchestration of death-making through selective or tactical decisions about what spaces and groups warrant demining efforts—or conversely, which are deemed expendable. This dual lens emphasizes that both mine-laying and demining are deeply entwined with sovereign assertions of whose life counts and whose does not, challenging conventional narratives of humanitarian mine action.

Consequently, it brings into sharper relief the contradictory and entwined processes by which militaries and demining agencies simultaneously assert a right to protect certain bodies and to expose others to lethal risk, situating these practices in broader structures of power and statecraft.

Chapter 3

Global Governance of Landmines

3.1 Introduction

This chapter provides a contextual overview of the global governance of landmines, or what this dissertation terms the "international humanitarian demining regime". In doing so, it sets the stage for understanding global landmine governance as contingent upon the geopolitical context and a product of geopolitical power shifts.

The first part of the chapter traces the genealogy of humanitarian demining. It locates the roots of humanitarian demining in the shifting geopolitical context of the late Cold War.

The Soviet-Afghan War spurred the rise of anti-landmine humanitarian discourses in the early and mid-1980s. Gorbachev's new foreign policy agenda shifted the confrontational geopolitical context to rapprochement, and enabled the emergence of demining as a distinct humanitarian practice. The USSR's dissolution and triumph of the U.S.-led "international liberal order" allowed the anti-landmine humanitarian discourse and practice to proliferate. Under the auspices of the international liberal order, the anti-landmine movement culminated in a Mine Ban Treaty, and the emergence of an international humanitarian demining regime.

The second part of the chapter describes the structural and functional characteristics of the contemporary humanitarian demining regime. It outlines the key international organizations involved in landmine regulation and humanitarian demining, their roles and interactions to illustrate how these actors cooperate under global governance frameworks.

The chapter concludes by situating landmine governance within a shifting "geopolitical context." It links great power competition to global and local orders, demonstrating how changes from unipolarity to a contested multipolar order shaped humanitarian norms like the landmine ban and humanitarian demining.

3.2 Genealogy of Humanitarian Demining

3.2.1 Second World War and Cold War Antecedents

The demining process was developed during and after WW2.[102] More precisely, demining, as a distinct technical process of ordnance removal, was developed amid the "mine development—mine countermeasures duel" between Axis powers and Allies.

Drawing on their experience with wartime mine countermeasures, Allied powers drove application and development of demining in Europe in the aftermath of the war. Working under supervision of Allied troops, German Prisoners of War (POWs) were put to demining work in France, Holland, Denmark, Norway, Britain, Soviet Union and Germany.[103] This marked the beginning of the first systematic landmine clearance operations and invention of three key demining technologies.: manual mine clearance (MMC), the use of mine detections dogs (MDDs), and mechanical demining.

Monin and Gallimore suggest that the history of landmines, and by extension the history of attempts to clear them, mirrors a "century of military and social history".[104] Similarly, Bolton argues that the evolution of attempts to mitigate and clear landmine contamination is closely linked to the "changing nature of the state, warfare and the international system since 1945".[105] More precisely, Bolton argues that the political history of demining should be examined through six cross-sections of its history—the "aftermath of WW2, the wars of Indochina, the 'New Wars' and the development of 'Post-Modern Warfare' into the Global War on Terror", as well as decolonization in Africa, and the Arab-Israeli conflicts.[106]

While the roots of demining, as a technical process, can be traced to WW2, the subsequent episodes of war in the 20th century had minimal effect on the process, methods and technologies of demining. In fact, demining operators introduced few major differences in demining

[102] Mike Croll. 2008. *Landmines in War and Peace : from Their Origin to Present Day*. Barnsley: Pen & Sword Military.
[103] Ibid, 91.
[104] Lydia Monin and Andrew Gallimore, 2002. *The Devil's Gardens: A History of Landmines*. London, Pimlico. P. xvi
[105] Matthew Bolton. 2010. *Foreign Aid and Landmine Clearance*. Bloomsbury Publishing. P. 12
[106] Ibid, 13.

techniques since the 1940s. McGrath notes that contemporary demining methods are largely identical to military demining of the 1940s:

> British army Pamphlet No.6, Detection and Clearance of Mines, issued in 1947 for the use of Royal Engineers and Infantry Assault Pioneers laid down detailed drills for the manual detection of landmines which differ very little from the procedures used by the best humanitarian teams working today.[107]

Politically, the demining process did not undergo substantial changes between the end of the WW2 and late Cold War. At the time of its initiation in 1940s and until late 1980s, demining was an internal matter of sovereign states, and specifically a purview of state security organs. Croll suggests that this, indeed, was a principle established after WW2—"countries cleared landmines on their own territory with little outside help".[108]

Landmines remained "perfectly legitimate weapons" during this period.[109] The widespread landmine contamination during armed conflicts of the Cold War was not publicized, although the U.S. and USSR and their respective allies and client states were familiar with the matter.

The U.S. had little incentive to publicize the landmine problem because that would have involved accepting responsibility for contamination in Vietnam, Laos, and Cambodia. The USSR too, showed little interest in assisting its client states with clean-up. Framing landmines as a humanitarian issue was disadvantageous for both states, as it would delegitimize their past, present and future uses of the weapon. The UN response was largely absent as well. The lack of actionable response on the part of the UN was "symptomatic of the paralysis that affected the UN during the Cold War", particularly over issues that impinged the interests of the superpowers.[110]

Two attempts were made to regulate landmines during the Cold War. Both resulted in weak and loophole-filled restrictions: they failed to establish a norm on prohibiting landmine use, and were ineffective in changing state behavior.

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[107] Rae McGrath. 2000. *Landmines and Unexploded Ordnance*. Pluto Press. P. 75
[108] Croll. 2008. *Landmines in War and Peace,* 141.
[109] Bolton. 2010. *Foreign Aid and Landmine Clearance*, 14.
[110] Ibid, 17.

The first one was a ban on the use of POWs as deminers under the 1949 Geneva Conventions—a response, by the International Committee of the Red Cross (ICRC), to the Allied use of German POWs to clear minefields laid by the Wehrmacht. Allied powers bypassed this restriction by "inducing" POWs to volunteer for demining with promises of "early release, better conditions and higher rates of pay".[111]

The second attempt was the 1980 "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", known simply as the Convention on Conventional Weapons (CCW). The CCW was a result of nearly a decade-long efforts by the so-called middle powers to produce an International Humanitarian Law (IHL)-rooted treaty regulating and prohibiting conventional weapons which cause excessive injury and suffering to civilians. In the 1970s, the middle powers—particularly Scandinavian and Non-Aligned states—began floating the idea of a legal framework to regulate landmines.[112]

Reacting to the "widespread domestic discontent with the Vietnam War", Sweden led the effort by producing an expert military-medical report in 1973 which suggested a ban on "certain kinds of weaponry".[113] As a result, Sweden and nearly two dozen states requested that ICRC convene a conference to discuss the matter.

A series of conferences were held between 1973 and the adoption of CCW in 1980. Each conference was met with "disdain and disinformation from the US and NATO countries" who denigrated the Swedish and Swiss-produced data.[114]

The 1974 conference only yielded a promise of a new conference. Similarly, conferences held in 1976 and 1977 began preparing additional protocols for the Geneva Conventions but yielded no concrete results but a promise of yet another conference. The final conference was convened by the UN in 1979, and resulted in the 1980 CCW which only prohibited "indiscriminate" use of

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[111] Croll. 2008. *Landmines in War and Peace,* 90.
[112] Bolton. 2010. *Foreign Aid and Landmine Clearance*, 19.
[113] Torgil Wulff. 1973. *Conventional Weapons, Their Deployment and Effects from a Humanitarian Aspect: Recommendations for the Modernization of International Law: A Swedish Working Group Study.* Stockholm: Swedish Ministry of Foreign Affairs. ; Bolton. 2010. *Foreign Aid and Landmine Clearance*, 20.
[114] Bolton. 2010. *Foreign Aid and Landmine Clearance*, 20.

landmines, and required minefield mapping and a warning to civilians before the use of scatterable mines.[115]

The CCW, however, left the definition of "indiscriminate use" vague.[116] And in practice, the CCW was wholly inadequate. The new humanitarian norm that middle powers sought to establish regarding landmines resulted in a vague, unenforceable provision, and failed to regulate state behavior. The signing of the CCW, in fact, was followed by a continued and enlarged landmine use and contamination—especially by the USSR, a CCW signatory, during the Soviet-Afghan War.

While framed as a "humanitarian issue", the attempt to regulate landmine use by middle powers was, in essence, an attempt to challenge the "arms control" model as the regime governing international security which enabled the U.S. and USSR to maintain and legitimize their military hegemony. In effect, the CCW ended reflecting the "arms control" agenda of the great powers, rather than humanitarian concerns. The middle powers' attempt to swap the *raison d'état* with *raison de l'humanité* did not come to fruition precisely because the geopolitical context of the Cold War did not permit such a shift to break through and potentially acquire legitimacy and collective consensus. The superpower-centric context stifled and constrained these attempts to the margins of public and political discourses, while superpowers "domesticated" prohibition demands into weak and inoperative CCW provisions.

3.2.2 Genesis of Humanitarian Demining

The superpower-centric geopolitical context of the Cold War stifled and prevented establishing landmines as a distinctly humanitarian issue requiring collective action . The U.S. and USSR both engaged in mine warfare, and labeling landmines as a humanitarian issue was deemed a disadvantageous move that could delegitimize the two countries military practices.

However, the shifting geopolitical context of late Cold War was the cause behind the genesis of humanitarian demining and global governance regime prohibiting use, production, stockpiling and transfer of landmines. More precisely, the emergence of humanitarian demining and global

[115] Bolton. 2010. *Foreign Aid and Landmine Clearance*, 21.
[116] "Protocol (II) on Prohibitions or Restrictions on the Use of Mines, Booby-Traps and Other Devices." October 10, 1980. Article 3. https://ihl-databases.icrc.org/en/ihl-treaties/ccw-protocol-ii-1980/article.

landmine governance was made possible by several interrelated factors: the Soviet-Afghan War, Gorbachev's reformist agenda, Soviet withdrawal from Afghanistan, and subsequent dissolution of the USSR which left the U.S. as the single, unchallenged pole of world power.

Landmines were firmly established in state arsenals by the 1980s. However, the weapon had virtually no public profile, and there was little interest in it beyond military circles, despite the CCW.[117] A dozen countries across three continents were heavily contaminated with landmines and other UXO, and mine warfare only expanded, not stalled, after the CCW. In fact, the most contaminated countries included those where the U.S. and USSR fought proxy wars. Both countries laid mines, but contamination went "virtually unrecorded".[118]

Bolton contends that the "landmine epidemic" of the 1980s "fortuitously coincided" with the end of the Cold War. This, in turn, opened the space for "norm entrepreneurs, such as international NGOs and middle powers, to link up and raise their concerns in the international arena", and hence establish the discipline of humanitarian demining and lobby for a mine ban.[119] However, Bolton's argument overlooks the fact that the global attention to landmines and first humanitarian demining programs emerged in late 1980s, as a direct response to the Soviet use of landmines in Afghanistan.

What enabled Afghanistan to be the first country to "alert the world" of the "seriousness of the landmine problem" was the fact that the mines were principally laid by the USSR.[120] The Soviet-Afghan war received extensive coverage among Western media, and themes often reiterated were confined to "Soviet expansionism and brutalities", coupled with the "Mujahideen's bravery, deep conviction of freedom, tribal values and the corresponding hatred for Soviet communism".[121] This sensationalism and romanticization of the "Mujahideen's valor" was facilitated by the "popular themes of anti-communism in the context of East-West rivalry".[122]

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[117] Croll. 2008. *Landmines in War and Peace,* 137.
[118] McGrath. 2000. *Landmines and Unexploded Ordnance*, 15.
[119] Bolton. 2010. *Foreign Aid and Landmine Clearance*, 22.
[120] McGrath. 2000. *Landmines and Unexploded Ordnance*, 15.
[121] Ali T. Sheikh. 1990. "Soviet and Western Media Coverage of the Afghan Conflict." *Strategic Studies* 13 (3): 35–63. https://doi.org/10.2307/45182014. P. 41
[122] Ibid.

The same media also reported that Soviets laid millions of mines, while journalists and medical-aid agencies on the ground in Afghanistan witnessed and documented the dire situation with civilian casualties of landmines, most of which required limb amputations.[123] Unlike Vietnam or Cambodia, although substantially affected by landmines, for the Western media, Afghanistan's landmine problem fit into the "classic good-versus-bad story"—"invasion by a hugely superior (and communist) external force being resisted by brave but poorly armed local fighters with colorful history".[124]

In short, the Western governments denounced the "Soviet invasion of Afghanistan", and the media set the stage for international outrage by underscoring the civilian harm inflicted by Soviets' brutal weaponry.[125] By the mid-1980s, the Western governments and public recognized landmines as a "pariah among the paraphernalia of modern weaponry".[126] Thus, the anti-Soviet propaganda directly fueled framing landmines as a distinctly humanitarian issue, and set the stage for the emergence of humanitarian demining.

What was less recognized amid the public outcry against landmines in the West, was the fact that the U.S. exported over five million landmines to thirty-eight countries since 1969, and that U.S. mines and cluster munitions littered two dozen countries.[127]

By the time the international attention and condemnation of landmines shaped up, the newly-elected, "reform-minded" Soviet leader, Mikhail Gorbachev, began floating the idea of Soviet withdrawal from Afghanistan.[128] In 1985, he sought the withdrawal and received the support of the Soviet leadership to do so.[129]

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[123] McGrath. 2000. *Landmines and Unexploded Ordnance*, 15.
[124] Ibid.
[125] Office of the Historian. n.d. "The Soviet Invasion of Afghanistan and the U.S. Response, 1978–1980." *DOS*. https://history.state.gov/milestones/1977-1980/soviet-invasion-afghanistan.
[126] McGrath, *Landmines and Unexploded Ordnance*, 14.
[127] United States ICBL. n.d."Problem." *Ban Mines USA*. https://www.banminesusa.org/about/problem.html
[128] Svetlana Savranskaya and Tom Blanton. 2019. "The Soviet Withdrawal from Afghanistan 1989." *National Security Archive,* February 27, 2019. https://nsarchive.gwu.edu/briefing-book/afghanistan-russia-programs/2019-02-27/soviet-withdrawal-afghanistan-1989.
[129] Artemy M. Kalinovsky. 2011. *A Long Goodbye the Soviet Withdrawal from Afghanistan*. Harvard University Press. P. 74

The conflict proved costly and unpopular. But Gorbachev's principal concern was not domestic political effects of the war, but its "potential to interfere with his broader reform projects, particularly his plan to seek a lessening of international tension".[130] The war left the USSR internationally isolated, and Gorbachev's decision-making on Afghanistan was a manifest of shifting foreign policy. Under the slogan of "New Political Thinking", Gorbachev sought rapprochement with the U.S. and its European allies, emphasizing that "confrontation was not inevitable and, crucially, that the Soviet Union could take major initiatives toward a lessening of tensions".[131]

The first humanitarian demining program happened against this backdrop—the Western anti-Soviet landmine discourse, and Gorbachev's "New Thinking" in foreign affairs.

Amid the sudden shift away from a confrontational geopolitical context that characterized the Cold War, the UN launched a demining training for Afghani refugees in Pakistan under 1987 Operation Salaam, expecting them to return and demine Afghanistan after the Soviet withdrawal.[132] In response to widely publicized, Soviet-made landmine contamination in Afghanistan, a group of former British military members formed a demining organization, and deployed to Afghanistan in 1988 to demine as the Soviets withdrew. Their organization, named "Hazardous Area Life-support Organization" or HALO, became the first humanitarian demining organization. At the same time, the ICRC launched a prosthetic workshop to assist Afghanis disabled by mine accidents.[133] Shortly after HALO deployed to Afghanistan, the UN expanded its Operation Salaam and launched a demining program in 1989—marking one of the first "massive UN post-conflict operations".[134]

The same year, the creation of the Mines Advisory Group (MAG) by a former British military engineer, marked the formation of the second international humanitarian demining organization; MAG deployed to Afghanistan and Cambodia immediately upon its creation.[135]

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[130] Kalinovsky. 2011. *A Long Goodbye the Soviet Withdrawal from Afghanistan*, 74.
[131] Ibid, 75.
[132] Croll. 2008. *Landmines in War and Peace,* 143.
[133] Ibid, 142.
[134] Bolton. 2010. *Foreign Aid and Landmine Clearance*, 23.
[135] Mines Advisory Group. n.d. "History." *MAG International.* https://www.maginternational.org.

The UN, HALO, and MAG demining missions thus marked the beginning of humanitarian demining operations. HALO, in particular, became "intrinsic to an emerging order of international non-governmental organisations (NGOs) involved in clearing up the debris of war, the resettlement of refugees and the alignment of security and development".[136]

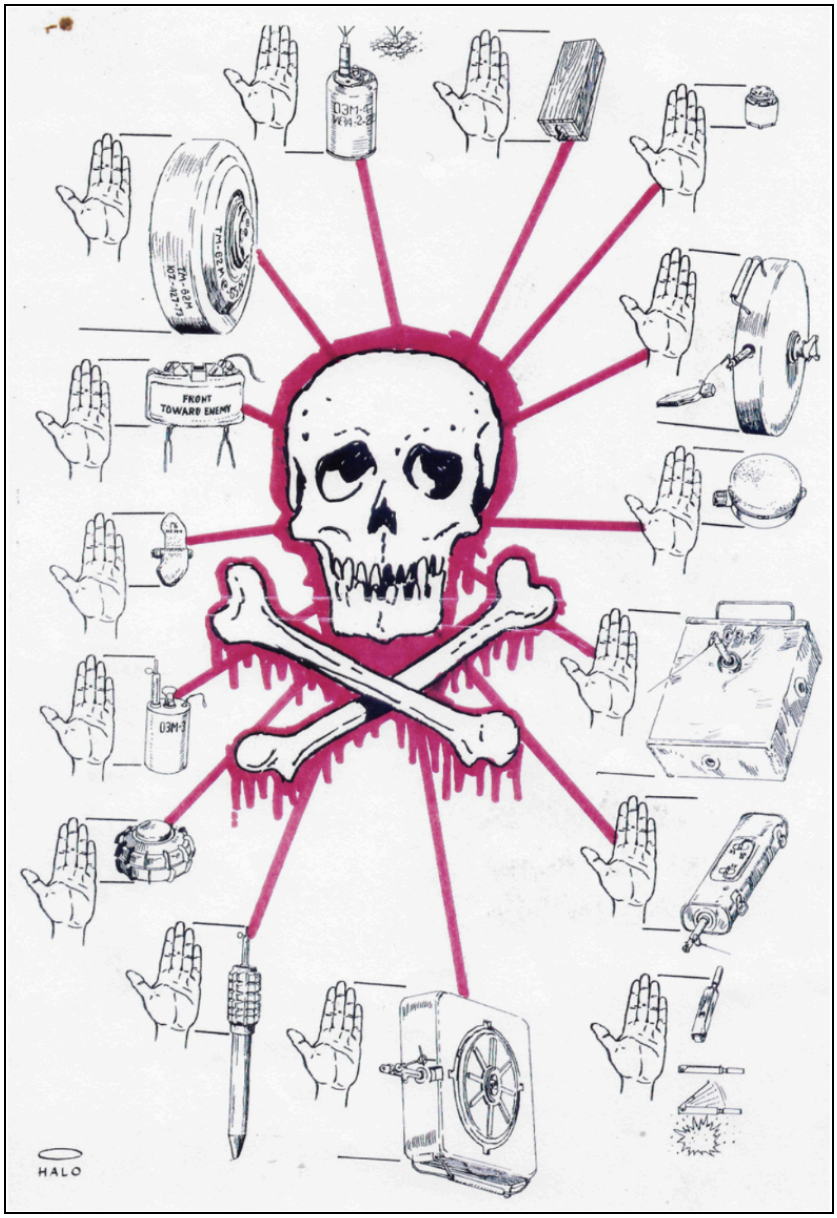


Figure 3.1. *One of the first mine-awareness posters, created and used by the HALO Trust in Kabul, at the outset of the first humanitarian demining mission in history.*[137]

[136] Angus Mitchell. 2023. "Hair-Raising Adventures Loosely Organised: Early Years of the HALO Trust and Humanitarian Mine Action in Afghanistan, 1988–92." *Scottish Historical Review* 102 (3): 394–439. https://doi.org/10.3366/shr.2023.0623. P. 396
[137] Ibid, 420.

Previously largely obscure weapons, landmines proved to have substantial propaganda value. The extensive publicization and politicization of Soviet landmine use produced a new way of thinking about landmines: the Western governments, media, and NGOs recognized the weapon as a principally "humanitarian problem" which needed to be addressed through practical humanitarian assistance—cleaning up the mess caused by the other "evil" superpower. Gorbachev's new foreign policy approach resulted in a shifting Cold War geopolitical context, and the latter enabled the emergence of demining as a humanitarian discipline.

3.2.3 Genesis of the International Humanitarian Demining Regime

> "How HMA [humanitarian mine action] developed in Afghanistan in the early 1990s became intrinsic to the New World Order that emerged from the post Cold War world and the first Iraq War".[138]

The dissolution of the USSR in 1991 transformed the global balance of power and the existent regime governing international security. At the end of the Cold War, the U.S. emerged as the unchallenged superpower.[139]

The resultant "U.S. unipolar moment" led to the "consolidation and expansion of the values, institutions, and networks underpinning the American international system and its elements of liberal international order".[140] In this context, demining operations ceased to be sole responsibility of individual states' security apparatus, allowing the formation of an international humanitarian demining regime.

The predominant variant of humanitarianism before the Cold War focused on colonialism, commerce, and civilizing missions, whereas the Cold War variant concerned nationalism, development, and sovereignty.[141] The U.S. unipolar moment and perceived triumph of international liberalism spurred the development of "liberal humanitarianism"—a variant of humanitarianism characterized by focus on "peace, globalization, and human rights".[142]

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[138] Angus Mitchell. 2024. "Mine Games: Humanitarian Mine Action and the HALO Trust." *Edinburgh University Press Blog*, January 3, 2024. https://euppublishingblog.com/2024/01/03/humanitarian-mine-action-and-the-halo-trust/.
[139] Cooley and Nexon. 2020. *Exit from Hegemony,* 5.
[140] Ibid.
[141] Barnett. 2011. *Empire of Humanity*, 9.
[142] Ibid.

Within this context of liberal humanitarianism, the new international regime prohibiting landmines and governing clearance efforts quickly took shape.

Whereas newly-formed demining organizations saw their mission as clearing the debris of war, other humanitarians saw demining as an insufficient response to the "landmine epidemic". Because mines have the ability to kill and maim indiscriminately, and the anti-Soviet propaganda of the 1980s popularized the idea that innocent civilians, and particularly children, were primary victims of landmines, liberal humanitarians sought a more radical response: the complete ban of landmines.

In 1992, six newly-formed NGOs and existing humanitarian NGOs—MAG, Handicap International (HI), the Human Rights Watch (HRW), Medico International (MI), Physicians for Human Rights (PHR), and Vietnam Veterans of America Foundation (VVAF)—formed a coalition to advocate for a ban on AP landmines.[143] The coalition appointed Jody Williams, an activist from Vermont, as their leader, and became formally known as the International Campaign to Ban Landmines (ICBL). Their name encapsulated their mission clearly: ban landmines.

Importantly, the same year, the Norwegian People's Aid (NPA), an NGO founded by Norway's "labour movement's humanitarian solidarity organisation" in 1939, pivoted to demining work and deployed to Cambodia.[144] The NPA's pivot to demining reflected a growing trend among existing humanitarian organizations to shift their focus to demining work.

The ICBL's goal—banning a weapon—had precedents: the 1899 Hague Convention, 1949 Geneva Conventions, and most importantly, the 1980 CCW.[145] Recognizing the failure of the CCW—vague and unenforceable provisions, considerable latitude given to militaries and absence of a compliance monitoring mechanism, the ICBL sought to establish a monitoring mechanism to oversee a ban on all aspects of landmines: production, stockpiling, sale, export and use.

[143] Croll. 2008. *Landmines in War and Peace,* 163.
[144] Norwegian People's Aid. n.d. "About NPA - Solidarity in Action." *NPA.* https://www.npaid.org
[145] Croll. 2008. *Landmines in War and Peace,* 161-162.

The Cold War context prioritized national security and defense of superpowers, therefore stifling efforts to ban landmines and designate them a humanitarian problem. The immediate post-Cold War period had the opposite effect: it enabled a rapid and wide proliferation of the anti-landmine movement because the issue corresponded with values underpinning the new geopolitical order.

By 1993, in just a year of campaigning, the ICBL's work showed promise, and gained notable momentum. Their network expanded to hundreds of other NGOs and national campaigns.[146] The UNGA passed a resolution calling for a moratorium on APL export, Sweden announced cessation of APL production, the Vatican Council called for a mine ban, and Fiat sold the shares it held in an Italian mines manufacturer.[147]

Notably, a group of retired U.S. generals supported the ICBL by writing a letter to President Clinton and suggesting that a mine ban would be a human and military responsibility.[148] As a result, President Clinton was reported to have been keen to support a complete ban on APLs while committing the U.S. as the leader of the process.[149]

The ICBL's campaigning work continued and soon resulted in substantial public awareness, and the "media developed a fascination for mines".[150] This public awareness was considerably helped by endorsement by "celebrities", particularly Nelson Mandela and Princess Diana.[151]

3.2.3.1 The Mine Ban Treaty

The ICBL initially sought to establish a mine ban via amendments to the CCW. The Clinton administration committed the U.S. to leading the process and invigorating the CCW. For this purpose, the UN convened a CCW review conference in 1995. However, the consensus model of decision-making at the conference hindered the ICBL's maximalist position. Russia completely opposed the ban, and the U.S. reversed its course from supporting the complete ban to supporting a ban with the exception of their minebelt in the Korean Peninsula. The ICBL then sought a different pathway: creating a treaty from scratch.

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[146] Croll. 2008. *Landmines in War and Peace,* 164.
[147] Ibid.
[148] Ibid.
[149] Ibid, 165.
[150] Ibid.
[151] Bolton. 2010. *Foreign Aid and Landmine Clearance*, 25.

In 1996, the ICBL published a "crucial study" which argued that the negative impact of APLs outweighed the military utility.[152] The study, endorsed by fifty senior military officials from "around the world" reportedly convinced "many political and military leaders to back or at least not object to a ban".[153] By this time, the support for the ICBL mine ban mission was widespread, counting hundreds of NGOs, and a significant number of states, particularly the "middle powers"—such as Scandinavian countries, Canada, Switzerland and Austria.

The same year, 1996, anti-mine campaigning culminated when the Canadian government invited the ICBL and their state supporters to Ottawa to discuss the prospect of turning "mine ban" into a treaty.[154] This marked the beginning of the so-called "Ottawa process". Croll notes that the conference proceeded unremarkably, until on the last day, the Canadian Foreign Affairs Minister, Lloyd Axworthy, unilaterally announced that the next year Ottawa would host another conference at which "countries could sign a treaty banning landmines".[155]

In 1997, 122 countries signed the finalized version of the "Antipersonnel Mine Ban Treaty" which went into force two years later, effectively banning APLs for its signatories. While the U.S. did not sign the treaty, the Clinton administration largely adhered to the treaty's provision. Concerns over the security situation on the Korean Peninsula, as well as the withdrawal clause prohibiting signatories' withdrawal from the treaty during conflict, prevented the U.S. from fully adhering to the ICBL demands. As a result, Clinton's mine policy relinquished APL use only outside the Korean Peninsula, and retained unrestricted use of "self-neutralizing" mines elsewhere.

With the Mine Ban Treaty adopted, the UNGA and UNSC established the United Nations Mine Action Service (UNMAS) the same year, envisioning this body as an "integral component of UN peace operations" and a "global coordinator for mine action".[156] By this time, four new international humanitarian demining organizations formed: DEMIRA and Menschen gegen

[152] International Committee of the Red Cross. 1996. *Anti-personnel Mines: Friend or Foe?* Geneva: ICRC. https://www.icrc.org/sites/default/files/external/doc/en/assets/files/other/icrc_002_0654.pdf
[153] Bolton, 2010. *Foreign Aid and Landmine Clearance*, 25.
[154] Croll. 2008. *Landmines in War and Peace,* 168.
[155] Ibid.
[156] United Nations Mine Action Service. n.d. "What We Do". *UNMAS.* https://www.unmas.org.

Minen (MgM) in Germany, Fondation Suisse de Déminage (FSD) in Switzerland, and Danish Demining Group (DDG) in Denmark.

Concurrently, the UN formed a working group tasked with putting together a set of principles for humanitarian demining that could act as a "set of international standards" for humanitarian demining worldwide. To assist this process, the Swiss government, working with other Mine Ban Treaty signatories, formed the Geneva International Center for Humanitarian Demining (GICHD), envisioning the body as the humanitarian demining knowledge and expertise hub.

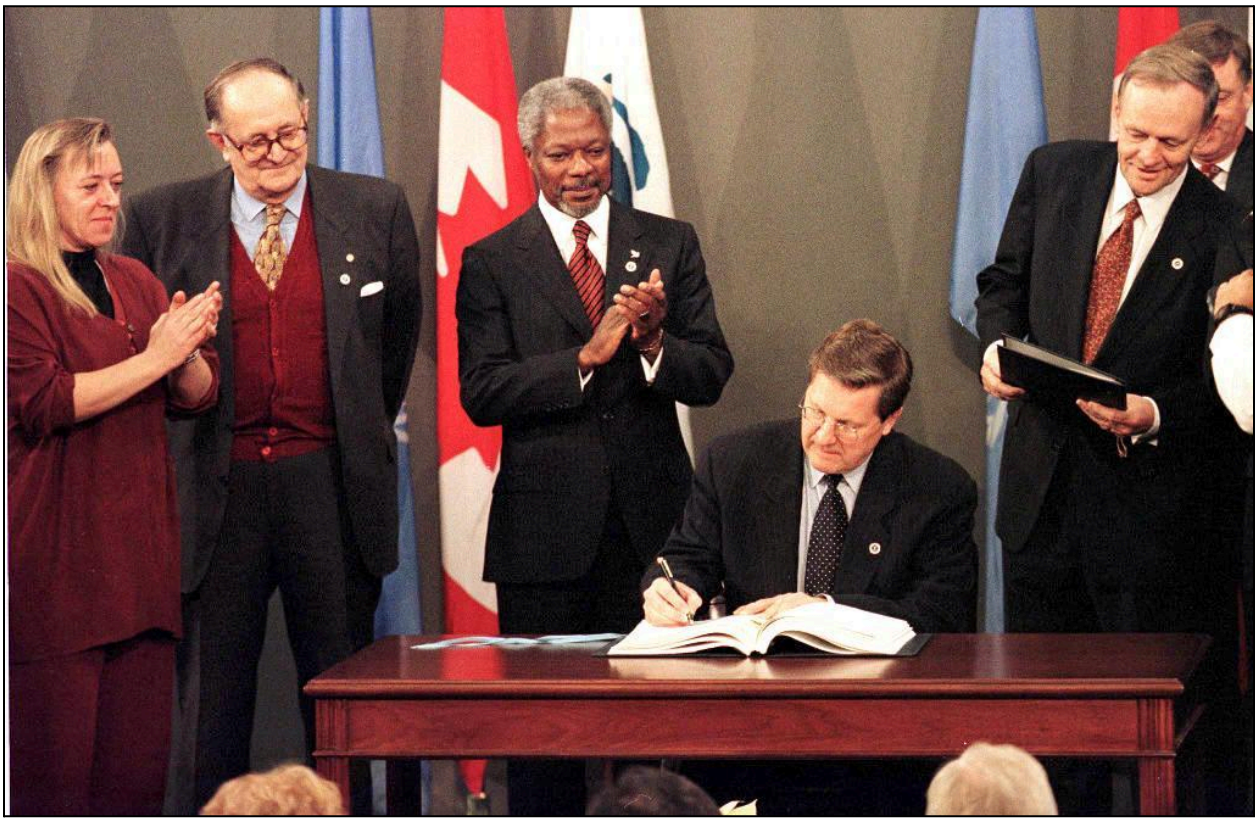


Figure 3.2. *Canadian Foreign Minister Axworthy signs the Mine Ban Treaty in Ottawa on December 3, 1997. Axworthy is accompanied by: ICBL leader Jody Williams, Cornelio Sommaruga, the president of the International Committee of the Red Cross, the UN Secretary General Kofi Annan, and Canadian Prime Minister Jean Chretien.*[157]

[157] "Canada Landmines Conference". Photograph by Dave Chan for AFP, December 3, 1997. Source: Getty Images.

3.2.3.2 IMAS: The International Mine Action Standards

The IMAS framework is a set of guidelines, recommendations and standards which detail "best" practices, procedures, and processes for all aspects of humanitarian mine action. The development of IMAS was first discussed in Denmark in 1996, at an international technical conference on humanitarian demining practices.[158]

The effort to create a set of standards that could guide demining globally was a reaction to the development of the international humanitarian demining sector in the early and mid-1990s, particularly the signing of the Mine Ban Treaty and a wave of new demining organizations.

The UN-led working group produced their first publication detailing the envisioned standards in March 1997, under the newly-formed UNMAS, tasked with coordinating the UN's mine action and demining operations.[159] The publication became known as the "International Standards for Humanitarian Mine Clearance Operations".[160]

The UNMAS envisioned the standards as a "practical guide" for countries which sign the Mine Ban Treaty, and based them on the practices of the UN demining missions and demining NGOs. Between 1997 and 2001, the guidelines were reworked and updated, expanding the scope from just "demining" to "mine action". In 2001 the updated text became the first edition of the "International Mine Action Standards".[161] The contents of IMAS details technical practices in nearly all aspects of demining, from mine risk education, victim assistance, to mapping, marking, survey processes and clearance processes.

By itself, the IMAS is not "legally binding". However, it clarifies the "practical implementation of Anti-personnel Mine Ban Convention (APMBC) and Convention on Cluster Munitions (CCM)", essentially "directing" countries affected by landmines to utilize IMAS in meeting their commitments to APBBC and CCM. Countries dealing with landmines are thus "directed" to either adopt IMAS or create a set of national mine actions standards (NMAS) that "align fully" with IMAS propositions.

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[158] International Mine Action Standards. n.d. "About IMAS". *IMAS.* www.mineactionstandards.org/about.
[159] United Nations Mine Action Service. 2023. "IMAS 8.40. Marking explosive ordnance hazards". 3rd Edition. *UNMAS*, January 17, 2021. https://www.mineactionstandards.org/fileadmin/uploads/imas. P. iv.
[160] Ibid.
[161] International Mine Action Standards. n.d. "About IMAS." *IMAS.* www.mineactionstandards.org/about.

The UN acts as a custodian of IMAS, and the UNMAS retains authority in maintenance and development of IMAS. In practice, IMAS is "governed" by the IMAS Steering Group (SG) and IMAS Review Board (RB). The latter gives "technical input" for the IMAS framework, and comprises "29 members from across the mine action sector"—demining organizations, donors, national demining authorities (NMAA), demining schools, and independent experts.[162] The former is composed of several UN agencies, the GICHD, a "donor forum", and a select NMAA whose membership rotates. The IMAS SG provides "executive guidance, strategic direction, policy guidance, and oversight of all work undertaken by the RB".[163]

Officially, the responsibilities, authorities and ownership of IMAS are clear, yet, practical experience shows otherwise. Describing how IMAS works, the technical operations manager of MAG's mission in BiH notes that the ownership of IMAS is not clear in practice; "it [IMAS] is owned by no one and everyone; there is this lingering question: whose IMAS? Who does it belong to?"[164]

Since its first edition in 2001, the IMAS has been used by nearly all countries with the landmine problem, either directly through adoption or indirectly through alignment of their respective NMAS.

The Standards can not be "imposed" or "forced", however, practice indicates a different kind of reality. Countries with the landmine problem have typically emerged from their respective conflicts a need for international assistance—monetary, expertise, equipment—in carrying out demining operations, and little to no substantial experience in demining, especially "humanitarian demining". The international demining operators which arrive to post-conflict spaces to carry out demining tasks are typically members of the IMAS RB and/or SG, or involved with the IMAS RB and SG in other, less direct, ways. With local governance structures in post-conflict countries relatively "receptive" to external assistance and guidance, the demining operators can simply "impose" or "force" IMAS in practice, or push for a creation of IMAS-aligned NMAA for such NGOs to stay present and working in the country.

[162] International Mine Action Standards. n.d. "IMAS Governance." *IMAS.* www.mineactionstandards.org.
[163] Ibid.
[164] Person MAG1-TO (Mines Advisory Group), interviewed by the author, May 18 2024.

More specifically, the international humanitarian demining organizations, particularly the "big four"—HALO, MAG, FSD, NPA—understand that, for the most part, their purpose and presence in affected countries is precisely this "transfer of knowledge", or operational practices and standards developed by the operators in the field and reflected in IMAS: "the whole point of internationals [staffers of international demining NGOs] is the transfer of knowledge".[165]

More frequently, land-mined countries are informed of IMAS when formally requesting demining assistance from the UN, UNMAS, UNDP or any other humanitarian agency directly or indirectly affiliated with the UN. The countries' governments then move to make legal and institutional arrangements—adoption of or alignment with IMAS—to "attract" and facilitate arrival of international demining assistance, and particularly international demining NGOs. Tymur Pistriuha, the Head of the Ukrainian Deminers Association (UDA)—one of first local demining operators that emerged in Ukraine in 2014—notes that the "general practice" of mine-affected countries has been to simply adopt the IMAS without creating NMAS: "not many countries have demining laws—they have strategy, but not NMAS; so many of them just use IMAS and justify it, but IMAS is just a framework—it is not detailed".[166]

Describing the peculiarities of practical application of demining standards and IMAS, Eleanor Porritt, the FSD Program Director for Ukraine, suggests that international demining NGOs can "sort of impose it" on countries in which they operate, particularly "outside Europe":

> There is probably an argument to be made, without getting into light distasteful politics of it, but why in places like Cambodia or Sri Lanka it [IMAS] can be somewhat forced—all these international priorities—and in places like Ukraine, they are like no, we do our thing here, we are Europeans, you are not going to tell us what to do.[167]

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[165] Eleanor Porritt (Fondation Suisse de Déminage, Program Director for Ukraine), interviewed by the author, February 28, 2025 ;
Selma Antić (Norwegian People's Aid, EORE and Community Liaison Manager), interviewed by author, May 10 2024 ;
Jessica Hyland (Mines Advisory Group, Regional Director for Eastern Europe), interviewed by author, May 6 2024.

[166] Tymur Pistriuha (Ukrainian Deminers Association/Demining Solutions, Director), interviewed by author, March 5 2025.

[167] Eleanor Porritt (Fondation Suisse de Déminage, Program Director for Ukraine), interviewed by the author, February 28, 2025.

Therefore, several factors made it possible for IMAS to proliferate among mine-affected countries and become, as its name suggests, a set of international standards for demining. On one hand, since the advent of "humanitarian demining" in the 1990s, most mine-affected countries lacked expertise, knowledge, capacity, equipment and funding to conduct demining of their territories, which made them more receptive (and requiring) to international demining assistance. This dynamic ties to the proliferation of landmines as a weapon of war during the Cold War; most countries to which the USSR, SFR Yugoslavia (SFRY), PR China (PRC), and others sold landmines had no training or knowledge in the "proper military use" of the weapon that involves patterned placement, marking, and the know-how in diffusing the explosive. Therefore, when the wars ended and landmines became a "problem", the national and local government structures did not command virtually any demining knowledge.

On the other hand, the same set of international demining organizations that emerged in the early 1990s to tackle the "humanitarian problem of landmines" had helped create IMAS, and subsequently carried it with them to any new country they were deployed to. Over time, this has become a feedback loop: every deployment in a "new" mine-affected country would help inform and "improve" the practices and standards, and these novel insights and expertise would be used to update the IMAS.

And the last factor is what the FSD Program Director for Ukraine terms the "distasteful politics of it", by which is meant the racial-colonial aspects of IMAS proliferation, where the legacies of colonialism in mine-affected countries had, simply put, primed these societies for an "easier", more "seamless" foreign-led application of practices and standards.

In nearly a quarter century of existence, IMAS had been reworked and updated several times; the official IMAS records indicated that there have been at least eight rounds of major revisions.[168]

However, IMAS is not a single document but rather a collection of distinct but related documents clarifying practices and procedures in different areas of demining. At present, there are seventy-nine of such documents, covering topics from underwater survey, worksite safety, NTS, TS, land release, clearance methods, markings, machines, equipment, victim assistance, EOD, battle area clearance, and others.

[168] IMAS. n.d. "International Mine Action Standards." *IMAS.* www.mineactionstandards.org/standards/.

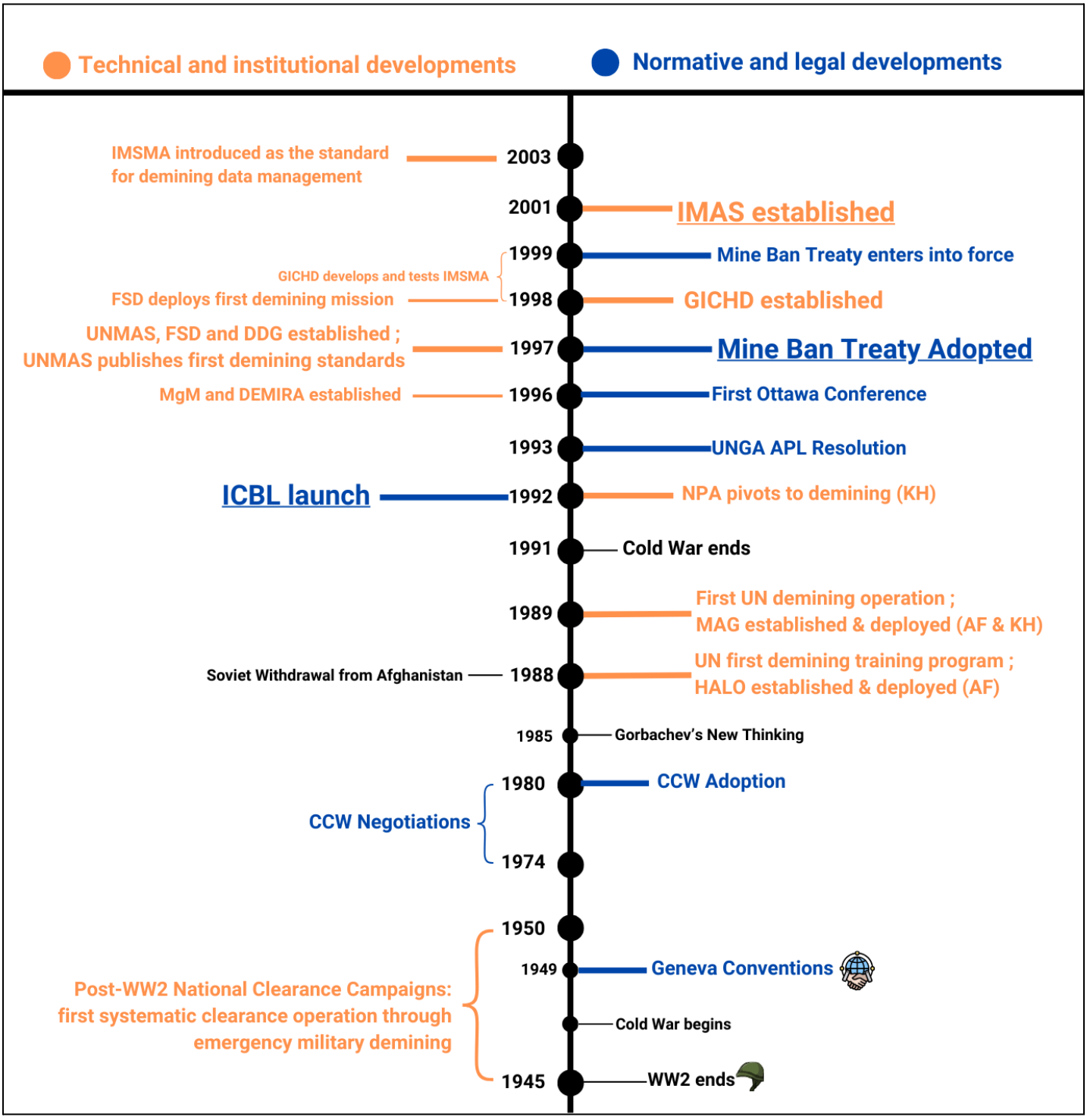


Figure 3.3. *The timeline of the development of the international humanitarian demining regime.*

3.3 The International Humanitarian Demining Regime

Krasner defines international regimes as "principles, norms, rules, and decision-making procedures around which actor expectations converge in a given issue-area".[169] Humanitarian demining qualifies as an international regime because it meets all four criteria.

Its guiding "principle" stipulates that deliberate use and presence of landmines constitutes an "unacceptable threat" to civilian life. The regime's guiding "norm" is articulated in the 1997 Mine Ban Treaty which prohibits production, use, export and stockpiling of landmines. The rules through which the norm is met are codified in the IMAS. And the decision-making procedures of the humanitarian demining regime involve Review Conferences, Meetings of State Parties, and Intersessional Meetings through which the provision of the Mine Ban Treaty and IMAS are reviewed and upgraded.

Therefore, the contemporary humanitarian demining operates as a multiscalar regime composed of international treaties, intergovernmental agencies, NGOs, expert bodies, and donor states. Together, these entities establish and implement norms against landmine use, coordinate the clearance of mine-contaminated areas, and assist victims of landmines.

Previous sections discussed key junctures through which the international humanitarian demining regime emerged: the formation of first demining organizations in response to the Soviet use of landmines in Afghanistan and subsequent withdrawal of forces in 1988, the emergence of ICBL in 1992, the signing of the Mine Ban Treaty in 1997, and the creation of IMAS in 2001. This section outlines the core elements of the international humanitarian demining regime, including the normative framework, demining actors—administrators, operators, and donors—functions, coordination mechanisms, and technical aspects of demining.

3.3.1 Normative Framework

At the core of the contemporary demining regime is the 1997 Mine Ban Treaty. The treaty codifies the norm prohibiting the APLs.[170] The treaty stands as the "legal pillar" for humanitarian

[169] Stephen D. Krasner. 1982. "Structural Causes and Regime Consequences: Regimes as Intervening Variables." *International Organization* 36 (2): 185–205. https://www.jstor.org/stable/2706520. P. 185.
[170] United Nations Office for Disarmament Affairs. n.d. "Anti-Personnel Landmines Convention." *UNODA*. https://disarmament.unoda.org/anti-personnel-landmines-convention/.

demining, and mandates that state parties stop all use of APLs, cease production, purchase and development of APLs, destroy stockpiles, identify and clear all mined areas under their jurisdiction, and provide victim assistance.[171]

Since 1997, the treaty has been signed by 164 states. By framing landmine prohibition as a binding norm, the treaty shapes and regulates practices and behaviors of state parties, as well as broader [political] discourse on landmines and their use.

The treaty's provisions sustain the political and legal impetus for demining efforts. Each state party is required to meet the treaty's provisions within ten years of signing, and submit annual progress reports to the UN Secretary General who transmits the communication to all other state parties.[172] When a state party is unable to meet the clearance deadline, all state parties vote to grant an extension based on the "majority of votes".[173]

The treaty further mandates that state parties consult and cooperate with each other regarding the implementation of the treaty's provision, and allows state parties to request "fact-finding missions" if they suspect non-compliance by one of the state parties.[174]

Importantly, the treaty allows signatories to withdraw, however, withdrawal is prohibited during armed conflict.[175] The logic behind this provision is to prevent states from invoking national security and defense imperatives to justify withdrawal from the treaty. This provision further emphasizes the treaty's core norm: that use of landmines is "unjustifiable" under any and all circumstances.

3.3.2 Key Actors

The key actors of the humanitarian demining regime include demining administrators and coordinators, [international] demining operators, and donors—particularly state donors.

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[171] "Convention on the Prohibition of the Use, Stockpiling, Production and Transfer of Anti-Personnel Mines and on Their Destruction". September 18, 1997. Article 1: 1a, 1b, and 2; Article 4; Article 5: 1 and 2; Article 6: 3. https://treaties.unoda.org/t/mine_ban.
[172] Ibid, Article 5:1. https://treaties.unoda.org/t/mine_ban.
[173] Ibid, Article 5:5, and Article 7:1, 1a, 1b, 1c, 1d, 1e, 1f, 1g, 1h, 1i, 7:2, 7:3.
[174] Ibid, Article 8:1, 8:2, 8:7, 8:8, 8:13, 8:14.
[175] Ibid, Article 20:3.

3.3.2.1 Demining Coordinators

Two organizations administer and coordinate the international humanitarian demining regime: the UNMAS, and the GICHD.

The UNMAS acts as the "lead entity" for mine action, and performs nearly all tasks related to mine action, including landmine clearance.[176] The organization's primary role, however, includes "coordinating global humanitarian demining activities" by supporting the development, maintenance, and application of IMAS, assisting national authorities in client states to develop national demining institutions and structures, and "advocating for compliance and universalization" of the Mine Ban Treaty.[177]

The UNMAS engages with virtually all actors that form the international humanitarian demining regime. It chairs the IMAS RB and IMAS SG, maintains and develops IMAS, and leads the Inter-Agency Coordination Group on Mine Action (IACG-MA)—a group comprising various UN agencies, external organizations, and observers who endorse IMAS.

On the ground, UNMAS coordinates and performs demining in client states as the "sole authority" if the client state is not "able" to set up a demining program, or assists clearance efforts by contracting international NGOs and commercial companies, and providing technical advice.

The GICHD, on the other hand, performs tasks related to developing and improving demining expertise. Its primary role is to generate, disseminate, and support the codification of "knowledge products" in demining work.[178] The GICHD provides secretariat to the IMAS SG and IMAS RB, and is simultaneously a member of both bodies; the GICHD, therefore, performs "governance" and "technical input" roles in the international humanitarian demining regime.

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[176] United Nations Mine Action Service. 2023. "CATALOGUE OF UNMAS MINE ACTION ACTIVITIES Draft as of 16 January 2023". *UNMAS*, January 16, 2023. P. 1-2. https://www.unmas.org/sites/default/files/catalogue_of_activities_-_march_2023.pdf

[177] Ibid, 2.

[178] Geneva International Centre for Humanitarian Demining. 2023. "Strategy 2023-2024." *GICHD*, January 2023. https://www.gichd.org/fileadmin/uploads/gichd/Documents/Strategy. P. 4.

3.3.2.2 Demining Operators

The international humanitarian demining organizations are the most critical part of the international demining regime, because they carry out the majority of operational tasks, and implement the regime's norms and rules on the ground.

Key international operators include the HALO Trust, MAG, NPA, FSD, DDG under Danish Refugee Council, Humanity & Inclusion (formerly Handicap International), and DanChurchAid. The HALO Trust, and MAG are the largest and most prolific operators, followed by NPA, FSD, DDG/DRC and DanChurchAid.

These organizations specialize in on-the-ground clearance, and generally train and employ local deminers. While UNMAS and GICHD coordinate the IMAS and generate demining expertise, the operators apply these provisions on the ground and thus disseminate the regime's rules materially. Importantly, these organizations also take part in the IMAS RB—they help provide technical input for IMAS based on their operational experience in demining.

While these operators decide on demining missions and demining prioritization using internal "humanitarian impact" matrices, the locations of their missions are substantially dependent on objectives of their donors.[179]

They are funded by governments, foundations, and private donors, but the majority of funds comes from individual governments, particularly the U.S. Department of State (DOS).[180] Other large donors include governments and foreign offices of the UK, Germany, Norway, Netherlands, France, EU, and Canada.[181]

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[179] Person MAG1-TO (Mines Advisory Group, Technical Operations), interviewed by the author, May 18 2024. ; Eleanor Porritt (Fondation Suisse de Déminage, Program Director for Ukraine), interviewed by the author, February 28, 2025.
[180] Norwegian People's Aid. n.d. "Donors." *NPA*. www.npaid.org/mine-action-and-disarmament/donors. ; Mines Advisory Group. N.d. "Where We Work - Ukraine - Our Donors". *MAG International.* www.maginternational.org/what-we-do/where-we-work/ukraine/. ; Fondation Suisse de Déminage. n.d. "Finances." *FSD.* https://fsd.ch/en/about-us/finances/.
[181] Ibid. ; Ibid. ; Ibid. ; The HALO Trust. 2024. "THE HALO TRUST ANNUAL REPORT AND FINANCIAL STATEMENTS". *HALO,* March 31, 2024. https://www.halotrust.org/media/ei4f33jv/annual-report-and-financial-statement-2024.pdf. P. 26.

3.3.3 Core Functions and Coordinative Mechanisms

The humanitarian demining regime encompasses a range of interconnected functions. These functions can be categorized as: norm generation and dissemination, operational coordination and delivery, monitoring and compliance, resource mobilization, evolution and adaptation, and victim assistance.

First, the regime defines what is "acceptable" regarding landmine use and affirms a moral-legal stance against it. Advocacy campaigns, diplomatic meetings, and public awareness initiatives spread this prohibition norm, gradually stigmatizing landmine use globally.

Second, practical demining requires systematic coordination among donors, implementing NGOs, host governments, and technical advisors. UNMAS, national mine action centers, and bodies like GICHD ensure alignment of standards, funding, and timelines. Third, state parties "must" report to the APMBC on stockpile destruction, clearance progress, and victim assistance measures. The ICBL's Landmine Monitor and UN-driven tracking mechanisms cross-check official reports, flagging non-compliance or areas needing more support.

Further, the regime invests in training local demining personnel, establishing national mine action authorities, and sharing technical innovations. The IMAS guidelines institutionalize best practices, improving the safety and efficiency of clearance. Donor states commit bilateral and multilateral funding for mine clearance, risk education, and survivor assistance. NGOs fundraise from governmental and private sources. This multi-channel approach diversifies the regime's resource base.

As conflicts change, the regime adapts its mandates. For example, addressing improvised explosive devices (IEDs) or integrating landmine clearance with broader humanitarian response. Emerging technologies, like drone mapping or new detection methods, are tested by demining operators, and then standardized and disseminated through IMAS. Finally, the regime provides victim assistance, as it is a formal pillar of the Mine Ban Treaty. Risk education in communities, especially for children, reduces incidents of accidental mine detonation while clearance is ongoing.

Unlike strictly top-down regimes, humanitarian demining rests on public-private partnerships and transnational networks. The Mine Ban Treaty formalized a legal and "moral" foundation, but day-to-day effectiveness arises from a decentralized system of stakeholders. Several coordinating mechanisms help maintain coherence.

The Inter-Sessional Meetings and Annual Conferences of States Parties to the APMBC convenes states, the ICBL, UN agencies, and other NGOs to exchange data and best practices. The Implementation Support Unit (ISU) at GICHD, offers administrative and substantive backup to Treaty Chairpersons and national focal points. Clusters or working groups on victim assistance, clearance methodologies, and universalization strategies, ensure that specialized issues receive focused attention. Information-sharing platforms, like the Information Management System for Mine Action (IMSMA) maintained by GICHD, facilitate standardized data collection and reporting on contaminated areas and clearance progress. Through these institutional links, the regime maintains functional cohesion.

3.4 Conclusion

The emergence of the humanitarian demining regime and norm banning landmines can be understood through Nexon and Cooley's conceptualization of international ordering.

Namely, in the liberal international ordering after the end of the Cold War, the architecture included norms like multilateralism, human rights, and free trade, while the infrastructure included the UN, NATO, and transnational networks of NGOs—all of which both reflected and reinforced liberal principles. In this sense, the movement to ban landmines and establish an international humanitarian demining regime can be seen as part of the liberal international order's humanitarian architecture.

The norm that certain weapons are unacceptable due to humanitarian considerations is a normative principle that gained prominence in the 1990s, complementing older norms on war conduct under International Humanitarian Law (IHL). The Mine Ban Treaty itself became a new rule in the architecture, and it enshrined values of human security and human rights—protecting civilians' right to life and limb even in war. Correspondingly, the infrastructure for this norm consisted of institutions and relationships—NGOs, international organizations, and state

partnerships. These formed a network enabling routine interactions—training programs, monitoring missions, donor conferences—that made the norm operational.

In Cooley and Nexon's terms, by the early 2000s the landmine ban regime had its architecture—the treaty's legal obligations and underlying humanitarian norm, and infrastructure, a dense web of organizations and cooperation, in place, nested within the broader liberal order.

However, Cooley and Nexon also emphasize that international orders can be heterogeneous and patchy. Even hegemonic orders are not monolithic—their rules are not uniformly accepted or applied. Some states might comply with certain norms while defying others, creating an order that is "bumpy rather than smooth".[182]

This holds true for the landmine ban. The humanitarian norm was embraced by many middle and small powers, but several great powers remained outside the treaty, effectively choosing a different path for this specific norm. The U.S., for instance, supported several elements of the international liberal demining regime, and particularly humanitarian demining, being one of the largest funders of demining. However, the U.S. declined to join the Mine Ban Treaty, citing security needs on the Korean Peninsula. Likewise, China and Russia did not accede, prioritizing their military autonomy.

Thus, the architecture of the landmine regime coexisted with parallel counter-norms or exceptions maintained by some states. For most of the post-Cold War period, this did not dismantle the overall order. The ICBL has rather tolerated it as an evolving patchwork while hoping that over time, other states would afford their signatures.

Indeed, over 30 states that initially did not sign eventually did, and even non-signatories often informally adhere to parts of the norm, such as export moratoria. The geopolitical context of the 1990s and early 2000s, provided a favorable geopolitical context for the landmine ban's success. The U.S. and its Western allies, underwrote the liberal international order, supplying the security and relative consensus that allowed the international liberal humanitarian regime to emerge. But that regime was fated to change over time.

[182] Cooley and Nexon. 2020. *Exit from Hegemony*, 35.

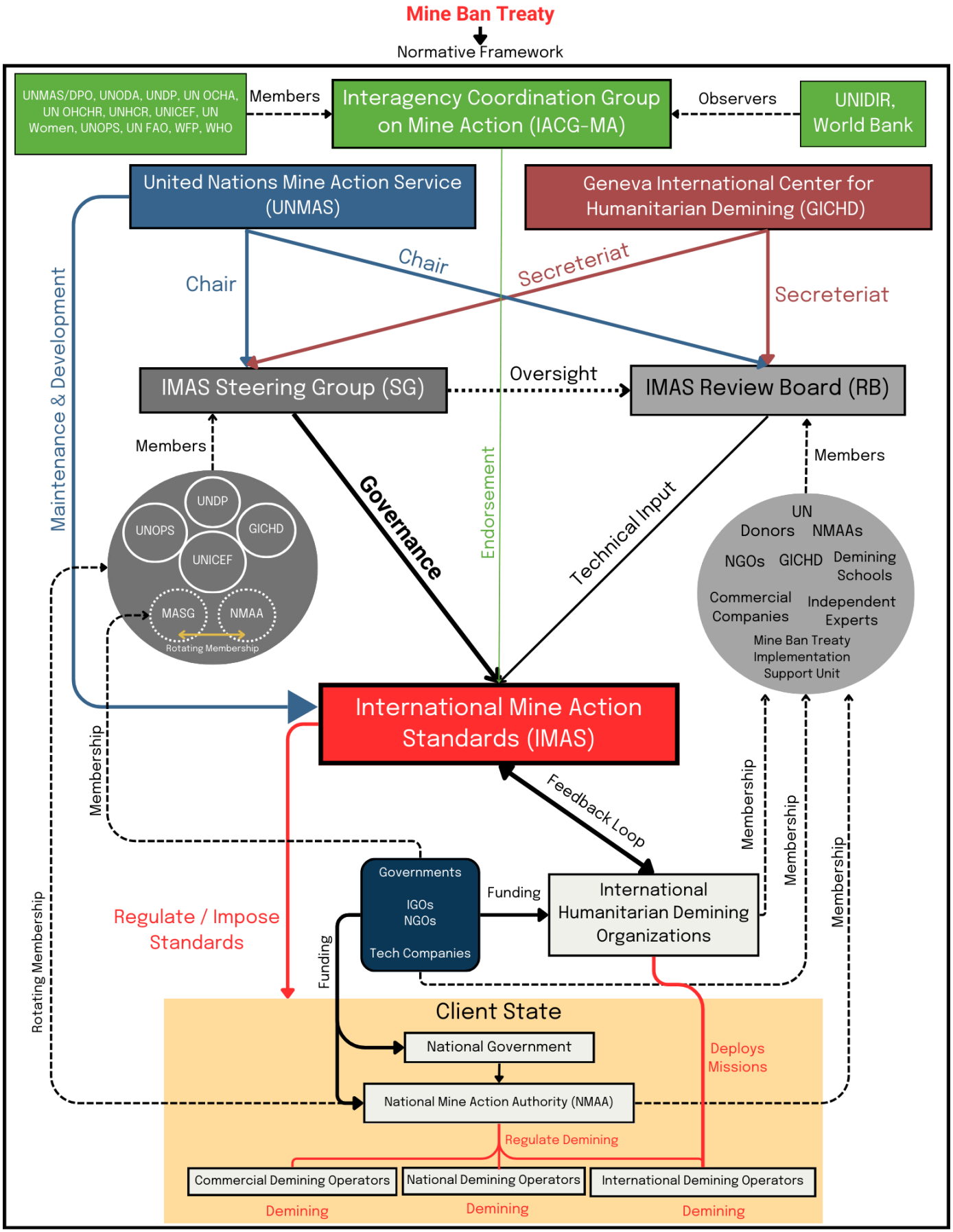


Figure 3.4. *The structure of the international humanitarian demining regime.*

Chapter 4

Research Methodology: A Triangulation Approach

4.1 Introduction

The dissertation's research design incorporates a triangulation approach to develop a comprehensive understanding of the process of demining as a form of territorial recovery in two contrasting geopolitical contexts. Three methodological components—process tracing, semi-structured interviews, and ethnographic fieldwork—are integrated to enable an in-depth exploration and understanding of demining and yield a "thick description" of the process under scrutiny.

The following chapter delineates the research methodology adopted for examining demining as a territorial practice. The use of process tracing, semi-structured interviews, and ethnographic fieldwork enables a multifaceted analysis, allowing for both in-depth exploration of processes and the mapping of intricate networks involved in demining activities. The methodological framework aligns with the dissertation's research objectives and enhances the robustness and validity of the findings. The subsequent sections will elaborate on the research design, data collection procedures, and sampling strategies. The final section of the chapter outlines how asymmetries in the research design and the data collection processes emerged and converged in response to the realities encountered in the field.

4.2 Process Tracing

Process tracing, or the "systematic examination of diagnostic evidence selected and analyzed in light of research questions and hypotheses posed by the investigator" is a fundamental component of the dissertation's analytical toolkit.[183] Given the use of process tracing as an analytic tool for drawing descriptive and causal inferences from diagnostic pieces of evidence, data collected through this method is often derived from and understood as a "temporal sequence

[183] David Collier. 2011. "Understanding Process Tracing." *PS: Political Science & Politics* 44 (04): 823–30, https://doi.org/10.1017/S1049096511001429. P. 823

of events or phenomena".[184] As such, process tracing is a methodology where particularly rigorous attention is given to the temporal sequence of events and careful, fine-grained description of each step in that trajectory. In other words, the "unfolding of events over time" is central to the process tracing methodology.[185]

The use of process tracing method helps illuminate how and why a particular outcome arises by mapping the precise steps through which it is realized. As such, it is a distinctly advantageous method for this comparative case study research because it aids in identifying the causes of effects by finding linkages backwards. By allowing a detailed chronological account of the demining processes in BiH and Ukraine, process tracing helps elucidate how and why the landmine removal operations emerged as "war-reversing" and "war-making" practices in the two countries respectively. Moreover, comparing the timelines of demining in the two contexts, helps identify the precise conditions and circumstances that caused and facilitated the emergence of demining operations in two contrasting formats.

4.2.1 Timelines

The dissertation encompasses two distinct timelines: 1) Demining timeline in BiH, and 2) Demining timeline in Ukraine. Both timelines provide structured chronological frameworks which are referenced throughout the study.

For the BiH case study, the timeline spans twenty-nine years and seventeen months, beginning on December 14 1995, and extending until December 31 2024. The starting point, December 14 1995, marks the signing of the Dayton Peace Accords (DPA) which not only ended the armed conflict in BiH, but formally set the stage and initiated the organized demining operations in the country.

By using the signing of the DPA as the starting point of the timeline instead of a later date, this study captures the very beginning of demining efforts in BiH. This allows the dissertation to precisely describe the process because it captures how the actors involved initially envisioned and operationalized demining activities.

[184] Collier. 2011. "Understanding Process Tracing", 824.
[185] Ibid.

Similarly, the Ukrainian case study spans ten years, eight months and twenty-five days, beginning on April 6 2014, and extending until December 31 2024. The starting point, April 6 2014, marks the beginning of the Donbas conflict. The crisis and conflict in Ukraine commenced earlier, with the annexation of Crimea by the Russian Federation taking place in February and March 2014. However, these dates are not the starting point in the timeline precisely because they do not mark the beginning of either mine-laying nor demining operations on the Ukrainian territory. Instead, the beginning of active armed conflict in Eastern Ukraine signaled the start of large scale mine-laying operations, and the emergence of the demining agenda in the country. By using April 6 2014 as the starting point in the timeline, this study captures the moment when landmines emerged as a problem to be addressed.

Concluding both timelines on December 31 2024 ensures a comparable analytical endpoint, and somewhat alleviates the asymmetries in the study.

The demining operations are still ongoing in both BiH and Ukraine, with no foreseeable end despite numerous assessments and projections.[186] Despite consistent clearance efforts for nearly thirty years, BiH remains one of the most mine-affected countries in the world, and the second most mine-affected country in Europe, the first being Ukraine from 2022. The clearance efforts thus continue, and are likely to continue for at least several decades to come.

At present, an estimated one third of Ukrainian territory is mined. With the armed conflict still ongoing, it is plausible to assume that the scale will continue to increase up until the cessation of the war, despite ongoing demining efforts. Projections and assessments for a complete landmine clearance differ, but there is a widespread agreement that demining Ukraine will take a very long time. Some local and international deminers and sappers, and local and international demining agencies project that clearing Ukrainian territory of landmines will take several decades, and may "drag to a 100 years" in areas that are most affected.[187] On the other hand, Oleksii Vasuliuk,

[186] Gaby Ochsenbein. 2017. "It'll take ages for Bosnia to be mine free." *Swiss Info*, December 4, 2017. https://www.swissinfo.ch

[187] Ukrinform. 2024. "Demining in Some Regions of Ukraine May Last up to 100 Years - Sapper." *Ukrinform*, October 21, 2024. https://www.ukrinform.net. ;
Tony Blair and Howard Buffett. 2024. "Clearing Ukraine's Mines Is Crucial for Global Food Security, Say Howard Buffett and Tony Blair." *The Economist*, September 9, 2024. https://www.economist.com ;
Sasha Vakulina. 2024. "What Will It Take to Demine Ukraine, the World's Largest Minefield?" *Euronews*, October 10, 2024. https://www.euronews.com.

a Ukrainian environmental expert puts it in more poignant terms, claiming that "estimates for demining range from 75 to 100 years, which is definitely beyond the lifespan of any Ukrainian".[188] Other demining experts suggest that Ukraine's landmine situation is significantly more grim, claiming that "it would take Ukraine 757 years to undo the damage using conventional methods and their current resources".[189]

Despite the fact that the subject of this study—demining—is far from being "complete" in either of the two case studies, and may not be complete for the duration of the author's life, this study argues that the proposed timeline provides both sufficient and necessary data to derive sustained descriptive inference.

4.2.2 Data Collection

To systematically document the chronological progression of demining initiatives and operations in BiH and Ukraine respectively, this dissertation collected data from a diverse array of sources. The timelines were initially populated by data sourced from official reports and documents published by governmental, non-governmental, intergovernmental, and international organizations formerly and presently involved in demining BiH and Ukraine. I compiled the list of such sources into two separate tables in the appendix section.

I subsequently supplemented both timelines with data and information published in news articles by international, regional, national, and local media. To avoid excessive repetition, this study lists the media sources list for both case studies in the bibliography section. Furthermore, I sourced additional information from reports and articles published by think tanks.

Further information and data for the two timelines came from scholarly articles published in peer-reviewed academic journals. Such sources are cited extensively throughout this dissertation, and are therefore not listed in this particular section in order to avoid redundancy. Finally, this

[188] Yuliya Surkova. 2025. "Who Is Bold Enough to Declare Part of the Country a No-Go Zone for 100 Years?". *Network for Border Crossing Journalism*, February 6, 2025. https://n-ost.org.
[189] Iuliia Osmolovska and Nataliia Bilyk. 2024. "Cleaning the Augean Stables: Humanitarian Demining in Ukraine". GLOBSEC: Bratislava. https://www.globsec.org.;
Vera Bergengruen. 2023. "Ukraine Is Using AI to Help Clear Millions of Landmines." *TIME*, November 2, 2023. https://time.com/6330445/demining-ukraine/. ;
Eve Sampson and Samuel Granados. 2023. "Ukraine Is Now the Most Mined Country. It Will Take Decades to Make Safe." 2023. *The Washington Post*. July 22, 2023. https://www.washingtonpost.com.

study refines both demining timelines by integrating, where necessary, data obtained from interviews with individuals involved in demining operations in BiH and Ukraine. In so doing, this dissertation aims to capture on-the-ground realities and contextual nuances absent from official records and institutional and media sources.

4.3 Interviews

The interview research methodology is a critical component of this dissertation. To yield a thick description of the demining process, it is necessary to engage in conversational inquiry because situating the dissertations's findings and conclusions on the realities on the ground enhances the quality of the study.

The interview research for this study spanned the entire duration of data collection process, from December 5th 2023 until March 21st 2025. Some interviews were conducted in-person, while others were conducted online, via Zoom, Google Meets, Google Teams, and WhatsApp. The interview research focused on key demining actors in BiH and Ukraine.

More specifically, it focused on individuals with extensive experience in the demining sector, including not only deminers, but also the administrative staff. The administrative staff interviewed during the data collection process include: directors and assistant directors of demining units, program officers and program directors, medics, demining inspectors, quality control officers and managers (internal and external), technical operations managers, EOD officers, officers for quality control of safety and procedures, liaisons, explosive ordnance risk education (EORE) educators, members of the AF BiH Demining Battalion, and members of government institutions such as defense ministries, legislative bodies, and finance institutions.

The list of organizations interviewed in BiH include: Norwegian People's Aid (NPA), Bosnia and Herzegovina Mine Action Center (BHMAC), Demining Department of BiH Federal Civil Protection Administration (FUCZ), Mines Advisory Group (MAG), Armed Forces of Bosnia and Herzegovina (AF BiH) including the EOD Unit and the Demining Battalion, European Union Force in Bosnia and Herzegovina (EUFOR), and Parliamentary Assembly of Bosnia and Herzegovina (PA BiH). The list of organizations interviewed in Ukraine include: State Emergency Service of Ukraine (SESU), Ukrainian Deminers Association (UDA), Demining Solutions, Mines Advisory Group (MAG), Fondation Suisse de Déminage (FSD), Ministry of

Defence of Ukraine, State Finance Institution for Innovation (SFII), and National Mine Action Authority of Ukraine (NMAA).

The priority for interview research was given to agencies and institutions which are significantly involved in the demining process, such as demining operators or national demining authorities—the latter coordinate and standardize demining procedures, whereas the former carry out demining tasks. Due to access issues, some key demining actors were not interviewed. For instance, the HALO Trust is notably absent from the above lists because of substantial access issues.

4.3.1 Sampling Strategy

The interview research for this dissertation employs the snowball sampling method, or what Mosley calls a method for "gradually accumulating respondents in a sample based on recommendations from earlier interviewees".[190] Over the course of research, the snowball sampling method has proven especially useful for identifying and reaching demining experts.

Commenting on the tightly-knit nature of demining work, the FSD Program Director for Ukraine noted how: "Demining is a small community, we all know each other".[191] Because of the sensitive nature of their work, the demining sector is typically tightly regulated, and individuals from outside of demining networks, particularly researchers, often encounter restricted access, suspicion and skepticism.

The issue of access is particularly pronounced in Ukraine, amid the significance of demining operations for Ukraine's war effort against the Russian Federation. Under such circumstances, the snowball sampling method is critical to obtaining any relevant contact and information because it allows leveraging insider networks to introduce outside scholars as trusted affiliates. Such introductions foster a degree of a priori trust that might otherwise be challenging to secure, thereby streamlining the process of identifying and recruiting key interlocutors.

[190] Layna Mosley. 2019. *Interview Research in Political Science*. Ithaca, NY: Cornell University Press. P. 41.
[191] Eleanor Porritt (Fondation Suisse de Déminage, Program Director for Ukraine), interviewed by the author, February 28, 2025.

Because this dissertation research design does not feature statistical analysis and the central limit theorem does not apply, the ideal sample size is less clear, and thus presents a methodological challenge.[192] In the initial stage of the research, I estimated that 25-30 interviews per case study, or 50-60 total interviews would be a sufficient sample size. I based this estimate on the recognition that in-depth, semi-structured interviews would provide a solid foundation for a qualitative inquiry while capturing a diverse range of perspectives present in the demining sectors of BiH and Ukraine.

However, the process of securing access and recruiting key interlocutors proved significantly more complex than originally anticipated, particularly within Ukraine. Despite the extensive use of snowball sampling methodology, many of my contacts in Ukraine, particularly international demining personnel, refused to speak about their work even with the guarantee of anonymity. In the case of BiH, my "localness" granted me substantially wider access to demining experts, and significantly "closer look" at the process of demining. Additionally, my perceived ethnonational identity, evidently reflected in my name led to an uneven access: whereas authorities in the Federation of Bosnia and Herzegovina (FBiH), state-level agencies, and international agencies were willing to speak to me, authorities in Republika Srpska (RS) were disinclined.

As a result, this dissertation did not meet its "ideal" sample-size plan for Ukraine, but met the planned sample-size plan for BiH.

The final sample-size counts 47 interlocutors from BiH, and 7 from Ukraine. While this constraint led to evident numerical asymmetries across the two case studies, it did not compromise the qualitative depth and diversity of data collected from the interviews. The data collected during the interview research remains contextually nuanced and offers substantial depth. Therefore, the insights gathered remain sufficiently robust to support meaningful comparative analysis and ensure the analytical integrity of the research findings despite the numerical asymmetries.

[192] Mosley. 2019. *Interview Research in Political Science*, 273.

4.3.2 Interview Script

Script for Semi-Structured Interviews with Demining Experts
1. What is your mission in BiH / Ukraine and how do you fulfill it? What things are crucial to know about the work you do in BiH / Ukraine? 2. How does your organization think about landmines as a problem and how is that shaped by context, and competing understandings of territory? 3. Who determines the prioritized sites for demining? Who is involved, what tools and ways of demining do you use, and where does this expertise come from? 4. What problems and challenges do you come across in your work: what problems do you find from international funders, and what are the local problems and concerns? Optional question for international demining organizations: 5. Does your work in Ukraine differ from the one you have done and/or are doing in BiH? If so, why and how is it different?

Table 4.1. Interview Script for BiH and Ukraine Demining Experts.

4.4 Fieldwork

The third part of the study's research methodology is ethnographic fieldwork. The purpose of this research methodology is to document and capture the demining processes through direct observation and participant observation. This process includes visits to institutional headquarters of demining agencies, observing their daily administrative work, and the landmine clearance process. Similarly to interview research, ethnographic fieldwork assists in grounding the study in the realities at local(ized) scales, and helps produce a thick description of the demining processes itself.

4.4.1 Ethnographic Fieldwork in BiH

The ethnographic fieldwork in BiH took place between January 10th and January 19th 2024, and between April 11th and May 20th 2024. During this part of research, I visited two demining worksites, four institutional headquarters, and a one-day event dedicated to mine action and mine awareness where key demining operators and authorities demonstrated their work and operations to the public.

The four institutional headquarters visited include the BHMAC at Kasindolska 192 in Sarajevo, the FUCZ at Vitomira Lukića 10 in Sarajevo, the NPA at Blagovac 2 in Vogošća, and the AF BiH Barracks at Safeta Zajke in Sarajevo. The two demining worksites visited are located in Herzegovina and Eastern Bosnia respectively. The demining worksite in Herzegovina is located in Drecelj, a village adjacent to the city of Konjic. The demining worksite in Eastern Bosnia is located in Zebina Šuma, a village in the FBiH part of the Foča-Ustikolina municipality.

In both cases, I was granted permission by the FUCZ, the demining operator carrying out clearance tasks, to visit the worksites, and traveled to both locations with FUCZ staff in vehicles designated for demining worksites. During both visits, I spent the entire day at the site, and was required to complete the routine medical survey upon arrival. At the sites, I spoke to deminers, medics, quality control staff, officers for safety procedures, EOD technicians, and the demining inspectors from the BHMAC.

While at the demining worksites, I observed the demining teams' routine work, including mapping, documentation, and quality control; I took photographs and videos of their work, and kept notes in my fieldwork journal. In both instances, the demining teams leaders, as well as team members gave me their verbal permission to record and take photographs.

A portion of the interviews involved one-on-one conversations, while another portion featured group settings, particularly at demining sites, where I had extended conversations with multiple demining experts at the same time. I also conducted interviews outside of demining worksites and institutional headquarters. All interlocutors who decided to remain anonymous requested that we have a conversation outside of their institutional headquarters, thus many fieldwork interviews took place in local cafes and restaurants.

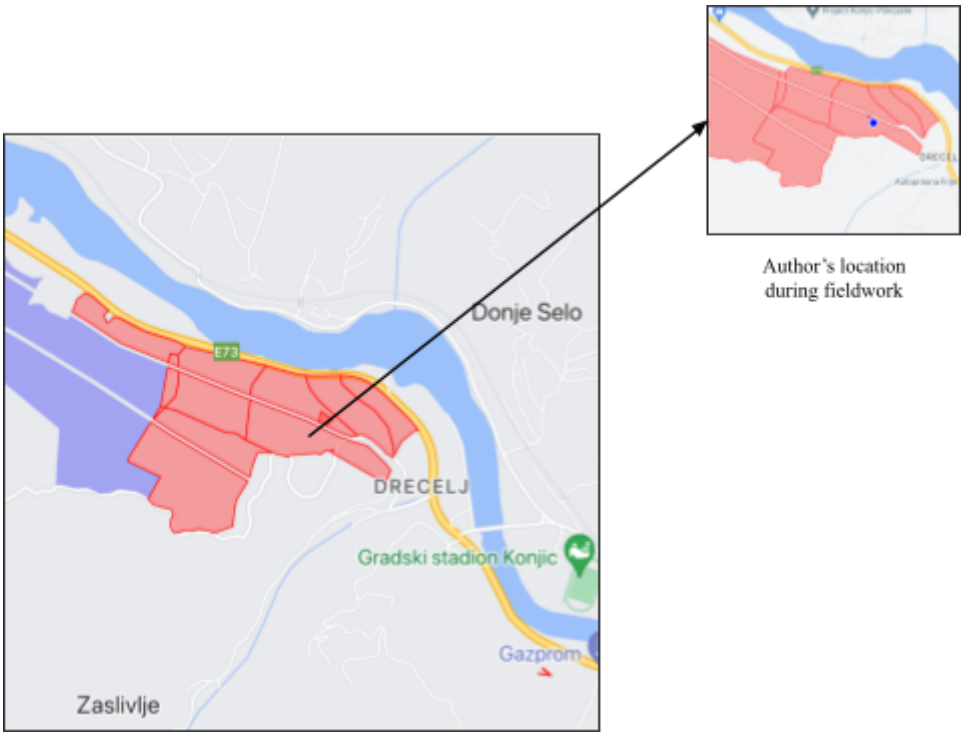


Figure 4.1. *A map showing the location and extent of the demining worksite, MAC ID-9618, in Drecelj-Konjic, and the location of the author during fieldwork.*[193]

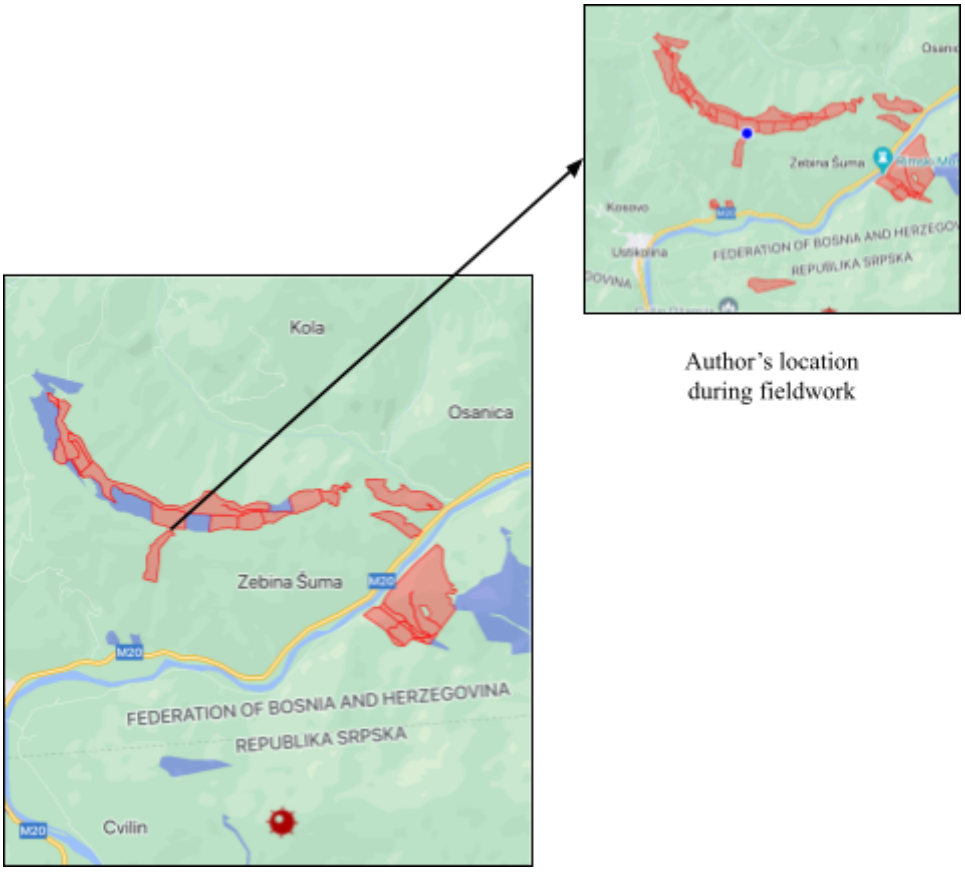


Figure 4.2. *A map showing the location and extent of the demining worksite, MAC ID-62, in Zebina Šuma, Foča-Ustikolina municipality, and the location of the author during fieldwork.*[194]

[193] Bosnia and Herzegovina Mine Action Center (BHMAC), BH Mine Suspected Areas IOS App. Screenshot taken by author, 2024. https://apps.apple.com/us/app/mine-suspected-areas/id1546066712.
[194] Bosnia and Herzegovina Mine Action Center (BHMAC), BH Mine Suspected Areas IOS App. Screenshot taken by author, 2024. https://apps.apple.com/us/app/mine-suspected-areas/id1546066712.



Figure 4.3. *The entrance of the minefield MAC ID-9618 in Drecelj-Konjic.*[195]

[195] Photograph taken by author on May 7, 2024.



Figure 4.4. *The entrance of the minefield MAC ID-62 in Zebina Šuma, Foča-Ustikolina municipality.*[196]

[196] Photograph taken by author on May 16, 2024.



Figure 4.5. *The headquarters of the Bosnia and Herzegovina Federal Civil Protection Administration (FUCZ) in Sarajevo, and the headquarters of the Norwegian People's Aid (NPA) mission in Bosnia and Herzegovina. Photos 1 and 2 show the FUCZ's Demining Department. Photo 3 shows the training field for the NPA's mine detection dog units. Photo 4 shows the NPA's headquarters in Vogošća. Photo 5 shows the NPA's kennels for the mine detection dogs.*[197]

4.5 Limitations and Asymmetries of the Study

Ukraine remains an active war zone. Because of this, I was unable to conduct ethnographic fieldwork research in Kyiv Oblast or other areas where demining operations are underway, such as Chernihiv Oblast, Kherson Oblast, Kharkiv Oblast, and Mykolaiv Oblast. In April and May 2024, I coordinated institutional headquarters visits and demining worksites visits with MAG's mission in Ukraine and generous assistance of MAG's Regional Director for Eastern Europe. The visits were scheduled to take place in August and September 2024. While my contacts from Ukraine attempted to [re]assure me that Kyiv Oblast and several other areas where active combat has largely ceased were "safe", news of occasional bombings of such areas had further

[197] Photographs taken by the author in Sarajevo and Vogošća on April 23 and May 10, 2024.

discouraged me from pursuing travel to Ukraine. I definitively abandoned the Ukraine fieldwork plans in June 2024 amid concerns for personal safety.

Given the absence of fieldwork data from Ukraine, and the imbalance of the number of experts interviewed across the two cases, this dissertation presents an asymmetric study. Despite the asymmetry, this study posits that these imbalances do not undermine inferential leverage.

First, the Ukraine interviews were sampled across the same organisational strata as the BiH case—government, INGOs, and local operators—ensuring representation of every decision-tier captured in the BiH case. Second, I compensated for the smaller n with a triangulation strategy: each Ukrainian claim is cross-checked against process-tracing timelines built from official reports, and media pieces. Third, because the dissertation's comparative logic hinges on within-case causal process tracing rather than interview frequency, what matters is saturation of mechanistic evidence, not symmetry of raw counts.

In addition, the evidentiary ecology in Ukraine is more transparent than in BiH, further mitigating the interview gap. Since 2022 the Ukrainian government, media outlets, think tanks, and demining INGOs have produced regular "situational reports": satellite images, daily contamination maps, procurement ledgers, progress dashboards, and technical briefs. That torrent of open-source material yields far richer event-sequence and funding data than is available for BiH, where comparable records sit in non-digitized BHMAC archives, and required my on-site visits and ethnographic observation to access. Consequently, fewer interviews in Ukraine are offset by a denser, publicly verifiable documentary trail, whereas the BiH case appropriately relies more heavily on fieldwork and face-to-face testimony. For instance, the list of the exact types of landmines used during the Bosnian War is not available online. To find this out, I had to rely on in-person visits to organizations tasked with clearing them, where I was shown physical collections of replicas, dummy landmines, and neutralized landmines used during the conflict.

Finally, ethical and safety constraints that precluded ethnographic fieldwork in Kyiv Oblast are themselves salient data: they reveal the contested, wartime context whose effects on demining practice I theorize, and I foreground this reflexively in the limitations section. Taken together, these compensatory measures secure analytical rigor while respecting the practical realities of research in an active war zone.

Chapter 5

Why States Arm the Earth

5.1 Introduction

Wars are fought over territory, and the waging of war also remakes territory. War requires the claiming of space, the exploitation of resources, and the destruction of material structures and ecologies supporting enemy formations. It is about life and death not only for humans but non-human species and life support systems, infrastructure, and ecologies. In the context of the Anthropocene, marked by an accelerating planetary crisis where thresholds of three planetary boundaries have been exceeded—biodiversity loss, nitrogen cycle interruption, and climate change—the size and magnitude of socio-environmental disturbance enacted through war is larger than any other anthropogenic activity, making it a "major and distinctive force in environmental change".[198]

Beyond the immediate damage and destruction, the socio-ecological effects of war extend into the future through the "slow violence" of remnant war munitions. Landmines, in particular, have enduring material effects on territories and ecologies. They render space dangerous, alter land-tenure patterns, and degrade the biosphere through chemical contamination and physical damage. They project force beyond the capability of a human body, defy the immediate spatio-temporal limits of battlespaces, and extend and entrench the territorial logic of wars by inscribing it upon and beneath the land.

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[198] Robert Francis and Krishna Krishnamurthy. 2014. "Human Conflict and Ecosystem Services: Finding the Environmental Price of Warfare." *International Affairs* 90 (4): 853–69. https://doi.org/10.1111/1468-2346.12144. P. 854 ;
Richard P. Tucker, and Edmund Russell. 2004. *Natural Enemy, Natural Ally : Toward an Environmental History of Warfare*. Corvallis: Oregon State University Press. P. 2 ;
Joseph Hupy. 2008. "The Environmental Footprint of War." *Environment and History* 14 (3): 405–21. https://doi.org/10.3197/096734008x333581. P. 405 ;
Paul Crutzen. 2006. The "Anthropocene". In Ehlers, Eckart, and Thomas Krafft, eds. 2006. *Earth System Science in the Anthropocene*. Berlin, Heidelberg: Springer. https://doi.org/10.1007/b137853. P. 16 ;
Johan Rockström. 2009. "A Safe Operating Space for Humanity." *Nature* 461 (7263): 472–75. https://doi.org/10.1038/461472a. P. 472.

As such, they create systems of "automated violent enclosure" or what Bolton calls "[war]architectural interventions"—practices that "shape space, guide people through it and produce affect".[199] Beyond that, landmines are also media that "communicate something about the world that produced them".[200]

This chapter discusses why and how states arm the Earth with landmines. To understand this, the chapter first discusses how warfare remakes territories. The chapter then discusses the origins and technical aspects of landmines and mine-laying.

It presents a brief historical background of this weapon, tracing the process by which landmines became an integral part of modern military arsenals. After cataloguing the different types of landmines and ways of deployment, the chapter shifts the focus on the process of mine-laying, including its origins, types and technical aspects. The final section of the chapter examines processes of mine-laying as a distinct way of practicing territory, understood as the "spatialization of death". To understand the process of demining as a form of territorial recovery in different geopolitical contexts, it is imperative to reflect on the technical design, deployment mechanism, and military use of landmines. The "thick geopolitics" of landmine use and removal begins with an understanding of the weapon itself.

5.2 War and the Remaking of Ecologies

The common sense understanding of war is that it is a "cataclysmic event that interrupts otherwise normal character of daily life".[201] It is a form of annihilation, and "no process of annihilation succeeds without leaving at least a trace".[202]

There are at least three types of material-environmental effects on territories associated with warfare. The first concerns material-environmental disturbance and destruction from weaponry. The second concerns the direct consumption of resources to support armies, while the third relates to the indirect consumption of resources by military-industrial complexes that supply the

[199] Matthew Bolton. 2015. "From Minefields to Minespace: An Archeology of the Changing Architecture of Autonomous Killing in US Army Field Manuals on Landmines, Booby Traps and IEDs." *Political Geography* 46 (May): 41–53. https://doi.org/10.1016/j.polgeo.2014.11.002. P. 41.
[200] Ibid,. 42
[201] Jairus Victor Grove. 2019. *Savage Ecology : War and Geopolitics at the End of the World*. Durham: Duke University Press. P. 59-60.
[202] Ibid, 60.

war effort.[203] These disturbances take place in three stages: first while preparing for war, second during the war, and third in the postwar period.[204] Neither of the three types of material-environmental disturbance is isolated from the other two or confined to one stage only, but all three intertwine across different spatio-temporal scales and stages.

Environmental destruction and disturbance can also be a deliberate war strategy. McNeill notes that "deliberate environmental warfare has a long pedigree", and "scorched-earth tactics, poisoned wells, and the like are almost as old as war itself".[205] But the environmental damage and destruction through warfare take place whether or not the natural environment is part of a deliberate strategy, and the severity of effects is not necessarily higher in the latter case.

In preparing for war, active military training, manufacture, testing and stockpiling of war munitions, construction and maintenance of military facilities and consumption of natural resources can lead to "residual unexploded ordnance (UXO), chemical contamination, landscape cratering, vegetation removal, and soil erosion".[206] Heavy vehicle traffic can physically damage land through greater soil compaction and altered geodiversity of landscapes.

For instance, "altered flora in tank tracks were documented 55 years after World War II training maneuvers".[207] Such effects are only amplified during the war—a carbon-intensive activity that requires extraordinary amounts of energy and is "distinguished by immense and concentrated energy flows".[208] Military vehicles like tanks, destroyers, and fighter jets emit massive amounts of CO_2. For instance, Collins notes that the Pentagon is the "world's largest industrial consumer of fossil fuels".[209] Similarly, Belcher at al. note that the U.S. military "remains the largest single institutional consumer of hydrocarbons in the world".[210] Military vehicles also release pollutants

[203] Joseph Hupy. 2008. "The Environmental Footprint of War." *Environment and History* 14 (3): 405–21. https://doi.org/10.3197/096734008x333581. P. 406.
[204] Gary E. Machlis and Thor Hanson. 2008. "Warfare Ecology." *BioScience* 58 (8): 729–36. P. 33.
[205] J.R. McNeill. 2004. "Woods and Warfare in World History." *Environmental History* 9 (3): 388. P. 401.
[206] Machlis and Hanson. 2008. "Warfare Ecology", 34.
[207] Ibid, 35.
[208] Ibid, 34. ; Tom H. Hastings. 2000. *Ecology of War & Peace : Counting Costs of Conflict*. Lanham, Md.: University Press Of America. P. 39.
[209] Sheila D Collins. 2015. "War Making as an Environmental Disaster." *New Labor Forum* 24 (2): 25–30. https://doi.org/10.2307/24718593. P. 26.
[210] Oliver Belcher, Patrick Bigger, Ben Neimark, and Cara Kennelly. 2019. "Hidden Carbon Costs of the 'Everywhere War': Logistics, Geopolitical Ecology, and the Carbon Boot‐Print of the US Military." *Transactions of the Institute of British Geographers* 45 (1): 65–80. https://doi.org/10.1111/tran.12319. P. 66.

such as ozone-depleting nitrogen oxides (NO_x) and highly toxic hydroxides that have adverse effects on the atmosphere, as well as the lithosphere (soil), and hydrosphere (water).

The use of war munitions causes soil disturbance by cratering soil layers and bedrocks, removing protective vegetation covers, and impregnating soil with shrapnel—all of which may induce laterization, a process by which exposed soils turn into dry, rock-like laterite.[211] War munitions can thus alter landscapes beyond recognition, turning them into what Gregory calls "anti-landscapes" and "slimescapes", or what Hupy terms "moonscapes".[212]

Such pulverization of land by war munitions was first documented during WW1 and the advent of explosive ordnance. For instance, tunneling, mining, and trench warfare on the Western Front together produced a "hideously hybrid and cyborg" nature—an entanglement of "trees stripped of branches and leaves, soil bereft of cover, burned-out vehicles, bombed-out buildings, barbed wire, exploded munitions, weapons, toxic residues, and body parts".[213] Similarly, Hupy notes how during the Vietnam War, extensive carpet bombing turned the green delta land into what from above looked like a "gray porridge".[214] In some places, bomb craters remain clearly visible decades after the war.[215]

The remaking of territory through war does not end once the fighting stops. War's effects on the environment are pernicious because they "spill over the temporal and spatial boundaries of the attack", battlefields, and frontlines—environmental disturbance begins well before the first shots are fired and continues long after the guns fall silent.[216] Indeed, the Council of Europe's Committee on the Environment documented how "air, river and underground transfer of pollutants" resulting from NATO's 1999 offensive in Serbia affected areas of "Albania, Bulgaria, Greece, Hungary, Romania, North Macedonia, and Ukraine" for months after the military operation.[217] Similarly, Machlis and Hanson note how studies conducted after "six decades of

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[211] Hupy. 2008. "The Environmental Footprint of War", 417.
[212] Derek Gregory. 2015. "The Natures of War." *Antipode* 48 (1): 3–56. https://doi.org/10.1111/anti.12173. P. 14 ; Hupy. 2008. "The Environmental Footprint of War", 412-417.
[213] Gregory. 2015. "The Natures of War", 4. ; Tucker and Russell. 2004. *Natural Enemy, Natural Ally, 4.*
[214] Hupy. 2008. "The Environmental Footprint of War", 416.
[215] Tyner. 2010. *Military Legacies,* 19.
[216] Chris Pearson. 2012. "Researching Militarized Landscapes: A Literature Review on War and the Militarization of the Environment." *Landscape Research* 37 (1): 115–33. P. 124
[217] Council of Europe, Assembly Debate, Parliamentary Assembly, January 24, 2001. (EU) https://assembly.coe.int/nw/xml/XRef/Xref-XML2HTML-en.asp?fileid=16867&lang=en

bombing practice on the island of Vieques, Puerto Rico, have documented weapons-related toxins in groundwater, vegetation, and nearshore marine life".[218]

Intense pollution, damaged and destroyed infrastructure, and degraded landscapes and ecosystems are some of the immediate postwar conditions.[219] Debris, rubble, and military scrap left behind continue to contaminate soil, water, and air, and war's environmental impact extends into the future through legacy munitions and other explosive remnants of war (ERW). The ERW refers to ordnance left behind after a war and includes two different types of ordnance. Explosive weapons that fail to detonate "as intended become unexploded ordnance (UXO)", while "explosive weapons that have not been used during the armed conflict but have been left behind and are no longer effectively controlled" become abandoned explosive ordnance (AXO)".[220] The ERW includes "artillery shells, grenades, mortars, rockets, air-dropped bombs, and cluster munition remnants".[221]

However, one military technology, in particular, has enduring material effects on territories and ecologies: landmines. Monin and Gallimore note that landmines can be distinguished from other weapons of war in that they know no ceasefire.[222]

Nixon, too, notes how in "neither space nor time can mine-terrorized communities draw a clear line separating war from peace".[223] They wreak "social and environmental havoc", remake territory for decades after the war through land degradation, and constitute "one of the most hazardous soil contaminants".[224] Long after a "war's soldiers have been demobilized, the landmine maintains its unblinking vigilance. It is there to do its duty— even if ten, twenty years too late, retaliating against an enemy as unspecific as humanity itself".[225]

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[218] Machlis and Hanson. 2008. "Warfare Ecology", 35.
[219] Machlis and Hanson. 2008. "Warfare Ecology", 34.
[220] The International Campaign to Ban Landmines. 2022. "Landmine Monitor 2022." *ICBL-CMC*, November 2022. https://backend.icblcmc.org/assets/reports. P. i.
[221] Ibid.
[222] Monin and Gallimore. 2002. *The Devil's Gardens,* 2.
[223] Rob Nixon. 2011. *Slow Violence and the Environmentalism of the Poor*. Harvard University Press. P. 222.
[224] Ibid. ; J.A Hannam and J.A. Dearing. 2008. "Mapping Soil Magnetic Properties in Bosnia and Herzegovina for Landmine Clearance Operations." *Earth and Planetary Science Letters* 274 (3-4): 285–94. https://doi.org/10.1016/j.epsl.2008.05.006. P. 285.
[225] Nixon. 2011. *Slow Violence,* 223.

Landmines are intended to "prevent, restrict, or inhibit enemy access to particular locations" during conflict.[226] Because they are cheap, lightweight, effective, accessible, and easy to manufacture, the use of landmines has become a routine in the late 20th-century and 21st-century warfare.[227]

While landmines can be distributed randomly, many are placed in and around areas of strategic importance because of their capacity to deny access, kill, and injure enemy soldiers or destroy and incapacitate military vehicles. Vital infrastructure installations, "such as bridges, electrical towers, water and sewage treatment plants, hospitals, and even schools, are frequently mined".[228]

Landmines remake land either directly through detonation and deterioration or indirectly by altering socio-ecological relations.[229] Berhe classifies landmine effects on land into five categories: (1) access denial, (2) loss of biodiversity, (3) micro-relief disruption, (4) chemical contamination, and (5) loss of productivity. Only the first category falls into landmines' indirect effects, and the latter four into direct effects.[230]

Chemical compounds, such as TNT, RDX, or tetryl released from landmines when they deteriorate or detonate degrade and contaminate soils. This interferes with "the ability of the soil system to serve as a geochemical sink for contaminants" or "act as a natural buffer to control the exchange of elements between the atmosphere, hydrosphere, and biota".[231]

Landmines' indirect effects on land, their ability to render dangerous [territorialize] vast areas of land and restrict access to land-based resources, physically reconstitute natural landscapes when

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[226] Tyner. 2010. *Military Legacies,* 92.
[227] Ibid, 92-94. ;
Neil Andersson, Cesar Palha da Sousa, and Sergio Paredes. 1995. "Social Cost of Land Mines in Four Countries: Afghanistan, Bosnia, Cambodia, and Mozambique." *BMJ* 311 (7007): 718–21. https://doi.org/10.1136/bmj.311.7007.718. P. 718. ;
Frank Witmer and John O'Loughlin. 2009. "Satellite Data Methods and Application in the Evaluation of War Outcomes: Abandoned Agricultural Land in Bosnia-Herzegovina after the 1992–1995 Conflict." *Annals of the Association of American Geographers* 99 (5): 1033–44. https://doi.org/10.1080/00045600903260697. P. 1043
[228] Tyner. 2010. *Military Legacies,* 110.
[229] Jon D. Unruh, Nikolas C. Heynen, and Peter Hossler. 2003. "The Political Ecology of Recovery from Armed Conflict: The Case of Landmines in Mozambique." *Political Geography* 22 (8): 841–61. https://doi.org/10.1016/j.polgeo.2003.08.001. P. 845.
[230] Asmerat A. Berhe. 2007. "The Contribution of Landmines to Land Degradation." *Land Degradation & Development* 18 (1): 1–15. https://doi.org/10.1002/ldr.754. P. 6.
[231] Ibid, 9.

"abandoned agricultural areas return to bush and forest".[232] Landmines also affect the processes of resettlement and return migrations. In a quest to (re)settle on landmine-free areas, people in post-conflict communities may move to fragile environments and degrade them through unsustainable use.[233]

By ensuring that "militarized landscapes" endure, landmines and other war munitions also impact socio-ecological relations that are important for post-war recovery and reconciliation, such as agriculture, transportation, or international investment.[234]

As issues of post-conflict "re-integration, land access, land conflict, food insecurity, and environmental degradation caused by or aggravated by landmines gain momentum and interact", they restructure and contest spatial scales—"their extent, content, relative importance, and interrelations".[235] Food insecurity and loss of sustenance sources to landmines and remnant war munitions, in particular, have socio-political repercussions that can significantly complicate peace processes. As Unruh et al. note, groups and individuals "disenfranchised from the gains of transition from war to peace may resort to violence in order to survive", degrading the legitimacy of the post-war state in the process.[236]

On the other hand, the endurance of landscapes saturated with material legacies of war can obstruct the processes and politics of reconciliation by *affectively* reconfiguring landscapes. The lingering presence of landmines and war munitions, coupled with slow landmine mapping and de-mining processes can breed mistrust and anxiety among inhabitants of remnant material landscapes of war. As boundaries of mine and munition-infested spaces become "unclear, diffuse and difficult to determine", they create what Pardo Pedraza terms "landscapes of suspicion".[237] And this affective reconfiguration of landscapes, in turn, reconfigures the corporeal experience—certain areas cease to be used, paths are no longer walked, and land is no longer touched.[238]

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[232] Unruh et al. 2003. "The Political Ecology of Recovery from Armed Conflict", 844.
[233] Ibid.
[234] Ibid, 841.
[235] Ibid, 845-857.
[236] Unruh et al. 2003. "The Political Ecology of Recovery from Armed Conflict", 857.
[237] Diana Pardo Pedraza. 2022 "Landscapes of Suspicion: Minefields and Cleared-Lands in Rural Colombia." *Society for Cultural Anthropology*, January 25, 2022. https://culanth.org/fieldsights/landscapes-of-suspicion-minefields-and-cleared-lands-in-rural-colombia.
[238] Ibid.

5.3 Landmines as War Weapons

> "Equally dangerous to friend and foe and extremely dangerous to pick up when no longer required" — Major Bucknill, Royal Engineers, 1884.[239]

Landmines have substantially shaped the wars and and their aftermaths throughout the 20th and 21st centuries, leaving tangible and intangible legacies that extend far beyond the battlefield. Their extensive use throughout the conflicts of the 20th century resulted in what humanitarian NGOs termed a "global emergency" or a "global epidemic" of landmines.[240]

The humanitarian effects of landmines are well-documented with a large corpus of survivor testimonies, assessments of mine impacts in the developing world, and a "great swathe of anti-mine literature".[241] In fact, the majority of literature on landmines is "anti-mine", emphasizing their post-conflict civilian cost and advocating for their complete and immediate ban. This corpus of literature afforded landmines—and minefields, a list of picturesque nicknames, such as "the dragon's teeth", "the devil's gardens", "the most hated weapon", "infernal machines", and "weapons of mass destruction in slow motion".[242]

Beyond the civilian and humanitarian effects of landmines, which have been thoroughly illuminated through such literature, the weapon itself has received significantly less attention in literature, scholarly or otherwise. In a critique of this dynamic, Croll describes the existing literature on landmines as "highly emotive and not especially enlightening".[243] This section discusses the origins and technical aspects of landmines and mine-laying. First, it presents a brief historical background of this weapon, tracing the process by which landmines became an integral part of modern military arsenals. After cataloguing the different types of landmines and

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[239] Croll. 2008. *Landmines in War and Peace,* 27.
[240] Donna McIvor Joss. 1997. "Anti-Personnel Landmine Injuries: A Global Epidemic." *Work* 8 (3): 299–304. https://doi.org/10.3233/WOR-1997-8310.
[241] Croll. 2008. *Landmines in War and Peace,* viii.
[242] Monin and Gallimore. 2002. *The Devils' Garden,*xvi ;
Stew Magnuson. 2020. "A Hard Look at the Landmine Issue." National Defense, October 8, 2020. https://www.nationaldefensemagazine.org/articles/2020/10/8/a-hard-look-at-the-landmine-issue ; Philip C. Winslow. 1997. *Sowing the Dragon's Teeth : Land Mines and the Global Legacy of War*. Boston, Ma: Beacon Press.
[243] Croll. 2008. *Landmines in War and Peace,* viii.

ways of deployment, the chapter shifts the focus on the process of mine-laying, including its origins, types and technical aspects.

5.3.1 The Landmine

"A landmine is the perfect soldier:
Ever courageous, never sleeps, never misses".[244]

A landmine is an explosive trap. It is a device that detonates through chemical, electrical or mechanical fuses when initiated by its victim or through controlled means.[245]

In the words of the U.S. Department of the Army, a landmine is simply "an explosive device that is designed to destroy or damage equipment or personnel".[246] In military lexicon, a landmine is defined as a defensive, area denial weapon, intended to defend a particular location or military position by denying, restricting or inhibiting access, or "shaping the terrain" by channeling the movement of enemy troops.[247] In short, the military utility of landmines lies in their capacity to "transform the terrain to the defender's advantage" and allow defenders to "use less men, whilst forcing the attacker to use more".[248] Landmines, however, can also be used offensively to inflict casualties, or destroy equipment, vital infrastructure, communications lines, and supply routes.[249]

While military lexicon emphasizes the defensive capacity of mines, the lexicons of mine action NGOs typically stress the visceral effects of landmines, defining them as "explosive devices designed to destroy or damage vehicles, or to wound, kill or otherwise restrict people's activities".[250] Beyond their capacity to defend and protect, or act offensively, landmines are also a psychological weapon. They sow fear, terror and uncertainty which can cripple morale of the

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[244] Mine Sweepers. n.d."Facts About Landmines". https://landminefree.org/facts-about-landmines/.
[245] Bolton, 2010. *Foreign Aid and Landmine Clearance*, 3. ;
U.S. Department of the Army. 2004. "FM 20-32 Mine/Countermine Operations". *Department of the Army*, February 2, 2004. https://www.marines.mil/Portals/1/Publications. P. 1-1. ; United Nations Mine Action Service. 2015. "Landmines, Explosive Remnants of War and IED Safety Handbook". UN: New York. https://www.unmas.org/sites/default/files/handbook_english.pdf P. 12.
[246] Department of the Army, 2004. *Mine/Countermine Operations*, 1-1.
[247] Tyner. 2010. *Military Legacies,* 92; UNMAS. 2015. *Landmines Handbook*, 11. ; Bolton. 2010. *Foreign Aid and Landmine Clearance*, 3.
[248] Croll. 2008. *Landmines in War and Peace,* ix.
[249] Ibid, vii. ; UNMAS. 2015. *Landmines Handbook*, 11.
[250] UNMAS. 2015. *Landmines Handbook*, 11.

enemy forces, and lead to hesitation and delay in the war effort. Erola suggests that this "psychological impact can be as effective as the physical damage caused by the mines", while Croll notes that the "unnerving psychological effect" of landmines caused combatants of the American Civil War to "march bravely up through a blaze of musketry but timidly over ground in which they suspect the hidden mine".[251]

5.3.2 The Origin: From Spikes to Infernal Machines

The lineage of landmines can be traced to non-explosive land traps such as spikes and stakes used by various armies over two thousand years ago.[252] The form of these traps, usually made of metal or wood, was different from the modern landmines, but identical in function.[253] The current understanding of mines' lineage indicates that earliest-known explosive-based landmines were used in the 13th century by the Chinese military against the Mongol troops.[254] These are documented as early command-initiated fragmentation mines.

In European warfare, however, landmines were not used until the 18th century when the initial attempts to use gunpowder in mines resulted in a weapon called fougasse.[255] While fougasse was not technically a landmine, because it was not victim-activated, mass-produced, or compact, its invention was pivotal—the modern fragmentation landmine was developed from the fougasse.

The advent of "modern" landmines can be traced to the First World War, where the main driver for their development was the need to counter armoured attacks.[256] The "virtual immunity" of tanks to small-arms fire defied the territorial principles of the early 20th-century warfare. Landmines offered a solution, and so "with the tank, came the anti-tank mine".[257] Indeed, Croll notes that the "catalyst for modern mine warfare was the introduction of the tank".[258] Croll further observes the peculiar nature of this development, suggesting that "it was not a clash of

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[251] Jan Erola. 2024. "From Shield to Sword: The Offensive Potential of Modern Landmines - Nordic Defence Review." *Nordic Defence Review*, September 16, 2024. https://nordicdefencereview.com. ; Croll. 2008. *Landmines in War and Peace,* vii.
[252] UNMAS. 2015. *Landmines Handbook*, 10. ; Croll. *Landmines in War and Peace,* viii.
[253] Croll. 2008. *Landmines in War and Peace,* viii.
[254] Ibid, 10. ; Erola. 2024. "From Shield to Sword."
[255] Ibid, 11 ; Ibid.
[256] Croll. 2008. *Landmines in War and Peace,* ix.
[257] McGrath. 2000. *Landmines and Unexploded Ordnance*, 1.
[258] Croll. 2008. *Landmines in War and Peace,* 44.

equals", as "the tank and the mine represent the antithesis of each other".[259] Whereas a tank is manned with a crew, "expensive, mobile, armoured and a proud statement of military virility", a mine is "unmanned, concealed, cheap, invidious, and inglorious".[260]

The early modern landmines, particularly anti-tank mines, had modest impact and their usage remained peripheral at the start of the 20th century. While naval mines had become an "established and sophisticated part of naval warfare" by WW1, no army entered WW1 "with mass-produced landmines in their arsenal".[261] In the inter-war period, landmines remained largely disregarded. British and German engineers made some progress in further refinement of anti-tank mines, but anti-personnel mines were almost "disregarded altogether" because no standard design existed at the time, and they were "always improvised in the field".[262]

It was not until 1935 that German engineers invented the infamous Schrapnell Mine 35, also known as S-Mine, which combined the "maximum destructive power in small, easily concealed format".[263] Four years after its invention, the S-Mine was deployed in battle, and was first used during the Saar Offensive in 1939. The French soldiers encountered the S-Mine during this offensive, and its novel technology was reported to have contributed to the French withdrawal.

This incorporation of high explosives into mines made the weapon more precise, reliable and effective, and marked the technological breakthrough that allowed landmines to proliferate. The German shift from an offensive to a defensive posture in 1942 coupled with a range of mine countermeasures employed by Allies made further technological progress in mine warfare an imperative.

By 1945 Germans had developed sixteen entirely new models of anti-tank mines and ten models of anti-personnel mines, compared to just two types of the former and one model of the latter in their arsenal in 1939.

[259] Croll. 2008. *Landmines in War and Peace,* 44.
[260] Ibid, 44-45.
[261] Ibid, 31.
[262] Ibid, 43.
[263] Ibid, 44.



Figure 5.1. *A photo of an original German S-Mine 35 (SMi.-35) from WW2. This particular model was repainted from dark green into "desert colors" and was likely used in the North African Campaign of WW2.*[264]



Figure 5.2. *A photo showing internal components of the S-Mine. The entire body of the mine, except the fuse, would be buried into soil. The fuse was designed to resemble strands of grass.*[265]

With the conclusion of WW2, landmines, previously a peripheral weapon, had been established as a "major weapons system".[266] Throughout forty-five years of the Cold War, landmines became an integral part of the military arsenal, and were widely used in wars in Korea, Vietnam, Laos, Cambodia, Afghanistan, Angola, Mozambique, Somalia, Ethiopia, Iran, Iraq, and Nicaragua. At the turn of the 20th century, less than ten types of landmines existed, including both anti-tank and anti-personnel. Today, there are over six hundred different types of conventional landmines, and

[264] International Military Antiques. n.d. "Original WWII Inert German Cutaway Bouncing Betty S-Mine with Pressure Fuse." *IMA-USA*. https://www.ima-usa.com/products/original-wwii-inert-german.
[265] Ibid.
[266] Roly Evans. 2022. "A Brief History of Mine Detection Dogs". Center for International Stabilization and Recovery (CISR). *The Journal of Conventional Weapons Destruction* 21: 1-2. P. 50.

many more unconventional and improvised types. Despite hundreds of different types, the general mechanism and components of all conventional landmines are similar, if not identical.

5.3.3 The Mechanics of Landmines

Since the material components of all landmines share a degree of similarity, it is possible to devise a diagram that captures the general mechanics of the weapon. Landmines generally consist of five distinct components:

1. Firing mechanism—which sets off the detonator or igniter charge.
2. Detonator or igniter—which sets off the booster charge.
3. Booster charge—which may be attached to the fuse or the igniter or be part of the main charge.
4. Main charge—which sits in a container and usually forms the body of the mine.
5. Casing—which contains all the above parts.[267]

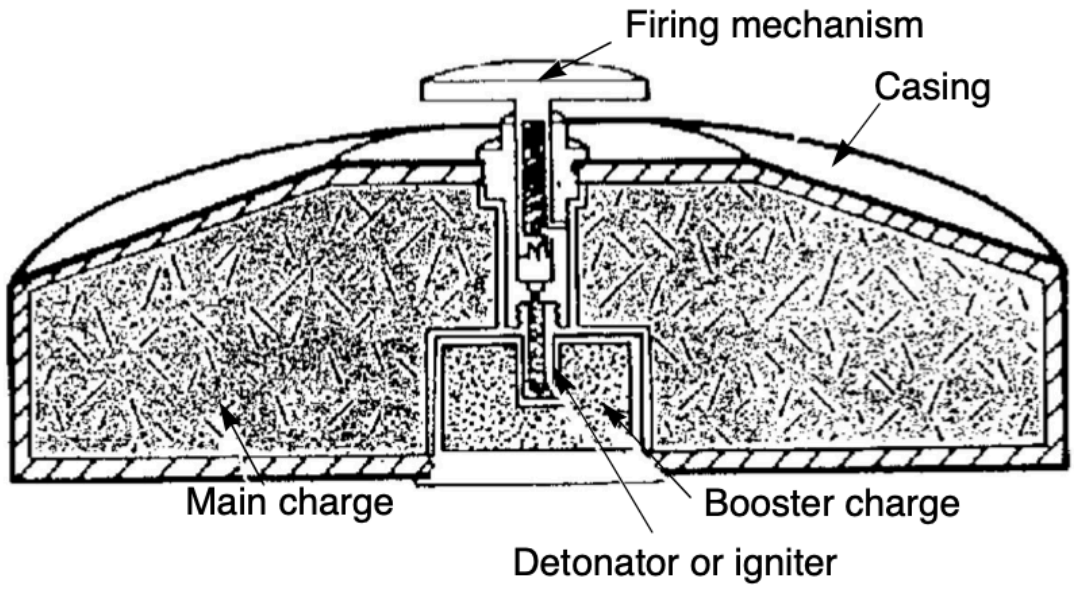


Figure 5.3. *The set of components of a landmine.*[268]

[267] Department of the Army. 2004. *Mine/Countermine Operations*, 1-1.
[268] Ibid, 1-2.

The five basic components of a mine work in tandem to produce an "explosive train" through which a landmine is activated and detonated. The process begins once the firing mechanism or firing pin is activated, which sets off the explosive train to the main charge and produces an explosion.

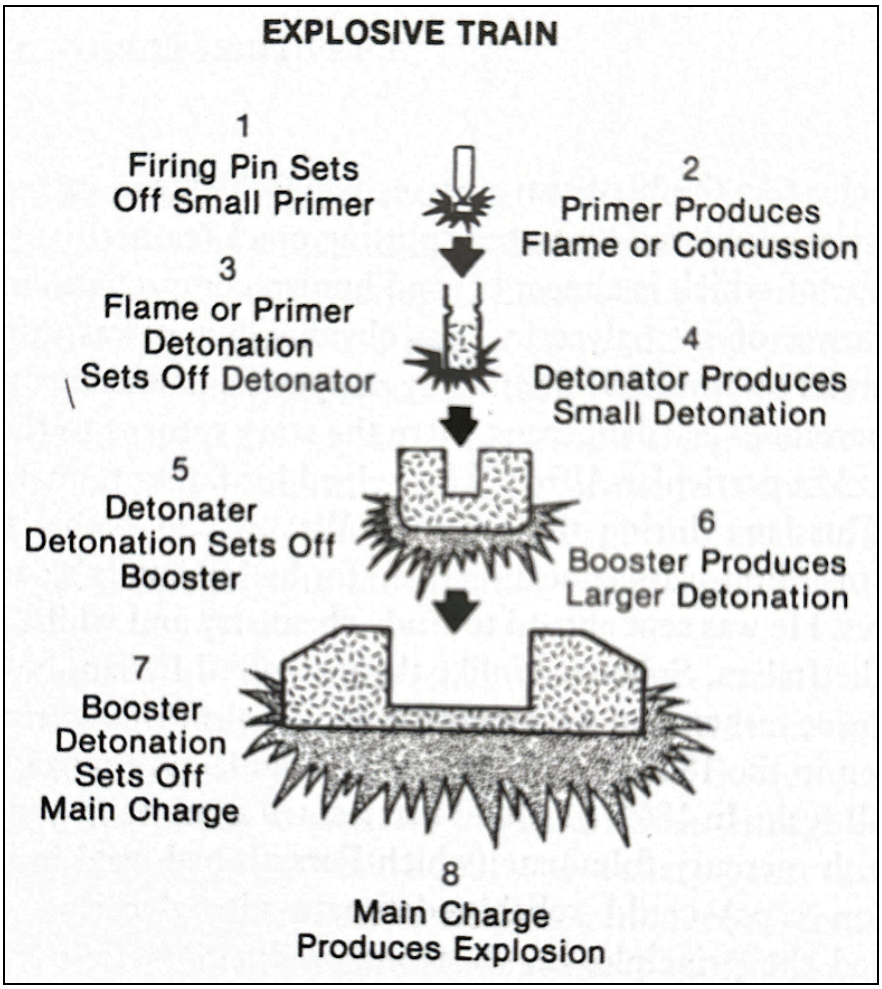


Figure 5.4. *The explosive train—a sequence of explosives of different properties found within all landmines.*[269]

The way in which the explosive train is initiated differs across different types of landmines. This is called the mine "activation mechanism" or "methods of actuating mines".[270] While there are at least eleven different activation methods, the "pressure" and "tripwire" method (also referred to as the "pull method") remain the most prevalent in mine warfare.

[269] Croll. 2008. *Landmines in War and Peace,* 30.
[270] Department of the Army. 2004. *Mine/Countermine Operations*, 1-3.

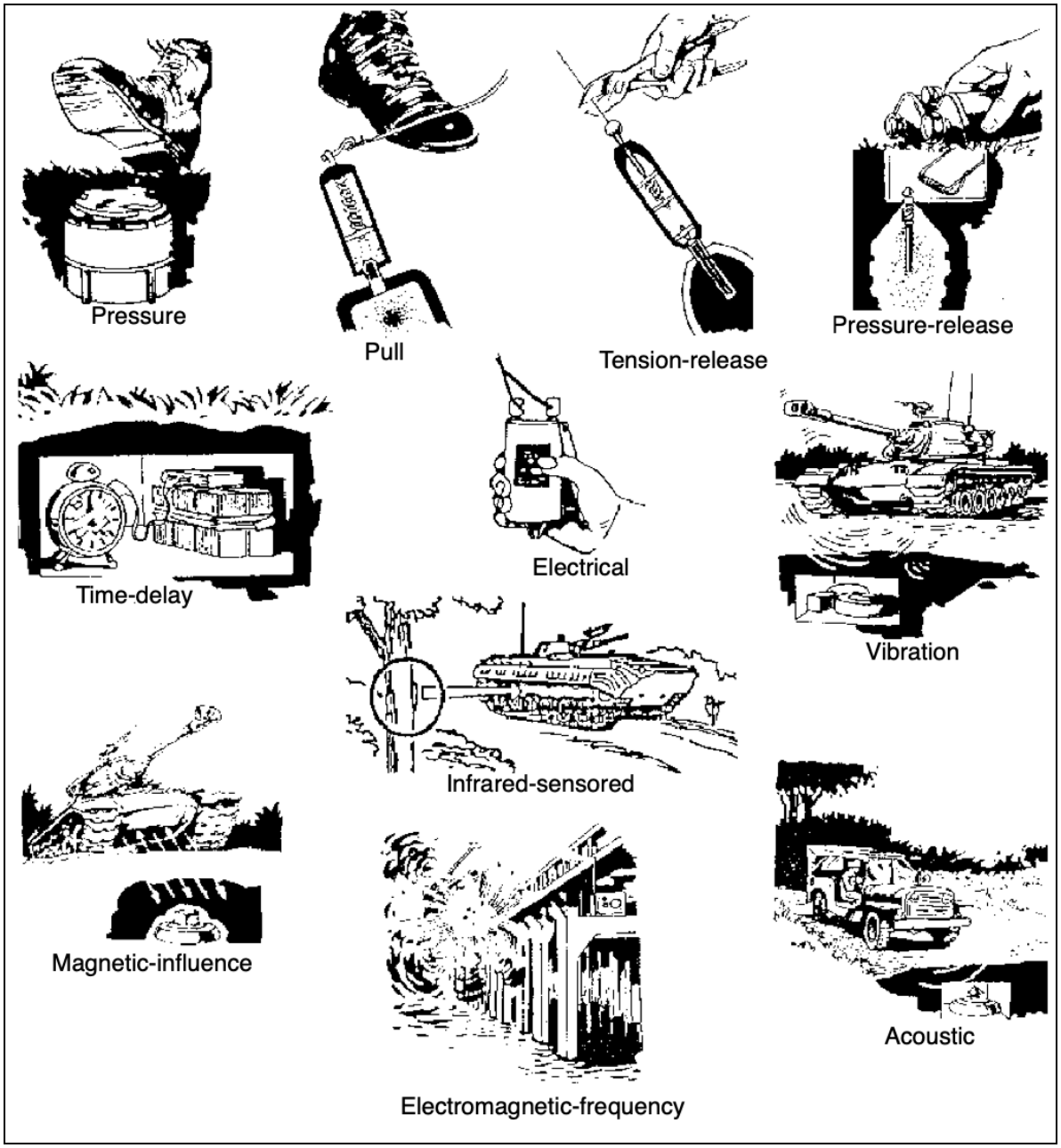


Figure 5.5. *Different types of initiation mechanism for landmines.*[271]

Despite a dozen different activation mechanisms, and over six hundred different mine types, their main classification is based on the type of target. The modern landmines are grouped in two broad categories: anti-personnel landmines (APLs) and anti-vehicle landmines (AVLs) or anti-tank landmines (ATLs).[272]

[271] Department of the Army. 2004. *Mine/Countermine Operations*, 1-3. ; Croll. 2008. *Landmines in War and Peace,* 123.
[272] UNMAS. 2015. *Landmines Handbook*, 12. ; United Nations. 2023. "The Deadly Legacy of Landmines." *UN News*, April 2, 2023. https://news.un.org/en/story/2023/04/1135252.

5.3.4 Anti-Personnel Landmines

"Other weapons kill or injure,

but none are deliberately designed to disfigure in this way".[273]

The APLs, as the name suggests, are used against personnel, either to kill or cause substantial injury. They are designed to detonate by "presence, proximity, or contact or contact by a person".[274] The APs are typically victim-activated, meaning that they detonate when "stepped on or when a trip wire is touched", but some types detonate by the passage of time or other controlled means.[275] APs are generally small devices and their effectiveness, at least in part, depends on their camouflage, or "concealment in the earth" so that they may be initiated by the enemy unless the mine can be initiated via remote-controlled.[276]

In fact, military manuals on landmines detail the necessity of camouflage for the mine warfare, directing personnel to "pack dirt tightly around and over the mine", fill the hole and the mine with more dirt if necessary, and "camouflage the whole installation".[277] Thus, landmines are typically deployed on the ground, either buried into the soil, or fixated slightly above it. The APs are further categorized by their initiation mechanism or manner in which they inflict destruction: blast, fragmentation, small shape charge, or "release of harassing agents or lethal gas".[278]

5.3.4.1 Blast Anti-Personnel Landmines

Blast AP landmines are pressure mines, designed to be triggered by pressure of physical contact, typically by stepping on the mine.[279] They are typically "very cheap" and "among the most commonly found in the world".[280] Blast APs are not designed to cause death, but rather to

[273] Croll. 2008. *Landmines in War and Peace,* 55.
[274] UNMAS. 2015. *Landmines Handbook*, 12.
[275] Ibid. ; U.S. Department of the Army. 1964. "TM 9-1345-200 Department of the Army Technical Manual Landmines." *Department of the Army,* June 8, 1964. https://www.ibiblio.org/hyperwar/USA/ref/TM/pdfs/TM9-1345-200.pdf P. 4
[276] Croll. 2008. *Landmines in War and Peace,* vii. ; Department of the Army. 1964. *Technical Manual Landmines*, 4.
[277] Department of the Army. 1964. *Technical Manual Landmines*, 20.
[278] UNMAS. 2015. *Landmines Handbook*, 12. ; Department of the Army. 1964. *Technical Manual Landmines*, 4.
[279] UNMAS. 2015. *Landmines Handbook*, 13.
[280] Ibid.

seriously injure by "crippling the foot or leg of a soldier who steps on it" which frequently leads to "amputation of one or more limbs".[281] They can also somewhat incapacitate a vehicle, by "bursting the tires of a wheeled vehicle that passes over it".[282] UNMAS notes that blast APs are most commonly cylindrical in shape, and "range in size from 7 to 16 cm in diameter and 5 to 10 cm in height".[283] They also come in other forms, such as rectangles or "shoe-box" shapes. Blast APs are physically small, with dimensions going up to 15 cm x 30 cm, and a "relatively small explosive charge" of less than 100 grams.[284] They are typically painted "tan, olive, green, black, brown, grey" or a combination of colors, and buried into soil or scattered over it.[285] Therefore, blast APs are designed to be nearly impossible to see once placed. Some types are made of wood or metal, but most contemporary blast APs are made entirely of plastic. They are hermetically sealed, which adds to their resistance to extreme weather events, particularly floods. The plastic casing makes blast APs waterproof and active even when submerged in water or snow. The plastic casing also makes blast APs light and mobile, meaning that in case of heavy rains or floods, these mines are easily swept by water and moved elsewhere, while remaining active.



Figure 5.6 *A photo of a deployed AP blast mine.*[286]

[281] Department of the Army. 2004. *Mine/Countermine Operations*, 1-6. ; UNMAS. 2015. *Landmines Handbook*, 13.
[282] Ibid.
[283] UNMAS. 2015. *Landmines Handbook*, 13.
[284] Ibid.
[285] Ibid, 14.
[286] Ibid, 13.



Figure 5.7. *Yugoslav-made blast AP landmine: PMA-2. The landmine is plastic, and fits into the palm of a hand. This type was used extensively during wars of Yugoslavia's disintegration, particularly BiH, Croatia and Kosovo. Yugoslavia's landmines were made across several towns and cities across the country's republics, specifically BiH, Serbia, Montenegro, and to a lesser degree Slovenia, and Croatia which produced seamines in Rijeka.*[287] *The military factories were state-owned, and companies specialized in producing different parts that would make a "whole weapon", including landmines. For instance, company „Slavko Rodić" from Bugojno, BiH, produced fuses, capsules and different types of explosive; „Pobeda" company in Goražde, BiH, produced "initial explosives" and "initial capsules for detonation"; gunpowder ("black" and nitroglycerin-type) was produced in „Slobodan Princip – Seljo" company in Vitez, BiH, and "Kamnik" in Slovenia; other various types of explosives were made in companies „Milan Blagojević" in Lučani, Serbia, „Prva iskra" in Barič, Serbia, and „Police" in Berani, Montenegro.*[288] *PMA-2 proliferated to Angola, Namibia, Cambodia, Iraq, Zimbabwe, and Albania.*[289]

5.3.4.2 Fragmentation Anti-Personnel Landmines

Fragmentation AP landmines are primarily designed to cause death to a large number of enemy soldiers by propelling metal fragments once the mine is activated. Fragmentation APs typically

[287] Dominik Andreić. 2023. *Razvoj Vojne Industrije, Izvoz Naoružanja I Vanjska Politika Druge Jugoslavije*. Master's thesis, University of Zagreb, Faculty of Humanities and Social Sciences. https://repozitorij.ffzg.unizg.hr/islandora/object/ffzg:9090 P. 62
[288] Ibid.
[289] Collective Awareness to UXO. n.d. "Pma 2 Landmine." *CAT-UXO*. https://cat-uxo.com/explosive.

have metal casings along with metal fragments [shrapnel] or ball bearings inside.[290] When the canister of the mine is projected into air and bursts, the internal metal contents of fragmentation APs, shrapnel or ball bearings, become lethal projectiles as the explosive scatters them around the immediate area.[291]

The fragmentation AP mines come in several forms, depending on the direction in which metal fragments are projected: all general directions [360 degrees], or specified direction. The types include: stake mines, bounding fragmentation mines, and directional fragmentation mines.

5.3.4.2.1 Stake Anti-Personnel Landmines

AP Stake landmines are tripwire mines, and remain the most commonly found fragmentation mines. They are called "stake mines" because they are designed to fit on a metal or wooden stake. The stake would be hammered into earth until the mine is sitting slightly above the surface. Stake mined are cylinder-shaped, and like other APLs, typically painted in the colors of the environment where they are to be deployed.

When used, stake mines are fitted with one or several tripwires. Once the tripwire is pulled or cut, the mine is set off and projects metal fragments in all general directions or "360-degree radius", and causes "lethal injury to anyone within an unobstructed 4 metre radius" and "death and serious injury to people at much greater distances".[292]

Because stake AP landmines are staked and tripwired, they can also be hung on trees, strung across roads, paths and doorways. The lethal reach of some types of AP stake mines is farther than 4 meters.

However, the AP stake mines can be unpredictable, partly because of the way metal fragments are distributed, and partly because the often-wooden stakes they are fitted on disintegrate over time. The mines remain active even if they fall off from the stake, and may be even harder to detect, and more dangerous.

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[290] UNMAS. 2015. *Landmines Handbook*, 14.
[291] Department of the Army. 2004. *Mine/Countermine Operations*, 1-6. ; UNMAS. 2015. *Landmines Handbook*, 14.
[292] UNMAS. 2015. *Landmines Handbook*, 15.



Figure 5.8. *A Yugoslav-made AP stake mine, PMR-2A, fitted on a metal rod. The PMR-2A is known locally as "kukuruz mina" or "corn cob mine" because its outer layer resembles corn kernels. It was mass-produced and used extensively during the Yugoslav wars of independence. The PMR 2A is a copy of the Russian stake AP landmines POMZ, developed and used in WW2. The POMZ model was copied by a number of countries. The design remained virtually unchanged since WW2.*[293]

[293] Collective Awareness to UXO. n.d. "Pmr 2a Landmine." *CAT-UXO.* https://cat-uxo.com/explosive-hazards/landmines/pmr-2a-landmine.



Figure 5.9. *A photo of a "live" PMR-2A at a former frontline in Eastern Bosnia. The mine's wooden stake disintegrated, because it had been placed thirty years earlier. The tripwires with which the mine was fitted were found disturbed and laying close to the mine, indicating potential malfunction. The explosive remained intact.*[294]

5.3.4.2.2 Bounding Fragmentation Anti-Personnel Landmines

Bounding AP landmines can be linked to tripwires or direct-pressure operated. They are typically buried, and have a cylindrical shape with a single or multi-prong fuse. Like other types of AP landmines, they come in green, black, brown and grey variations. When a bounding fragmentation AP landmine is triggered, the first explosion propels the mine out of the ground, and the main charge detonates mid-air, shooting metal fragments in all directions. Bounding

[294] Photograph taken by author in Zebina Šuma, BiH. May 16, 2024.

Fragmentation AP landmines are lethal within "25 meters and capable of inflicting serious injury at ranges up to 100 metres".[295]

The most well-known mine of this type is the German S-Mine. The production of S-Mine ceased after WW2, however, its design was copied by several countries, including Russia, China, and Yugoslavia. The Yugoslav model, PROM-1, was particularly sturdy and effective, which led to its widespread use in the Yugoslav wars of independence. PROM-1 was and remains the most-feared landmine in BiH, Croatia and Kosovo, among civilians and deminers alike.[296] Before deminers are assigned to and dispatched to a demining worksite in BiH, their first question is typically whether or not PROM-1 is expected in the area (*bos. Ima li promova/promovki?*).[297] PROM-1 proliferated to Angola, Chile, Eritrea, Iraq, Mozambique and Namibia.[298]



Figure 5.10. The Soviet version of German S-Mine, OZM-72 (rus. Осколочно-Заградиительная Мина 72). The OZM 72 was developed from OZM-3 and OZM-4, and has superior explosive charge. The Soviet OZM series were likely developed during WW2 or shortly thereafter. Russia has continued production and development of the OZM series after the USSR's collapse. Mines of this type have been recorded in Afghanistan, Angola, Cambodia, Cuba, Eritrea, Ethiopia, Mozambique, Namibia, Nicaragua, Sudan, Vietnam, Yemen, Zambia, and most recently in Ukraine.[299]

[295] UNMAS. 2015. *Landmines Handbook*, 17.
[296] Ferhat Ljuca (BiH Federal Civil Protection Administration, Senior Officer for Quality Control), interviewed by the author, May 7, 2024.
[297] Ibid. ; Kemal Adžem (BiH Federal Civil Protection Administration, Demining Team Leader/EOD technician), interviewed by the author, May 16, 2024.
[298] Operational Environment Data Integration Network. n.d."PROM-1 Yugoslavian Anti-Personnel Mine". *ODIN*. https://odin.tradoc.army.mil/Search/All/prom.
[299] Geneva International Center for Humanitarian Demining. 2022. "Explosive Ordnance Guide for Ukraine." 2nd edition. GICHD: Geneva. https://www.gichd.org/fileadmin. P. 14. ; Collective Awareness to UXO. n.d. "OZM-72 Landmine." *CAT-UXO*. https://cat-uxo.com/explosive-hazards. ; Noland Mines. n.d. "OZM-4 Anti-personnel bounding fragmentation mine." https://nolandmines.com/explosive_hazards.



Figure 5.11. *A photo of a neutralized PROM-1 landmine. This particular model is used for mine awareness campaigns and education events by the BiH Federal Civil Protection Administration in FBiH.*[300]

[300] Photograph taken by author in Sarajevo, BiH, May 13, 2024.

5.3.4.2.3 Directional Fragmentation Anti-Personnel Landmines

The directional fragmentation AP landmines are designed to project military fragments in one specified direction. They come with three different activation methods: tripwire or pull, pressure, and command. The latter is the most common activation mechanism for this type of mine. Once detonated, these landmines project fragments in a "60-degree horizontal arc and to a height of about 2 metres".[301] They have an "effective range", which can cause death or serious injury of "around more than 50 meters".[302]

Most landmines of this type have a "curved rectangular or round box about the thickness of a paperback book" which sits on a stand or legs, generally colored "olive, black or brown".[303] Some types come in larger, circular shapes, and project fragments in "shotgun" style. They can sometimes destroy passenger vehicles.

The US-designed landmine of this type, Claymore, was invented in 1960. Claymore is the "first conventionally manufactured directional fragmentation mine".[304] Claymore is well-known and widely used; directional fragmentation AP landmines are sometimes called "Claymore type". Claymore either proliferated to or was copied by "Cambodia, Canada, Chile, China, Finland, Hungary, Italy, Myanmar, Pakistan, Philippines, Poland, Russia, Saudi Arabia, Serbia, South Africa, South Korea, Sweden, Turkey, Ukraine, and Vietnam".[305]

5.3.4.3 Anti-Personnel Landmines with Shape Charge

The AP landmines with shape charge are pressure operated. They are cylindrical in shape, typically buried, and have a "conical tip for an easier push into the soil, and a round plate for firm positioning in the soil".[306] These landmines are generally small in size and carry a relatively small amount of explosive. They are designed to cause serious injury, rather than death. AP landmines of this type are uncommon and not widely used or produced.

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[301] UNMAS. 2015. *Landmines Handbook*, 16.
[302] Ibid.
[303] Ibid.
[304] Geneva International Center for Humanitarian Demining. 2022. "Explosive Ordnance Guide For Ukraine." 2nd edition. *GICHD*, September 22, 2022. https://www.gichd.org/publications. P. 21
[305] Operational Environment Data Integration Network. n.d. "M18A1 Claymore American Anti-Personnel Mine." *ODIN*. https://odin.tradoc.army.mil/Search/All/claymore.
[306] UNMAS. 2015. *Landmines Handbook*, 17.



Figure 5.12. *The US Claymore landmine. This sample is an inert training and practice version of the real weapon used during the Vietnam War.*[307]



Figure 5.13. *Soviet-made directional fragmentation APL, MON-50, deployed at an unspecified location. The USSR created MON-50 by copying the US Claymore mine. The text reads "Toward Enemy" in Russian.*[308]

[307] International Military Antiques. n.d."Original U.S. Vietnam War Complete M68 Claymore Mine Training Kit with Canvas Carry Bag - Inert." *IMA-USA*. https://www.ima-usa.com.
[308] "MON-50 soviet, plastic bodied, directional type of anti-personnel landmine". Photo by zim286. n.d. Source: Getty Images.

5.3.5 Anti-Vehicle Landmines

AV or AT landmines are designed to disable and destroy military vehicles. Similar to AP landmines, AVs can be activated through different means: pressure, remote control, magnetic influence, vibration, or "through the disturbance of a tilt rod, a sort of vertical tripwire".[309] They can be made of plastic, metal or wood.

Because AV landmines are used against military vehicles, they are positioned on "roads, roadsides, paths, tracks and the verge of the road".[310] When detonated, an AV landmines does only disable a tank or other type of military vehicle, but typically causes death or serious injury to the vehicle crew. AV landmines are much larger than AP landmines; they carry over five kilograms of high explosive and need substantial weight, over a hundred kilograms, to be activated through pressure. AVs cannot be triggered by a weight of a person, however, attempting to lift and remove the mine from soil can make it detonate, if an AV is used as a "main charge of an IED".[311] AV landmines are most often "protected" by supplementing them with an IED (Improvised Explosive Device), or by placing an AP landmines on top or next to them. Clustering AV landmines with AP landmines and IEDs is a common practice.



Figure 5.14. *A photo of TMA-1, a Yugoslav-made anti-tank landmine. The TMA series were copied by the Yugoslav military from the German Tellermine series. TMA-1 was specifically copied from German Tellermine-43. The TMA series are made entirely of plastic, and impossible to detect with metal detectors. Yugoslavia was the most prolific producer of non-metal, and minimum-metal landmines.*[312]

[309] UNMAS. 2015. *Landmines Handbook*, 17-18.
[310] Ibid, 18.
[311] Ibid.
[312] Collective Awareness to UXO. n.d. "Tma 1 Landmine." *CAT-UXO*. https://cat-uxo.com/explosive-hazards/landmines/tma-1-landmine. ; McGrath. *Landmines and Unexploded Ordnance*, 12. ; Roly Evans. 2019. "Minefield Clearance and Casualties - Holland 1945 - Military Operations Research Unit Report No.7," *The Journal of Conventional Weapons Destruction* (23) 1. P. 5.

5.4 Mine-Laying

"Mine warfare is an unpleasant business [...] mines are boring and nasty".[313]

The dynamic duel of mine development and mine countermeasures of WW2 did not only result in a range of novel mine types and technologies. It also resulted in the invention of different ways of mine-laying. In tandem with the rapid technological progress in mine design, the German military of the WW2 focused on different ways of mine-deployment in order to counter the Allied mine countermeasures, and slow or complicate the clearance process.

The German military began incorporating a scientific approach to laying mines in 1918, however, it was not until 1942 that this crystallized into an official doctrine and "was embedded throughout their field forces".[314] Citing a British officer of the WW2 who encountered German minefields, Croll notes that "no one who had first-hand experience of following up a German retreat can forget the thoroughness of their [mine laying] methods".[315]

The German military pioneered the "minefield" as a doctrine of mine-laying, integrated minefields in their overall defensive plan, and "surveyed in great detail, down to the position of individual mines".[316] Croll further notes that the process by which German minefields were laid was "choreographed into a rigid drill".[317]

Mines were laid in uniform patterns, and exact positions determined with a measuring wire; lines of soldiers, each carrying four mines, would lay a mine at their feet on command, then move forward and to the left to lay another, repeating the process with the other two mines.[318] The German methodological approach to mine-laying, coupled with Allied countertactics, rippled into various military manuals on mine warfare after the Second World War.

In modern mine warfare, there exist two general ways of mine-laying: individual mine deployment, or minefield. Individually, mines are placed to "reinforce nonexplosive obstacles",

[313] Croll. 2008. *Landmines in War and Peace,* viii.
[314] Ibid*,* 51.
[315] Ibid.
[316] Ibid.
[317] Ibid.
[318] Ibid, 51-52.

or to "demoralize an enemy force".[319] Minefield employment, on the other hand, emerges from a more elaborate set of conflict objectives, either defensive or offensive.

5.4.1 Creating a Minefield

> "I was young and inexperienced. There was no such thing as a minefield. It wasn't structured. We laid them [landmines] randomly".[320]

> "Our stocks of mines were limited, we improvised explosives but we usually didn't have enough to create actual minefields. We used them primarily to instill fear".[321]

A minefield is any land area containing more than a single landmine, and it may contain any number, type and mix of AP and AT mines.[322]. The U.S. Department of the Army lists the following purposes of minefields:

> 1) Produce a vulnerability on enemy maneuver that can be exploited by friendly forces; 2) Cause the enemy to piecemeal his forces, 3) Interfere with enemy command and control, 4) Inflict damage to enemy personnel and equipment, 5) Exploit the capabilities of other weapon systems by delaying enemy forces in an engagement area, and 6) Protect friendly forces from enemy maneuver and infiltration". In conflict, combatants are directed to employ any of the four "patterned" types of minefields, depending on the battlefield purposes. The list of patterned minefields includes: protective minefield, tactical minefield, nuisance minefield, and phony minefield.[323]

Protective minefields, as the name suggests, are employed to "protect soldiers, equipment, supplies, and facilities from enemy attacks or other threats".[324] Tactical minefields are also meant to protect the defending forces, but in a way that blurs differences between defense and offense;

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[319] Department of the Army. 2004. *Mine/Countermine Operations*, 2-1.
[320] Person AF4-BC, interviewed by author, February 27, 2025.
[321] Person AF2-MC, interviewed by author, May 9, 2024.
[322] Department of the Army. 2004. *Mine/Countermine Operations*, 2-1. ; McGrath. 2000. *Landmines and Unexploded Ordnance*, 28.
[323] Ibid.
[324] Ibid, 2-2.

tactical minefields "directly effect the enemy's maneuver in a way that gives the defending force a positional advantage".[325] In other words, tactical minefields are employed in and around areas of enemy force movement, confirmed or expected. Such areas include bridges, roads, and passes. If a tactical minefield is marked, it may prevent or affect the enemy's maneuver without the mines being detonated, whereas unmarked minefields disrupt maneuver when walked into. Nuisance minefields are employed with the intention of imposing "caution on enemy forces", as well as to "disrupt, delay, and sometimes weaken or destroy follow-on echelons".[326]

Phony minefields are not real minefields, as they do not entail actual mines. Instead, phony minefields are usually seeded with "fake mines" and mine markers, such as red warning signs and barbed wire. Their primary purpose is to "deceive the enemy about the exact location of real minefields" which can lead the enemy force to "question his decision to breach and may cause him to expend his reduction assets wastefully".[327]

A fifth type of minefield is a scattered minefield, which is laid in a way that disregards the "classic patterns". Scattered minefields are employed as a rapid response, typically in "enemy-held territories, contaminated territories, and in most other areas where it is impossible for engineers to emplace conventional minefields".[328]

In the process of mine-laying, combatants look at terrain and the "minefield variables" in order to decide on the exact placement of mines. The variables include: the minefield front, depth, density and composition.

The density and composition refer to the number and types of landmines used in the creation of a minefield, while depth and front refer to the size of a minefield. All four variables are dependent on the physical geography of the battlespace, the intent and desired outcome of minefield employment, as well as the nature of the enemy force's tactics and movement. Logically, minefields with larger front and depth pose a bigger challenge for the enemy force; using a combination of AP and AV landmines, increasing density, or even "protecting" AV mines by

[325] Department of the Army. 2004. *Mine/Countermine Operations,* 2-2.
[326] Ibid.
[327] Ibid.
[328] Ibid, 3-1.

placing AP mines on top of them or next to them, make minefields a particularly effective weapons of war.

Most importantly, the handlers are "required" to mark and record minefields, even if employing unpatterned, scatterable types. The mandate to mark minefields with visible and durable markers, and record the locations of minefields and individual mines is derived from the official military manuals of individual countries, as clear markings help "prevent fratricide". The Geneva Conventions Protocol II also mandates that minefields be marked and their locations recorded. However, the empirical evidence from countries with the "mine problem" shows that marked and recorded minefields were and are a rarity, rather than a custom.

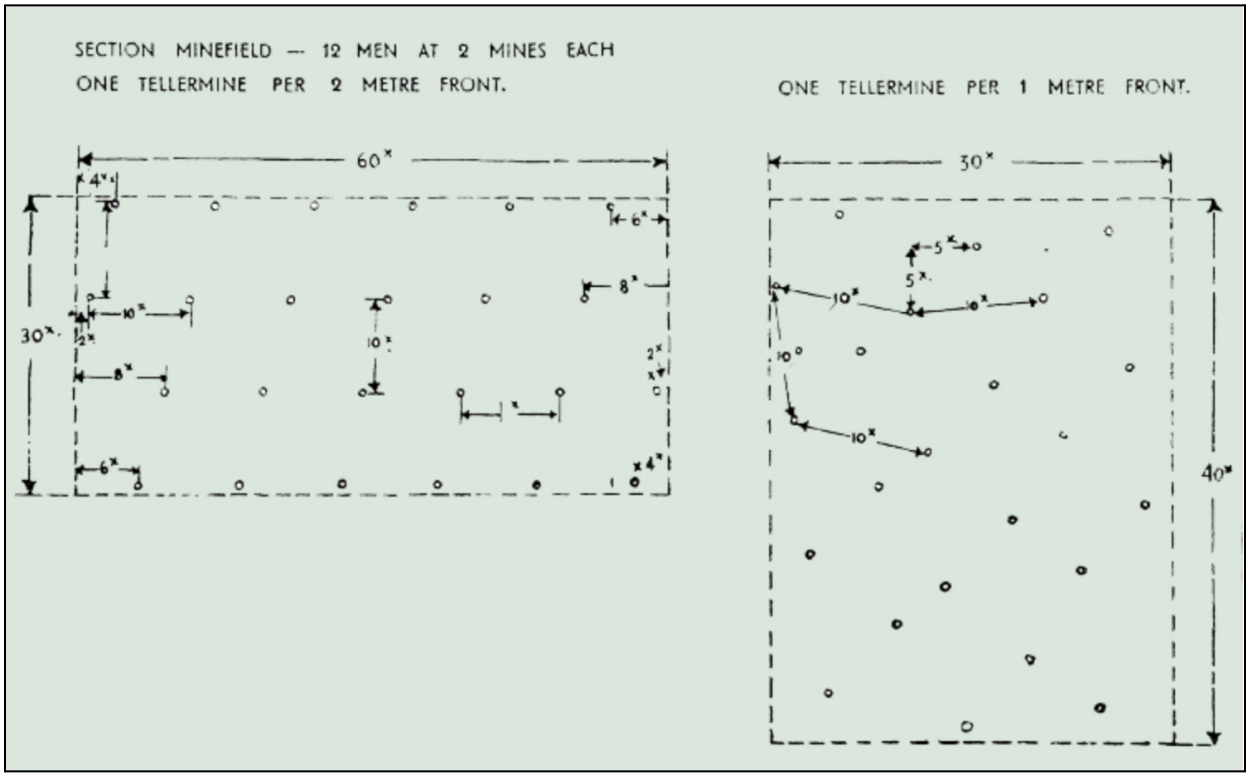


Figure 5.15. *German minefield patterns at Al Alamein. The information was sourced by the British troops and handed to the US Department of War in 1942. The drawing shows that German minefields were patterned and each landmine planted at a measured distance.*[329]

[329] United States War Department Office of The Chief of Engineers Washington. 1942. "GERMAN MINEFIELDS AT ALAMEIN (OCTOBER - NOVEMBER 1942)." *Information Bulletin*, June 28, 1943. https://www.allworldwars.com/German-Minefields-at-Alamein.html.

5.5 Mine-Laying: Spatialization of Death

Conceptually, mine-laying is a practice that turns land into a deadly extension of military force. As such, it is a spatialization of lethal potential across space to achieve strategic goals.

Landmines, as noted in military manuals, allow militaries to weaponize the terrain itself. Rather than a combatants standing ground with rifles and artillery, the soil itself conceals the threat. The landscape is militarized in depth and made to serve as an ever-present sentinel of violence.

The predominant way to understand mine-laying is as a form of area denial. In military definitions, an area denial weapon is used to prevent an adversary from occupying or traversing a zone by inflicting damage or instilling fear. In laying landmines, militaries attempt to freeze the territorial *status quo* by making it lethal for the enemy other[s] to use that land.

The spatial logic of mine-laying is one of exclusion through the threat of death. Minefields and landmines creates [in]visible boundaries that are enforced *automatically* without requiring consistent human supervision. Unlike a checkpoint where soldiers decide on the mobility and flow of people, a landmine exercises indiscriminate violence—anyone who crosses its path, combatant or civilian, friend or foe, risks triggering it.

Mbembe's notion of necropolitics is useful here. Landmines enact a form of necropolitical power wherein sovereignty is exercised by deciding the conditions under which people may live or die. The act of laying a minefield is essentially a sovereign decision that certain spaces are transformed into "kill zones". Those who move in those spaces without authorization are consigned to the possibility of death. In this way, the minefield is a micro-territory of sovereign power, delineating who may pass, and who must not.

Historically, landmines have been used both in defensive and offensive strategies. Defensively, armies lay landmines to protect their flanks, fortify their bases, or guard borders. Offensively, landmines can channel enemy movements into kill zones or even directly target civilian use of land to undermine the enemy's logistical support base.

By mining roads and fields, militaries can deny civilians safe access to areas, thereby exerting control and "punishing" those seen as collaborating with the enemy. In other words, mine-laying

can be employed to fragment the territory of everyday life—to make ordinary activities like fetching water or tending livestock into lethal gambles. This is the spatialization of death in a direct sense: the necessities of life, such as water, markets, and farms, are surrounded by deadly perimeters.

What distinguishes the territorial impact of landmines from an "occupying army", is the permanence and impersonality of mines. Landmines remain active for years or decades, without further human input. They "guard" territory even after the soldiers have left. This further creates post-conflict casualties and fear. Long after a war ends, the territory that was mined often remains dangerous. The territory is effectively in a state of suspended war, what Mbembe called "peace as war without end" in colonial contexts—an apt phrase for mined lands where peace is nominally restored but people continue to die or lose limbs as a result of the past conflict.

Landmines thus reconfigure territory by exclusion and terror. The presence of mines often leads to depopulation of rural areas and abandonment of productive land. Farms are left fallow, roads go unused, development stalls. Mines carve out what are effectively no-go zones. In a sense, each landmine creates a small sovereign area unto itself: a radius of "absolute power" over life or death. And collectively, a dense minefield establishes a *de facto* border—not a legal border, but a material one that separates safe space from unsafe space.

In conflict zones, trench lines have often been accompanied by belts of mines, which reinforce frontlines and make any territorial advance slow and costly—such as in Ukraine. These mines signify how territory can be stabilized by threat: neither side can easily push forward without heavy losses, and civilians caught between are effectively fenced in by explosives.

From a spatial perspective, mine-laying can be seen as creating a "thickened battlespace". Instead of a frontline that is a "thin line on a map", a mined area creates "depth"—an area the enemy must either avoid or painstakingly breach. In doing so, it transforms geography into a weapon.

It is telling that in military strategy, landmines are often termed a "force multiplier"—they amplify the effect of a defending force by complicating the attacker's use of terrain. But this

multiplication of force is inherently tied to the land itself. The soil, the vegetation, the very ground is imbued with deadly agency.

Conceptually, this blurs the line between nature and warfare. The term “deathscape” could be invoked: a landscape engineered for death. Unlike a battlefield where armies meet openly, a deathscape is quietly murderous. It looks “ordinary” until an unwary step sets off an explosion.

People living adjacent to minefields often describe how the environment is full of hidden death—an eerie feeling of normalcy overlaying constant danger. In such spaces, territory is experienced through absence and anxiety: absence of people because they fled or avoid it, absence of development, and anxiety about where it is safe to tread. This is a perverse form of territorial order—one maintained by fear rather than by administrative or social structures.

Landmines also have a psychological—territorial effect. The terror they instill extends beyond the immediate minefield. Knowing that an area might be mined can deter movement in a much larger surrounding zone, especially if maps are poor or mines have shifted through landslides, and floods. Thus, mines cast a shadow of territory—the “territory of fear” is often larger than the territory of the actual mine placements. For civilians, their own habitual map of the area gets redrawn with blanks and skull-and-crossbones warnings. This aligns with Mbembe’s necropolitical framing: the power of death does not just kill directly, it also controls by imposing a state of living in death’s shadow. Populations near mine-infested zones live with a constant reminder of mortality that curtails their freedom and well-being, effectively a form of control at a distance.

Mine-laying as a territorial practice, therefore, is about establishing control through death. It is the process of sculpting the terrain with danger to serve strategic ends. Landmines enforce territorial claims without continuous human presence, delegating violence to the environment itself. This spatialization of death turns swathes of land into extensions of the sovereign kill decision. The result is a reconfiguration of territory: dividing inside (safe) from outside (perilous) in a way that can long outlast the conflict that created it. War’s geography persists in every buried mine, making territory itself a continual enforcer of war’s logic until those mines are removed.

5.4 Conclusion

Landmines and mine warfare were developed over the course of the 20th century, and further refinement continued into the 21st century. The basic objectives of landmine warfare today remain identical to those of WW1, indicating that little changed apart from the technological progress in their design and destructive capacity.

Military manuals detail the "proper" employment of landmines, including pattern-style placements and marking of minefields. However, empirical evidence from Vietnam, Cambodia, Angola, Iraq, Afghanistan, Colombia, Laos, Bosnia, Croatia, Kosovo, Armenia, Azerbaijan, and Ukraine point to a different reality of mine warfare: unpatterned, irregular, unrecorded, and unmarked minefields.

The impromptu mine usage during the Cold War led to the significant civilian casualties in places where conflicts ended. This led to the realization among humanitarian organizations and Western governments that landmines blur a neat boundary between the wartime and the postwar, and the recognition of landmines as a "pariah among the paraphernalia of modern weaponry" in the mid-1980s.[330] This paradigm shift, spurred by the reality of irregular mine usage, had another set of effects: the global campaign to ban use of landmines and subsequent signing of the Ottawa Treaty, and the development of humanitarian demining programs.

Building on the conceptual claims and histories outlined in this and previous chapters, the following two chapters turn to landmine usage in Bosnia-Herzegovina and Ukraine respectively. The chapters examine how the warring factions in Bosnia and Ukraine integrated landmines usage into sequential phases of the conflict, the operational logics that governed where mines were placed, and the material constraints that shaped mine-type selection and emplacement. In doing so, the two chapters demonstrate how mine-laying in Bosnia and Ukraine emerged as a deliberate technique of territorialization.

[330] McGrath. 2000. *Landmines and Unexploded Ordnance*, 14.

Chapter 6

How Bosnia-Herzegovina was Mined

6.1 Overview of the Bosnian War

The Bosnian War was one of five conflicts which together constitute the Yugoslav wars of independence of the 1990s. There is "general acceptance" that the war began in early 1992, between March and early April, although disagreements and competing claims exist regarding the exact start date. Armed violence and first armed clashes ensued shortly after the Socialist Republic of Bosnia and Herzegovina (SRBiH) voted to secede from the Socialist Federal Republic of Yugoslavia (SFRJ) in an independence referendum between February 29th and March 1st 1992.

The voter turn-out was roughly 64% and the majority of voters were either Bosnian Muslims or Bosniaks, and Bosnian Catholics or Bosnian Croats. The Bosnian Orthodox Christian population or Bosnian Serbs either boycotted the referendum or were prevented from participating by the Bosnian Serb authorities.[331] The outcome of the referendum was the creation of the Republic of Bosnia and Herzegovina (RBiH); the results of the vote counted 99.7% of voters voting "yes".

There were three main belligerents: the Army of the Republic of Bosnia Herzegovina (ARBiH), Army of the Republic of Srpska (VRS), and the Croatian Defense Council (HVO). Additional parties were involved at different stages of the conflict, such as: the Autonomous Province of Western Bosnia, the Republic of Serbian Krajina (RSK), the Republic of Croatia (RH), the Yugoslav National Army (JNA), and NATO.

6.2 The Process of Conflict

The conflict was marked by rapid territorial changes, shifting frontlines, sieges, and severe violations of human rights, most commonly referred to as acts of "ethnic cleansing". Gregory et al. note that, although the practice of ethnic cleansing was/is not new, the "term itself gained widespread use in the 1990s, when it was used to refer to Serbian attacks on Muslims in Bosnia

[331] United Nations International Criminal Tribunal for the former Yugoslavia. n.d. "The Conflicts." *ICTY.* https://www.icty.org/en/about/what-former-yugoslavia/conflicts.

and Albanians in Kosovo".[332] In terms of territorial changes, the conflict can be divided into three phases.

6.2.1 Initial Territorial Gains and Losses: 1992

The first phase of the conflict, from the outset and until 1993, was marked by significant territorial gains on the part of the VRS, and significant territorial losses on the part of ARBiH. Because of the territorial advances of the VRS, the ARBiH was initially confined to territorial pockets and isolated enclaves, and the HVO remained largely in southwestern parts of the country, specifically Western Herzegovina.

The VRS made its most substantial territorial gains in Eastern and Northern parts of BiH. In April and May 1992, the VRS captured three towns along the Drina river in Eastern Bosnia: Višegrad, Zvornik, and Foča, establishing thus a contiguous territory adjacent to the Socialist Republic of Serbia (SRS).[333] Zvornik, a border town, secured an important crossing point for the influx of arms and other supplies for the war effort from the SRS. In Northern Bosnia, the VRS captured the towns of Banja Luka and Prijedor, both of which facilitated the establishment of a firm stronghold in the northern part of BiH. Importantly, the VRS launched a siege of Sarajevo, the capital of RBiH, in April 1992, cutting off supply routes and entry points to the city.

At this stage, the ARBiH lacked cohesive structure and heavy weaponry. In fact, it was not until July 1992 that the groupings of different armed factions were renamed from "Territorial Defense of BiH" to ARBiH. As the VRS consolidated its strongholds in eastern and northern parts of the country, ARBiH was confined to pockets within and around cities of Sarajevo, Tuzla, Zenica, Mostar, as well as Srebrenica, Žepa, and Goražde. The HVO secured their control over several cities in Western Herzegovina, such Tomislavgrad, Grude, and Široki Brijeg, and established a contiguous area adjacent to the border with Croatia.

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[332] Gregory et al. 2009. *Dictionary of Human Geography*, 213.
[333] United Nations International Residual Mechanism for Criminal Tribunals (UN IRMCT). n.d. "Rat u BiH - Zauzimanje Zvornika." *IRMCT.* https://www.irmct.org/specials/war-bosnia/bcs/ ; UN IRMCT. n.d. "Rat u BiH - Zauzimanje Foče". *IRMCT.* https://www.irmct.org/specials/war-bosnia/bcs/ ; UN IRMCT. n.d. "Rat u BiH - Zauzimanje Višegrada". *IRMCT*. https://www.irmct.org/specials/war-bosnia/bcs/

By summer 1992, the VRS established the so-called "Posavina Corridor", taking control of towns of Odžak, Modriča, and Derventa, and uniting the VRS-controlled western and eastern territories. Concurrently, the UNSC "voted to send UN peacekeepers to Bosnia to facilitate delivery of humanitarian relief", and imposed a "no-fly" zone over BiH in October 1992.[334]

By the end of 1992, the VRS took control of Bosanski Brod (later renamed to Brod), a border town in the western part of the Posavina region, and Jajce, one of key strategic towns in Central Bosnia.[335] Throughout 1992, the VRS enjoyed superior military capacity which was made possible by substantial backing from the JNA, and the confiscation of JNA weaponry. The first phase of the conflict resulted in VRS establishing de facto control of 60% to 70% of BiH territory.[336]

6.2.2 Counter-offensives and the Bosniak-Croat Conflict: 1993-1994

By the end of the first year of the conflict, the frontlines and respective areas of territorial control were largely consolidated. However, 1993 brought new dynamics, as ARBiH and the HVO launched joint and individual counter-offensives to reclaim lost territories and stall VRS advances. Importantly, 1993 marked the breakdown of the informal Bosniak-Croat alliance which erupted in a conflict between ARBiH and the HVO.

The [armed] clashes between RBiH and HVO began in early 1993 with incidents reported in Busovača and Gornji Vakuf, but a temporary ceasefire was brokered by the UNPROFOR. An all-out war between the two factions erupted in Central Bosnia and Herzegovina in April, around the same time NATO began to enforce a no-fly zone over BiH, upholding the UN Resolution 816.[337] The same month, the UNSC sent additional peacekeeping troops in what it proclaimed "UN safe zones", first in Srebrenica, and then Bihać, Sarajevo, Žepa, Goražde, and Tuzla.[338]

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[334] U.S. Department of State. 1995. "Bosnia Fact Sheet: Chronology of the Balkan Conflict." *Bureau of Public Affairs*, December 6, 1995. https://1997-2001.state.gov/regions/eur/bosnia/balkan_conflict_chron.html

[335] Davor Marijan. 2004. "Expert Opinion: On the War Connections of Croatia and Bosnia and Herzegovina (1991 – 1995)". *Časopis za suvremenu povijest* 36 (1): 249–89. https://hrcak.srce.hr/file/151907 P. 264.

[336] Ibid.

[337] Daniel Bethlehem and Marc Weller. 1997. *The Yugoslav Crisis in International Law*. Cambridge University Press. P. 33.

[338] Radio Slobodna Evropa. n.d. "INTERAKTIVNA HRONOLOGIJA: Rat U BiH - Zaštićene Zone." *Radio Slobodna Evropa.* https://www.slobodnaevropa.org/a/infografika-hronologija-rata-u-bih/27375809.

Throughout late spring, key clashes between the two factions took place in Konjic, Jablanica, Mostar, Vitez, Busovača, Kiseljak, and Zenica. The HVO consolidated their control over the western part of Mostar, and began a siege of the eastern part of the city.[339] After launching a series of offensives in May and June, ARBiH secured their control of Travnik, Kakanj, Fojnica, Bugojno, Gornji Vakuf, Jablanica, Konjic, and most of Novi Travnik.[340] The ARBiH offensives continued throughout the second half of 1993, and HVO incurred substantial territorial losses, but managed to retain control of Vitez area throughout December 1993 and first half of February 1994.[341]

In early February 1994, at the request of the UN, NATO authorized air strikes against VRS "artillery and mortar positions in or around Sarajevo determined by UNPROFOR to be responsible for attacks against civilian targets in that city".[342] This decision came days after the Markale massacre in Sarajevo. The same month, the mounting reports of the Republic of Croatia's military involvement in the ARBiH-HVO conflict led the UNSC to consider sanctions against Croatia, while the U.S. offered economic help in return for the withdrawal of their troops and assistance in brokering an ARBiH-HVO ceasefire.[343] In late February, the U.S. negotiated the "Washington Framework Agreement", which ended the conflict and established the "Bosniak-Croat Federation".[344] Concurrently, NATO carried out its first military mission, shooting down several VRS warplanes that violated the no-fly zone.[345] The Alliance's military engagement against the VRS continued throughout 1994.

The end to the Bosniak-Croat conflict brought a new dynamic to the Bosnian War, as the two factions launched joint and individual offensives against the VRS in late 1994. The joint forces took control of Kupres, several other areas in southwestern BiH, and prevented VRS from taking

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[339] UN IRMCT. n.d. "Rat u BiH - Podjela i Opsada Mostara". *IRMCT*. https://www.irmct.org/specials/war-bosnia/bcs/.
[340] Shrader, Charles. 2003. *The Muslim-Croat Civil War in Central Bosnia : A Military History, 1992-1994.* Texas A&M University Press. P. 123.
[341] Ibid, 154.
[342] NATO. 2002. "NATO Handbook: Evolution of the Conflict." *NATO, December 18, 2002.* https://web.archive.org/web/20100206234650/http://www.nato.int/docu/handbook/2001/hb050102.htm
[343] Shrader, 2003. *The Muslim-Croat Civil War in Central Bosnia,* 159.
[344] "Framework Agreement for the Federation". March 1, 1994. https://peacemaker.un.org/sites/default/files/document/files.
[345] NATO. 2002. "NATO Handbook: Evolution of the Conflict." *NATO, December 18, 2002.* https://web.archive.org/web/20100206234650/http://www.nato.int/docu/handbook/2001/hb050102.htm

control of Bihać. The objective of joint ARBiH-HVO offensives was to "cut off" VRS in southwestern BiH from forces of Republic of Srpska Krajina (RSK) in Croatia.

6.2.3 Final Territorial Adjustments: 1995

The joint and individual offensives by HVO and ARBiH against VRS continued in the first half of 1995, and NATO launched another bombing campaign against VRS in May. Coordinated offensives, and NATO support aided Bosniak and Croat forces in amounting substantial territorial gains in 1995.



Figure 6.1. *A map showing areas of control in May 1995 (ARBiH=green, HVO and HV=yellow, VRS and RSK=pink).*[346]

[346] The Library of Congress. "Territorial Changes in Bosnia and Herzegovina since January 1993." *Central Intelligence Agency*, 1995. https://www.loc.gov/resource/g6861f.ct003054/?r=-0.549.

Several key events took place in the summer of 1995. First, in July, the VRS took control of Srebrenica and Žepa, following an order issued by RS President Radovan Karadžić in early March _ the order, code-named "Direktiva za Dalja Dejstva OP. Br. 7" (*en. Directive 7*), detailed a plan to "complete the physical separation of the Srebrenica and Žepa enclaves as soon as possible" to meet VRS military objectives.[347] In the process, VRS forces conducted mass executions of civilian population that had taken shelter in two towns the UN designated "safe areas" two years earlier. Second, the HVO and HV launched operation "Ljeto '95" (*en. Summer '95*) in western BiH, and succeeded in cutting off VRS from RSK. This operation was followed by operation "Oluja" (*en. Storm*) in August, which effectively ended the RSK. In September and October, operations "Mistral", "Sana", and "Južni potez" (*en. Southern Move*), resulted in HVO, HV, and ARBiH taking control of several key areas in western BiH.

These territorial advances, coupled with NATO's "Operation Deliberate Force" bombing campaign, were followed by U.S.-led peace negotiations in November 1995 in Dayton, Ohio. The war's final adjustments were codified in the "General Framework for Peace in Bosnia and Herzegovina", conventionally referred to as the Dayton Peace Agreement (DPA), which imposed a ceasefire roughly along the frontlines and partitioned the country into two semi-autonomous entities. Under DPA, 51% of territory was allocated to a Bosniak-Croat Federation, officially named the Federation of Bosnia and Herzegovina (FBiH), and 49% to Republic of Srpska (RS). The division of FBiH into ten cantons was established in the Washington Agreement of 1994, and affirmed by the DPA in 1995. Importantly, the DPA established the Office of the High Representative (OHR), an authority to oversee the implementation of the civilian aspects of the DPA and "to be appointed consistent with relevant United Nations Security Council resolutions".[348]

The control of Brčko, a strategic town in the Posavina corridor, proved difficult to settle during the peace negotiations in Dayton, and the belligerents agreed to enter a "binding arbitration" for

[347] ICTY. "Indictment: The Prosecutor of the Tribunal Against Zdravko Tolimir, Redivoje Miletic, Milan Gvero." Case No. IT-04-80-I. https://www.icty.org. ; High Command of the Army of the Republic of Srpska. 1995. "Direktiva za Dalja Dejstva OP. Br. 7". March 8, 1995. P. 8.
[348] "General Framework Agreement for Peace in Bosnia and Herzegovina". 14 December 1995, Annex 10, Article I, 37. https://www.osce.org/files.

this disputed area. A little over four years later, in March 2000, the OHR designated Brčko a self-governed and internationally-supervised special district.[349]



Figure 6.2. *A map showing areas under control of the tree belligerents in November 1995 (ARBiH=green, HVO=yellow, VRS=pink), and IEBL (red) agreed upon in Dayton.*[350]

[349] Office of the High Representative. 2000. "High Representative's Decision on the Establishment of the Brcko District of Bosnia and Herzegovina – Office of the High Representative." *OHR*, March 8, 2000. https://www.ohr.int.

[350] The Library of Congress. 1995. "Dayton Agreement over Areas of Control, 24 November 1995 : [Bosnia and Hercegovina]." *Central Intelligence Agency*, 1995. https://www.loc.gov.

6.3 Wartime Landmine Use and Contamination: 1992–1995

Landmines were used heavily during the entire duration of the Bosnian War. All of the three major parties to the war—ARBiH, VRS and HVO, employed landmines to defend territories and stall enemy advances. Since the VRS confiscated large amounts of JNA weaponry, its units possessed larger stockpiles of landmines than ARBiH and HVO, and thus employed them more extensively. Indeed, several of my interlocutors who are former combatants of ARBiH noted that their respective units did not have enough landmines to create "actual minefields", by which they mean large patterned minefields.[351] In addition to possessing bigger stockpiles of landmines, VRS also retained the highest number of military-trained EOD technicians and engineers who were educated in mine warfare.

A notable consequence of this dynamic was that VRS units were able to and knew how to deploy effective minefields, and typically produced and kept detailed minefield maps for their own records.[352] While the HVO and ARBiH may have employed landmines more sparsely, they employed them nonetheless. The lack of conventional landmines led to various units creating improvised explosives and new types of landmines, typically named after towns where they originated, such as "Goraždanka" from Goražde, or "Čapljinka" from Čapljina.[353]

However, most of the landmines used during the conflict, both APs and AVs, were of the conventional type, and were Yugoslav-made. Ironically, many Yugoslav factories producing military weapons and equipment were located in SRBiH, including factories producing landmine components and factories assembling landmines. Particularly common AP landmines were PROM-1, locally known as "promovka", PMA-2, and PMA-3, known locally as "pašteta" (*en. meat tin pate*). Other conventional APs used include: PFM-1, known locally as "papagaj" (*en. parrot*), PROM-3, PMR-4, PPMP-2, known locally as "kukuruz" (*en. corn cob*), PROM-KD, MRUD, and PMA-1. The PFM-1 mine, also nicknamed "leaf mine" and "butterfly", is an

[351] Person AF4-BC, interviewed by author, February 27, 2025;
Person D1, interviewed by author, May 7, 2024;
Person AF2-MC, interviewed by author, May 9, 2024;
Person D8, interviewed by author, May 16, 2024.
[352] Person AF4-BC, interviewed by author, February 27, 2025; Person AF2-MC, interviewed by author, May 9, 2024.
[353] Person AF2-MC, interviewed by author, May 9, 2024; Person AF3-E, interviewed by author, May 13, 2024.

"infamous" Soviet-made blast APL, first used by Soviets in Afghanistan, and currently in Ukraine. The USSR created the PFM-1 mine after reverse-engineering a U.S. mine, BLU-43 or "Dragontooth", used during the Vietnam War.[354] The APs were most commonly laid around trenches, contact lines and defensive perimeters, many of which were located in various, often dense, forests, hilltops, and fields. The AVs used were mainly the TMA series such as TMA-1, TMA-2, TDM-1, and TM-57. In contrast to APs, the AVs were typically laid on roads, bridges and other paths and pathways where movement of vehicles, particularly tanks, was common and/or likely. In addition to Yugoslav-made landmines, several foreign-made mines are said to have made their way to the battlefields, such as Israeli, Russian, Iranian, and Italian-produced landmines.[355]



Figure 6.3. *A set of replica landmines showing six out of many landmine types used during the Bosnian War. The "Goraždanka" mine and the PFM-1 mine can be seen in the lower left corner.*[356]

[354] Collective Awareness to UXO. n.d. "PFM-1 Landmine". *CAT-UXO.* https://cat-uxo.com/explosive-hazards/landmines/pfm-1-landmine.
[355] Person AF2-MC, interviewed by author, May 9, 2024.
[356] Photograph of EUFOR's landmine replicas collection at "Mine Awareness" event in Sarajevo, taken by the author on May 13, 2024.



Figure 6.4. *Replicas of the types of AP and AV landmines used during the Bosnian War.*[357]

[357] Photograph of EUFOR's landmine replicas collection at "Mine Awareness" event in Sarajevo, taken by the author on May 13, 2024.



Figure 6.5. *A set of landmine replicas used during the Bosnian War. The PMA-2 and PMA-3 types were particularly common. In the aftermath of war, children were consistently warned to avoid the two meat-pate-tin-looking landmines, because they were designed to blow off a soldier's foot, but inflict lethal injuries to children or kill them on the spot.*[358]

[358] Photograph of EUFOR's landmine replicas collection at "Mine Awareness" event in Sarajevo, taken by the author on May 13, 2024.



Figure 6.6. *The "Explosive Closet". The FUCZ retains a collection of neutralized explosives used during the Bosnian War, including conventional and improvised AP landmines, and other munitions.*[359]

[359] Photograph taken by author at BiH Federal Civil Protection Administration Headquarters in Sarajevo, April 23, 2024.



Figure 6.7. *A closer look at the "Explosive Closet" at the FUCZ Demining Department Headquarters in Sarajevo*.[360]

The diverse topography of BiH influenced the conflict dynamics and locations of contact lines and frontlines, which influenced the locations in which landmines were deployed. With the exception of the Posavina region in the northern part of the country, nearly all of BiH's topography is characterized by high-elevation, mountainous, hilly, rugged terrain with dense forests and karst landscapes. The low elevation, open plains and high visibility of the Posavina region made mechanized warfare possible, and AVs were particularly useful in the area.

However, the rest of the battle area's hilly terrains made troop movement difficult, and necessitated control of key [mountain] passes, pathways and bridges. It also made mechanized warfare largely inconducive, and made several towns vulnerable to siege tactics. Because hilly and forested physical geography of key battle spaces necessitated the use of ground troops, most of the conventional landmines employed were of the AP type.

[360] Photograph taken by author at BiH Federal Civil Protection Administration Headquarters in Sarajevo, April 23, 2024.

The rugged terrain of many battlefields did not only determine the types of mines used, but it also influenced ways in which they were deployed. In other words, minefields created were typically irregularly-shaped, and rarely patterned according to mine warfare manuals.

Instead, effective mine warfare of the Bosnian War required extensive collaboration with the country's physical geography, and bore no resemblance to the scientific approach to minelaying pioneered by the German military in WW2. Unmarked minefields were a custom.[361] If markings were made, they would often be visible only to the mine-laying side; an example of such occurrence involves a minefield where mines were placed at the feet of trees, and markings were made by making cuts to the trees only visible from one side of the frontline.[362] The irregularities in mine-laying during the conflict point to the fact that landmines were used offensively, as much as defensively.

A former combatant of ARBiH notes that landmines were "primarily used to instill fear", as "production of fear" seemed to be particularly useful in deterring advances and risking unfavorable shifts of the frontline.[363] An official report on minelaying and demining in BiH, jointly-produced by the Ministry of Civil Affair, Demining Commission and BHMAC in 2008, notes the following: "minefields in Bosnia and Herzegovina were placed by war parties [...] primarily between confrontation lines in order to prevent or slow down movements of army units into the areas of other war parties. Minefields were also placed in front of strategic facilities under the control of war parties, such as military barracks".[364] The reports further emphasizes the geographic spread, noting that:

> Minefields were placed throughout the country, from Herzegovina carts on the south and southwest of the country, through high mountainous and ravine area of central Bosnia to plain areas on the north of Bosnia and Herzegovina. It is obvious that minefields were

[361] Ferhat Ljuca (BiH Federal Civil Protection Administration, Senior Officer for Quality Control), interviewed by the author, May 7, 2024. ; Person AF2-MC, interviewed by author, May 9, 2024 ; Person AF3-E, interviewed by author, May 13 2024.
[362] Ferhat Ljuca (BiH Federal Civil Protection Administration, Senior Officer for Quality Control), interviewed by the author, May 7, 2024.
[363] Person AF2-MC, interviewed by author, May 9, 2024.
[364] Ministry of Civil Affairs of Bosnia and Herzegovina and Demining Commission of Bosnia and Herzegovina. 2008. "REQUEST For an extension of the deadline for completing the destruction of anti-personnel mines in mined areas in accordance with Article 5, paragraph 1." *BHMAC*, June 2008. P.4.

present on all types of vegetation prevailing in the country (rocks, bushes, high grass, and forest).[365]

A report issued by DOS in 1998 cites more specific data, reporting that mines were most heavily used in the "Brcko area, southwest to the Zavidovici and Sarajevo".[366] The report further noted that every canton in FBiH was contaminated, with heaviest concentrations of landmines found in Tuzla-Podrinje, Central Bosnia, and Zenica-Doboj cantons, whereas RS was less "mine-affected".[367]

In addition to the use of mines along and within the frontlines, key infrastructure was also heavily mined, such as "road systems, power plants, bridges, dams and other parts of the infrastructure".[368] It remains unclear how useful and successful landmines were in stabilizing territorial claims, however, the fact that the geographic spread of landmines traces the conflict's frontiers, and a belt of minefields snakes through forests, hills, and mountains where the former belligerents faced off, speaks to their utility—at least partially.

Notably, several sources claim that mine-laying did not end with the war; civilians were reported planting mines to prevent the return of IDPs, or moving mines "near their homes and emplacing them elsewhere in areas they deem advantageous to their protection" amid widespread mistrust between former belligerents.[369]

The exact figure with regards to landmines use and contamination remain inconclusive and contentious. The earliest-known estimate was produced by the U.S. Department of State (DOS)

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[365] Ministry of Civil Affairs of Bosnia and Herzegovina, and Demining Commission of Bosnia and Herzegovina. 2008. "REQUEST For an extension of the deadline for completing the destruction of anti-personnel mines in mined areas in accordance with Article 5, paragraph 1." *BHMAC*, June 2008. P.4.
[366] U.S. Department of State. 1998. "Hidden Killers 1998: The Global Landmine Crisis." *Bureau of Political-Military Affairs, Office of Humanitarian Demining Programs*, September 1998. https://1997-2001.state.gov/global/arms/rpt_9809_demine_ch3i.html.
[367] Ibid.
[368] Ibid. ; Ferhat Ljuca (BiH Federal Civil Protection Administration, Senior Officer for Quality Control), interviewed by the author, May 7, 2024.
[369] U.S. Department of State. 1998. "Hidden Killers 1998: The Global Landmine Crisis." *Bureau of Political-Military Affairs, Office of Humanitarian Demining Programs*, September 1998. https://1997-2001.state.gov/global/arms/rpt_9809_demine_ch3i.html. ;
Person AF2-MC, interviewed by author, May 9, 2024;
Person AF3-E, interviewed by author, May 13 2024.

in summer 1996, claiming that "between two and three million landmines" were used in BiH, which made the country "among the five most heavily mined countries in the world".[370]

In 1998, the United Nations Mine Action Centre (UNMAC) and the International Committee of Red Cross (ICRC) estimated a presence of more than "30,000 mined areas in Bosnia and Herzegovina littered with some 750,000 mines".[371] The same year, the DOS produced another estimate, suggesting a presence of "600,000-1 million landmines and a yet largely undetermined amount of UXO" spread over 300 km^2 of land.[372]

In 1999, however, BHMAC reported that, as of January 1999, there were "18,229 known mine fields of an estimated 30,000 mine fields in the country with 750,000 land mines in the ground" of which "83.55 percent are AP mines and 16.45 are AT mines".[373] Citing a 2001 UN Report, Bolton reports that "up to one million mines, mostly anti-personnel" were used in the conflict.[374] Alilovic reported different figures, suggesting that "an estimated 670,000 mines and 650,000 pieces of UXO" were used at 10,000 locations".[375] Lisica reports a total number of 18,600 known minefields, whereas Sančanin reports that approximately one million mines were deployed during the conflict.[376]

Today, BHMAC reports that 84.045 landmines, both APs and AVs, were cleared and neutralized in twenty-nine years of demining operations, and estimates that BiH will be mine-free by 2027.[377] This report and estimate indicate two possibilities: either the initial numbers on

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[370] U.S. Department of State. "Implementing the Dayton Peace Agreement: Demining." *Bureau of Public Affairs*, June 21, 1996. https://1997-2001.state.gov/regions/eur/bosnia/bosnia_demining.html.
[371] International Committee of the Red Cross. 1998. "The Silent Menace: Landmines in Bosnia and Herzegovina." *ICRC*, February 1, 1998. https://www.icrc.org/sites/default/files/external.
[372] U.S. Department of State. 1998. "Hidden Killers 1998: The Global Landmine Crisis." *Bureau of Political-Military Affairs, Office of Humanitarian Demining Programs*, September 1998. 1997.state.gov.
[373] Bosnia and Herzegovina Mine Action Center. n.d. "Bosnia and Herzegovina." commons.lib.jmu.edu.
[374] Matthew Bolton. 2003. "Mine Action in Bosnia's Special District: A Case Study," *Journal of Mine Action* : Vol. 7 : Iss. 2 , Article 7. https://commons.lib.jmu.edu/cisr-journal/vol7/iss2/7. P. 25.
[375] Marija Alilovic. 2003. "Demining Law in Bosnia and Herzegovina," *Journal of Mine Action* : Vol. 7 : Iss. 2 , Article 16. https://commons.lib.jmu.edu/cisr-journal/vol7/iss2/16. P. 56.
[376] Darvin Lisica. 2003. "Bosnia and Herzegovina Mine Problem: Priority Setting," *Journal of Mine Action* : Vol. 7 : Iss. 2 , Article 3. https://commons.lib.jmu.edu. P. 14 ;
Gregor Sancanin. 2017. "Bosnia and Herzegovina: ITF Enhancing Human Security Perspective 20 Years After the Conflict," *The Journal of Conventional Weapons Destruction*: Vol. 21 : Iss. 1 , Article 7. https://commons.lib.jmu.edu. P. 27.
[377] Bosnia and Herzegovina Mine Action Center. n.d. "Minska Situacija". *BHMAC*. https://www.bhmac.org/trenutna-minska-situacija-plan-izvjestaj/

landmine use were severely exaggerated, or BiH will not be mine-free for several centuries, judging by earlier reports on landmine use and the speed of clearance. Several demining operators expressed their frustration with BHMAC numbers and statistics, accusing BHMAC of deliberately exaggerating numbers of uncleared mines and dimensions of minefields and mine-suspected areas.[378] Nonetheless, until all of BiH's territory is cleared of landmines, the reports on the exact number of landmines employed during the war will remain rough estimates.



Figure 6.8. *A map of known and suspected minefields in BiH in 1999, produced by BHMAC. The locations of minefields, colored red, follow the wartime frontlines and lines of confrontation.* [379]

[378] Person A, interviewed by author, Spring 2024 ; Person B, interviewed by author, Spring 2024 ; Person C, interviewed by author, Spring 2024 ; Person D, interviewed by author, Spring 2024.
[379] "Map of Bosnia Illustrating Minefield Locations and Borders", photo by Bojan Brecelj, Getty Images, n.d. https://www.gettyimages.com/detail/photo/map-of-bosnia-illustrating-minefield-locations.

Chapter 7

How Ukraine Was Mined

7.1 Overview of the Ukrainian War

7.1.1 The Process of Conflict

The Ukrainian War originated against the backdrop of socio-political upheaval in late 2013 and early 2014, with Russian annexation of Crimea marking a beginning of a broader contest over Ukraine's territory and [geo]political future. The armed violence began in April 2014, when Russia-sponsored separatist seized control over several towns in Donbas, and proclaimed the Donetsk and Luhansk People's Republics (DPR and LPR). The conflict has evolved over a ten-year period, encompassing the Crimean annexation, a protracted struggle and conflict in and over Donbas, and eventually an inter-state war since February 2022. As such, the conflict can be split into six phases.

7.1.2 Prelude and Annexation of Crimea: 2013-2014

In late 2013, Ukraine's President Viktor Yanukovych abandoned a planned Association Agreement with the EU, sparking mass pro-European protests known as Euromaidan or "Revolution of Dignity" in Kyiv. These protests, motivated by demands for democracy and closer ties with the EU, intensified over the winter. The protests culminated in February 2014 with the ousting of Yanukovych's government after deadly clashes in Kyiv. For the Kremlin, the protests were interpreted as a "Euro-Atlantic operation to prise Ukraine from Russia".[380] Amid the struggle of Ukraine's President Yanukovich to contain and suppress the Euromaidan protests, and subsequent flight, Russia decided that its best response was to annex the Crimean Peninsula in March 2014, asserting "historical and strategic" claims.

7.1.3 Donbas Conflict: 2014-2015

Following the annexation of Crimea, pro-Russian unrest flared in Ukraine's eastern region of Donbas, encompassing Donetsk and Luhansk oblasts, in spring 2014.

[380] Toal. 2017. *Near Abroad,* 244.

In April, separatist militants, with encouragement and later active support from Moscow, seized government buildings and declared "People's Republics" in Donetsk and Luhansk. Concurrently, the Ukrainian government launched an "anti-terrorism operation" to restore control, but initially suffered substantial losses.[381] Pro-Russian Donbas separatist were bolstered by an influx of fighters and heavy weapons from across the Russian border, however, Ukrainian government forces reinstated some territorial control in the summer.[382] By fall of the same year, the Trilateral Contact Group for Ukraine, comprising the OSCE, Russia and Ukraine, reached a ceasefire agreement in Minsk, known as "Minsk Protocol I".

7.1.4 Low Intensity Conflict: 2015-2022

In January 2015, fighting resumed between Ukrainian government forces and Donbas separatists, effectively rendering the Minsk Protocol obsolete. This prompted a second round of ceasefire negotiations, and the signing of Minsk Protocol II in February. The agreement outlined a more detailed roadmap for ceasefire and a political settlement, including a pullback of heavy weapons and eventual reintegration of the separatist-held territories into Ukraine with special status. This accord effectively brought large-scale offensives to an end, locking in a *de facto* partition of the Donbas.

7.1.5 Inter-state War: 2022

In late February 2022, Russia launched a broader military offensive across multiple regions of Ukraine, including the capital city, effectively rendering the conflict an interstate war. The resulting full-scale war has resulted in widespread destruction of infrastructure, significant civilian displacement, and a realignment of international security postures.

Russia's initial February offensive unfolded along four converging operational axes: toward Kyiv, Kharkiv, the Donbas, and Ukraine's southern littoral. Within the first week, Russian forces were reported to have claimed control of more than 50,000 square miles of Ukrainian territory,

[381] Sabine Fischer. 2019. "The Donbas Conflict Opposing Interests and Narratives, Difficult Peace Process." *German Institute for International and Security Affairs*, April, 2019. https://www.swp-berlin.org/publications/products/research_papers/2019RP05_fhs.pdf. P. 9.
[382] Ibid.

roughly 22% of the country's total territory.[383] Notably, the Russian military took control of Kherson in early March, the first regional capital to fall under Russian control, giving the military a foothold on the right bank of the lower Dnipro river.[384]

However, Russia's initial offensive stalled by April, and the military withdrew from northern parts of Ukraine, including Kyiv, Chernihiv, and Sumy oblasts.[385] The retreat exposed "extensive evidence of summary executions" and other "grave breaches of international humanitarian law" in "more than 30 settlements in Kyiv, Chernihiv, Kharkiv and Sumy regions", and most notably in the town of Bucha.[386]

Russian forces subsequently centered their efforts toward the southern and eastern parts of Ukraine. In May, Russia claimed control of Mariupol.[387] They took control of Sievierodonetsk in June and Lysychansk in July, thereby securing almost the entirety of Luhansk oblast.[388] In late September, Russian authorities orchestrated plebiscites in Donetsk, Luhansk, Kherson, and Zaporizhzhia, after which President Vladimir Putin signed accession treaties proclaiming the four regions part of the Russian Federation on September 30th.[389]

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[383] Julia Ledure. 2022. "What Russia Has Gained and Lost so Far in Ukraine, Visualized." 2022. *The Washington Post*. November 21, 2022. https://www.washingtonpost.com/world/2022/11/21/russia-territory-gains-ukraine-war/.

[384] Michael Schwirtz and Richard Pérez-Peña. 2022. "First Ukraine City Falls as Russia Strikes More Civilian Targets." *The New York Times*, March 2, 2022. https://www.nytimes.com/2022/03/02/world/europe/kherson-ukraine-russia.html.

[385] Ibid.

[386] Human Rights Watch. 2022. "Ukraine: Russian Forces' Trail of Death in Bucha." *HRW,* April 21, 2022. https://www.hrw.org/news/2022/04/21/ukraine-russian-forces-trail-death-bucha. ; United Nations Human Rights Office of the High Commissioner. 2022. "The situation of human rights in Ukraine in the context of the armed attack by the Russian Federation, 24 February to 15 May 2022." *OHCHR*, June 29, 2022. https://www.ohchr.org/en/documents/country-reports/situation-human-rights-ukraine-context-armed-attack-russian-federation P. 6.

[387] Becky Sullivan and Laurel Wamsley. 2022. "Mariupol Has Fallen to Russia. Here's What That Means for Ukraine." *NPR*, May 19, 2022. https://www.npr.org/2022/05/18/1099885151/mariupol-falls-ukraine-russia-what-it-means.

[388] Pavel Polityuk, and Max Hunder. 2022. "Russia Takes Most of Sievierodonetsk City in Eastern Ukraine." *Reuters*, June 1, 2022. https://www.reuters.com/world/europe/russian-forces-face-stiff-resistance-ukraines-donbas-2022-05-31/. ; Thomas Gibbons-Neff, Kamila Hrabchuk, and Vivian Yee. 2022. "As City Falls, Ukraine's Last Hope in Luhansk Falls with It." *The New York Times*, July 3, 2022. https://www.nytimes.com/2022/07/03/world/europe/ukraine-war-lysychansk.html.

[389] Office of the President of Russia. 2022. "Signing of Treaties on Accession of Donetsk and Lugansk People's Republics and Zaporozhye and Kherson Regions to Russia." *Office of the President of Russia*. September 30, 2022. http://en.kremlin.ru/events/president/news/69465.

Ukraine countered with a rapid combined-arms strike in Kharkiv oblast in September, [re]claiming Balakliia, Izium, and Kupiansk, and severing Russia's northern logistics corridor. In November, Russian forces withdrew from Kherson city. By the end of 2022, Russia's initial areas of territorial control had "contracted to 40,600 square miles" or 17% of Ukraine's territory, mainly in the east and south. The frontlines were thus pushed towards eastern and southern parts of Ukraine.[390]

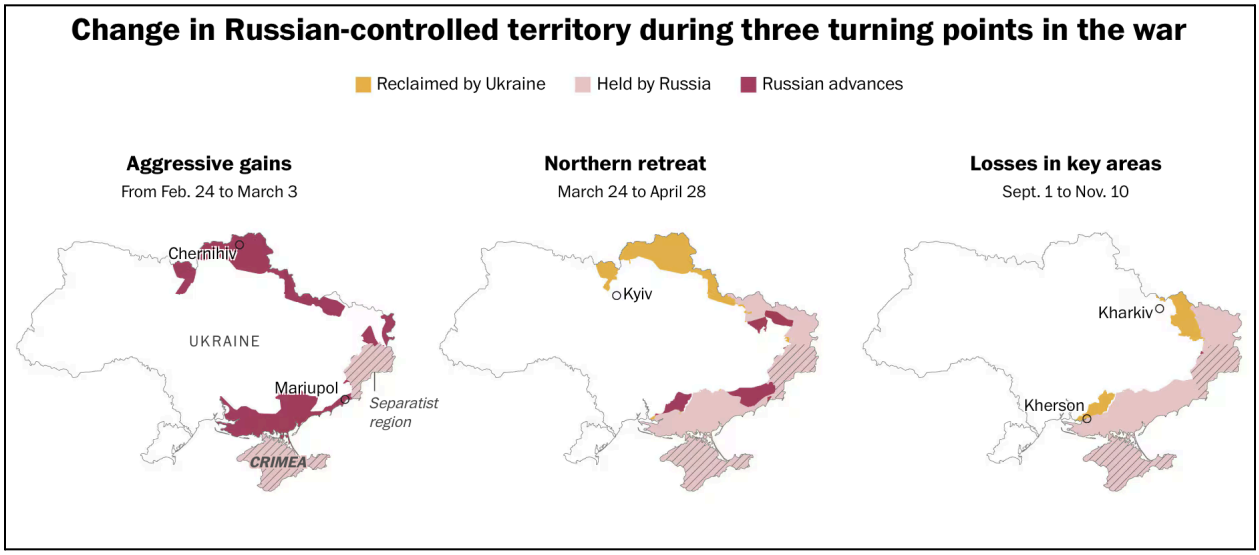


Figure 7.1. *Territorial adjustments between February and November 2022*.[391]

7.1.5.1 Entrenched Frontlines and Ukraine's Counter-offensive: 2023-2024

The second phase of the inter-state war, beginning in 2023, was marked by only kinetic oscillations at the frontlines. However, 2023 brought landmines back into the global spotlight, when Ukraine's summer counter-offensive stalled amid densely-laid Russian minefields at frontlines in the east and south.

In early 2023, Russian forces launched a sequence of winter offensives that resulted in two battlefield gains. In January, Wagner Group took control of Soledar, a salt-mining satellite of

[390] Julia Ledure. 2022. "What Russia Has Gained and Lost so Far in Ukraine, Visualized." 2022. *The Washington Post*, November 21, 2022. https://www.washingtonpost.com/world/2022/11/21/russia-territory-gains-ukraine-war/.
[391] Ibid.

Bakhmut whose capture marked the Kremlin's first territorial advance in months.[392] After a ten-month siege, Russian forces declared full control of Bakhmut on May 21st, a campaign that exhausted much of Russia's offensive potential in the eastern theatre.[393] The intensity of fighting during the battle of Bakhmut, and the toll of casualties, had subsequently been described as the "Bakhmut meatgrinder".[394]

Strategic initiative then shifted abruptly. In the early hours of June 6th 2023, an explosion destroyed the Kakhovka hydro-electric dam on the lower Dnipro, releasing an estimated 18 km³ of reservoir water and inundating more than 620 km² of Kherson and Mykolaiv oblasts. Kyiv denounced the breach as an "environmental war crime," while UN assessments ranked it among the gravest blows to civilian infrastructure since February 24th 2022.[395] The catastrophe not only displaced thousands and ravaged agricultural land, it also re-shaped the riverine battlespace by removing a natural water barrier and exposing contaminated sediments.

Ukraine's long-prepared summer counter-offensive began in early June along the Orikhiv-Tokmak axis of Zaporizhzhia. Nearly immediately after the operation began, Ukrainian forces' advance was stalled by a wide and dense belt of minefields laid by Russian forces.[396] Only by late August did Ukraine's assault brigades breach Russia's first fortified belt. In the process, Ukrainian military took control of Robotyne, yet could not fulfil the key aim of severing the land corridor linking Donbas to Crimea.[397]

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[392] Pavel Polityuk. 2023. "Russia Claims Capture of Ukraine's Soledar, but Kyiv Says Still Fighting." *Reuters*, January 14, 2023. https://www.reuters.com/world/ukraine-fights-russian-assault-salt-mining-town-along-eastern-front-2023-01-09/.

[393] Reuters. 2023. "Russia Says Ukrainian City of Bakhmut Captured." *Reuters*, May 21, 2023. https://www.reuters.com/world/europe/russias-wagner-claims-bakhmut-kyiv-says-situation-critical-2023-05-20/.

[394] Alia Brahimi. 2024. "Mercenary Meatgrinder: The Price of Bakhmut." *Atlantic Council*, June 27, 2024. https://www.atlanticcouncil.org/commentary/podcast/mercenary-meatgrinder.

[395] United Nations Ukraine. 2024. "Kakhovka Dam destruction, one year on." *UN Ukraine*, June 6, 2024. https://ukraine.un.org/en/270890-kakhovka-dam-destruction-one-yea.

[396] Isabelle Khurshudyan and Kamila Hrabchuk. 2023. "The Biggest Obstacle to Ukraine's Counteroffensive? Minefields." *The Washington Post*, July 15, 2023. https://www.washingtonpost.com/world/2023/07/15/ukraine-war-russia-mines-counteroffensive/. ; Andrew Harding. 2023. "Ukraine War: The Lethal Minefields Holding up Kyiv's Counter-Offensive." *BBC News*, July 3, 2023. https://www.bbc.com/news/world-europe-66080652.

[397] Reuters Staff. 2023. "Ukraine Says It Liberates Strategic Settlement." *Reuters*, August 28, 2023. https://www.reuters.com/world/europe/ukraine-says-it-has-liberated-southeastern-village-robotyne-2023-08-28/.

Locally, however, Ukraine's push obliged Russia to redeploy reserves southwards, diluting pressure on other sectors. At sea, successive strikes with naval drones and anti-ship missiles disabled the *Olenegorskiy Gornyak* and damaged dry-dock facilities at Novorossiysk, compelling the Black Sea Fleet to relocate a substantial share of surface combatants from Sevastopol.[398] By the end of 2023, territorial control of both factions was largely unchanged compared to January of the same year.

The relative stalemate of 2023 cracked in February 2024, when Russian forces took control of the city of Avdiivka in eastern Ukraine after months of intense combat—marking Russia's largest territorial advance since the capture of Bakhmut in 2023.[399] The defeat at Avdiivka only further exposed Ukraine's "low ammunition supplies and a shortage of personnel"—a vulnerability created by "critical delays in Western aid over the winter of 2023-2024".[400] Russian forces sought to exploit these vulnerabilities by opening a new front through a ground assault near Kharkiv in the northeast with an objective to push Ukrainian troops back and create a buffer zone.[401] However, Ukrainian troops reported that they stabilized this front and held off the Russian military in May 2024.[402]

In August 2024, amid the difficulty with [re]gaining momentum on the ground, Ukraine launched an offensive in the Kursk region of the Russian mainland, and thus "complicated the Russian military's efforts to advance in Ukraine".[403] Russia responded by introducing North

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[398] Isabel van Brugen. 2024. "Ukraine's Naval Drones Target Russian Black Sea Fleet's New Hideout." *Newsweek*, September 5, 2024. https://www.newsweek.com.

[399] Illia Novikov and Barry Hatton. 2024. "Russia Takes Control of a City in Eastern Ukraine after Ukrainian Troops Withdraw." *AP News*, February 16, 2024. https://apnews.com/article/russia-ukraine-war-avdiivka-c31eb7439d1983532a3f940061efe6e7.

[400] Ibid. ; Angelica Evans. 2025. "Ukraine's Kursk Incursion: Six Month Assessment". *Institute for the Study of War*, February 6, 2025. https://understandingwar.org/sites/default/files/Six%20Month%20Kursk. P. 1 ; Yuliia Dysa and Tom Balmforth. 2024. "Ukraine Thanks US on Long-Awaited Aid Package, Says It Will Make up for Lost Time." *Reuters*, April 24, 2024. https://www.reuters.com/world/europe/ukraine-thanks.

[401] Sergiy Karazy, Tom Balmforth, and Yuliia Dysa. 2024. "Russian Forces Attack Ukraine's Kharkiv Region, Striking on New Front." *Reuters*, May 10, 2024. https://www.reuters.com/world/europe/ukraine-sends-reinforcements-after-russian-forces. ; Daryna Mayer and Yuliya Talmazan. 2024. "Ukraine Halts Russia's Kharkiv Advance, Putin Says Offensive Aims to Create Buffer Zone." *NBC News*, May 17, 2024. https://www.nbcnews.com/news/world/ukraine-stabilized-kharkiv-russia-offensive-crimea-drone.

[402] Ibid. ; Ibid.

[403] Evans. 2025. "Ukraine's Kursk Incursion", 1.

Korean forces as a new belligerent in the conflict—the Ukrainian and South Korean governments reported that some ten thousand North Korean troops were sent to Russia in order to "retake the Kursk region".[404] The frontline dynamics throughout 2024 largely resembled the relative stalemate of 2023, with the notable exception of the Avdiivka battle, the opening of a new front in northeast Ukraine, and Ukraine's Kursk offensive. Intense combat continued in eastern Ukraine throughout 2024, but territorial changes remained small and the frontline largely static.

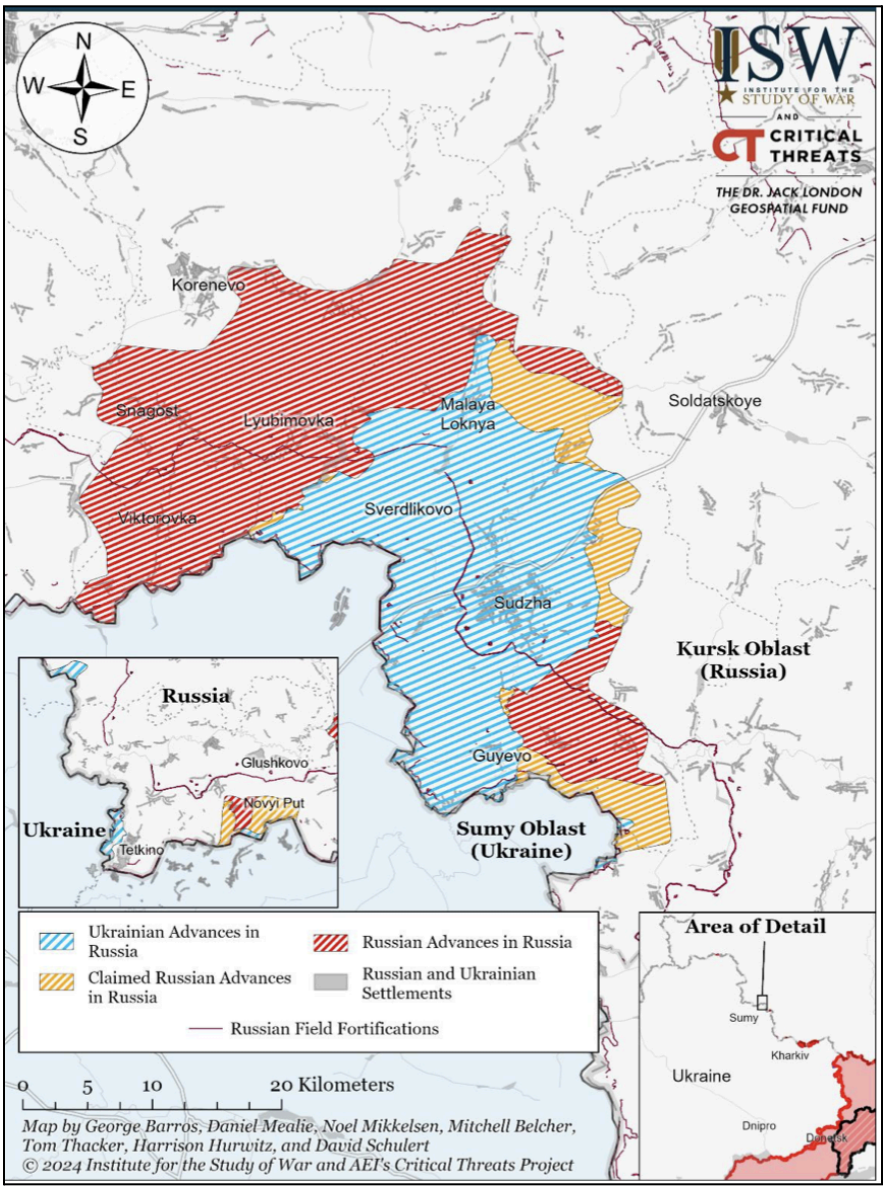


Figure 7.2. *A map of Russia's Kursk area depicting Ukraine's incursion and territorial control as of December 27, 2024.*[405]

[404] Liana Fix and Benjamin Harris. 2024. "North Korean Troops in Russia: A Dangerous New Phase in the Ukraine War." *Council on Foreign Relations*, October 25, 2024. https://www.cfr.org/expert-brief.
[405] Kateryna Stepanenko, Olivia Gibson, Nate Trotter, Angelica Evans, and George Barros. 2024. "Russian Offensive Campaign Assessment." *Institute for the Study of War,* December 27, 2024. https://www.understandingwar.org/sites/default/files. P. 7

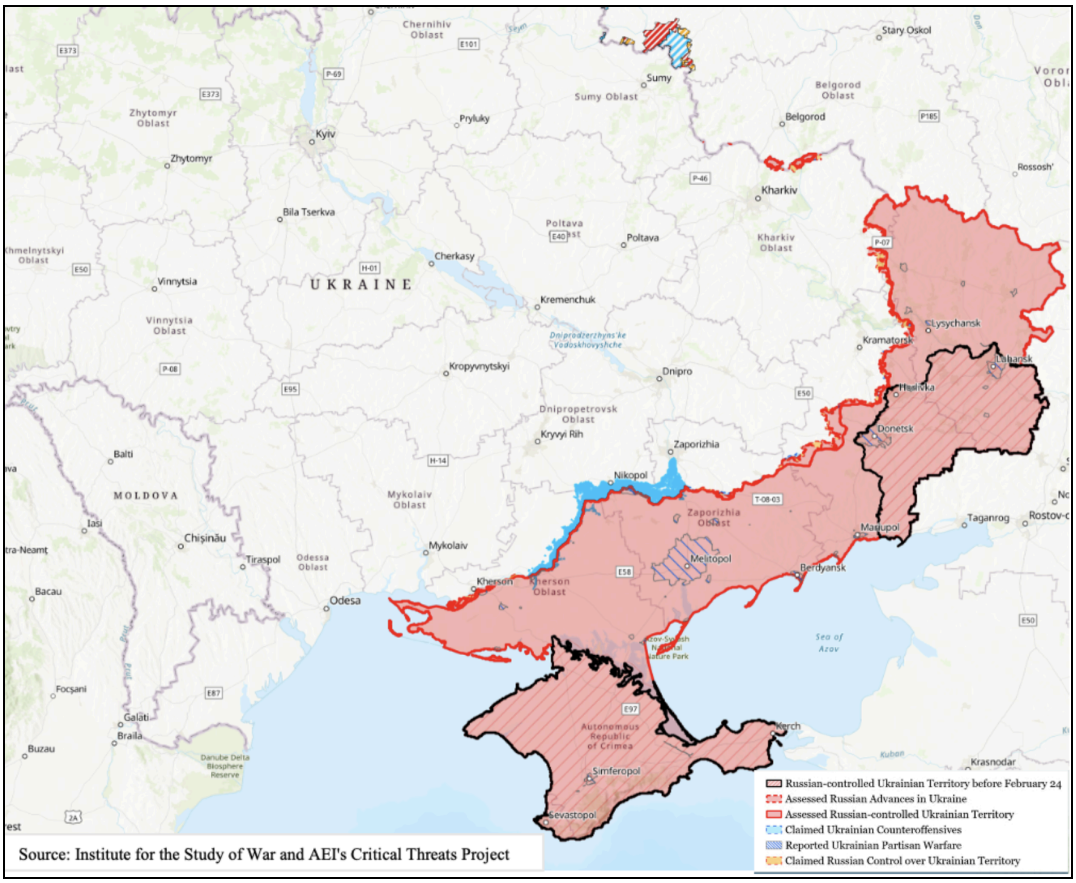


Figure 7.3. *A map showing areas of active combat and/or contestation in Ukraine as of December 11, 2024. The map shows frontlines have moved only slightly compared to late 2022.*[406]

7.2 Wartime Landmine Use and Contamination 2014-2024

Landmines have been a recurring feature of the Ukrainian War from 2014 to present, however, their use and geographic spread increased significantly following the conflict escalation in February 2022. In contrast to the Bosnian War, where all warring factions employed AP and AV landmines, landmines in Ukraine have been predominantly used by the Russian-sponsored Donbas separatists and the Russian military. In 2015, however, the Russian government denied that its forces had used landmines, noting that the "Self Defense forces of Crimea, before the referendum, placed the minefields with relevant markings", but only made use of "signal" mines and not "combat" mines.[407] The Ukrainian military made limited use of AV landmines before

[406] Russia Matters. 2024. "The Russia-Ukraine War Report Card." *University of Harvard Belfer Center for Science and International Affairs,* December 11, 2024. https://www.russiamatters.org/news/russia-ukraine-war-report-card/russia-ukraine-war-report-card-dec-11-2024.

[407] Human Rights Watch. 2015. " Landmines in Ukraine: Technical Briefing Note." *HRW,* April, 2015. https://www.hrw.org/sites/default/files/related_material/LM_Landmines. P. 11

2022, but this dynamic shifted thereafter. The AP landmines were reported to have not been part of Ukraine's military arsenal until 2022.

From 2014 until January 2022, landmines were used predominantly in Donetsk and Luhansk Oblasts with the highest concentration reported to be found along and within the contact line that separated government-held territory from separatist-held areas.

Limited reports exist on the types of landmines used between 2014 and 2021 because neither technical nor non-technical surveys were conducted in separatist-held areas. The OSCE SMM observed some types of AV and AP used during their patrols, but reliable estimates were not made by the government, the OSCE, or demining NGOs. In fact, the lack of comprehensive NTS and TS led to chronic lack of data/information, and even by 2018 "no one knew what the extent of contamination actually was".[408]



Figure 7.4. *A photo of the unfuzed MON-50, MON-90, and OZM-72 mines in Ilovaisk, eastern Ukraine. The three types of landmines were documented by the Human Rights Watch on October 11, 2014.*[409]

[408] Jack Losh. 2018. "Ukraine's Hidden Menace." *POLITICO*, September 13, 2018. https://www.politico.eu/article/ukraine-landmines-conflict-hidden-menace/.
[409] Human Rights Watch. 2015. "Landmines in Ukraine: Technical Briefing Note." *HRW,* April 2015. https://www.hrw.org/sites/default/files/related_material/LM_Landmines. P. 3.

The OSCE SMM patrols noted several types of landmines; their observations indicated that AVLs were the "most prevalent type", particularly type TM-62M, and, in lesser numbers, the plastic-bodied TM-62P3.[410] The AV landmines were typically laid on the surface, creating the so-called "surface minefields" which ranged from "small minefields across tarmac roads that comprise only a few mines to surface-laid minefields across large open fields".[411] Coastal areas of Donetsk were reported to have a type of Soviet-made amphibious mine, PDM-1M, and the "SMM monitors observed some of this mine laying taking place".[412] At this stage of the conflict, AP landmines were used in lesser numbers than AV, and the SMM monitors reported seeing only a few types: a bounding fragmentation mine OZM-72, a fragmentation mine POM-2, and several types from directional MON-series.[413]



Figure 7.5. *A photo of a TM-62P3 mine in the Donetsk region.*[414]

[410] Edward Crowther. 2019. "Contamination in Eastern Ukraine: Observations by OSCE," *The Journal of Conventional Weapons Destruction*: Vol. 23: Iss. 1, Article 9. https://commons.lib.jmu.edu/cisr-journal/vol23/iss1/9. P. 25.
[411] Ibid.
[412] Ibid.
[413] Ibid.
[414] Ibid.

The chronic "lack of information" regarding the types and extent of landmines used resulted in considerable efforts by the GICHD to collect all and any data on landmine use, types and extent of contamination through limited NTS and TS surveys conducted by international NGOs and open source media. The GICHD research yielded information about eleven types of AP landmines used between 2014 and February 2024, and seven types of AV landmines, including three types previously unknown and likely developed by the Russian military amid the Donbas conflict. AV landmines were reported to be widely used, especially type TM-62M which was reported as being used at roadblocks by the separatist forces.[415]

Landmines reported in Ukraine since 2014

Category	Designation	Origin	Type	Initiation
Antipersonnel	MON-50	Russia/USSR	Fragmentation	Tripwire/command
	MON-90	Russia/USSR	Fragmentation	Tripwire/command
	MON-100	Russia/USSR	Fragmentation	Tripwire/command
	OZM-72	Russia/USSR	Fragmentation	Tripwire/command
	PMN-4	Russia	Blast	Pressure
	POM-2/POM-2R	Russia/USSR	Fragmentation	Tripwire/self-destruct
Anti-vehicle	TM-62M	Russia/USSR	Blast	Pressure
	PTM1-G	Russia/USSR	Blast	Pressure/self-destruct
Anti-landing	PDM-1M	Russia/USSR	Blast	Tilt rod

Figure 7.6. *A list of the types of landmines documented in Ukraine by spring 2015. The list was produced by the Human Rights Watch whose team collected evidence through witness accounts, field investigations, verified photos and videos on social media, and cooperations with international demining experts, the Ukrainian government, and the Landmine Monitor.*[416]

[415] Geneva International Center for Humanitarian Demining. 2022. "Explosive Ordnance Guide For Ukraine." 2nd edition. *GICHD*, September 22, 2022. https://www.gichd.org/publications.
[416] Human Rights Watch. 2015. "Landmines in Ukraine", 4.

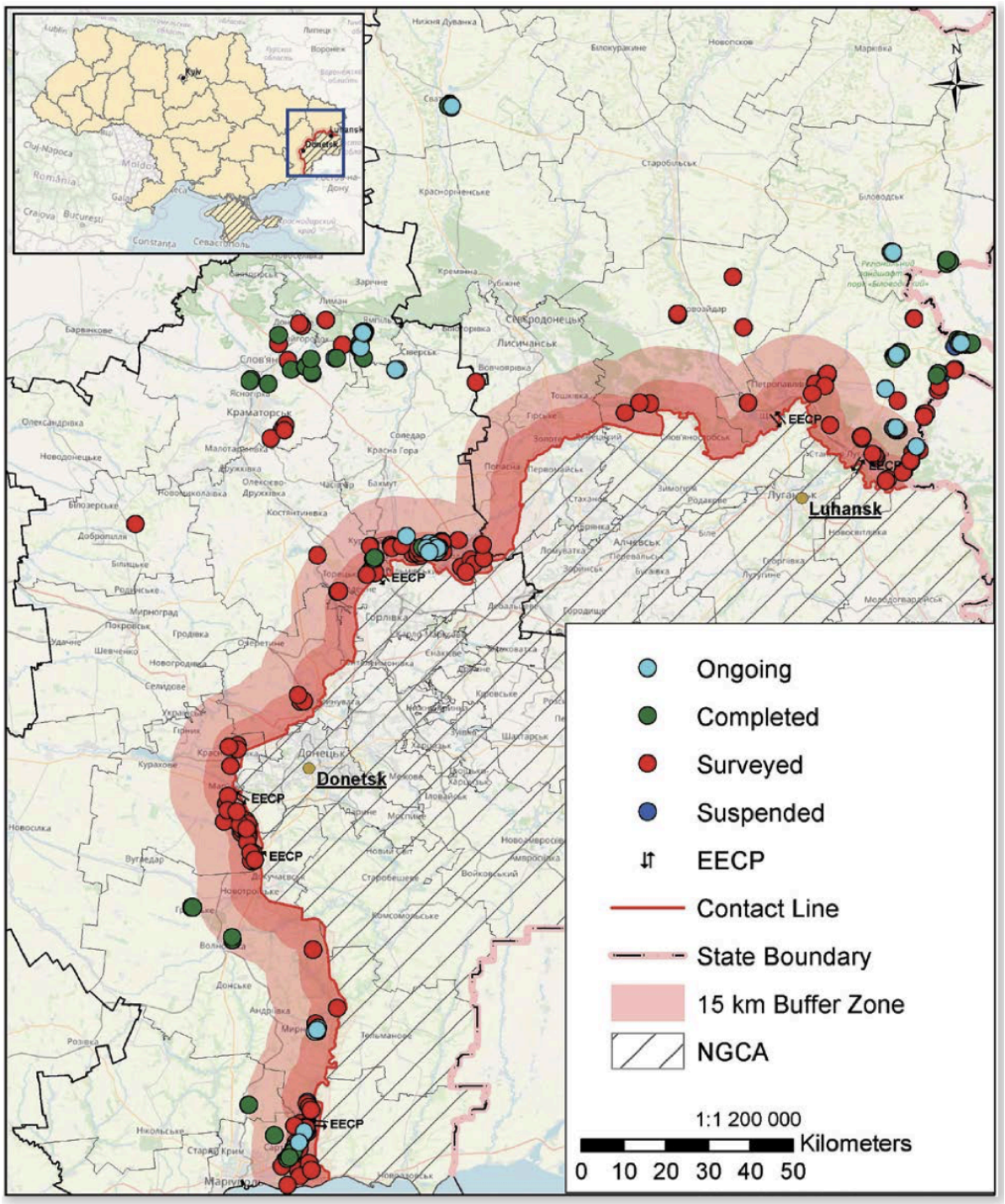


Figure 7.7. *A map showing areas surveyed by HALO Trust between 2015 and 2021. The landmine contamination was reported to be highest along the contact line; no data on landmine contamination separatist-controlled areas was available at this time.*[417]

[417] Tobias Hewitt and Shenhav, Ronan. 2021. "Developing National Landmine Clearance Capacity in Ukraine," *The Journal of Conventional Weapons Destruction*: Vol. 25: Iss. 1, Article 9. https://commons.lib.jmu.edu/cisr-journal/vol25/iss1/9. P. 36

Despite their use since 2014, landmines have only become a distinct feature of the Ukrainian War from 2022 onwards, resulting in "large, dispersed, and complex levels of contamination".[418]

From February 2022, Russian military increased the landmine arsenal to thirteen different conventional AP landmines, thirteen different conventional AV landmines, a "newly-developed" APL variant with sensor fuze, IEDs, and improvised landmines.[419] The Ukrainian military deployed thirteen types of AV landmines, and reported to have employed AP landmines in violation of Kyiv's commitments to the Mine Ban Treaty from 1999.[420]

The geographic pattern of landmine contamination since 2022 has mirrored the conflict dynamics: virtually all areas where battles were fought had been mined with varying minefield patterns and compositions. Landmines had been used within eleven out of twenty-seven oblasts: Chernihivska, Dnipropetrovska, Donetska, Kharkivska, Khersonska, Kyivska, Luhanska, Mykolaivska, Odeska, Sumska, and Zaporizka.[421]

The primary use of landmines has been of defensive nature—to entrench positions and defend held territories by deterring the advance of Ukrainian military, however, Russian military has also deployed landmines offensively by scattering improvised mines, IEDs and APLs in and around buildings during retreats of its units. The latter was a common tactic in the first half of 2022 amid first battles and Russian retreats from early positions in the war.

These "offensive minefields" have been irregular and unpatterned, with Ukraine's frontline deminers reporting finding AP landmines and booby traps near or at doors of houses, inside and behind toys, inside soda cans, fridges, books, and under "dead bodies of Russian soldiers".[422]

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[418] Human Rights Watch. 2023. "Landmine Use in Ukraine." *HRW,* June 13, 2023. https://www.hrw.org/news/2023/06/13/landmine-use-ukraine. P. 2
[419] Ibid, 3.
[420] Ibid.
[421] Ibid, 2.
[422] Jake Epstein. 2023. "Russia's Mining Everywhere in Ukraine, Even Fridges, Toys, and Books." *Business Insider*, August 5, 2023. https://www.businessinsider.com. ;
Steve Brown. 2024. "Opinion: Russian Hypocrisy Knows No Bounds – Accuses Kyiv of Using Booby-Trapped Toys." *Kyiv Post*, May 24, 2024. https://www.kyivpost.com/opinion/33190. ;
Vladyslav Smilianets. 2023. "On Ukraine's Landmine-Strewn Front, Even the Corpses Can Kill." *Reuters*, August 4, 2023. https://www.reuters.com./.



Figure 7.8. *A map depicting the advance of the Russian military in March 2022. Areas shaded in red show the early war position of 2022 and correspond to the locations of Russian-laid minefields.*[423]



Figure 7.9. *A map depicting areas under Russian military control in November 2022, shaded in red.*[424]

[423] Angelica Evans, Nicole Wolkov, Christina Harward, Olivia Gibson, Anna Harvey, George Barros and Nate Trotter. 2022. "Russian Offensive Campaign Assessment April 14". *Institute for the Study of War*, April 14, 2022. https://www.understandingwar.org/sites/default/files.

[424] Bailey, Dominic, Mike Hills, Paul Sargeant, Chris Clayton, Kady Wardell, Camilla Costa, Mark Bryson, Sana Dionysiou, Gerry Fletcher, Kate Gaynor and Erwan Rivault. n.d. "Ukraine in maps: Tracking the war with Russia." *BBC News*. https://www.bbc.com/news/world-europe-60506682.

As frontlines shifted by the end of 2022, with the Russian military withdrawing to eastern parts of Ukraine, the use of AP and AV landmines increased, and became "patterned". In efforts to repel and deter the advance of the Ukrainian military further in Donetsk, Luhansk, Zaporizhzhia, and Kherson oblasts, the Russian military began building a "wall of minefields" along the entire frontline.

This strategy had two notable consequences. First, it emerged as "the most significant obstacle" to Ukrainian military counteroffensive in 2023.[425] Second, it became the source of reports and claims on Ukraine being the "most mined country in the world", and a host to "the world's largest minefield".[426]

The extent of contamination in Ukraine, however, is not known. International demining NGOs provided estimates that suggest a third or a fourth of Ukraine's territory may be covered in landmines. The Ministry of Defense of Ukraine (MOD) provides regular updates on suspected/confirmed landmine contamination and clearance progression, sourcing data from SESU and international demining NGOs. The estimates of MOD suggest that CHAs and SHAs cover an area of nearly 600.000.000 m^2 inside the government-controlled area. However, my interlocutors from Ukraine claim that "public information" on clearance progression in particular, does not *necessarily* depict the realities on the ground, claiming that clearance information is kept somewhat "secret" because demining operators have been targeted directly and indirectly by the Russian military and Russian Intelligence units.[427] The Chernihiv office of the Swiss Demining Foundation, the FSD, was shelled in July 2024.[428]

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[425] Andrew Harding. 2023. "Ukraine War: The Lethal Minefields Holding up Kyiv's Counter-Offensive," *BBC News*, July 3, 2023. https://www.bbc.com/news. ; Isabelle Khurshudyan and Kamila Hrabchuk. 2023. "The Biggest Obstacle to Ukraine's Counteroffensive? Minefields." *The Washington Post*, July 15, 2023. https://www.washingtonpost.com/world/2023/07/15/.

[426] Eve Sampson and Samuel Granados. 2023. "Ukraine is now the most mined country. It will take decades to make safe." *The Washington Post*, July 22, 2023. https://www.washingtonpost.com/world. ; Krzysztof Nieczypor. 2023. "Ukraine: The World's Biggest Minefield." *OSW Centre for Eastern Studies*, November 22, 2023. https://www.osw.waw.pl. ; Jen Kirby. 2023. "There Are Now More Land Mines in Ukraine than Almost Anywhere Else on the Planet." *Vox*, November 30, 2023. https://www.vox.com. ; Briar Stewart. 2024. "The World's Largest Minefield." *CBC News*, May 2, 2024. https://www.cbc.ca.

[427] Eleanor Porritt (Fondation Suisse de Déminage, Program Director for Ukraine), interviewed by the author, February 28, 2025. ; Tymur Pistriuha (Ukrainian Deminers Associations/Demining Solutions, Directors), interviewed by the author, March 5, 2025.

[428] Eleanor Porritt (Fondation Suisse de Déminage, Program Director for Ukraine), interviewed by the author, February 28, 2025. ; Ministry of Economy of Ukraine. 2024. "Russians Shelled FSD Office in



Figure 7.10. *A compilation of 10 media reports, published between 2023 and 2024, which discuss Ukraine's landmine situation and describe Ukraine as "the world's largest minefield".*[429]

Kharkiv: The Building and Equipment Were Damaged." *Demine Ukraine*, July 24, 2024. https://demine.gov.ua/en/news.

[429] DPA. 2023. "Ukraine Has Largest Minefield in the World, Prime Minister Says." *RadioFreeEurope/RadioLiberty*, January 8, 2023. https://www.rferl.org/a/ukraine. ; Alexey Lenkov. 2024. "Nowhere to Step: Ukraine Plagued at Least 2 Million Landmines." *Bulgarian Military Industry Review*, July 26, 2024. https://bulgarianmilitary.com/2024/07/26/. ; Krzysztof Nieczypor. 2023. "Ukraine: The World's Biggest Minefield." *OSW Centre for Eastern Studies*, November 22, 2023. https://www.osw.waw.pl/en/publikacje/osw-commentary. ; Briar Stewart. 2024. "The World's Largest Minefield." *CBC News*, May 2, 2024. https://www.cbc.ca/newsinteractives. ; Vijesti. 2024. "How Ukraine Became the Biggest Minefield in the World." *Vijesti.me*, July 8, 2024. https://en.vijesti.me/bbc/714934/. ; Sasha Vakulina. 2024. "What Will It Take to Demine Ukraine, the World's Largest Minefield?" *Euronews*, October 10, 2024. https://www.euronews.com/my-europe/2024/10/10. ; Théo Prouvost. 2024. "Ukrainian Sappers Race against World's Largest Minefield." *Euromaidan Press*, October 25, 2024. https://euromaidanpress.com/2024/10/25/. ; Jen Kirby. 2023. "There Are Now More Land Mines in Ukraine than Almost Anywhere Else on the Planet." *Vox*, November 30, 2023. https://www.vox.com/world-politics/2023/11/30/. ; Scott Sweetow. 2023. "Ukraine Is Becoming the World's Largest Minefield." *SOFREP*, February 22, 2023. https://sofrep.com/news/ukraine. ; Isabelle Khurshudyan and Kamila Hrabchuk. 2023. "The Biggest Obstacle to Ukraine's Counteroffensive? Minefields." *The Washington Post*, July 15, 2023. https://www.washingtonpost.com/world/2023/07/15/.

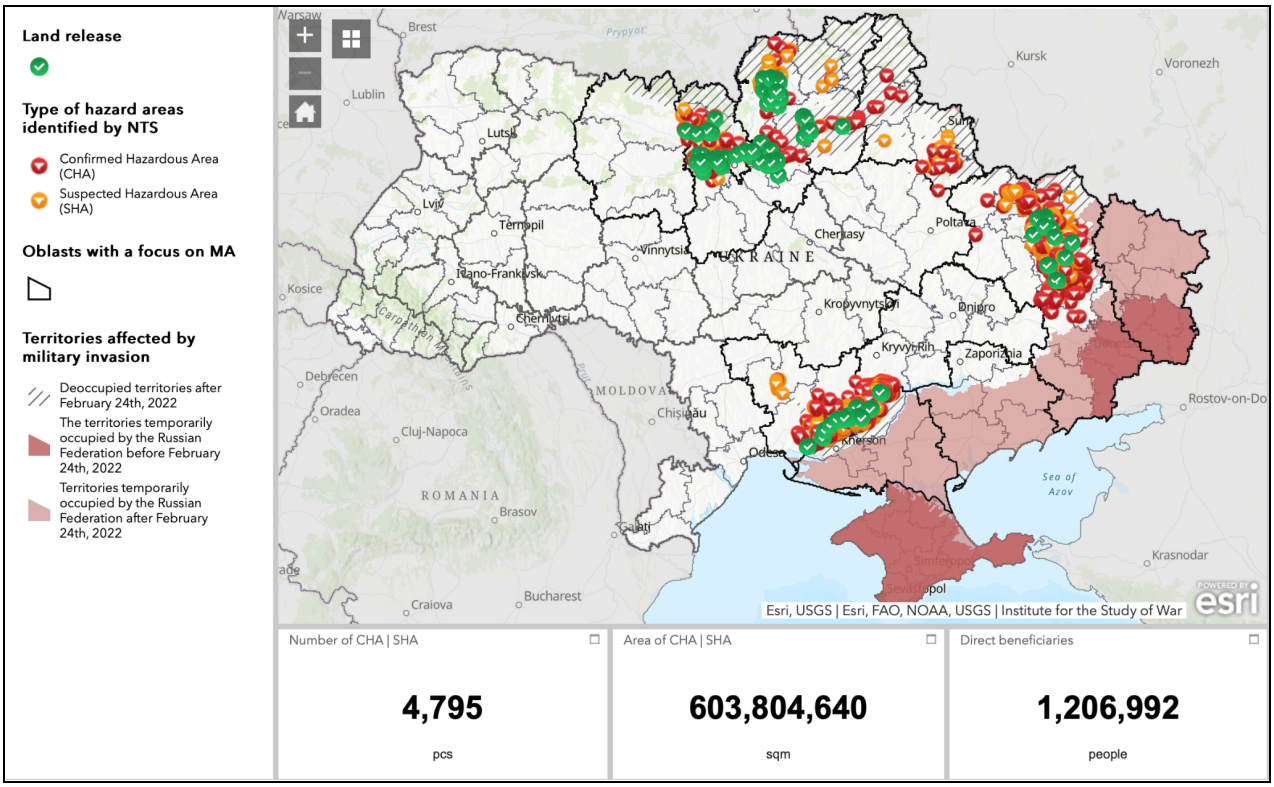


Figure 7.11. *A map of SHAs, CHAs, and cleared areas produced by the Ukrainian Ministry of Defense; status as of April 23, 2025.*[430]

Nearly all types of AV and AP landmines deployed in Ukraine between 2012 and 2024 have been either Soviet-designed or Russian-designed.

The AP landmines that have been observed and identified in government-controlled areas come from six different series: PMN, POM, OZM, MON, PMF, and MOB.[431] The types of AP landmines that the Russian military has employed include all conventional types: blast, fragmentation, bounding fragmentation, directional, as well "scatterable mines".

Together, all the landmines deployed have contributed to the "explosive tapestry" in Kyiv-held and Moscow-led areas of Ukraine, which has been a subject of active clearance efforts since 2014.

[430] Ministry of Defence of Ukraine, Mine Action Center. 2025. "Implementation of humanitarian demining activities." *UA IMSMA*. https://ua.imsma.org/portal/apps/webappviewer.
[431] Geneva International Centre for Humanitarian Demining. 2022. "Explosive Ordnance Guide for Ukraine." 2nd Edition. *GICHD*, September 22, 2022. https://www.gichd.org/fileadmin/uploads/gichd/Publications/GICHD_Ukraine_Guide_2022_Second_Edition_web.pdf



Figure 7.12. *A mine safety training by SESU, where the agency demonstrates types of landmines and UXO its deminers found and identified through demining operations. The collection shows a "Claymore-type" directional fragmentation landmine, an anti-tank landmine, two types of blast APLs, and two types of bounding fragmentation APLs.*[432]



Figure 7.13. *Types of landmines and other weapons documented by SESU and presented in a powerpoint presentation used by SESU to communicate key information about its demining work.*[433]

[432] Photograph by Elena Tita for Global Images Ukraine. April 4. 2023. Source: Getty Images.
[433] State Emergency Service of Ukraine (SESU). "Demining Ukraine" - Presentation. P. 7. _ email from Person SESU (State Emergency Service of Ukraine) to the author on March 21, 2025.



Figure 7.14. *A "mine and UXO awareness room" in an underground school in Kharkiv showing types of mines used in Ukraine. Ukraine's Ministry of Education issued a decree requiring all schools to possess such rooms.*[434]

[434] Photograph by Oles Kromplias for Global Images Ukraine. October 15, 2024. Source: Getty Images.

Chapter 8

Understanding Landmines as Material Agents

8.1 Introduction

"Mines have always been more than just defensive weapons".[435]

A landmine is not a passive remnant of war. It is not just an inert object waiting to explode. It is an agent that reconfigures territories, ecologies and socio-ecological relations. To understand the capacity of landmines to kill, disable, move, territorialize, and remake ecologies necessitates that a landmine be considered beyond its intended military function.

The vast range of things which landmines do is best understood as what the paradigm of New Materialism terms the "liveliness of matter" or "more-than-human agency". It is a capacity "not only to impede or block the will and designs of humans but also to act as quasi agents or forces with trajectories, propensities, or tendencies of their own".[436] This "thing-power" of landmines is most aptly understood through key propositions of Bennett's conception of "vital materiality".[437]

The following chapter interrogates the capability of landmines to disrupt and reconfigure socio-ecological relations by defying and bending the spatio-temporal logic of war. Drawing on insights from the New Materialism, this chapter reframes landmines as active participants in the remaking of landscapes and their contents.

The goal is to catalogue the many ways in which these weapons shape the environments which they inhabit and from which they are removed, and elucidate the distinct spatio-temporal and socio-ecological ordering/networks they produce in the process.

This conceptual framing and discussion lays the groundwork for illuminating and understanding landmined environments of post-war BiH and wartime Ukraine as "co-produced by human and non-human actors" where landmines and minefields actively [re]territorialize space.

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[435] Jan Erola. 2024. "From Shield to Sword: The Offensive Potential of Modern Landmines - Nordic Defence Review." *Nordic Defence Review*, September 16, 2024. https://nordicdefencereview.com.
[436] Bennett. 2010. *Vibrant Matter*, 9-10.
[437] Ibid.

8.2 The Materiality of Landmines

Out of all conventional military technologies and weaponry, landmines in particular, have enduring material effects on territories and ecologies. Monin and Gallimore note that landmines can be distinguished from other weapons of war in that they know no ceasefire.[438]

Nixon too, notes how in "neither space nor time can mine-terrorized communities draw a clear line separating war from peace".[439] They wreak "social and environmental havoc", remake territory for decades after the war through land degradation, and constitute "one of the most hazardous soil contaminants".[440] Long after a "war's soldiers have been demobilized, the landmine maintains its unblinking vigilance. It is there to do its duty—even if ten, twenty years too late, retaliating against an enemy as unspecific as humanity itself".[441]

Landmines enclose spaces and deny access, and kill and injure humans and non-humans—that much is obvious; it is, simply put, the intention with which they were created and with which they are primarily used. But how do we account for a host of other actions they do and effects they produce that exceed, if not defy, the intentions of their makers and users?

Fundamentally, a landmine consists of four parts—a metal or plastic casing, a detonator, a booster charge, and the main explosive charge.[442] To be effectively deployed, a landmine must be concealed, typically buried—or half buried in earth, and camouflaged with the leaves, grass, and dirt.

To illuminate how this grouping of inert materials—metal, plastic, explosive chemicals, soil, vegetation, rocks, water, wind, geological processes, and others—affords landmines a capacity to kill, disable, move, migrate, territorialize, terrorize and remake ecologies, I now turn to the analytic toolkit of New Materialism, and the concepts of "material agency", and "distributive

[438] Monin and Gallimore. 2002. *The Devil's Gardens,* 2.
[439] Nixon. *Slow Violence,* 222.
[440] Ibid. ; Hannam and Dearing. 2008. "Mapping Soil Magnetic Properties in Bosnia and Herzegovina for Landmine Clearance Operations", 285.
[441] Nixon. *Slow Violence,* 223.
[442] Tyner. 2010. *Military Legacies,* 94.

agency" as articulated by Bennett, and informed by Latour's Actor-Network Theory, and Deleuze and Guattari's concept of "assemblage".[443]

The concept of "material agency" or what is sometimes termed the "liveliness of matter" qualifies non-human others, both inert and living, as agents. In doing so, it pushes for a more critical engagement with the concept of the agency itself, arguing that the capacity to produce ripples—to affect—is not only "localized in a human body or in a collective produced (only) by human efforts".[444] Echoing Olsen's ideas, Kirchhoff contends that material entities "have, ontologically and epistemologically, the quality of agency, only if all material entities have de facto existing qualities that affect and shape the way human beings perceive and understand the world".[445]

In re-conceptualizing matter as lively, Bennett, Coole and Frost, Barry, Klinke, and other proponents of New Materialism attempt to encourage sustainable engagement with the capacity of "things—edibles, commodities, storms, metals—not only to impede or block the will and designs of humans but also to act as quasi agents or forces with trajectories, propensities, or tendencies of their own".[446] Material objects, thus, have a kind of "thing-power" which is independent of human use or design. By urging a reconceptualization of agency itself, New Materialism also attempts to reconfigure how we conceive of the "human—non-human relationship". The failure to recognize, and appreciate the thing-power leads to a [mis]understanding of non-human others as instrumentalized, mute, dead matter, which not only distorts the ontology of material and non-human entities, but also "feeds human hubris and our earth-destroying fantasies of conquest and consumption".[447]

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[443] Bennett. 2010. *Vibrant Matter*. ; Latour, Bruno. 2005. *Reassembling the Social: An Introduction to Actor-Network-Theory*. Oxford: Oxford University Press. ; Deleuze and Guattari. 1987. *A Thousand Plateaus.*

[444] Bennett. 2010. *Vibrant Matter*, 50.

[445] Kirchhoff. 2009. "Material Agency", 207.

[446] Bennett. 2010. *Vibrant Matter*, 9-10. ; Diana Coole, and Samantha Frost, eds. 2010. *New Materialisms*. Duke University Press. https://doi.org/10.1215/9780822392996. ;
Andrew Barry. 2013. *Material Politics : Disputes Along the Pipeline*. John Wiley & Sons. ;
Ian Klinke. 2019. "Vitalist Temptations: Life, Earth and the Nature of War." *Political Geography* 72 (June): 1–9. https://doi.org/10.1016/j.polgeo.2019.03.004.

[447] Bennett. 2010. *Vibrant Matter*, 11.

If matter is indeed lively, then landmines exemplify this liveliness in a distinctly menacing form. Landmines are, as Bennett puts it, a "dangerously vibrant matter". They are a concentrate of explosive, metal, and plastic endowed with agency/capability that is erratic, versatile—protean; they often, if not consistently, exceed the intentions of their makers and handlers. Once deployed or laid in the field, landmines take on a life of their own. For years and decades, they persist in the earth they inhabit and landscapes they occupy. Their destructive potential and their presence palpably affect ecologies, and socio-political and socio-ecological affairs.

8.2.1 Unnatural Disaster: Remaking Ecologies

A commonplace tendency is to think of deployed landmines as dormant—as simply lying inert until triggered. But even before lives of deployed landmines culminate in an explosive "grand finale", these weapons affect the biosphere by degrading and leaching chemicals.

Landmines, in other words, remake ecologies directly through detonation and deterioration.[448] Berhe classifies landmines' direct effects on land into four categories: (1) loss of biodiversity, (2) micro-relief disruption, (3) chemical contamination, and (4) loss of productivity.[449] Chemical compounds, such as TNT, RDX, or tetryl released from landmines when they deteriorate or detonate degrade and contaminate soils. This interferes with "the ability of the soil system to serve as a geochemical sink for contaminants" or "act as a natural buffer to control the exchange of elements between the atmosphere, hydrosphere, and biota".[450]

Furthermore, landmines affect ecologies and socio-ecological relations by simply moving with erosion—a geological process through which soil, rocks and other materials are moved from one place on the Earth's crust to another via wind, water, ice or gravity. In addition to erosion, landmines also move and migrate with floods. The empirical evidence of mine migration is abundant with examples from Vietnam, Cambodia, South and North Korea, Laos, Tajikistan, Bosnia and Herzegovina, Libya and Ukraine.[451] Frequently, landmines dislodged by floods

[448] Unruh et al. 2003. "The Political Ecology of Recovery from Armed Conflict", 845.
[449] Berhe. 2007. "The Contribution of Landmines to Land Degradation", 6.
[450] Ibid, 9.
[451] IFRC. 2024. "Tajikistan: From Landslides to Landmines, Partnership Helps Keep People Safe and Healthy." *IFRC*, April 29, 2024. https://www.ifrc.org/article. ;
Joe Saballa. 2024. "Seoul Warns N.Korean Landmines Can Be Swept to S.Korea by Flooding." *The Defense Post*, July 18, 2024. https://thedefensepost.com. ; Jared Ferrie. 2018. "Landmine Risk for Thousands Displaced by Floods in Laos." *Reuters*, August 7, 2018. https://www.reuters.com. ;

transgress national borders and migrate outside the countries where they were originally employed. In the midst of 2014 regional floods that affected large areas of BiH, Croatia and Serbia, an indeterminate number of landmines from Bosnia migrated to Croatia and Serbia. In warning citizens of "moving mines", Ahdin Orahovac, then-director of the BHMAC, noted "It's a regional problem now".[452] In Ukraine, the Kakhovka Hydroelectric Power Plant breach in the summer of 2023 dislodged minefields that had been mapped and marked by local and international demining operators; Dnipro river carried landmines downstream to Odesa as the city's governor urged citizens not to "walk along coast and beaches".[453]



Figure 8.1. *A flooded minefield in southern Ukraine*.[454]

David Sen. 2020. "Beware of Shifting Landmines due to Floods." *Khmer Times,* October 18, 2020. https://www.khmertimeskh.com. ;
Ahmed Elumami and Ayman Al-Warfali. 2023. "Libyan Flood Survivors Weigh Water Shortages against Landmine Risk." *Reuters*, September 17, 2023. https://www.reuters.com.
[452] Joanna Kakissis. 2024. "Balkan Floods Expose Deadly Mines from 1990s Civil War." 2014. *NPR*, May 20, 2014. https://www.npr.org.
[453] Martin Fornusek. 2023. ""Governor: Dnipro River Carries Mines, Ammunition to Odesa Seaside." *The Kyiv Independent*, June 8, 2023. https://kyivindependent.com.
[454] The HALO Trust (@TheHALOTrust), "A minefield in southern #Ukraine today following the breaching of the Nova Kakhovka dam." *Twitter*. June 6, 2023, 12:26 PM. https://x.com/TheHALOTrust/status/1666119369968037903



Figure 8.2. *In Prud, BiH, a map depicting locations of nearby minefields is seen submerged in water amid 2014 floods.*[455]



Figure 8.3. *A mine warning sign sits on the shore of river Sava amid 2014 floods; Sava river flows through Slovenia, Croatia, northern border of Bosnia, and Serbia.*[456]

[455] Joanna Kakissis. 2024. "Balkan Floods Expose Deadly Mines from 1990s Civil War." 2014. *NPR*, May 20, 2014. https://www.npr.org.

[456] Jovan Matic and Ruzmir Smajilhodzic. 2014. "Landmine Explodes in Bosnia as Dangerous Clear-up Begins after Massive Floods." *The Sydney Morning Herald*, May 21, 2014. https://www.smh.com.au.

Similarly, after heavy summer rains of 2024, the Chinese authorities issued a "Do not go to the riverbank" warning to its citizens, amid the fear that North Korean landmines moved to the other side of the North Korea-China border.[457] Beselt et al. discuss conditions that created the "migratory lives" of landmines in the Western Balkans (WB) with "little to none direct human agency" beyond initial deployment of mines.[458] On one hand, the WB is a "seismically active region that is also prone to erosive surface runoff, landslides, and floods due to the characteristics of the terrain and rainfall events", but it is "precisely in the areas affected by these geomorphological processes that large quantities of landmines and ERWs were scattered, intentionally placed, or abandoned".[459]

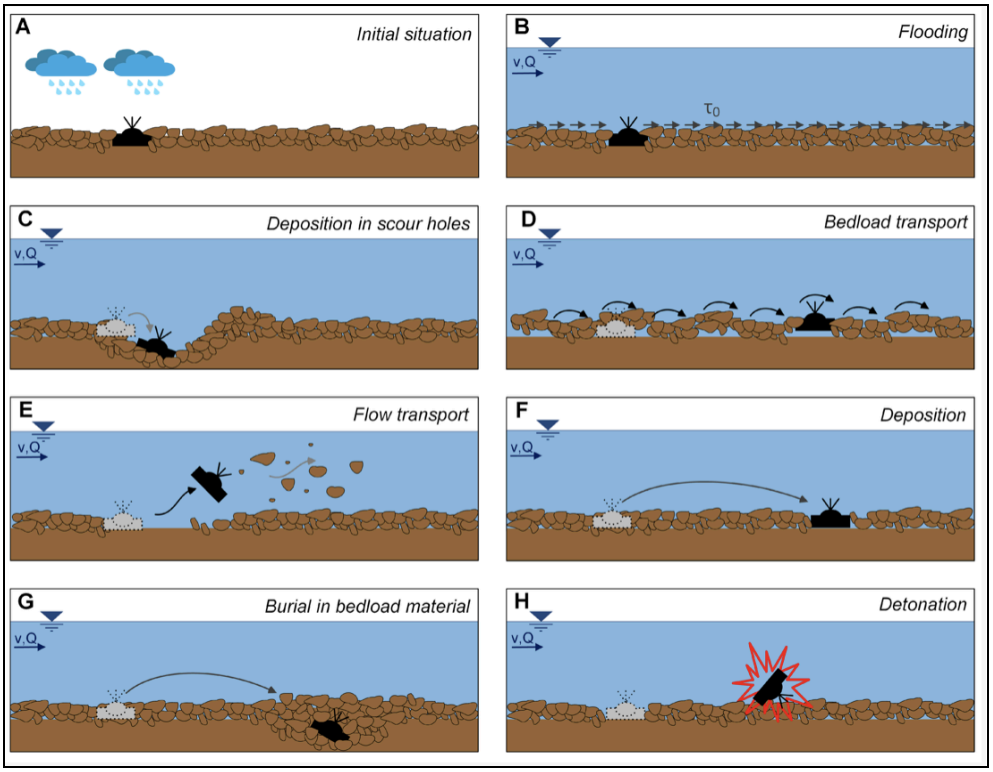


Figure 8.4. *Processes through which a landmine may migrate through a flood event _ the outcome is likely influenced by the interaction of flowing of water and the sediment layer.* [460]

[457] Asia Press. 2024. "Chinese Authorities Warn of Possible North Korean Landmine Displacement due to Floods, Notify Residents 'Do Not Go to the Riverbank.'" *RIMJIN-GANG*, August 13, 2024. https://www.asiapress.org/rimjin-gang/2024/08/military/border/.
[458] Ivo Baselt, Adis Skejic, Budo Zindovic, and Jens Bender. 2023. "Geologically-Driven Migration of Landmines and Explosive Remnants of War—a Feature Focusing on the Western Balkans." *Geosciences* 13 (6): 178. https://doi.org/10.3390/geosciences13060178.
[459] Ibid, 5.
[460] Ibid, 9.

However, it is not only the weather conditions that interact with landmines to produce an effect on landscapes and ecologies. Kim notes how in "more-than-human natures" of the Korean Demilitarized Zone (DMZ), wild boars and "apocryphal Siberian tigers" may sit at the top of the food chain, but landmines, in fact, supersede them.[461] Although designed to be triggered by an adult human, APs, depending on the design, can be triggered with as little as five to fifteen kilograms.[462] Larger wild animals, such as deer or boar, as well as domesticated animals, particularly sheep, can easily be victimized by these weapons.

Indeed, many instances of herds of sheep being blown up by landmines have been reported in BiH and Croatia.[463] In discussing processes of demining in BiH with a senior Bosnian politician, I noted how complex and slow the procedure is: "Do you know who the best deminers are?" he digressed. "Bosnians? Brits?" I replied, referencing their historic experiences. "No, sheep are." he replied laughingly, but with evident conviction.[464]

Apart from "waging a slow war" on the biota of landscapes they inhabit, landmines can produce unexpected, if not productive, ecological effects. In the process of enclosing spaces and denying access to humans, landmines may act in concert with the biota to turn former battlefields into de facto nature and/or wildlife reserves. Empirical evidence from the Falkland Islands' minefields is a case in point. The Magellanic and gentoo penguins inhabiting the Falkland Islands weigh less than ten kilograms when fully grown, making them too light to set off the types of AP and AV landmines placed on the island. With minefields deterring human encroachment, the minefields became an accidental sanctuary for colonies of penguins. As these "odd" penguin sanctuaries became "popular and lucrative for ecotourism", local efforts emerged to prevent the demining process.[465]

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[461] Eleana J. Kim. 2016. "Toward an Anthropology of Landmines: Rogue Infrastructure and Military Waste in the Korean DMZ." *Cultural Anthropology* 31 (2): 162–87. https://doi.org/10.14506/ca31.2.02. P. 173.
[462] Anti-Persoonsmijnen Ontmijnende Product Ontwikkeling - APOPO. 2024. "8 Not-So-Fun Facts about Landmines (and 3 More Hopeful Ones)." *APOPO*, April 4, 2024. https://apopo.org.
[463] Frame Šarić. 2009. "Mina raznijela 16 ovaca u blizini Zadra." *Večernji List*, December 1, 2009. www.vecernji.hr/vijesti/mina-raznijela-16-ovaca-u-blizini-zadra.
[464] Person PBiH1, interviewed by the author, December 7, 2024.
[465] Kaushik Patowary. 2015. "The Penguin Population That Thrives on Falklands' Minefields." *Amusing Planet*, March 2, 2015. https://www.amusingplanet.com/2015/03/the-penguin-population-that-thrives-on.html. ; Brent Bambury. 2017. "Penguins That Found Sanctuary in a Minefield May Be Threatened by Demining Campaign". *CBC*, May 19, 2017. https://www.cbc.ca/radio.

This further reaffirms Bennett's contention that assemblages of matter, humans and non-human others can yield "emergent phenomena" beyond the human intention or design. Up until the completion of demining operations in Falkland Islands in 2020, a weapon intended to kill and injure protected and enabled the flourishing of penguin life.



Figure 8.5. *A colony of gentoo penguins rests in a minefield at Kidney Cove on the Falkland Islands.*[466]

8.2.2 Enlisting Human Responses: Affective Agency and Socio-Ecological Relations

To recognize and acknowledge the material agency of landmines along and within assemblages in which they may, at times, be the "energetic pulse" or one of energetic pulses, also means recognizing ways in which they enlist human responses. Apart from affecting ecologies directly, landmines exert indirect effects by altering socio-ecological and socio-political relations.[467] Landmines' indirect effects on land—their ability to deny access, and render dangerous

[466] Brent Bambury. 2017. "Penguins That Found Sanctuary in a Minefield May Be Threatened by Demining Campaign". *CBC*, May 19, 2017. https://www.cbc.ca/radio.
[467] Unruh et al. 2003. "The Political Ecology of Recovery from Armed Conflict", 845.

[territorialize] vast areas of land and restrict access to land-based resources, physically reconstitute natural landscapes when "abandoned agricultural areas return to bush and forest".[468] Landmines also affect the processes of resettlement and return migrations. In a quest to [re]settle on mine-free areas, people in post-conflict communities may move to fragile environments and degrade them through unsustainable use.[469] Indeed, by persisting in the landscape, or even migrating the other landscapes, landmines extend the spatio-temporal scope/logic of war. This is precisely the kind of "dispersed and continued agency beyond human intent" which Bennett's theory of "vital materiality" helps to attend to while cataloguing the [geo]political consequences/effects of mined lands.

While landmines can be distributed randomly, many are placed in and around areas of strategic importance because of their capacity to deny access, kill, and injure enemy soldiers or destroy and incapacitate military vehicles. Vital infrastructure installations, "such as bridges, electrical towers, water and sewage treatment plants, hospitals, and even schools, are frequently mined".[470]

In separatist wars, locations of minefields often correspond to the desired borders of the cartographic visions that drive such wars. By ensuring that "militarized landscapes" endure, landmines and other war munitions impact socio-ecological relations that are important for post-war recovery and reconciliation. For instance, Unruh et al. contend that "landmines constitute the primary obstacle to the reconstruction and development in Mozambique", and document the effects these weapons affected "important aspects of recovery" such as agriculture, transportation corridors, and international investment.[471] Similarly, MacLean documents how landmines have become a "dangerous nuisance" in Myanmar where they "unsettle good governance initiatives" by derailing infrastructure projects and stalling the return of displaced farmers.[472] As issues of post-conflict "re-integration, land access, land conflict, food insecurity, and environmental degradation caused by or aggravated by landmines gain momentum and interact", they restructure and contest spatial scales _ "their extent, content, relative importance,

[468] Unruh et al. 2003. "The Political Ecology of Recovery from Armed Conflict", 844.
[469] Ibid, 845.
[470] Tyner. 2010. *Military Legacies,* 110.
[471] Unruh et al. 2003. "The Political Ecology of Recovery from Armed Conflict".
[472] Ken MacLean. 2016. "Humanitarian Mine Action in Myanmar and the Reterritorialization of Risk." *Focaal* 2016 (74): 83–96. https://doi.org/10.3167/fcl.2016.740107.

and interrelations".[473] Food insecurity and loss of sustenance sources to landmines and remnant war munitions, in particular, have socio-political repercussions that can significantly complicate peace processes. As Unruh et al. note, groups and individuals "disenfranchised from the gains of transition from war to peace may resort to violence in order to survive", degrading the legitimacy of the post-war state in the process.[474]

On the other hand, the endurance of landscapes saturated with landmines can obstruct the processes and politics of reconciliation by affectively reconfiguring landscapes. The lingering presence of landmines, coupled with protracted clearance processes can breed mistrust and anxiety among inhabitants of "militarized landscapes". Here, the material agency of landmines operates through affect and threat, creating a persistent atmosphere of suspicion which "violently molds and permanently alters" daily life. Thus, the "thing-power" of landmines is not only contained in an instant of explosion, or environmental degradation, but in the capacity to slowly and pervasively reorder socio-territorial life. Even without detonating or being visible, landmines can effectively and affectively impose a "state of siege" on communities. The affective capability of landmines, notes Pardo-Pedraza, "exceeds their material presence and their functional explosive capacity".[475] As boundaries of mine-infested spaces become "unclear, diffuse and difficult to determine", they create "landscapes of suspicion".[476] This affective reconfiguration of landscapes, in turn, reconfigures the corporeal experience—certain areas cease to be used, paths are no longer walked, and land is no longer touched.[477]

Landmines may draw together affective networks of fear, suspicion and precaution.[478] They may also draw networks of empowerment as articulated by Kim, where a "fear of death and trespass" is transformed into "ecstatic joy and spatial liberation" offering a different kind of life that generates new economics and political possibilities.[479] Perhaps most importantly, landmines also

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[473] Unruh et al. 2003. The Political Ecology of Recovery from Armed Conflict, 845-857.
[474] Ibid, 857.
[475] Diana Pardo Pedraza. 2022 "Landscapes of Suspicion: Minefields and Cleared-Lands in Rural Colombia." Society for Cultural Anthropology, January 25, 2022. https://culanth.org/fieldsights/landscapes-of-suspicion-minefields-and-cleared-lands-in-rural-colombia.
[476] Ibid.
[477] Ibid.
[478] David Henig. 2012. "Iron in the Soil: Living with Military Waste in Bosnia-Herzegovina." *Anthropology Today* 28 (1): 21–23. https://doi.org/10.1111/j.1467-8322.2012.00851.x. ; Pardo-Pedraza, 2022. "Landscapes of Suspicion".
[479] Kim. 2016."Toward an Anthropology of Landmines", 180.

draw networks of policy, knowledge, technical expertise, and "knowledge-expertise sharing". The fact that the Global Campaign to Ban Landmines emerged in response to the material, menacing post-conflict afterlives of mines points to the capacity of these weapons to enlist networked human responses. The process of their disentanglement from landscapes—demining—is surely the most pertinent example, which latter chapters focus on.

8.3 Conclusion

The many ways in which landmines affect the socio-political, ecological, and socio-ecological fabrics, however, cannot be reduced to the weapon's "innate vitality". Landmines defy and exceed the intentions of their makers and users, and the analytic toolkit of New Materialism helps map out how this unravels by attending to the emergent, distributive agency of the assemblages of entities that make this possible. Landmines are not alive, living, conscious or intelligent, and this study pushes against such anthropomorphic depictions. Neither "aliveness" nor "intentionality" can be ascribed to them. "Liveliness" in a sense of "ecological embeddedness" and "relational ontologies", however, can.[480] Landmines, and their material components, act in concert with landscapes, ecologies, weather conditions, geological processes, and biota.

The analytic arsenal of New Materialism tends to be clumsy in discussions of intentionality, and particularly human/political power and responsibility. Discussing the ways in which landmines act beyond their intended use may offer a way to prevent the "distributive agency" from becoming an "analytical swamp". The "material agency" of landmines, be it in the post-war or wartime, is made possible by their manufacture, trade and, above all, human use which is centered on distinct geopolitical objectives of claiming spaces/territories.

It is possible, thus, to attend to different "energetic pulses" of this assemblage while emphasizing the uneven power topography that makes it. Laying mines is a geo-biopolitical process—a process of claiming territory to assert a way of life through a production of death. A human decision (and agency) to plant landmines, therefore, sits at the very beginning of this train of "entangled materialities".

[480] Kim. 2016. "Toward an Anthropology of Landmines", 182.

Chapter 9

The Minefield as an Assemblage

9.1 Introduction

> "Anywhere a battle has been fought or over which a military plane has flown or which is within the range of mortar, artillery or rockets may be a minefield—the only definition is that landmines are present".[481]

The New Materialism offers an analytic toolkit to recognize and attend to the capability of landmines to act in ways that exceed the intentions of their makers and users through various assemblages involving material and immaterial entities. To conceptualize the "minefield" beyond its military utility and depiction in military lexicons, however, requires an expansion of the conceptual, theoretical and analytical toolkit beyond what New Materialism offers.

The dissertation argues that minefields are not inert, static, and fixed places. Because minefields involve a myriad of human and non-human actors and practices, this study contends that minefields are best understood as distinct socio-spatial configurations—as assemblages.

To conceptualize the minefield as a distinct spatial configuration requires weaving together insights from Mbembe and his concept of "necropolitical power", Deleuze and Guattari's concept of "assemblage" (agencement), and Foucault's notion of "biopower". In order to flesh out an understanding of "the minefield" as a geo-biopolitical tool which inscribes upon space a cartography which is at once, and oscillates between, a deathscape and space protecting life and livelihood, I first discuss the minefield as an assemblage, and then introduce its geopolitical, biopolitical, and necropolitical properties.

9.2 Minefield: An Assemblage

The notion of "assemblage" in Deleuze and Guattari's terms, concerns the non-hierarchical field of agents with capacities to affect. It is a process by which a "collective entity (a thing or

[481] McGrath, 2000. *Landmines and Unexploded Ordnance*, 28.

meaning) is created from the connection of a range of heterogeneous components"; an "aggregate with a certain consistency being created from an active, ad hoc, and ongoing entanglement of elements".[482] An assemblage is thus a heterogeneous entity; it is an ensemble of elements—material, discursive, organic—which form a functional whole.

It is possible, then, to theorize a minefield as an assemblage. A minefield involves: mines as material elements, the soil/earth in which the mines are embedded, vegetation and other biota of the place, buildings or other infrastructural objects, warning signs, barricade tapes, fences and/or barbed wires, markers (such as wooden sticks), maps, and even memories of violence, and behaviours of people and animals/biota around it.[483] This combination of human and non-human elements, of material and discursive produces a distinct spatial entity—an area that can be characterized by exclusion, terror and fear, hazard, but also (economic and political) opportunity and possibility, possibility/promise of different/new life, or even protection of life and livelihood.[484]

9.2.1 Deterritorialization and Reterritorialization

In conceptualizing their notion of assemblage, Deleuze and Guattari further introduce a set of twin processes—deterritorialization and reterritorialization—which describe and detail how assemblages remake spaces. Gregory et al. suggest that deterritorialization "signifies a growing tendency for states, in the context of global capitalism, to encounter and often encourage an uprooting of people and things with massive social, psychological, and political consequences", whereas "reterritorialization is the reverse of this process".[485] However, in Deleuze and Guattari's terms, deterritorialization is simply a "breakdown of territoriality in thought and practice", and it occurs simultaneously with reterritorialization or a becoming of a new spatial ordering.

Gregory et al. note that the jargon of "deterritorialization" was developed by Deleuze and Guattari as just an "epistemological intervention: not an empirical claim about the geography of postmodernity, but a postmodern psychoanalytical argument about the need to follow diverse flows of desire and thereby critique containerized concepts of the human psyche in modern

[482] Gregory et al. 2009. *Dictionary of Human Geography*, 38.
[483] Henig. 2012. "Iron in the Soil".
[484] Kim. 2016."Toward an Anthropology of Landmines".
[485] Gregory et al. 2009. *Dictionary of Human Geography*, 745.

ego-psychoanalysis".[486] This presents a conceptual challenge for this study, but the two notions may still be used to aptly describe the becoming and being of a minefield.

When combatants create minefields during conflict, they effectively deterritorialize a landscape through the act of minelaying—whatever the previous use of landscape, be it habitation, agriculture, transit, is therefore suspended, disrupted or even destroyed. But as mines lay in the ground and "settle" into these landscapes, a new spatial order emerges, contingent upon the behavior of humans and biota around it. This mined area—a minefield—becomes reterritorialized as a "forbidden zone", an "unsafe zone" or even as a patchwork of safe and unsafe. Henig documents "the peril of living with" in rural areas of post-war Bosnia, where the "presence of landmines is reflected in the way villagers perceive and conceptualize their engagement with the landscape they inhabit".[487] In an attempt to extract lumber from surrounding forests to somewhat alleviate economic hardships, local villagers reterritorialized minefields into a patchwork of safe and unsafe lanes.

This "process of way-finding of in the afflicted spaces always entails exact navigational language", it is a "detailed and descriptive language that exactly localizes", and "includes specific markers such as stones, mounds, and stumps, rendered precise signifiers by the transmitted memory of events that happened there.".[488] Kim, too, makes an argument against the static understanding of minefields (what she terms "rouge infrastructure") by drawing on the empirical evidence of the Korean DMZ—where local villagers and animals continuously remake or reterritorialize the mined landscape through trespassing making it a particularly lively assemblage. [489]

The villages of postwar BiH, the Korean DMZ, and many other mined countrysides of different countries, such as Afghanistan, Kosovo, Cambodia, and Laos, host particularly dynamic minefield-assemblages. Once wars carve the countryside into territories of risk and danger, many villagers and rural communities learn to live with landmines. In the process of doing so, they develop [re]new[ed] assemblages. The minelaying, the official mapping and classification of areas in terms of danger levels create new geographies, but so do communities and biota around.

[486] Gregory et al. 2009. *Dictionary of Human Geography*, 257.
[487] Henig. 2012. "Iron in the Soil", 22.
[488] Ibid.
[489] Kim. 2016. "Toward an Anthropology of Landmines".

They develop “assemblages of caution”—discursive and material markers of feared/dangerous places, communal and individual memories of (potentially) dangerous places, and well-trodden and abandoned paths. This is what Deleuze and Guattari would define as “expressive components” of an assemblage—behaviors and signs that mark and delineate territory. The UNMAS describes how local people, in the absence of official signs, often develop their own “techniques and and signs for marking dangerous areas”, such as piles of rocks, cans, pieces of cloth, sticks, and similar.[490] The result is a hybrid territory, simultaneously social and material, but neither entirely natural nor solely social. Kim describes such minefields in the Korean DMZ as “instead of being no-go zones or abject wastelands, minefields had transformed into tantalizing spaces of human crossing, predicated on an understanding of mines as actants whose agency could be anticipated and even overcome.[491]



Figure 9.1. *An improvised minefield sign next to a pile of disabled landmines in Snihurivka, Mykolaiv Oblast, Ukraine.*[492]

[490] United Nations Mine Action Service, 2015. *Landmines Handbook*, 41-42.
[491] Kim. 2016. “Toward an Anthropology of Landmines”, 163.
[492] “A warning sign read “МІНИ” marks a pile of mines disabled by a de-mining battalion”. Photograph by Narciso Contreras for Anadolu Agency, November 12, 2022. Source: Getty Images.



Figure 9.2. "*Unofficial", improvised mine signs.*[493]

[493] United Nations Mine Action Service, 2015. *Landmines Handbook*, 42.

A minefield is thus a minefield-assemblage. Far from being static, uniform, square-shaped, mute but menacing, a minefield is a dynamic ensemble of elements. It is productive— it produces fear and terror, absence, presence, but also human and non-human practices, such as survival expertise, demining and clearance techniques, and bureaucratic processes and projects. Its processes of deterritorialization, reterritorialization, and its expressive components share some degree of similarity among many different mined areas on the globe, yet particular dynamics of each minefield-assemblage are rooted in and contingent upon the distinct localities they inhabit, inclusive of the human and non-human entities.

9.2.2 Multiscalar Interactions

In addition to being rooted in particularities of socio-territorial places, a minefield is also nested in larger assemblages. As such, it is characterized by multi-scalar interactions. Even before a particular minefield becomes a subject of clearance, it is mapped, marked, categorized, and classified according to the level of danger and clearance priorities.

In postwar BiH, for instance, each minefield known to the state-level mine action agency, the Bosnia and Herzegovina Mine Action Center (BHMAC), is mapped, marked, given an ID number, and classified into different levels of priority for clearance operations.[494] The expertise to do so—to map and mark—can be traced to BiH's national Standard Operating Procedure (SOP) for demining, which can be traced to IMAS. The classification and prioritization is managed by the BHMAC, the Demining Commission, the Entity governments, the Council of Ministers, and the "donor body".[495]

Before and during clearance operations, a minefield is thus entangled in local and state governance, local, state and regional political economies, and international humanitarian

[494] Branislav Krljaš (Bosnia and Herzegovina Mine Actions Center, Internal Quality Control Department), interviewed by author, January 19, 2024.
Mustafa Kadribegović, (BiH Federal Civil Protection Administration, Assistant Director for Demining and EOD), interviewed by author, April 23, 2024;
Ferhat Ljuca, (BiH Federal Civil Protection Administration, Senior Officer for Quality Control), interviewed by author, May 7, 2024.
[495] "Zakon o Deminiranju u Bosni i Hercegovini." *Službeni glasnik BiH* 5/02. February 12, 2002. https://msb.gov.ba/dokumenti/5ZAKON_O_DEMINIRANJU_U_BOSNI_I_HERCEGOVINI.pdf.

regimes. The 1997 Ottawa Treaty, for instance, can be seen as a distinct global assemblage/network of states, demining experts, and humanitarian NGOs.

The standards and regulations set by the Ottawa Treaty, reflected in the IMAS, sets the standard for national mine action centers of states with the landmines problem. A national MAC or NMAA crafts an SOP in accordance with the IMAS, and demining operators further create their own SOPs in accordance with the standards outlined in the SOP of the national MAC or NMAA. The red mine warning signs, the yellow barricade tape, and wooden stakes with different coloring are some of many expressive components of this assemblage. The multi-scalar interactions of different assemblages influence, regulate, and sometimes impose protocols of clearance.

This can be understood as what Deleuze and Guattari call "overcoding", a process by which patterns and regimes of meanings are imposed.[496] In this case, it is a "higher-level" structure or assemblage/network, the UN with its Ottawa Treaty and IMAS, imposing patterns and regimes (not owning, producing, transferring and stockpiling landmines; distinct ways and methods clearance) on local assemblages. This can be extended to the national scales and the national MACs and NMMAs and their processes of prioritization—by classifying minefields into categories of priority, the agencies impose a certain power geometry onto mined geographies/ecologies.

Figures 9.3. and 9.4. show the markings at a demining worksites in Herzegovina in BiH, and Chernihiv oblast in Ukraine respectively. The design of warning signs is regulated by BHMAC SOP in BiH, and NMAS in Ukraine. Both are based on the IMAS 8.40 "Annex B (normative) EO hazard signs" which directs demining operators to use square-shaped 25cm x 25cm or triangle-shaped 20cmx28cmx20cm signs with "a red or orange background with a white symbol for danger".[497]

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[496] Andrew Robinson. 2010. "Why Deleuze (Still) Matters." *The Anarchist Library*. https://theanarchistlibrary.org/library/andrew-robinson-why-deleuze-still-matters. P. 2.

[497] United Nations Mine Action Service. 2023. "IMAS 8.40 Marking explosive ordnance hazards.". 3rd Edition, January 17, 2023. UNMAS: New York. https://www.mineactionstandards.org/fileadmin/uploads/imas/Standards/English/IMAS_08.40_Ed.3.pdf. P. 9-10.



Figure 9.3. *Minefield markers seen at the minefield MAC ID-9618. Minefield markers are regulated by the operating agency's SOP, which is regulated by the state-level MAC, which is regulated/imposed by the IMAS.*[498]

[498] Photograph taken by author in Konjic, BiH on May 7, 2024.



Figure 9.4. *Minefield markings in Chernihiv oblast in Ukraine, at a demining worksite where The HALO Trust is conducting clearance. Just like in BiH, the design for minefield markers in Ukraine is derived from IMAS.*[499]

However, "minefield-assemblages" can also influence and rework these power geometries inscribed onto territories. For instance, many "demining worksites" in postwar BiH necessitated cooperation between the FUCZ and the RUCZ, the two entity-level civil protection administrations.[500] When minefields transgress the boundaries of the IEBL on both sides, they challenge the postwar governance structure, and respective authority and responsibility of entity governments, as the entities can only employ the demining units of their civil protection administrations only within the entity territory. Hundreds of minefields sit on the IEBL and transgress the boundary on both sides. This led the PA BiH to officially delegate the responsibility to coordinate demining of the IEBL to BHMAC.[501]

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[499] "Ukrainian Deminers From Halo Trust Work In Chernihiv Oblast". Photograph by Maksym Kishka for Global Images Ukraine. April 17, 2025. Source: Getty Images.
[500] Mustafa Kadribegović, (BiH Federal Civil Protection Administration, Assistant Director for Demining and EOD), interviewed by author, April 23, 2024;
[501] "Zakon o Deminiranju Bosne i Hercegovine". *Službeni glasnik BiH* 5/02, February 12, 2002. https://msb.gov.ba/dokumenti.

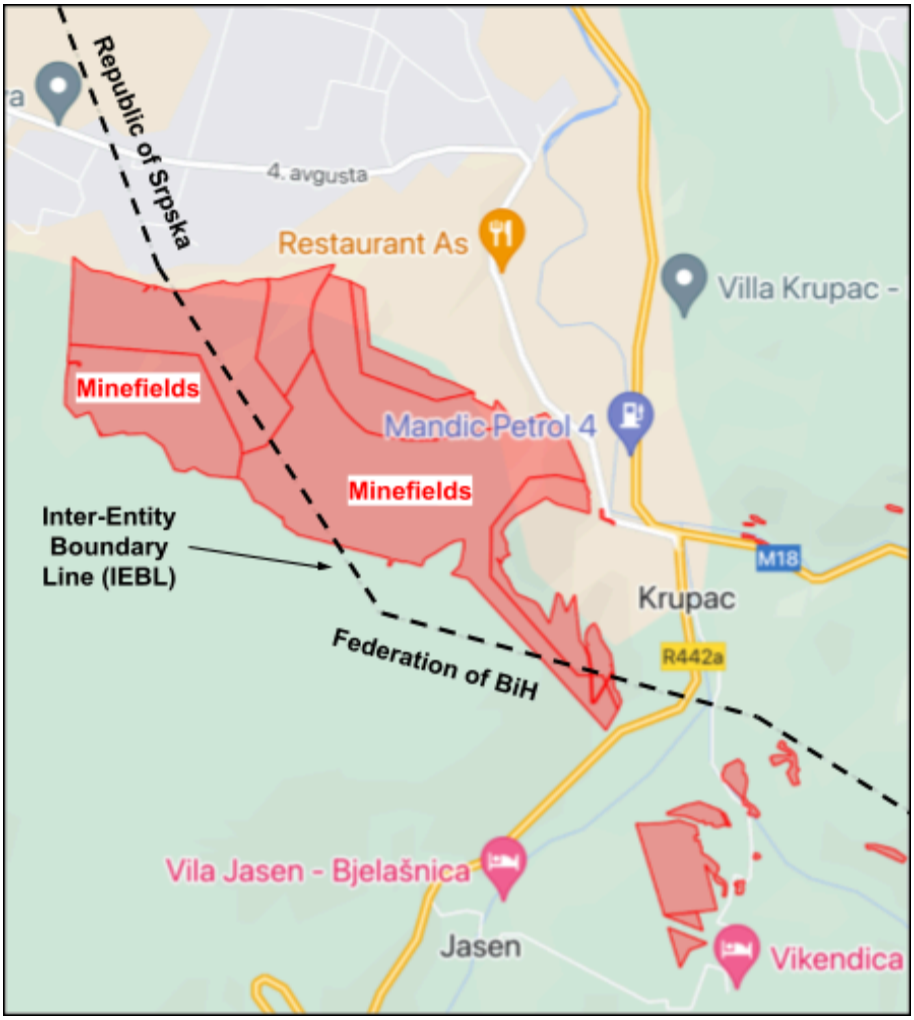


Figure 9.5. *Minefields in Krupac, a village which is a part of Ilidza and Istocna Ilidza municipalities and extends across both the FBiH and RS. Several minefields in Krupac cross the IEBL.*[502]

To think of a minefield as an assemblage is to recognize and highlight that landmines, landscapes, ecologies, biota, humans, governance, policy, and expertise form together networks that extend across multiple scales, vertical and horizontal. Kim captures this well by conceptualizing minefields as part of "rogue infrastructure" following Larkin's definition of infrastructure as "matter that enable[s] the movement of other matter".[503] Only with such recognition can we attend to socio-ecological, socio-territorial, and political orders that emerge from material remnants of war—from debris. To understand the socio-political fabric of the minefield-assemblage, I now turn to Mbembe's concept of "necropolitical power".

[502] Bosnia and Herzegovina Mine Action Center (BHMAC), "BH Mine Suspected Areas", IOS App. 2024—screenshot taken by the author.
[503] Kim. 2016. "Toward an Anthropology of Landmines".

9.4 Necropolitics: Sovereign Power Over Death

The "ultimate of expression sovereignty", contents Mbembe "resides, to a large degree, in the power and the capacity to dictate who may live and who must die [...] to kill or to allow to live constitute the limits of sovereignty".[504]

The exercise of necropolitical power, however, does not only result in death or extermination of people and populations, but renders certain lives killable, disposable, or perpetually at risk through direct and indirect exposure to death. In Mbembe's terms, the [spatial] manifestation of necropolitical power is the production of "death-worlds" or "new and unique forms of social existence in which vast populations are subjected to conditions of life conferring upon them the status of living dead".[505]

Mbembe's conception of necropolitics, in other words, is the "political making of spaces and subjectivities in an in-between of life and death".[506] The death-worlds are thus not only war zones, occupied territories, concentration camps, and spaces of genocide, but also refugee camps, prisons, favelas, suburbs, and other marginal or peripheral spaces.

If necropolitics is a [political] process that produces death and death-like conditions for life, and death-worlds its spatial manifestation, then minefields are a quintessence of necropolitical power. More precisely, landmines are instruments of necropolitical power, and minefields its territorial manifestation: they create not only literal "kill zones" but also spaces "in-between of life and death".

When militaries and combatants seed the land with landmines, they designate spaces and landscapes as zones of [potential and guaranteed] death. They turn everyday environments—roads, forests, villages, buildings, bridges, fields, and forests—into deathscapes which eliminate and deter unwanted presences.

Amid conflict, the "enemy force" is the population that is rendered killable [and disposable]—its physical presence, potential or actual, is deterred and eliminated by landmines. More precisely,

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[504] Mbembe. 2003. "Necropolitics", 11.
[505] Ibid, 40.
[506] Antonio Pele. 2020. "Achille Mbembe: Necropolitics." *Critical Legal Thinking*, March 2, 2020. https://criticallegalthinking.com/2020/03/02/achille-mbembe-necropolitics/.

minefields, as rationalized by their users, are implicitly spaces where those who transgress and enter are considered "legitimate targets" of [violent] death or dismemberment. A minefield thus is a "kill zone for the Other"—it "promises" and enforces physical death, but also a form of "social" death through dismemberment and subsequent disability.

A combatant who is maimed in a minefield is pulled out of the military service which disrupts the soldier's contribution to the war effort. Here, the necropolitical power of minefields and landmines works through the destruction of the value of a soldier's social existence through bodily harm, effectively sentencing the victim to a prolonged state of debility.

The necropolitical power of minefields, however, is not only spatial, but also temporal. Minefields can, and often do, extend the "killing power" into the future. After the active combat ends, minefields continue to enforce this violent sovereignty and "subjugate life to the power of death", except the population now deemed "disposable" becomes less determinate and contingent upon the priorities and decisions of the "demining-assemblage".

In the after-war, "new" disposable populations become groups that are "calculated" to be at the "least level of risk" by a designated demining authority which typically uses formulas and matrices that prioritize population size and economic utility.

Villages, borderlands, non-urban areas, peripheries, forests, and mountaintops thus form the disposables in the aftermath. Villagers and returning refugees, in particular, are frequently subjected to prolonged existence within death-worlds, as they live within and around actual and potential minefields where their everyday lives are marked by the proximity of death.

This is what Mbembe terms "small doses" of death or "small massacres", where necropolitics consists in the "power to manufacture an entire crowd of people who specifically live at the edge of life, or even on its outer edge—people for whom living means continually standing up to death".[507] This is precisely the type of racism and dehumanization that, following Mbembe, allows necropolitics to exist and expand in society: defining entire crowds of people as "not/less worthy of protection".

[507] Achille Mbembe. 2019. *Necropolitics.* Duke University Press. Pp. 37-38.

Following Mbembe's conceptualization of necropolitics and necropolitical power, minefields can be understood as deliberate inscription of death into geography. Their creation, existence and continuity transforms swaths of land and landscapes into zones of sacrifice where particular populations, groups, and bodies are subjected to death, death-like living conditions, or perpetual "living with" the potential death or dismemberments. Minefields thus exemplify the power to not only "let die" but to make die, or to force people to live in constant fear of dying. However, minefields do not only operate by "dealing death", but also by regulating life and mobility. To understand how this is made possible, I now turn to Foucault's notion of biopolitics.

9.5 Biopolitics: Regulating Life and Mobility

Power does not only work through the threat and production of death, but also through governance of life—population management, regulation of movement and mobility, and optimization of health. A minefield, as a collection of deadly explosives scattered on a piece of land, may seem purely thanatopolitical.

Yet, minefields also channel and regulate life and mobility around them—by creating "safe" and "unsafe" zones and spaces, they govern where people go, dwell, and exist, and where they can or can not go; they regulate where "social life" can be present and where not. More precisely, minefields can be seen as a form of territorial technology—a form of "violent spatial planning"—which shapes movement and habitation, and enforces "certain patterns of living". Minefields, in other words, are biopolitical instruments, just as much as they are necropolitical instruments.

Foucault's notion of biopolitics shifts the focus from the power to kill to the power to "make live and let die".[508] Foucault notes that "modern power" creates spaces of security and spaces of danger as part of managing populations.

Minefields starkly instantiate this by carving the landscape into binary zones: on one side of a marked minefield sign, life can proceed relatively normally while on the other side life is suspended under the sign of death. In this way, minefields contribute to the "biopolitics of

[508] Michel Foucault. 1978. "The History of Sexuality, Volume I: An Introduction." Translated by Robert Hurley. New York: Pantheon Books. Pp. 135-59.

space"—authorities [can] use them to secure borders, demarcate frontlines, or protect strategic assets, thereby ostensibly "saving and protecting" the lives of those on the "protected side" by threatening the lives of "intruders". During active conflict, for example, militaries mine approaches to their camps or settlements—this protects the in-group (making them live) by endangering any out-group that approaches (letting them die). Such practice aligns with what Foucault identified as the underlying principle of state racism in biopolitics—"the death of the other is seen as a condition for the life of the self". Biopolitical power, when coupled with racism or enmity, segregates populations into those to be nurtured and those to be exposed to death. Minefields materialize this segregation on the ground, often [literally] along ethnic or political lines.

Another biopolitical dimension of minefields is their role in regulating movement and behavior. The presence of mines compels people to alter how they live: which roads they take, which fields they cultivate, where they live. In this sense, minefields function akin to extreme forms of zoning or quarantine—they are disciplinary spaces that restrict bodies to certain paths. In heavily mined regions, everyday routines are governed by the knowledge of where one can safely step. For instance, civilians living near or next to minefields may often be unable to reach hospitals, markets, or schools because landmines block routes and roads. Here we see biopolitics and necropolitics intersect: the mines "let die" [or risk death] those who stray from sanctioned paths, effectively forcing the living to comply with a regulated mobility if they wish to survive—life continues, but under stringent "spatial discipline".

Biopolitical power is also evident in the institutional responses to minefields. Demining programs, danger signage, and survivor assistance can be seen as efforts to manage the fallout on populations—a recognition that if landmines remain, the state must mitigate their impact to maintain a healthy, productive populace.

Thus, even as mines are tools of death, they trigger biopolitical interventions: mapping dangerous areas, educating communities, particularly children, about mine risk, and prioritizing clearance in zones deemed "valuable" for resettlement or agriculture. Which areas get demined first is itself a biopolitical decision about whose life and livelihood are valued. This underscores that biopolitics often operates unevenly—it prioritizes certain populations and spaces as "more

valuable". Minefields, and decisions about their removal, reveal which lives are being fostered and which are neglected. If a village's fields remain mined for years due to "low socioeconomic impact" while a nearby infrastructure project's land is swiftly cleared, it signals a hierarchy in the biopolitical management of safety.

Therefore, conceptualizing minefields through a biopolitical lens illuminates their role in governing life by delimiting space. Minefields regulate who can move where, create enforced corridors of circulation [or immobility], and serve state objectives of securing territory and populations. They represent a grim convergence of security and control: a technology of terror that nonetheless structures the everyday conduct of those who live in its shadow. Biopolitically, minefields contribute to the partitioning of the social body into "protected areas of life" and "prohibited zones of death".

9.6 Conclusion

Conceptually, minefields can be seen as geo-biopolitical tools that inscribe the landscape with zones of control and exclusion. From a biopolitical perspective—drawing on Foucault's ideas—they regulate the movement and agency of bodies, transforming geographic spaces into territories where life is managed by the threat of death.

Minefields become active instruments of power, delineating "safe" spaces for certain populations while designating others as uninhabitable. They can be understood as contested spaces that both confine and define the parameters of living territory. In this framework, minefields not only function as lethal barriers but also as territorial constructs that determine who is allowed to occupy, inhabit, or control a given landscape, thereby merging spatial governance with the politics of life and death.

By conceptualizing minefields as assemblages, we can theoretically account for how new socio-ecological orders emerge from war's material debris. These orders include physical transformations—cratered, overgrown landscapes, spatial practices—avoiding certain paths, marking safe zones, and political relations—contested authority over dangerous ground. Assemblage thinking directs the attention to the interactive ensemble of elements through which mines continuously shape and are shaped by the world.

In the cases of BiH and Ukraine, for example, each minefield could be analyzed as an assemblage where history, materiality, and society intersect to produce a unique territorial configuration. As the conflict in Ukraine is ongoing, new minefield assemblages are in the making—combining modern weaponry, winter freeze-thaw cycles, civilian evacuation, and military mapping into what will become long-term geographies of risk. Assemblage helps trace these complex interrelations and to understand territory itself as something emergent and dynamic, not just a "container where events happen". The mined landscape is an event in its own right—a continuing event of territorial [re]formation driven by the agency of dispersed, networked explosives.

Chapter 10

How the International Community Demines

10.1 Introduction

"...neutralizing the tank was often much easier than neutralizing the mine".[509]

This chapter presents an overview of the technical aspect of humanitarian demining. First, the chapter makes a distinction between military-type and humanitarian-type demining processes. The chapter then focuses on the process of humanitarian demining as envisioned by the international liberal humanitarian demining regime, and captured within the IMAS. This process includes Non-Technical Survey (NTS), Technical Survey (TS), mapping, marking, minefield reduction, mine clearance (neutralization of retrieved mines), record keeping, and quality control.

10.2 Types of Demining

Demining is a process by which a single landmine or a group of landmines is neutralized and removed from the space it or they occupy. There are two basic types of demining: 1) military demining, and 2) humanitarian demining.

The former is more commonly called "counter-mining", and it is employed by soldiers or military sappers during battles. Military demining necessarily entails distinct strategic objectives: clear strategic pathways so troops can advance on the battlefield, or create general safe paths for military maneuvering, be it a retreat or advance. In counter-mining, the emphasis is on the speed of clearance; when creating a minimum safe path rapidly, clearance rate is deprioritized.

The latter—humanitarian demining—is substantially different from military demining; it involves different purposes, procedures, and standards. The aim of humanitarian demining is to "clear land so that civilians can return to their homes and everyday routines".[510] The ultimate

[509] Croll. 2008. *Landmines in War and Peace,* 45.
[510] United Nations Mine Action Service. n.d. "5 Pillars of Mine Action." *UNMAS*. https://www.unmas.org/en/5-pillars-of-mine-action.

goal of humanitarian demining is thus restoration of peace through the reversal of material effects of conflict. Since the advent of humanitarian demining in the 1990s, the notion "demining" has generally been understood as synonymous with "humanitarian demining", and the two are used interchangeably inside and outside demining circles.

While defining demining as "clearance of landmines" captures the essence of demining and its ultimate goal, it tends to obscure the fact that demining is a multi-stage process, where the actual clearance of the explosive threat is one of the last steps in the process. Before the clearance work is initiated, a minefield must first be located, surveyed through non-technical and technical means, mapped, and marked. The processes, standards, and technical aspects of demining are "regulated" by IMAS whose custodian is the UN and its demining department, the UNMAS.



Figure 10.1. *A bomb squad of Ukrainian Armed Forces 93rd Brigade performing military demining in Donetsk oblast on June 15, 2024. The two sappers are preparing to detonate an ATL mine and a shell in situ.*[511]

[511] "Ukrainian bomb squad carries out controlled detonations in Donetsk region". Photograph by Jose Colon for Anadolu. June 15, 2024. Source: Getty Images.



Figure 10.2. *A HALO Trust deminer in the village of Snigurivka in Mykolaiv oblast performs humanitarian demining, complete with IMAS-regulated lanes, markers, and equipment.*[512]

10.3 The Process of Humanitarian Demining

> "No matter how slowly or methodologically mine clearance team worked, they could never guarantee a clear route."—US Lieutenant Colonel Davis, Tunisia, 1943.[513]

The process of demining involves multiple levels and stages of operation. More importantly, the process involves a clear set of operating standards, regulated by IMAS. While the steps and stages of demining are organized in a chronological order, where each stage advances the process towards the actual clearance of landmines and ultimate "release" of land back to civilian use, stages can sometimes overlap or take place in an order not envisioned by IMAS or a standard operating procedure (SOP) which a particular demining operator is using.

Before a particular place is designated as "Confirmed Hazardous Area" (CHA), it is defined as a "Suspected Hazardous Area" (SHA) if there is a "reasonable suspicion of explosive ordnance

[512] "Ukraine Russia Conflict War." Photograph by Genya Savilov for AFP. June 14, 2024. Source: Getty Images.
[513] Croll. 2008. *Landmines in War and Peace,* 47.

contamination on the basis of indirect evidence of the presence of explosive ordnance".[514] To designate an area as a CHA, a team or several teams of scouts conduct a "Non-Technical Survey" (NTS).

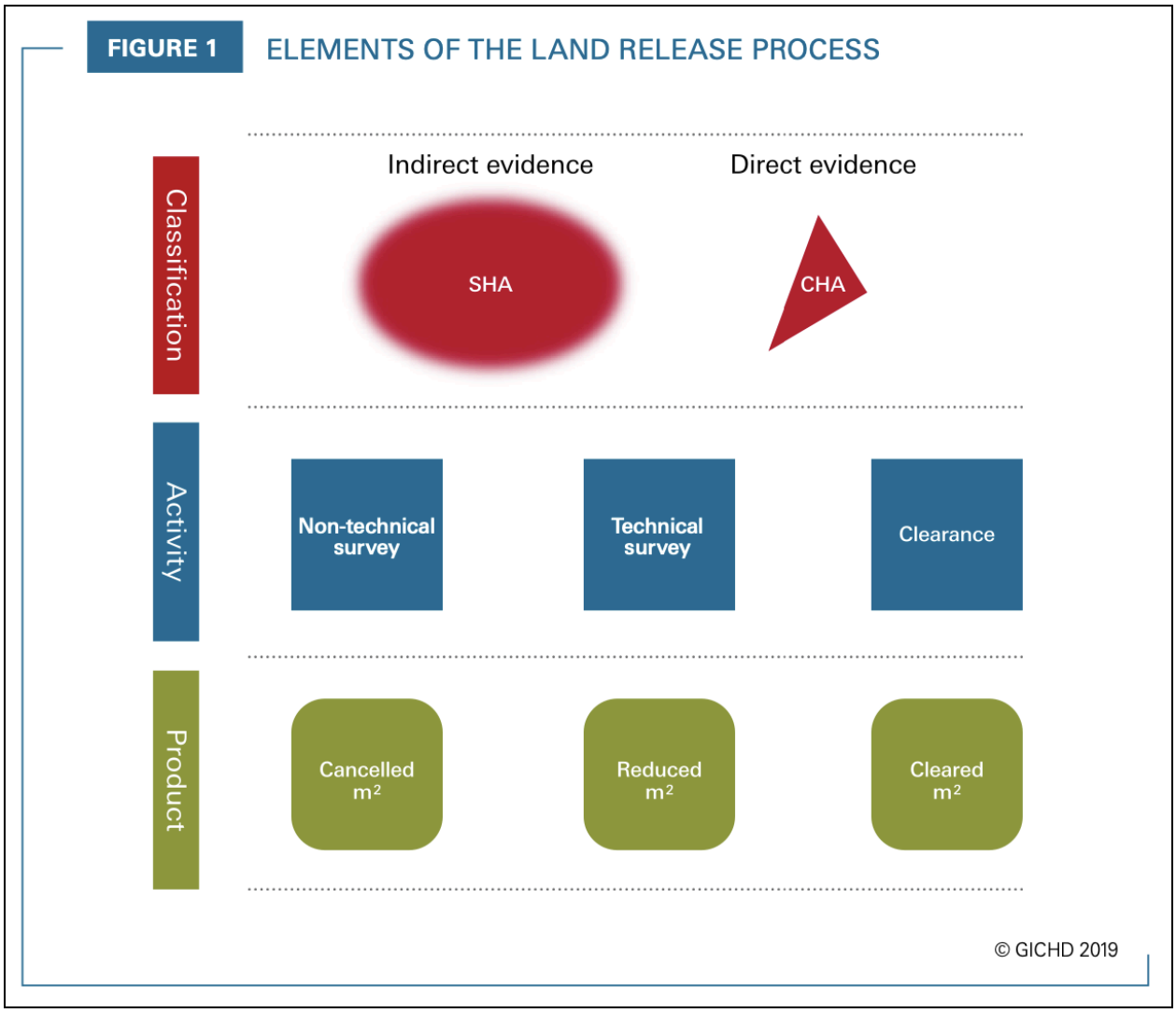


Figure 10.3. *Elements of the IMAS-style humanitarian demining known as "land release". This figure has been produced by the GICHD; the organization uses this figure in its "guide to NTS".*[515]

[514] United Nations Mine Action Service. 2024. "IMAS 04.10 Glossary of mine action terms, definitions and abbreviations.". 2nd Edition, 01 January 2003, Amendment 12, 25 October 2024. UNMAS: New York. P. 35.
[515] Geneva International Center for Humanitarian Demining. 2019. "A Guide to Non-Technical Survey". *Global CWD Repository,* 1292. https://commons.lib.jmu.edu/cisr-globalcwd/1292. P. 15.

10.3.1 Stage 1: Assessment and Non-Technical Survey

An NTS is an assessment of suspected mine-contaminated areas or SHAs; it may be a field assessment involving collection of new data, but it can also refer to a review of existing information regarding an SHA.

The purpose of the NTS is to "confirm whether there is evidence of a hazard or not, to identify the type and extent of hazards within any hazardous area to define, as far as is possible, the perimeter of the actual hazardous areas without physical intervention".[516] The IMAS defines NTS as:

> The collection and analysis of data, without the use of technical interventions, about the presence, type, distribution and surrounding environment of explosive ordnance contamination, in order to define better where explosive ordnance contamination is present, and where it is not, and to support land release prioritisation and decision-making processes through the provision of evidence.[517]

The ultimate goal of an NTS is to determine which areas will be subjected to a "Technical Survey" (TS) by collecting and analyzing data about the presence, types, and distribution of landmines without the employment of technical means.

Before conducting an NTS, the national mine action authority (NMAA) or national mine action center (MAC) picks an SHA to be subjected to an NTS based on its classification of "risk level" and "list of priorities". The NMAAs and national MACs typically retain authority in classifying SHAs according to the "risk level", however, "priority list" is produced in collaboration with local government structures. Any and all "priority lists" for a given period of time (typically a calendar year) are approved by the government body that holds executive power.

The NTS is rarely complete with a sole review of existing data, graphic or textual, and most often involves field research. During field NTS, scouts conduct an assessment of SHAs through interviews and questionnaires administered among the local population. The "local population"

[516] United Nations Mine Action Service. 2015. "National Technical Standards and Guidelines South Sudan." 1st ed, Version 3. October 1, 2015. https://www.unmas.org/sites. P. xviii.
[517] United Nations Mine Action Service. 2024. "IMAS 04.10 Glossary of mine action terms, definitions and abbreviations." 2nd edition, Amendment 12, October 25, 2024. UNMAS: New York. https://www.mineactionstandards.org/fileadmin/uploads/imas. P. 26.

can involve residents of a particular area, former fighters, government officials or other authorities, and health professionals.

During field NTS, scouts look for "direct evidence" and "indirect evidence" to determine if an SHA should be designated as CHA.

Direct evidence includes: verified explosive ordnance (EO) records, detonations by animals or during fires, official and unofficial mine markings and warning signs, fencing, mine or EO accidents where "the location of the event can be accurately determined", and "visual observation of EO, EO parts, fragmentation or craters".[518]

Indirect evidence includes: abandoned agricultural land, verbal evidence from civilians and/or former combatants, unverified records of EO, knowledge of former combat zones, evidence from prior surveys, visible potential IED components.[519]

During NTS, scouts ask the target population about whether or not they have been impacted by landmines. A "landmine impact" can have several meanings; target population may be asked if they had seen actual landmines, if they know a person who had been victimized by a landmines, or if they had heard reports, stories or rumours about landmines in the area. If the target person or population is a former soldier, they may be asked if they or their units had placed landmines in the area, or if they are familiar with potential mine-usage of the opposing force. A NTS is typically carried out in advance of a TS, but may be incorporated into that process.[520] As such, an NTS can sometimes lead to identification of actual sites and placements of landmines.

For instance, if the contact person during an NTS is a former soldier who informs scouts that a place in question was a site of battle where landmines were used, the scouts team may request that the contact join the field assessment. The scouts and the contact person then travel to the designated area, where the contact person describes the mine-laying operation, and informs the scouts about the exact placements of landmines. This procedure is conducted from a "safe distance" and usually involves detailed description of the physical geography of the area, along with photographs, exact coordinates, and sketches of expected mine locations.

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[518] United Nations Mine Action Service. 2019. "IMAS 8.40 Non-Technical Survey.". 1st Edition, Amendment 4, February 2019. UNMAS: New York. https://www.mineactionstandards.org. P. 5.
[519] Ibid.
[520] McGrath, *Landmines and Unexploded Ordnance*, 80.



Figure 10.4. *Scouts of international humanitarian NGOs performing NTS. Photo 1 shows HALO scouts team in Sri Lanka; photo 2 shows NPA scouts team in BiH; photo 3 shows HALO scouts team in Colombia; photo 4 shows DRC scouts team in Ukraine.*[521]

Upon the completion of a NTS, the responsible agency, a national MAC, NMAA or demining operator produces a "NTS report". If the NTS was conducted by a demining operator, then the report is submitted to the NMAC or NMAA for review. If a NTS yields no direct evidence of contamination, an area may be "canceled", and labeled by the NMAA as a "Canceled Area" or "Canceled Land m^2".

Typically, the NMAC or NMAA retains "sole authority" in deciding if a given area is canceled and "released" to civilian use. In such cases, the demining process stops at that point and TS is not performed. If the NTS yields direct evidence of mine contamination, the area is designated a CHA and the demining process moves to stage two: technical survey.

[521] Geneva International Center for Humanitarian Demining. 2019. "A Guide to Non-Technical Survey." *Global CWD Repository*, 1292. https://commons.lib.jmu.edu/cisr-globalcwd/1292. Pp. 13, 31. ; Ingebjørg Sorenes. 2022. "From war victim to aid worker". *NPA*, May 15, 2022. https://www.npaid.org/mine-action-and-disarmament/news/from-war-victim-to-aid-worker. ; Danish Refugee Council. 2024. "Ukraine: Surveying hidden dangers." *DRC*, July 29, 2024. https://drc.ngo/resources/news/ukraine-surveying-hidden-dangers/.

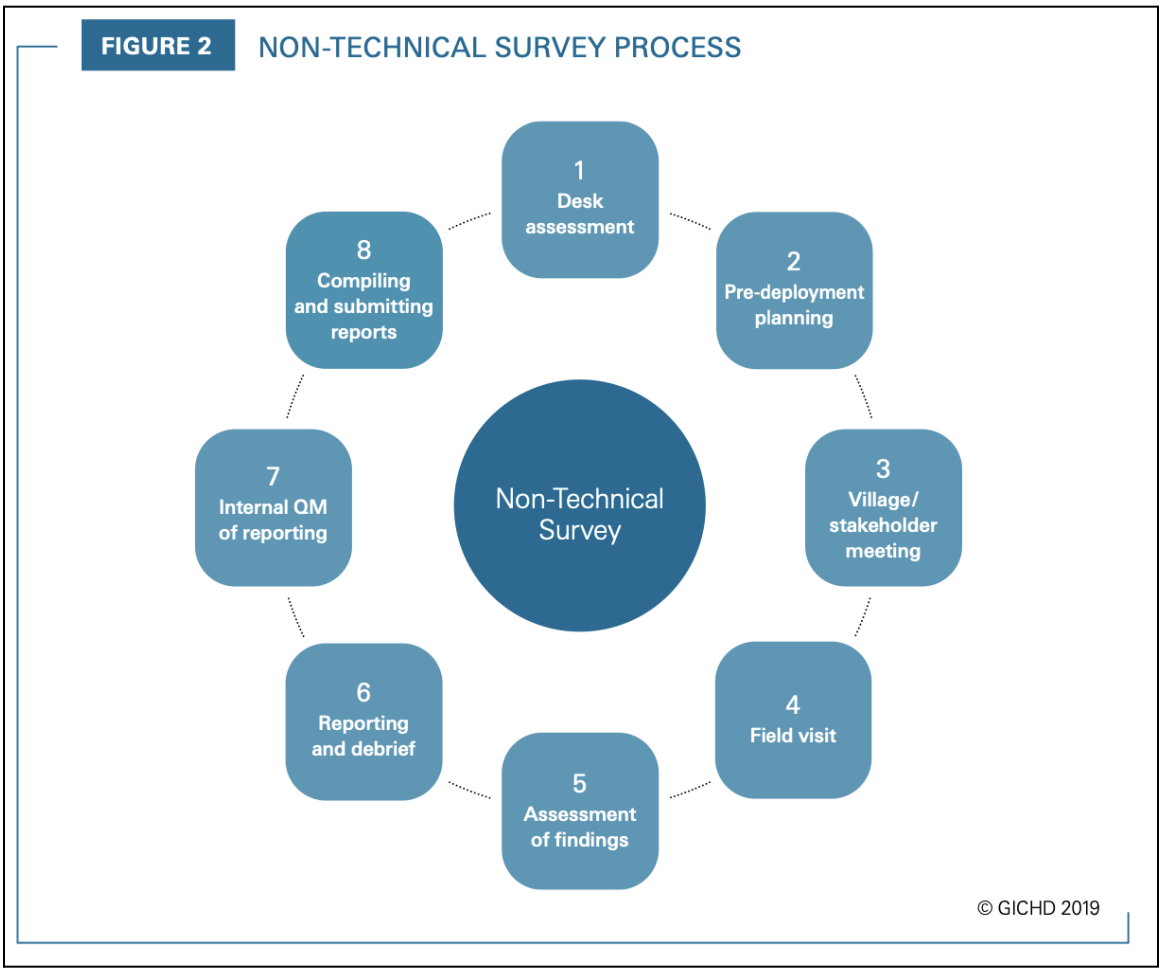


Figure 10.5. *Stages of the NTS process as envisioned by the GICHD.*[522]

10.3.2 Stage 2: Technical Survey

The technical survey (TS) refers to the stage of the demining process where a team of scouts and/or deminers physically enter a CHA and assess the extent of contamination, types of landmines present, the pattern(s) of landmine placement, and map and mark the area.

The TS, unlike NTS, involves technical tools that help scouts and deminers assess, map, and mark the CHA. Some of the technical tools used during TS involve: metal detectors, warning tapes, warning signs, cameras, prodders, excavation tools, compass, protractor, rangefinder (laser or tape measure), electronic positioning equipment (GPS), binoculars, drones, radio stations, off-road vehicle, first-aid kit, writing and drawing supplies, and wooden stakes.

[522] Geneva International Center for Humanitarian Demining. 2019. "A Guide to Non-Technical Survey". *Global CWD Repository*, 1292. https://commons.lib.jmu.edu/cisr-globalcwd/1292. P. 19.

The wooden stakes come in different lengths and color codes; long stakes are placed at the outer edges of the CHA, and short stakes are used to create “safe lanes” and “exploratory lanes” within the CHA.

During TS, scouts-deminers are required to not only assess the extent of contamination, but assess the “general physical geography” of the place—soil type, vegetation, orientation, and elevation—and take photographs.

The purpose of assessing the geographic features of a CHA is to determine the methods of demining that can be used; manual demining can be used across nearly all different geographies, however, MDDs and mechanical demining have “limits” and can not be used in “difficult geographies” such as mountaintops, water bodies, and rocky landscapes.

Further, during TS, scouts-deminers determine the “control point”, and calculate and determine the most suitable entry points into the CHA, and mark them by placing geodetic marks into the soil.

The “control point” refers to an area sitting adjacent to the minefield/demining worksite, right outside of the marked area, where medics, team leaders and quality control officers stay during demining operations along with vehicles, documentation, medical supplies, and other spare equipment. The entry points, and by extension the “control point”, must meet the “medevac” and “casevac” requirements. The latter refers to a time limit of ten minutes within which the deminer farthest in the field must be “pulled out” to the “control point” and loaded on the medically-appropriate vehicle in case of an incident; the former refers to the a time limit of sixty minutes within which the nearest hospital must be reached from the “control point”.

During TS, as scouts-deminers determine the extent of the contamination, they map and mark the area. In some instances, the area is marked with fences and wires right before the TS begins. These markers are then moved and adjusted upon the completion of the TS, so that they may reflect accurately the extent of the minefield. This is called “minefield reduction”. Often, initial non-technical assessments and estimates encompass much larger areas than what is actually contaminated. The TS aids in resolving this discrepancy. Upon the completion of TS, the minefield is marked with red or orange warning signs and typically yellow tape. The entire

process is recorded in forms provided by the NMAA or NMAS, which then produces a "TS report" and "TS certificate".

These documents are then used to put together a collection of forms and documents that form an "Operational Task" or "Demining Project". This collection includes all information known about a particular minefield, including information obtained during NTS, TS, and earlier-known data (such as wartime minefield maps), several maps of the area, and a set of separate paperwork which details modes and methods of demining that the NMAA or NMAC recommends/authorizes for use. In some instances where the NMAAs or NMACs allow it, TS is incorporated into the clearance stage, especially if there are accurate minefield maps and records, and strong direct evidence of contamination.



Figure 10.6. *A scout/dog-handler of a joint initiative between UNDP and APOPO performs TS in Ukraine using an MDD.*[523]

[523] Mines Advisory Group. 2024. "Women take the lead as handlers in UNDP's Technical Survey Dogs project for demining in Ukraine." *MAG International,* August 21, 2024. https://www.maginternational.org/whats-happening/women-take-the-lead-undps-technical-survey-dogs/.

10.3.3 Stage 3: Demining

10.3.3.1 Task Assignment and Clearance Preparation

With the NTS and TS complete, and the "Operational Task/Demining Project" created, the process moves to the clearance stage where landmines are detected and located, individually marked, and neutralized. The clearance stage is the "longest stage" of the demining process, and a single minefield typically takes months to complete, whereas more "challenging" tasks can take over a year.

Depending on the national and local context and respective demining legislations, the "Demining Project" may be assigned to a specific demining operator or chosen by a specific demining operator. This process is contingent upon the NMAA or NMAC, the demining legislation, the NMAS, the annual demining strategy, and the type of demining operator. National demining operators, such as civil protection administrations and militaries are generally assigned demining projects by the government, while international demining operators and commercial companies choose demining projects. The former group is assigned demining projects based on the annual demining strategy and national/local priorities which are continuously (re)negotiated. The latter have a choice in demining projects because their funding is not tied to the national governments or governance structures where they operate.

However, the demining projects of international demining organizations are contingent upon the preferences and priorities of their donors; before an international demining organization commits to a clearance task, they "must" run it by their donors for approval.[524]

This typically involves taking representatives and/or contacts from the donor body "out to the field" to show them the exact project in person, in addition to exchanging relevant documentation; the NPA and MAG practice this method.[525] If safety does not permit such

[524] Eleanor Porritt, FSD Program Director for Ukraine, personal communication, February 28, 2025; Selma Antic, EORE and Community Liaison Manager, NPA BiH, personal communication, May 10 2024; Jessica Hyland, Regional Director for Eastern Europe, MAG, personal communication, May 6 2024; Person MAG1-TO, personal communication, May 18 2024.
[525] Selma Antic, EORE and Community Liaison Manager, NPA BiH, personal communication, May 10 2024; Person MAG1-TO, personal communication, May 18 2024.

practice, as is the case in Ukraine, the approval is sought without field visits, but with detailed documentation.[526]

Commercial companies, on the other hand, choose projects based on the project's profit potential. Notably, commercial companies are also reported to base their choices on the relative "simplicity" of the project, as "complex" demining tasks are viewed as unprofitable.

Once a particular demining project is assigned to or chosen by a demining operator, the preparations for the clearance stage begin. The preparation stage involves another round of documentation exchange where the demining operator "responds" to the collective demining project documentation with a detailed "operational plan". The plan details the clearance timeline, equipment to be used (with detailed specifications and serial numbers), demining staff to be deployed, and any other information that the NMAA or NMAC may request. Each demining task requires a different number of deminers, so the team size varies, however, each team "must" have at minimum four deminers, two medics, a team leader, EOD officer, and an officer for internal safety and quality control.

The operational plan and information requirements differ across different demining projects and suggested/planned demining methods. If the operational plan is not deemed fit, then the documentation exchange continues until the NMAA/NMAC grants an approval.

10.3.3.2 Clearance

10.3.3.3 Manual Mine Clearance

Manual Mine Clearance (MMC) is the most common demining method used by demining operators. The process begins with a team briefing, where the demining team reviews and discusses the demining method (MMC), conducts a brief on the area using reference benchmarks, establishes the clearance lane(s) and reviews the safe depth to be achieved for AP landmines.[527]

[526] Eleanor Porritt, FSD Program Director for Ukraine, personal communication, February 28, 2025.
[527] United Nations Mine Action Service. 2015. "National technical Standards and Guidelines South Sudan", 39.

Once the area setup and preparation are complete, deminers go inside the minefield to begin detection and marking. At the minefield entrance, deminers test their metal detectors, and then begin visual search of lanes in search of anomalies, such as metal fragments, disturbed soil or tripwire fragments/signs. The metal detector is employed along the lane with visual search.



Figure 10.7. *A widely and internationally-used detector, Minehound VMR3. This is a dual-sensor detector with a metal detector and a ground penetrating radar suitable for non-metallic landmines and IEDs. It was developed by a German company, Vallon GmbH, in 2005, and has since become a standard in the demining sector.*[528]

[528] Photograph taken by author in Sarajevo, BiH. May 13, 2024.



Figure 10.8. *A testing area for metal detectors at the entrance of a minefield in Konjic, BiH. Here, the demining team leader buries a landmine fuse which deminers' metal detectors must be able to "pick up" before going into the demining worksite.*[529]

Once the metal detector returns a signal, a deminer isolates the signal by running the detector over the spot once again or several times. The location of the isolated signal is marked immediately with a designated marker, typically a picket or a thin metal rod with a red flag. The deminer then uses a prodder to prod carefully the ground at the indication, and uses designated hand tools to excavate a small circle or area around the signal indication.

[529] Photograph taken by author in Konjic, BiH. May 7, 2024.



Figure 10. 9. *Deminers of international humanitarian NGOs performing manual mine clearance. Photo 1 shows a HALO Trust deminer performing MMC in Snigurivka, Mykolaiv region in June 2024; Photo 2 shows an NPA deminer performing MMC in Likari, Srebrenica municipality in September 2014.*[530]

If the deminer confirms the presence of a landmine, the area is further marked with wooden stakes and yellow tape to prepare for manual landmine clearance. A demining team typically does not have multiple EOD technicians, and only EOD technicians can clear landmines. A deminer demines up until he reaches a landmine, and the EOD technician is the only person authorized to actually clear the mine".[531]

The exact method through which a mine is neutralized varies across operators, teams, specific tasks, and national regulations. A landmine may be destroyed *in situ*, but it may also be taken elsewhere and destroyed along other landmines.

The "elsewhere" may be a nearby trench if the minefield is located near a frontline where trenches were used, the EOD technicians will sometimes blow up the retrieved mines by putting

[530] "Ukraine Russia Conflict War". Photograph by Genya Savilov for AFP. June 4, 2024. Source: Getty Images. ; "Bosnia-Herzegovina Landmine Clearance". Photograph by David Bathgate for Corbis. September 18, 2014. Source: Getty Images.
[531] Ferhat Ljuca (BiH Federal Civil Protection Administration, Senior Officer for Quality Control), interviewed by the author, May 7 and 16 2024.

them in the trench together with an explosive. Each landmine has to be documented. The exact location where the landmine was found is typically drawn in on the map of the minefield, added to the list of found explosives/mines, and documented on another set of papers once destroyed.

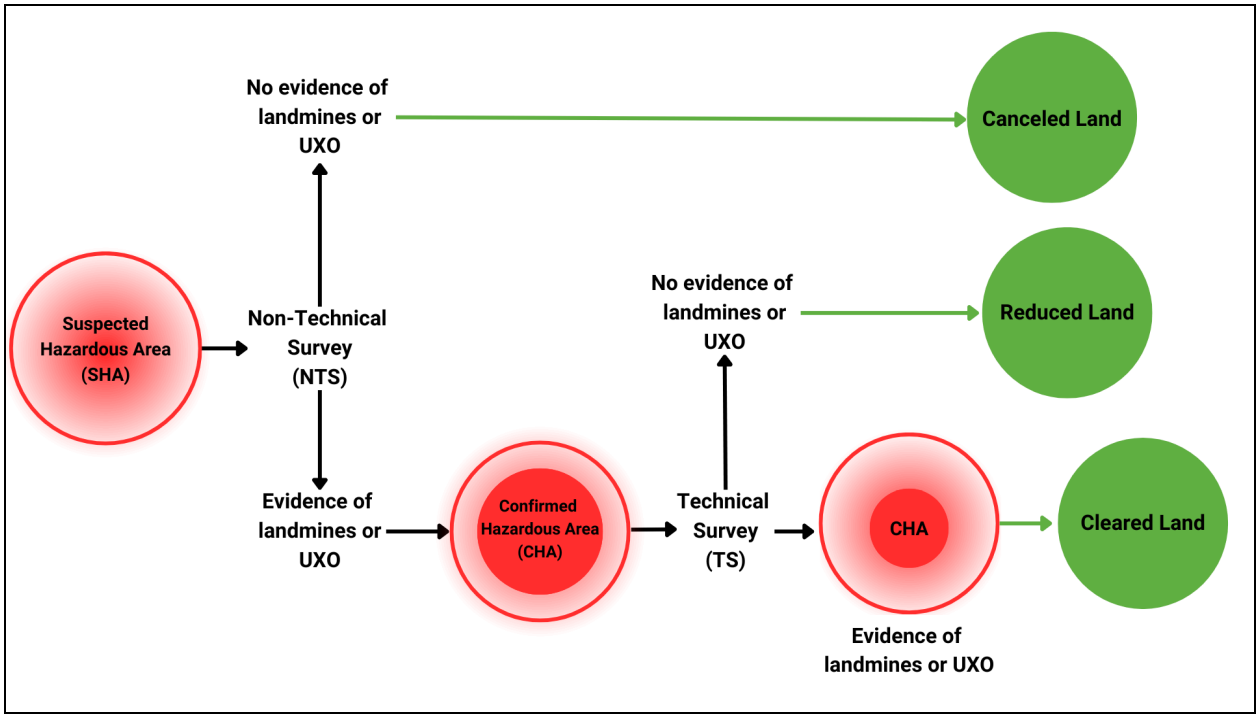


Figure 10.10. *A simplified illustration of the process of humanitarian demining as envisioned by IMAS land release standards.*

10.3.3.4 Animal Detection Systems (ADS)

The use of animals in landmine clearance is typically used in conjunction with MMC, and follows nearly identical procedures as the MMC. The IMAS terms this process as Animal Detection System or ADS.[532] While the term suggests a possibly wide range of detection animals, only two types are used in humanitarian demining: mine detection dogs (MDDs) and mine detection rats (MDRs).

The use of MDDs or MDRs as a "demining method" generally requires an approval from the NMAA/NMAC, and the deployment of MDDs is contingent upon the physical geography of the

[532] United Nations Mine Action Service. 2024. "IMAS 09.41 Operational procedures for Animal Detection Systems". 4th Edition, February 2020. UNMAS: New York. https://www.mineactionstandards.org/fileadmin/uploads/imas/Standards/English/IMAS_09.41_Ed.4.pdf. P. 7.

demining site. For instance, wet areas and wet soil, high temperatures, dense vegetation, high slopes, and cliff areas are considered areas where the efficiency of MDDs is likely to be limited, and is thus generally avoided.[533] The MDRs on the other hand, are typically resistant to high temperatures and tropical climates.[534] Windy areas and snow are considered unsuitable conditions for both the MDDs and MDRs.[535]

When deploying MDDs and MDRs, the demining operators are required to have "pre-determined search patterns/lanes" and trained, certified animal handlers. During clearance, MDDs and MDRs are used to either indicate initial locations of mines, or to check an area after clearance. When used in the former capacity, the handler deploys an MDD or MDR down the search lane where an MDD indicates the presence of a landmine by sitting or laying down, while an MDR scratches the soil surface. After indication, a deminer applies the same procedure as in the MCC: prodding, excavating, and marking.

10.3.3.5 Mechanical Clearance

Mechanical mine clearance refers to the use of mine-clearing or ground-preparation vehicles that may have one or several tools, such as flails, tillers, or sifters. Both types are built to resist AP landmine detonations, and are primarily used in clearance of minefields with APLs. Mine-clearing machines are used to detonate and thus neutralize landmines, whereas ground-preparation machines are used to remove obstacles, typically vegetation or tripwires, before MMC. Both types of machines are used exclusively in areas where the soil composition and elevation allow for effective deployment; rocky surfaces, hilltops, slopes, and wet areas are considered unsuitable for mechanical clearance. Like in MMC and MDD methods, demining operators create (mark) clearance lanes in mechanical mine clearance through which the designated machines pass while ensuring that lanes almost "overlap", so no area is "missed".

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[533] Vitomir Vasić (Norwegian People's Aid, Deminer), interviewed by author, May 10, 2024. ; Siniša Ilić (Norwegian People's Aid, Internal Quality Control Officer), interviewed by author, May 10, 2024.

[534] Anti-Persoonsmijnen Ontmijnende Product Ontwikkeling (APOPO). n.d. "Animal Welfare." https://apopo.org/herorats/faqs.

[535] United Nations Mine Action Service. 2024. "IMAS 09.41 Operational procedures for Animal Detection Systems." 4th Edition, February 2020. https://www.mineactionstandards.org. Pp. 14-15.

Chapter 11

Demining and Territorial Recovery

11.1 Introduction

Chapter 2 discussed the concept of territorial recovery, defining it as:

> A process by which space is reconstituted by social actors who perceive their sovereign control over such space as legitimate and, crucially, as having been compromised, diminished or entirely lost, in order to [re]claim and exercise governance over such space, so that territorial integrity may be restored and preserved.

In this sense, demining can be understood as a form of territorial recovery. A mined territory is lost and unrecovered territory, even if it lies within the borders of a state. As long as landmines litter the ground, the state's control and the population's access to such territory are limited. Landmines effectively exile a portion of territory from productive use, turning it into a liminal zone — it is there, but not fully accessible. Territorial recovery through demining attempts to end this liminality. It seeks to transform the minefield back into land governable in economic and strategic ways, and move beyond land governable by being demarcated as "off limits".

If mine-laying demonstrates an "aggressive" form of territorialization through death, demining is an attempt at territorial reconfiguration through the restoration of life and movement. Yet, as the following sections demonstrate, demining itself can sometimes carry forward the imprint of war and power, complicating the simple dichotomy of "war versus peace".

11.2 Demining as Territorial Recovery

If mine-laying is conceptualized as a "spatialization of death", then demining can be considered a mirror image of this process. Where the former creates militarized landscapes, and sows death in space, the latter seeks to disentangle death from space and make it "livable again".

Demining is thus a practice of territorial recovery, but it is a multidimensional process: it is technical, geopolitical, and biopolitical. This section examines demining through several conceptual lenses: as an expression of biopolitics, as a form of necropolitics, as a war-reversing

act, and as a war-advancing act. Paradoxically, the specter of death still haunts and organizes the process of demining, even as it attempts to undo the spatial effects of war.

At its core, demining involves locating, removing, and neutralizing landmines and other explosive remnants of war. Humanitarian demining operations often follow international [IMAS] standards: survey the area, mark it, deploy trained and accredited deminers to clear the mines, and then certify the land as "safe". In active conflict, military engineers perform breaching, quickly clearing lanes through minefields to allow troops to advance, albeit typically leaving uncleared areas in the process.

Whether in peace or war, demining reopens space. It permits bodies and capital to move where before they could not. As such, demining reconfigures territories from lethal zones to functional zones.

11.2.1 Biopolitical Aspects of Demining

In demining operations, there is a clear aim to "make live" by restoring, protecting, and saving human lives and livelihoods through removal of explosive ordnance. Both military counter-mining and humanitarian demining operate under the biopolitical imperative of protecting lives and livelihoods, however, their missions have different discursive and material forms and consequences.

In humanitarian demining, local and international demining operators and administrators discursively anchor demining in a life-affirming register. International NGOs such as MAG or HALO, explicitly frame their mission in terms of saving lives and enabling healthy, secure communities.[536] The UNMAS too, states that the aim of humanitarian demining is to "restore peace and security at the community level".[537] Militaries pursue a comparable biopolitical project but they articulate it in terms of maneuver warfare, such as "clearing path for advance", and "reclaiming occupied land from the enemy".[538]

[536] Mines Advisory Group. n.d. "What We Do." *MAG International.* https://www.maginternational.org. ; HALO Trust. n.d. "What We Do." *HALO.* https://www.halotrust.org/what-we-do.
[537] United Nations Mine Action Service. n.d. "5 Pillars of Mine Action". *UNMAS.* https://www.unmas.org/en/5-pillars-of-mine-action.
[538] Isabelle Khurshudyan and Kamila Hrabchuk. 2023. "The Biggest Obstacle to Ukraine's Counteroffensive? Minefields." *The Washington Post*, July 15, 2023. https://www.washingtonpost.com/world/2023/07/15/ukraine-war-russia-mines-counteroffensive/.

Nonetheless, the biopolitical dimensions of demining can be categorized in three broad clusters: risk governance, behavioral discipline, and socio-economic/territorial reconstruction.

The first category includes not only clearance of landmines, but practices through which risk and danger are quantified and measured, practices of demining prioritization, and minefield ranking procedures. Behavioral discipline category refers to practices which shape conduct of target population through the dissemination of knowledge and risk-avoidance norms. The category of socio-economic and territorial reconstruction involves efforts aimed at restoration and re-activation of land, labor, and mobility thereby [re]embedding spaces into state economic and administrative grids.

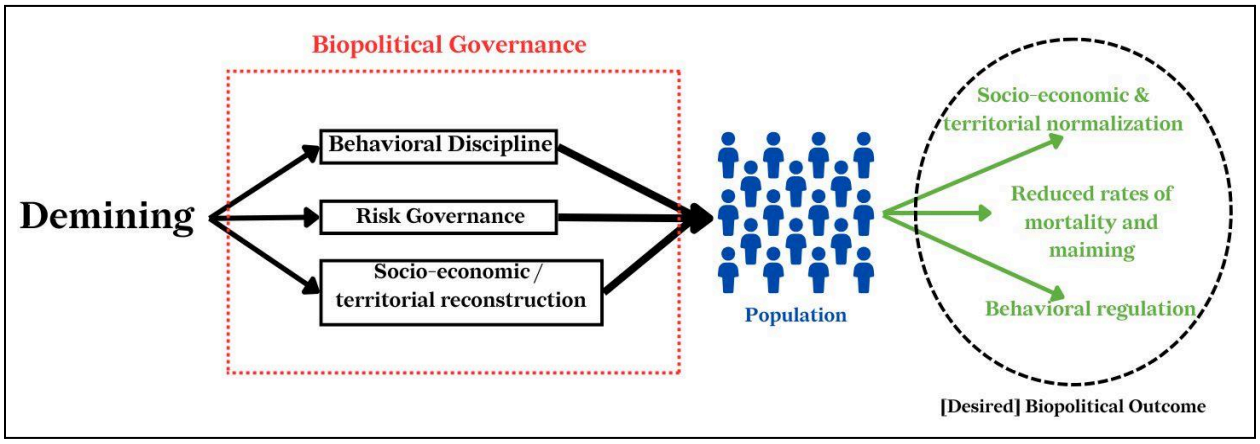


Figure 11.1. *A diagram of biopolitical aspects of demining.*

All three aspects—risk governance, behavioral discipline, and socio-economic and territorial reconstruction—can be observed within humanitarian and military-style demining operations. First, the removal of landmines is a fundamental biopolitical risk governance practice through which humanitarians and militaries alike save and protect human lives. Whereas the former neutralize minefields to save lives of civilians in the short, medium and long-term, the latter do so to save lives of combat forces in the short term, and wider [civilian] population in the long term.

The central assumption here is that living bodies are a calculable resource in peacetime and wartime, and that mine casualty figures must be driven to zero. Eliminating civilian mine casualty figures ensures that social and economic reconstruction can proceed because living human bodies *make* territory and *are* territory. On the other hand, decreasing military mine

casualty figures preserves combat power in the immediate term, and the survival of the polity which the military is defending in the longer term.

Next to the mine clearance processes, humanitarian and military deminers practice biopolitical risk governance by quantifying and measuring danger, prioritizing sites for clearance, and ranking contaminated areas according to the risk they pose to lives and livelihoods.

For international and local humanitarian NGOs, as well as state-run demining units, demining is often one component of a broader post-conflict biopolitical project that includes resettlement, public health, and reconstruction. Measuring the risk and danger posed by landmines is a process that takes place alongside clearance: demining operators and administrators survey and map mined areas and their spatial proximity to settlements and critical infrastructures in order to produce prioritization matrices.

Humanitarian demining is costly and slow. The way states and demining organizations commit and justify the allocation of resources for demining involves overt biopolitical logic. Prioritization decisions are often made by evaluating where clearance will most benefit the population—densely populated areas, vital infrastructure, agricultural fields—essentially calculating where the most lives and livelihoods can be saved or improved.

This is biopolitical reasoning: optimizing life outcomes at the population level. If one minefield blocks access to a water source for hundreds of people and another is in a remote area few enter, the former becomes a higher priority because it affects more living bodies and their health. In effect, a cost-benefit analysis in terms of human life and welfare guides the territorial [re]ordering that humanitarian demining undertakes.

Militaries on the other hand, measure and quantify the danger posed by landmines in terms of the likelihood and extent of effect minefields would have on their combat operations and broader war effort. Where humanitarian deminers measure the size of a minefield and spatial proximity to civilian populations, agricultural fields and infrastructures, military sappers enumerate mine types, minefield density and depth, and explosive potential. Their demining prioritization matrices are contingent upon the strategic and tactical objectives, and thus favor frontlines and sites critical to advancement of troops and military operations.

Further, demining operators and administrators enact biopolitical governance through behavioral discipline. The explosive ordnance risk education (EORE), a common program in mine-affected countries, teaches people, and particularly children, how to recognize landmine signs and avoid venturing into mined areas. The EORE is thus a form of biopolitical education which manages the population's behavior to reduce harm: it shapes the conduct of the [civilian] population through dissemination of knowledge and risk-avoidance norms.

For militaries, behavioral discipline comprises training and drills which teach combatants and military sappers the "right" behavior and conduct when met with landmines so that the "living capital" of military units may be preserved. Here, deviation from standard operating procedures can invite sanctions from superiors, as well as death or mutilation which compromise the combat power.

Lastly, a critical biopolitical aspect of demining is the socio-economic and territorial reconstruction which involves efforts aimed at restoration and re-activation of land, labor, and mobility thereby [re]embedding spaces into state economic and administrative grids.

Humanitarian demining operations are often tied to governmental or international development plans. A cleared area can be [re]integrated into the state's administrative and economic circuits. It is not only about the safety of the population, but about allowing agriculture to resume and roads to reopen, thus [re]establishing state presence and market linkages in war-torn regions. Cleared land can be farmed and thus feed the population, and cleared roads and mobility corridors allow trade. All of these link to the well-being of the population—a set of "standard" biopolitical concerns.

The act of clearing mines, often performed by local deminers hired and trained by international NGOs or the government, also serves to incorporate local civilians and veterans into the project of rebuilding the nation—a form of governmentality, where people are mobilized to help secure and normalize their own environment under guidance of experts. In Foucault's terms, governmentality is the conduct of conduct, the way in which the state or governing bodies shape the field of possible actions of individuals. Demining fits here: authorities conduct risk assessments, issue policies and guidelines for land use post-clearance, and effectively govern the dangerous spaces back into the economic-administrative fold.

One can also see demining as biopolitical in the way it often treats landmines as a public health issue. Demining NGOs, national governments, and medical doctors working with mine victims sometimes frame like an "epidemic" that must be eradicated for the health of the social body.[539] The imagery is of cleansing the land of dangerous contaminants.

For example, campaigns for mine ban, like the ICBL, emphasize the injury rates, such as the statistic that "one person is injured or killed by a landmine every hour" globally, to rally support for action. In response, demining initiatives measure success in terms of "lives saved and limbs preserved". The biopolitical mission is clear: reduce the death rate, reduce the injury rate, enable the population to live free from this particular source of death and physical mutilation.

Demining as biopolitics is thus about the management and enabling of life in territory formerly dominated by death. It positions the state or humanitarian actors in a paternalistic role: protecting and nurturant, directly opposite to the role of those who laid the landmines. If the message of mine-layers is "if you enter here, you die," the message of demining operators is "we will make this place safe for you to live." In doing so, demining projects reinforce the idea of territory as a space that should be governed for the benefit of the living human population, restoring the social contract that war had ruptured.

11.2.2 Necropolitical Aspects of Demining

Conceptualizing demining as a practice of territorial recovery which operates, at least partly, with a necropolitical logic may seem contradictory. After all, demining is "meant to eliminate deathtraps" and enable [future] life. However, there are several ways in which necropolitical dynamics persist or even manifest within demining processes.

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[539] Donna Joss McIvor. 1997. "Anti-Personnel Landmine Injuries: A Global Epidemic." *Work* 8 (3): 299–304. https://doi.org/10.3233/WOR-1997-8310. ;
International Committee of the Red Cross. 2004. "Ending the Landmine Era: Achievements and Challenges." Geneva: ICRC. https://www.icrc.org/sites/default/files/external/doc/en/assets/files. P. 2. ;
Mark Rountree and Harris, Robert. 2000. "Countering the Global Landmine Epidemic Through Basic Scientific Research," *Journal of Mine Action* : Vol. 4 : Iss. 2 , Article 13. https://commons.lib.jmu.edu/cisr-journal/vol4/iss2/13. ;
William Gondring. 1996. "The Anti-Personnel Land Mine Epidemic: A Case Report and Review of the Literature." *Military Medicine* 161 (12): 760–62. https://doi.org/10.1093/milmed/161.12.760.

First, the necropolitical logic can be observed in who undertakes the dangerous labor of demining. Often, it is local deminers (sometimes also low-paid workers) who risk their lives and limbs to clear landmines; they face death or maiming as an occupational hazard. In some post-conflict contexts, former combatants or even impoverished groups/individuals take up demining jobs because there are limited job opportunities, effectively risking their lives to make a living. There is a stark hierarchy here: international staff and donors provide funding and oversight, while local workers do the most dangerous work.

This can be seen as a necropolitical arrangement in which certain lives are implicitly valued as more expendable. The deminer's life is put at risk in service of the "greater social good"—a sacrifice that may be quietly normalized. If a deminer is victimized during demining work, it is sometimes treated as part of the cost of the operation—a grim calculus of whose death is acceptable for the sake of saving others. This dynamic resonates with Mbembe's observation that under necropower, some people/bodies are consigned to death or risk of death as part of political calculations of security and survival of the broader population. In demining, the "living dead" might be the deminers themselves while they walk the minefields daily, hovering between life and the possibility of sudden death, in order to "grant life to others".

Second, decisions about clearance priorities can have a necropolitical facet. Not all mined areas get cleared immediately after war, and some might linger for years or decades. The choice of which areas to clear first and which not is often influenced by (geo)political considerations in addition to humanitarian ones.

For instance, areas that are strategically important for the state or that symbolize its sovereignty might be demined first, while peripheral or opposition-associated areas wait. In effect, communities in those left-behind areas continue to live under the shadow of death (mines) longer, which implies a valuation that their safety is less urgent. Such decisions echo the idea of sovereign power determining who gets to have safety (life) now and who must continue to endure deadly risk. If a government prioritizes clearance around key economic corridors but neglects remote villages where mine accidents periodically kill farmers, one can interpret that as a form of necropolitical neglect – those villagers' lives are not accorded the same political weight.

Another angle is the interplay of life and death in the act of demining itself. Demining sometimes involves destroying mines in controlled explosions. In a sense, it is a continuation of war's destructive acts, but framed as cleaning. The mine is an "agent of death", and to remove it, the demining team might have to "kill the mine" (literally blow it up). There is a peculiar metaphorical layer here: the deminers must, in a way, speak the language of necropolitics to undo it: they use explosives to neutralize explosives, they don heavy armor and accept that any moment could be their last, almost like soldiers going into battle against an enemy (the landmines). Some deminers describe their job as "fighting the last battle of the war." The war is effectively continued in a very narrow sense: a battle of man versus hidden weapon, life versus death. This notion of war persisting through demining is necropolitical in that the landscape remains a battleground where death still dictates behavior until the last landmine is gone.

Furthermore, there is the [geo]political theatre of demining. Clearing mines is often highly publicized—politicians cutting ribbons on newly cleared roads, and various dignitaries visiting demining sites in protective vests. These performances can mask ongoing contentions.

For instance, in a context where territories are contested, one side might conduct demining as a way to assert control or legitimacy, essentially communicating: "this land is ours, and we are making it safe for our people." The opposing side might view that as a threat or a trespass if the status of the territory is disputed. Thus demining can actually inflame tensions: if it is not coordinated, it may be seen as one side unilaterally changing the facts on the ground by removing [deadly] obstacles. In this way, demining can become implicated in the continuation of conflict, where the politics of who clears what reflect underlying power struggles. Who controls the process of returning the land to life? That question may provoke conflict and a contest over the terms of living and dying in that space.

Therefore, demining has a necropolitical dimension in terms of labor and risk distribution, in the selective prolongation of danger for some communities, and its connection to ongoing power struggles. This demonstrates that even processes aimed at reversing war's damage cannot fully escape the politics of death that war inscribed in territory. Instead, they negotiate with it—to reduce and eliminate it, but sometimes also inadvertently extend it.

11.3 Demining as a War-Reversing Process

Within the international humanitarian demining regime, international demining operators and administrators commonly understand demining as a deliberate attempt to reverse the effects of war.[540] In this sense, every landmine removed is one less deadly hazard, and one less footprint of war on the land.

Demining is an attempt to turn a minefield back into "normal ground"—to undo the transformation of a landscape into a deathscape. As such, it is a form of spatial and temporal rewind: it seeks to restore territory to its pre-war condition—or a safe condition, and to allow society to resume activities that war had interrupted. Several aspects underscore demining's war-reversing character and logic.

The first aspect is restoring safe mobility: War impedes movement: frontlines, trenches, and minefields block [care]free movement and travel. Demining reopens roads, paths, and bridges. This re-establishes connections between communities, enabling displaced people to return home and commerce to flow. Demining reverses one of war's fundamental disruptions: the tearing apart of spatial connectivity.

Second is "reclaiming land for living and livelihoods". Demining operators, particularly international humanitarian NGOs, often focus on agricultural lands and residential areas because until those such areas are made safe, the "war's impact continues". Clearing contaminated agricultural land in particular can be seen as "healing of the land" and addressing food security issues. The act of a farmer plowing a field that was once a minefield is deeply symbolic of war's reversal—turning killing grounds into life-sustaining grounds again.

The third is enabling reconstruction: In the aftermath of wars, rebuilding infrastructure—houses, schools, hospitals, power and water systems—is vital for peace process and socio-economic recovery. But demining is often a prerequisite to rebuilding. By clearing explosives, demining makes reconstruction projects possible. Thus, demining is the first stage in war reversal at the infrastructural level, without which the landscapes would remain physically shattered.

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[540] United Nations Mine Action Service. n.d. "5 Pillars of Mine Action". *UNMAS*. https://www.unmas.org/en/5-pillars-of-mine-action.

The fourth is the psychological and social repair: The "presence of war" is not just physical, it is also psychological. Demining helps alleviate fears of death and mutilation among war-affected populations. This "restoration of a sense of security" is a critical part of reversing the climate of war. A community's "trust in the environment" is repaired through the demining processes. And the fifth is the symbolic closure: demining operations can also be tied to peace agreements and serve as "confidence-building measures" between former belligerents.

The idea of demining as war-reversal is emphasized by demining practitioners. Accordingly, demining is framed as a peacemaking tool—"finishing the war" by undoing its remnants. This view, specific to international humanitarian NGOs and humanitarian demining, paints demining as inherently peaceful: a life-saving humanitarian enterprise that stands in opposition to the destruction of war. Clearing mines is akin to treating a wound in the land—a necessary care to heal the territory that war injured.

11.4 Demining as a War-Advancing Process

The form of demining that militaries perform at frontlines—counter-mining—is an overt example of demining entwined with war efforts. However, even humanitarian demining can emerge as such, despite the "peacebuilding visage" or stated humanitarian discourse.

During active combat, counter-mining is employed by militaries to further one side's advance on the battlefield. Military engineers use "breaching" methods to move through enemy minefields. Breaching methods may include manual clearance, demining machines or simply detonating minefields and landmines by various explosives. Such operations are essentially "demining work", but for purposes which are offensive, and result in further militarization of landscapes, and potential territorial conquest.

This form of demining is an integral part of warfare where territory is being cleared of landmines precisely so that it can be "fought over" more directly. However, instances where militaries clear their own mines and minefields can also be part of the war effort—such situations typically occur when mined land needs to be put to a different use. For instance, clearing one's minefields in order to reposition forces or plan for an offensive or counter-offensive.

Humanitarian demining, however, can become a part of the war effort through "less direct" ways. Counter-mining and humanitarian demining are both spatial [re]organization practices which re-engineer terrain, reassign risk, and restructure patterns of movement. The key difference between the two is not just the material-technical act of ordnance removal, but the [geo]political projects in which such acts are folded. Counter-mining openly clears ground for military manoeuvring and assault, but the timing and spatial selectivity of humanitarian demining can advance the wider war campaign of one social actor.

Perhaps the most overt instance of humanitarian demining advancing or facilitating war-fighting imperatives is the deployment of humanitarian demining teams amid active warfare. Here, humanitarian demining can act as a logistics multiplier and a sovereignty-performing spectacle.

By clearing mobility corridors—roads, bridges and railroads—humanitarian deminers simultaneously reopen space for civilian movement and military supply chains. The "humanitarian prioritization matrix" which international NGOs use to pick areas for clearance may thus obscure the fact that clearance of mobility corridors enhances the military operational tempo. Mined routes which previously impeded mobility can be folded back into military logistical calculus and thereby advance manoeuvring by reducing temporal, material and human costs.

Conducting humanitarian demining of productive agricultural areas amid active war can also facilitate the broader war effort. Restoring agriculture does not only restore life-support systems which feed local civilian populations. The same agricultural products feed the military personnel, and exportable agricultural commodities [can] generate revenue that supports the war economy, either by enabling procurement of weapons systems or enabling the state to pay salaries to its military. Here, the state's humanitarian responsibility towards farmers and civilian populations simultaneously legitimizes and materially funds its war effort and martial ambitions. Thus, demining agricultural areas does not only exist as a post-conflict rural reconstruction and development project. It can also manifest as a strategic technology which binds together the metabolic, territorial and financial infrastructures into one assemblage. Through the efforts to reinstate food sovereignty, humanitarian demining [re]grounds the military campaign in the very soil it purports to emancipate from violence.

Furthermore, humanitarian demining also furnishes a sovereignty-performing spectacle. By making land safe through mine removal, humanitarian deminers aid the state in materializing [territorial] control and projecting legitimacy. By accepting foreign humanitarian demining assistance, and outsourcing clearance to nominally neutral actors, the state (belligerent) can simultaneously conserve its own demining assets for combat tasks while adorning its campaign with a veneer of humanitarianism and care. Here, humanitarian deminers help one social actor fuse logistical advantage with ethical capital: the same gesture that secure tactical advantage also curates a narrative of responsible governance.

Therefore, demining, whether conducted by military engineers or NGOs under a humanitarian mandate, cannot be disentangled from the [geo]politics of war-making and territorial control. Military counter-mining accelerates offensive manoeuvre, but humanitarian demining, through its selective clearance of roads, railroads and breadbasket areas, likewise amplifies military operational tempo, replenishes war economies and stages state sovereignty for domestic and foreign audiences.

The technical act of ordnance removal thus becomes a hinge where metabolic, logistical and symbolic circuits converge: demining converts lethal ground into a platform for troop movement, commodity circulation and legitimacy-producing spectacle. Recognizing ways in which [humanitarian] demining aids broader war efforts shows that this process is not merely a post-conflict remediation effort, but a form of strategic technology: it can facilitate the very campaigns that perpetuate conflict, sustain war economies, and re-inscribe sovereign claims over contested terrain.

Chapter 12

Humanitarian Demining in BiH

12.1 Introduction

The demining operations in BiH commenced with the conclusion of the Bosnian War in December 1995. The operations have involved several national, international, commercial, and non-governmental agencies, which together cleared 6.52% of the country's total territory by 2024. An estimated 8.14% of BiH territory was mined during the conflict. In twenty-eight years of clearance efforts, 3.343 km^2 of contaminated land has been cleared, and 75,232 anti-personnel landmines, 8,813 anti-vehicle landmines, and 71,122 explosive remnants of war destroyed.[541] An estimated 826 km^2, or 1.61% of total territory is still mined.[542]

From the outset, demining in BiH was understood and organized as an integral tool of peacemaking and peacekeeping. More specifically, international demining actors understood it as a critical component of the DPA implementation, including its military and civilian aspects, with an emphasis on the "humanitarian assistance, refugee return, and economic revitalization and reconstruction".[543]

The demining of "all areas" was not only one of the requirements laid out in the text of DPA, but the first demining operations in BiH were conducted by NATO, the UN, and newly-formed international humanitarian demining organizations. Clearance operations conducted by local actors were run under tight supervision and coordination of NATO and UN to ensure alignment with the DPA provisions and "sustainable transition to peace".

The following section discusses the process of humanitarian demining in BiH while reflecting on its chronological progression. In so doing, this section demonstrates how demining in postwar BiH not only reflected postwar geopolitical realities, but wider norms and values of the liberal international humanitarian regime that emerged in the 1990s. In "forcing" former belligerents in BiH to meet the DPA imperatives—such as securing demilitarized zones, facilitating refugee

[541] Bosnia and Herzegovina Mine Action Center. n.d. "Minska Situacija." *BHMAC*. www.bhmac.org
[542] Ibid.
[543] United States Department of State. 1996. "Implementing the Dayton Peace Agreement: Demining." *DOS Bureau of Public Affairs*. June 21, 1996. https://1997-2001.state.gov/regions/eur/bosnia.

returns, and fostering institutional cooperation among former belligerents—the international community developed demining in BiH that became inextricably bound to broader political, diplomatic, and strategic considerations of the international liberal ordering practices. Postwar demining in BiH thus represents an incumbent of the international liberal humanitarian demining regime.

12.2 Demining Timeline: 1996-2024

12.2.1 The Initiation of Demining Efforts: 1996-1997

On 20 December 1995, the Implementation Force (IFOR), led by the North Atlantic Treaty Organization (NATO), arrived in BiH to implement military aspects of the Dayton Peace Accords (DPA). By 14 December 1995, when the DPA effectively ended the conflict, the frontlines dividing the ARBiH, the VRS, and the HVO, including the "Bihać pocket", were saturated with landmines and UXO. Recognizing the extent to which landmines could hinder the implementation and sustainability of peace, the DPA required that all former belligerents, under the supervision of IFOR, mark and clear all existing minefields within thirty days "after the Transfer of Authority or as determined by the IFOR Commander".[544]

The US military in particular, saw landmines as "the greatest threat to force protection and the success of the mission".[545] The DPA provisions detailed the following requirements for all factions:

1. "Remove, dismantle or destroy all mines, unexploded ordnance, explosive devices, demolitions, and barbed or razor wire from the Agreed Cease-Fire Zone of Separation or other areas from which their Forces are withdrawn", and "remove, dismantle or destroy all mines, unexploded ordnance, explosive devices and demolitions as required by the IFOR Commander".[546]

[544] "General Framework Agreement for Peace in Bosnia and Herzegovina". December 14, 1995, Annex 1A, Article IV, 2d. https://www.osce.org/files/f/documents/e/0/126173.pdf
[545] Bolton. 2010. *Foreign Aid and Landmine Clearance*, 101.
[546] "General Framework Agreement for Peace in Bosnia and Herzegovina". December 14, 1995, Annex 1A, Article IV, 2d. https://www.osce.org/files/f/documents/e/0/126173.pdf

2. “Mark all known mine emplacements, unexploded ordnance, explosive devices and demolitions within Bosnia and Herzegovina”.[547]
3. Provide information detailing “positions and descriptions of all mines, unexploded ordnance, explosive devices”, and “positions and descriptions of [...] minefields”.[548]



Figure 12.1. *IFOR soldiers performing “military mine-lifting” at a road leading from Tuzla to central Bosnia on November 23, 1995 after the Dayton Peace Agreement was signed.*[549]

[547] “General Framework Agreement for Peace in Bosnia and Herzegovina”. December 14, 1995, Annex 1A, Article IV, 2d. https://www.osce.org/files/f/documents/e/0/126173.pdf.
[548] Ibid, Article V, 2e and 3c.
[549] “UN forces de-mine a road in Bosnia”. Photo by David Brauchli, Getty Images.

It remains unclear why the DPA demanded that all minefields be cleared within thirty days. It is plausible to assume that the extent of contamination was severely underestimated at the time the accords were negotiated, or that negotiators overestimated the extent and accuracy to which minefields were mapped during and after mine-laying operations, or both. It is also unclear when it became evident that the thirty-day deadline was a preposterous demand.

The early stages of implementation of the DPA's demining requirements revealed the lack of accurate minefield maps and heavy contamination, estimated at 8.2% of the total territory, roughly corresponding to 4,200 square kilometers.[550] Grujic notes that the initial information collected by IFOR reported 16.500 minefields.[551] By the end of its mandate in December 1996, the IFOR had retrieved 18.600 minefield maps, which remains the largest number of minefield maps a single organization has collected in the country.[552] It is estimated that between 60% to 70% of minefield maps and records were, in fact, handed to IFOR and SFOR by the ARBiH, HVO, and VRS in the early post-war years, and that about 25% of such records were partially incorrect.[553] The remaining 30% or up to 40% of minefield maps and records remain unaccounted for.[554]

Not long after the DPA implementation and demining efforts were initiated, the international community, in collaboration with local government structures, began forming various demining programs across the country. The first formal institution, the Bosnian Mine Protection and Removal Agency (MPRA), was formed in early 1996 with a mandate to oversee the clearance efforts but disbanded and replaced shortly after becoming subject to a political contestation.[555] Reflecting the realities on the ground, and the political separation along ethnonational lines laid out in the DPA, the BiH government formed a three-member Demining Commission. Each Commissioner came to represent one of the country's "Constituent Peoples"—Bosniaks, Croats and Serbs. The Demining Commission became, in name, the country's highest mine action

[550] Bolton. 2010. *Foreign Aid and Landmine Clearance*, 100.
[551] Zoran Grujic. 2010. "Bosnia and Herzegovina Demining 15 Years Later." *The Journal of ERW and Mine Action*, Special Report 14 (3): 13. https://commons.lib.jmu. P. 40.
[552] Branislav Krljaš (Bosnia and Herzegovina Mine Actions Center, Internal Quality Control Department), interviewed by author, January 19, 2024.
[553] Lisica. 2003. "Bosnia and Herzegovina Mine Problem", 14.
[554] Ibid. ; Person AF2-MC, interviewed by author, May 9, 2024. ; Person AF3-E, interviewed by author, May 13, 2024.
[555] Bolton. 2010. *Foreign Aid and Landmine Clearance*, 100.

authority. At the same time, the state-level government established a Board of Donors, composed of "major international participants in the mine action program" to advise the Commission on clearance issues.[556] At the time of its formation, the Board was "co-chaired by the Senior Military Advisor to the Office of the High Representative (OHR) and the Deputy Special Representative of the UN Secretary-General, and has representation from OHR, the EU, the Stabilization Force (SFOR), the UN, the World Bank, and the embassies of the United States and Norway".[557]

To facilitate and streamline the demining efforts, the United Nations Mission in Bosnia and Herzegovina (UNMBIH), established on 21 December 1995, set up the UN Mine Action Center (UNMAC) in May 1996. The first funds for UNMAC, $8.5 million, were provided by the U.S. government to help launch and implement its initial program.[558] The UNMAC demining operations began a couple months later, in August 1996, and ran through July 1998.[559] Grujic notes that RONCO, an American contracting company, was "awarded a bid to equip, staff, train and start demining activities".[560] The internationally staffed UNMAC advised and assisted the Demining Commission, and its key mission was to "help build local structures and operational capacities for managing the demining process", but its first task was to assess the problem.[561] As such, the UNMAC was envisioned as a temporary coordinating and capacity-building body whose mandate was to be ultimately transferred to the national structures. Other international organizations initiated their demining activities in the first half of 1996, around the time the UN established the UNMAC.

The Norwegian People's Aid (NPA) began preparing for the demining program in October 1995 by giving mine action training to Bosnian refugees in Norway.[562] The organization, supported by the Norwegian Ministry of Foreign Affairs (MFA), deployed to the Tuzla area in 1996 to begin

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[556] United States Department of State. 1998. "Hidden Killers 1998: The Global Landmine Crisis - Chapter III: Mine-Affected Countries." *DOS.* https://1997-2001.state.gov/global/arms/rpt_9809_demine.
[557] Ibid.
[558] Ibid.
[559] Grujic. 2010. "Bosnia and Herzegovina Demining", 41.
[560] Ibid.
[561] Ibid. ; United Nations Mission in Bosnia Herzegovina. n.d. " Bosnia and Herzegovina - UNMIBH - Mandate." *UNMIBH*. https://peacekeeping.un.org/fr/mission/past/unmibh/mandate.html.
[562] Bolton. 2010. *Foreign Aid and Landmine Clearance*, 106.

demining "in support of the shelter and reconstruction programs".[563] As the NPA's demining engagement commenced in northeast BiH, the UNMAC, UNICEF, and the International Committee of the Red Cross (ICRC), launched joint mine risk education programs across the country.[564]

The Halo Trust likely deployed to BiH sometime in 1996 or 1997 to assist with the mine action program. However, no publicly-available physical or paper trails exist to confirm the organization's involvement. My attempts to retrieve any such evidence directly from The Halo Trust have been unsuccessful. However, several of my interlocutors who have been involved in the demining operations in BiH since 1996 have confirmed either working for or collaborating with The Halo Trust's demining mission in BiH in the immediate post-war years.[565] Additionally, Flynn references the Halo Trust demining mission in Bosnia as being operative for several years.[566]



Figure 12.2. *Deminers from Norwegian People's Aid clearing a bombed-out building in Grbavica, a neighbourhood in Sarajevo in 1997.*[567]

[563] Bolton, 2010. *Foreign Aid and Landmine Clearance*, 106.
[564] Grujic. 2010. "Bosnia and Herzegovina Demining", 41.
[565] Person A, interviewed by author, Spring 2024; Person B, interviewed by author, Spring 2024; Person C, interviewed by author, Spring 2024.
[566] Michael Flynn. 1999. "Political Minefield." *Bulletin of the Atomic Scientists* 55 (2): 49–53. https://doi.org/10.1080/00963402.1999.11460317. P. 52.
[567] Ingebjørg Sorenes. 2022. "From war victim to aid worker". *NPA*, May 15, 2022. https://www.npaid.org/mine-action-and-disarmament/news/from-war-victim-to-aid-worker.

The earliest clearance efforts took the form of ad hoc and emergency demining, focusing on areas "vital to survival and basic needs", such as key infrastructure: high traffic roads, power plants, and urban or densely-populated areas. At this point, NATO-led IFOR troops were charged "only with military demining of the areas of the country in which it needed to operate, such as roads, airfields and military bases", while the "former warring factions were charged with clearing landmines from the rest of the country".[568] Organizing the former combatants of ARBiH, VRS and HVO into a unified demining force proved difficult, however, because former belligerents were reluctant to work together. For this reason, three separate demining training camps were set up. One in Travnik for the ARBiH, one in Banjaluka for the VRS, and one in Mostar for the HVO.[569]

It is unclear who exactly provided training; two interlocutors who were ARBiH combatants and EOD technicians turned deminers suggest it was simply the "Americans" who trained ARBiH, VRS and HVO soldiers in practices of military mine-lifting and humanitarian demining.[570] Because of the timing of demining training, it is likely that IFOR led the initiative. A report by the U.S. Department of State (DOS), however, suggests that the U.S. engaged directly in training "250 Bosnian deminers".[571] The earliest BiH government-led clearance operations were thus not a concerted effort but reflected a clear split along ethnonational lines. Branislav Krljaš, a former combatant of VRS and EOD technician turned deminer summarized the atmosphere of mistrust aptly: "We had to pick up our first checks for demining work in the federal part of Sarajevo; when we arrived, my men [former VRS combatants] were terrified—they wouldn't leave the van".[572] Similarly, DOS notes that "little progress was made in the initial months because of winter weather, lack of funding and training, and an overall lack of motivation on the part of the factions' armed forces".[573]

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[568] United States Department of State. 1998. "Hidden Killers 1998: The Global Landmine Crisis - Chapter III: Mine-Affected Countries." https://1997-2001.state.gov/global/arms/rpt_9809_demine_ch3i.html.
[569] Person AF2-MC, interviewed by author, May 9, 2024.
[570] Person AF2-MC, interviewed by author, May 9, 2024; Person AF3-E, interviewed by author, May 13 2024.
[571] United States Department of State. 1998. "Hidden Killers 1998: The Global Landmine Crisis - Chapter III: Mine-Affected Countries." https://1997-2001.state.gov/global/arms/rpt_9809_demine_ch3i.html.
[572] Branislav Krljaš (Bosnia and Herzegovina Mine Actions Center, Internal Quality Control Department), interviewed by author, January 19, 2024.
[573] United States Department of State. 1998. "Hidden Killers 1998: The Global Landmine Crisis - Chapter III: Mine-Affected Countries." https://1997-2001.state.gov/global/arms/rpt_9809_demine_ch3i.html.

In December 1996, IFOR's duties were handed over to the NATO-led multinational Stabilization Force (SFOR) which took over its demining responsibilities, and supervised 450 local soldiers who were conducting demining operations. The next year, 1997, working through the entity governments, the World Bank began financing mine clearance operations. Mansfield notes that this was the first time the World Bank had funded mine clearance operations.[574] The majority of funds of over $10 million went to RONCO and MineTech, two international companies that established subcontracts and joint venture arrangements with local commercial demining companies. The substantial funding package led to sudden formation of 40 local demining companies.[575]. DOS notes that funds for RONCO were provided by the U.S. government, in the amount of $15 million, and that RONCO's demining program concluded in 1997.[576] DOS further notes that only five private companies employed deminers: RONCO, MineTech, ABC, DSL, and BA TEC, and two NGOs: the NPA and HELP.[577]

The first two years of clearance showed limited results, despite substantial foreign funding, international assistance, and the DPA's demining imperative. Recognizing the obstacles posed by administrative complexities, and the lack of cohesion and centralized demining authority, the SFOR warned it would take at least three decades to demine at the speed of clearance used in the first two post-war years.[578] Grujic however, suggests one part of the mine action efforts bore notable results—the mine risk education.[579] Referencing the joint program of UNMAC, ICRC and UNICEF, Grujic notes that the "initial programs' results were significant", and that the "rate of more than 50 mine accidents per month in 1995 was reduced to fewer than 30 in 1998".[580] He further notes that "BiH's problem was that all of the available procedures at the time had been developed for sandy areas such as Afghanistan and the Persian Gulf. In response to its unique situation, BiH modified procedures, shifting from a "retrace your footsteps" to a seven-step

[574] Ian Mansfield. 2017."The Early Years of Demining in Bosnia and Herzegovina: Transfer to National Ownership," *The Journal of Conventional Weapons Destruction*: Vol. 21 : Iss. 1 , Article 6. https://commons.lib.jmu.edu/cisr-journal/vol21/iss1/6 P. 21.
[575] Ibid.
[576] United States Department of State. 1998. "Hidden Killers 1998: The Global Landmine Crisis - Chapter III: Mine-Affected Countries." https://1997-2001.state.gov/global/arms/rpt_9809_demine_ch3i.html.
[577] Ibid.
[578] Ibid.
[579] Grujic. 2010. "Bosnia and Herzegovina Demining", 41.
[580] Ibid.

procedure, with the primary aim to avoid entering a dangerous zone. This procedure was later used worldwide".[581]



Figure 12.3. *A UN and U.S.-funded comics booklet for mine-awareness campaigns targeted at children in BiH in 1997.*[582]

By the end of 1997, the UNMAC had five field offices in Tuzla, Banja Luka, Bihac, Mostar and Pale, employed 40 local staff members, and had "four fully equipped teams capable of demining approximately six square kilometers per year".[583] The planned [and logical] next step was to speed up the formation of national structures to take over UNMAC's missions and responsibilities, and begin state-level coordination of demining operations across the country.

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[581] Grujic. 2010. "Bosnia and Herzegovina Demining", 41. ;
Geneva International Centre for Humanitarian Demining. 2006. "Mid-term Review of the UNDP Integrated Mine Action Programme (IMAP) Final Report." July, 2006. Geneva: GICHD. https://www.gichd.org/fileadmin/uploads/gichd/Media/GICHD-resources/rec-documents/Evaluation-Bosnia-UNDP-IMAPR-GICHD-July2006.pdf. P. iii.
[582] "Comics for Children in Bosnia." Photograph by Viviane Moos for CORBIS. Source: Getty Images.
[583] Grujic. 2010. "Bosnia and Herzegovina Demining", 41.

12.2.2 Transfer to the National Ownership: 1998-2001

On 31 July 1998, the UNMAC mandate and operations were formally transferred to the BiH authorities.[584] The mandate, however, was not transferred to a centralized institution. Instead, a tripartite structure was set up: a state-level BHMAC, and two entity-level MACs: the FBiH MAC, and the RS MAC.

With the transfer of demining mandate ownership, the number of local staff increased. International staffers of the UNMAC, however, did not leave *en masse*. Grujic claims that twenty international demining advisors remained working for the hybrid tripartite structure, while a GICHD report argues that over forty international advisors were active in 1998.[585]

The transfer of ownership also required structural changes regarding funding and demining operations, as the newly-formed national and entity MACs were no longer run directly by the UN. The funding process for demining projects was mostly conducted through the International Trust Fund for Demining and Mine Victim Assistance (ITF), and the United Nations Development Programme (UNDP). The GICHD notes that the UN remained involved in demining BiH through UNDP by establishing a Mine Action Programme (MAP), subsequently renamed to Integrated MAP (IMAP) to "provide continued support to the development of national capacities for planning and coordinating mine action".[586]

The demining teams that the new MACs inherited from the UNMAC, were disbanded and reassigned to survey and quality control tasks.[587] The deminers who wished to remain in the demining roles, transferred to NGO demining organizations, such as Pale's Stop Mines, Sarajevo's BH Demining, Mostar's Pro Vita.[588]

Two additional regional offices, one in Travnik and one in Sarajevo, with an objective of "improve territorial coverage". At this stage, more humanitarian demining organizations were

[584] Grujic. 2010. "Bosnia and Herzegovina Demining", 42.
[585] Ibid.
[586] Geneva International Centre for Humanitarian Demining. 2006. "Mid-term Review of the UNDP Integrated Mine Action Programme (IMAP) Final Report." July, 2006. Geneva: GICHD. https://www.gichd.org/fileadmin/uploads/gichd/Media/GICHD-resources/rec-documents/Evaluation-Bosnia-UNDP-IMAPR-GICHD-July2006.pdf. P. 1.
[587] Ibid.
[588] Grujic. 2010. "Bosnia and Herzegovina Demining", 42.

accredited, "demining training was improved", and the first National Mine Action Standards were issued.[589] The tripartite structure, however, lacked "strong coordination" which decreased the efficiency of demining operations across the country.

DOS notes that in and by 1998, demining operations across the country were exclusively financed by foreign governments and organizations.[590] The World Bank provided $67 million for the "Emergency Landmines Clearance Project" which initiated demining operations in BiH.[591] Other donors, including the "EU, the U.S, Italy, and the UN financed the project".[592] The EU also "contributed $6.7 million to support the capabilities of the civil protection sector" and "granted $720,000 for several demining activities, including training, clearance, and UXO disposal".[593] Concurrently, the SFOR also funded mine clearance projects, and built "information centers, targeted at refugees throughout Bosnia-Herzegovina".[594]

My interlocutors from BiH, who were active in the demining sector since 1996, point out that "large funds" were provided for demining operations from several different sources in the first six years of clearance, and that "demining was an attractive, high-paying job", but suggest that "many funds were embezzled or misappropriated in others ways".[595] The GICHD similarly notes how "salaries for deminers and related personnel were set at remarkably high levels relative to local wages, significantly increasing clearance costs and fuelling corruption".[596] A senior demining expert further noted the situation with the misappropriation of demining funds was quite dire, and that he informed an unnamed U.S. official about it on one occasion, saying "You cannot give us as much money as we can steal".[597] Bolton also notes that the "commercial

[589] Ministry of Civil Affairs of Bosnia and Herzegovina, and Demining Commission of Bosnia and Herzegovina. 2008. "REQUEST For an extension of the deadline for completing the destruction of anti-personnel mines in mined areas in accordance with Article 5, paragraph 1." BHMAC, June 2008. P.4
[590] United States Department of State. 1998. "Hidden Killers 1998: The Global Landmine Crisis - Chapter III: Mine-Affected Countries." https://1997-2001.state.gov/global/arms/rpt_9809_demine_ch3i.html.
[591] Ibid.
[592] Ibid.
[593] Ibid.
[594] Ibid.
[595] Person A, interviewed by author, Spring 2024; Person B, interviewed by author, Spring 2024.
[596] Geneva International Centre for Humanitarian Demining (GICHD). 2006. "Mid-term Review of the UNDP Integrated Mine Action Programme (IMAP) Final Report." https://www.gichd.org/fileadmin/uploads/gichd/Media/GICHD-resources/rec-documents/Evaluation-Bosnia-UNDP-IMAPR-GICHD-July2006.pdf. July, 2006. GICHD: Geneva. P. 9.
[597] Person E, interviewed by author, Winter 2024.

tendering system" used for funding demining operations was "captured by a criminalized ethno-nationalist elite".[598] This situation had possibly become somewhat of a public secret, as research conducted by Henig indicates that even residents of rural communities occasionally referenced "all the stolen demining money".[599]

Between 1998 and 2001, the demining operation continued to be heavily dependent on funds provided by the key international donors—the US and the EU—and international demining NGOs who were additionally funded by individual governments—Switzerland, Norway, Germany, and Canada.[600] The "donor body" of the BHMAC and entity MACs, along with SFOR and UN advisors continued close supervision and coordination of demining operations, despite the establishment of local structures; "close supervision" was considered necessary to ensure compliance with the provisions of the DPA.

However, ambitions of the "international supervisors" remained as such to ensure the establishment of functional, sustainable and fully nationally-owned demining operations under one state-level institution; the legislative and institutional developments were consistently "nudged" in this direction between 1998 and 2001.[601]

Importantly, between 2000 and 2001, the three MACs initiated the first systematic landmines impact survey to assess and determine what communities were facing the most significant socio-economic impacts of landmine presence. The purpose of the survey was not only to map and determine locations of minefields, but to create a matrix or formula that could be used to determine "demining priorities".

12.2.3 The First Law on Demining: 2002

The process of transferring the responsibility and authority for demining operations to the national structures had culminated in 2002, when the PA BiH adopted the "Law of Demining in Bosnia and Herzegovina". The law established and clarified the precise organizational structure

[598] Bolton. 2010. *Foreign Aid and Landmine Clearance*, 9.
[599] Henig. 2012. "Iron in the Soil".
[600] Branislav Krljaš (Bosnia and Herzegovina Mine Actions Center, Internal Quality Control Department), interviewed by author, January 19, 2024.
[601] Branislav Krljaš (Bosnia and Herzegovina Mine Actions Center, Internal Quality Control Department), interviewed by author, January 19, 2024.

of the demining, including roles, ownership and responsibilities.[602] The Demining Law also solidified the institutional framework for demining, effectively unifying the two entity-level MACs under BHMAC on the state level.[603]

The law entrenched the Demining Commission as the "central demining body" in the country where three Commissioners represent each of the Constituent peoples. The law made the Commission part of the BiH Ministry of Civil Affairs (BiH MCP), stipulating that the Commission must report to the BiH MCP, however, its members were to be appointed by and from the Council of Ministers.[604]

The law designated BHMAC as the "advisory body" to the Demining Commission. More precisely, the law tasked BHMAC with coordinating all aspects of demining operations across the country—accreditation process, training, central record keeping, and quality control/inspection; the Demining Commission was tasked with approving NMAS, representing BiH at international demining conferences, improving and facilitating demining collaboration between FBiH and RS, and recommending candidates for three posts at BHMAC—director, assistant director and finance director.[605] However, the Commission was not assigned significant executive powers with regards to demining operations, and the Council of Ministers retained most executive powers over demining.

The entity-governments retained authority over approving demining priorities in coordination with the "donor body" consisting primarily of the UNDP, and the Office of the High Representative (OHR), and other unspecified members.[606] The organizational structure, in other words, was made complex—either as a result of inherent structural complexities of the BiH Constitution and the DPA, or as a direct result of international advisorship that, perhaps, saw a multi-level structure with intertwined/complicated decision-making process as a factor that could make the institutional framework for demining collapse-resistant. Regardless of the "complex

[602] "Zakon o Deminiranju Bosne i Hercegovine". Službeni glasnik BiH 5/02, February 12, 2002. https://msb.gov.ba/dokumenti/5ZAKON_O_DEMINIRANJU_U_BOSNI_I_HERCEGOVINI.pdf
[603] Ibid, Article 8. P. 2.
[604] Ibid, Article 4. P. 1.
[605] Ibid, Article 8. P. 2.
[606] Ibid.

institutional framework" that the Demining Law created, the law, more importantly, marked a *de facto* handover of demining leadership and responsibilities to BiH authorities.

As the "demining priority setting" remained in the hands of entity governments and international bodies, decisions on where, what and when to demine reflected, in broad strokes, the requirements and provision of the DPA. More specifically, the "focus" of demining operations remained centered on areas deemed vital to the "peace process": urban and densely populated areas, areas marked with significant movement of people, and areas of "high(er) volume" of IDP returns.

The BHMAC then moved to create three distinct categories of demining priorities, and classified all SHAs and CHAs according to their respective "risk levels" which were calculated based on the "community vulnerability level". The categories were named I, II, III and a "special" category 0 (zero). The latter, "category zero" referred to SHAs and/or CHAs which were located in and around suspected mass graves. This category took primacy over all other categories and areas; if a mass grave was suspected to be located at the same places as a SHA or a CHA, demining operations would begin immediately and the entire operation coordinated with legal institutions (typically the prosecutor's office) and forensics teams.[607] As for the three "regular" categories, the BHMAC devised a formula to calculate the "level of vulnerability" which combined the population size, number of resident under "direct risk", the size of SHA/CHA within the administrative boundaries of a specific community, and the size of the administrative area of the community:

$$I = \frac{\sqrt{ukupan\ broj\ stanovnika} \times (broj\ stanovnika\ u\ direktnom\ riziku + 1) \times veličina\ sumnjivih\ površina}{površina\ zajednice}$$

Figure 12.4. *The formula used by the BHMAC to calculate levels of vulnerability.*[608]

[607] Branislav Krljaš (Bosnia and Herzegovina Mine Actions Center, Internal Quality Control Department), interviewed by author, January 19, 2024.
[608] Demining Commission and Bosnia and Herzegovina Mine Action Center. 2024. "STANDARDNE OPERATIVNE PROCEDURE CENTRA ZA UKLANJANJE MINA U BOSNI I HERCEGOVINI ZA PROTUMINSKE AKTIVNOSTI (SOP BHMAC-a ZA PMA)." April, 2024. P. 10.

With the formula established in alignment with the DPA provisions and demining priorities of the donor body and entity governments, the BHMAC then created a table detailing "vulnerability levels": I=101+ meaning "high", I=20-100 meaning "medium", and I=0-20 meaning "low".

I	Nivo ugroženosti
101+	VISOK
20-100	SREDNJE
0-20	NIZAK

Figure 12.5. *The three levels of vulnerability calculated by BHMAC.*[609]

The vulnerability levels were then used to calculate "risk levels" of SHAs and CHAs. In addition to "vulnerability levels", factors that determined the "risk levels" were "unknown minefields" or SHAs, "known minefields" or CHAs, "direct evidence of contamination", "indirect evidence of contamination", and the "presence of PROM landmine".

Therefore, **category I** priority includes places with populations at "high risk" with known minefields (CHAs), direct evidence of contamination, and presence of PROM, and places with populations at "medium risk" but with known minefields containing PROM mines. **Category II** includes places with populations at "high risk" with unknown minefields (SHAs) and indirect evidence of contamination, places with populations at "medium risk" and "low risk" with known minefields (CHAs) and direct evidence of contamination, and places with populations at "low risk" with known minefields containing PROM mines. The lowest priority, **category III**, includes places with populations at "medium risk" and "low risk" with unknown minefields (SHAs) and indirect proof of contamination. In effect, the BHMAC's prioritization matrix was

[609] Demining Commission and Bosnia and Herzegovina Mine Action Center. 2024. "STANDARDNE OPERATIVNE PROCEDURE CENTRA ZA UKLANJANJE MINA U BOSNI I HERCEGOVINI ZA PROTUMINSKE AKTIVNOSTI (SOP BHMAC-a ZA PMA)." April, 2024. P. 10.

aimed at facilitating the implementation of the DPA: mined (potential) war crimes evidence were the utmost priority for demining operations, followed by highly populated and high traffic areas, followed by agricultural fields and areas with smaller populations, followed by (small) villages, forests and mountains.

ODREĐIVANJE NIVOA RIZIČNOSTI MSP-a			
Vjerovatnost postojanja dokaza miniranosti → / Nivo ugroženosti zajednice ↓	Nepoznata minska polja SAMO INDIREKTNI DOKAZI	Poznata minska polja DIREKTNI I INDIREKTNI DOKAZI	Poznata minska polja DIREKTNI I POSTOJANJE MINE PROM
VISOKI	SREDNJI	VISOKI	VISOKI
SREDNJI	NISKI	SREDNJI	VISOKI
NISKI	NISKI	SREDNJI	SREDNJI

Figure 12.5. *The three levels of risk calculated by BHMAC.*[610]

12.2.4 Technological and Institutional Progress: 2002-2008

With the Demining Law in force, and demining roles defined, the demining landscape in BiH entered a phase marked by a focus on technological and institutional improvement, and efforts to flesh out a national mine action strategy (NMAS). The landmine impact survey (LIS) that had been launched by BHMAC between 2000 and 2001 was completed in 2003; its results were critical to setting demining priorities, operational plans, and a national demining strategy.

Before the survey was complete, however, the Demining Commission, possibly under pressure of the MCP, the Council of Ministers, the "donor body", and commitments to the Mine Ban Treaty, approved and published BiH's first demining strategy for 2002-2009 period.[611] Upon the completion of the survey a year later, the BHMAC conducted an evaluation of the strategy,

[610] Demining Commission and Bosnia and Herzegovina Mine Action Center. 2024. "STANDARDNE OPERATIVNE PROCEDURE CENTRA ZA UKLANJANJE MINA U BOSNI I HERCEGOVINI ZA PROTUMINSKE AKTIVNOSTI (SOP BHMAC-a ZA PMA)." April, 2024. P. 11.
[611] Bosnia and Herzegovina Council of Ministers. 2008. "BOSNIA AND HERZEGOVINA MINE ACTION STRATEGY (2009-2019)." April 24, 2008. https://www.gichd.org/fileadmin/uploads. P. 3

concluding, in late 2004, that it was "too optimistic and unrealistic", as the "size and complexity of the problem greatly exceeded available funding, technology and general support to program implementation".[612]

The strategy thus needed a revision, and BHMAC used the results of the survey to draft an updated strategy for Commission's approval; the revised version covered the period between 2005 and 2009, and introduced and envisioned a "country free of mine impact by 2009".[613] The wording of the NMAS was misleading, however, and the notion of "landmine-impact free" was not meant to communicate that demining operators would and should complete removal of all landmines in BiH. Rather, the actual operational plan called for complete clearance of all minefields that were classified as category I, and "permanent marking of the second and third category locations".[614]

To facilitate the implementation of the revised strategy on the ground, BHMAC worked with the demining operators to improve demining methodologies and capacities between 2002 and 2008. The first improvement was the integration of MDDs and mechanical demining assets which began in 2002. Specialized dog teams, provided by NPA's Mine Detection Dog Center were deployed by local and international operators for clearance work, as well as mechanical clearing machines to cut vegetation and detonate mines in "flat" areas.[615]

Importantly, BHMAC began developing a comprehensive GIS database of minefield records and clearance data in this period. Legislative amendments and updated standards during 2005-2007 improved "quality control and safety" for deminers, although their distinct "work status" was not recognized. International support continued, but there was a gradual shift toward local implementation: most deminers by this time were locals working in NGOs, civil protection units, or military demining teams. [616]

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[612] Bosnia and Herzegovina Council of Ministers. 2008. "BOSNIA AND HERZEGOVINA MINE ACTION STRATEGY (2009-2019)." April 24, 2008. https://www.gichd.org/fileadmin/upload. P. 3.
[613] Ibid.
[614] Ibid. 4.
[615] Selma Antić (Norwegian People's Aid, EORE and Community Liaison), interviewed by author, May 10, 2024.
[616] Branislav Krljaš (Bosnia and Herzegovina Mine Actions Center, Internal Quality Control Department), interviewed by author, January 19, 2024.

Clearance output steadily rose by this time. From 1996 through 2007, accredited organizations had cleared about 85,5 km² of land, destroying 46,487 AP mines, 7,077 AV mines, and nearly 40,000 UXO in the process.[617] BHMAC submitted reports to the Demining Commission and the Ministry of Civil Affairs indicating that by 2007, 78% of cleared land was in the "category I".[618] Moreover, BHMAC and other demining operators continued mine risk education: nearly 250,000 people received risk education from 2003 to 2007, and over 35,000 warning signs were posted around SHAs between 1998 and 2007.[619] Local authorities, primarily BHMAC and the Ministry of Civil Affairs argued that these efforts specifically had reduced civilian accidents by 2007.

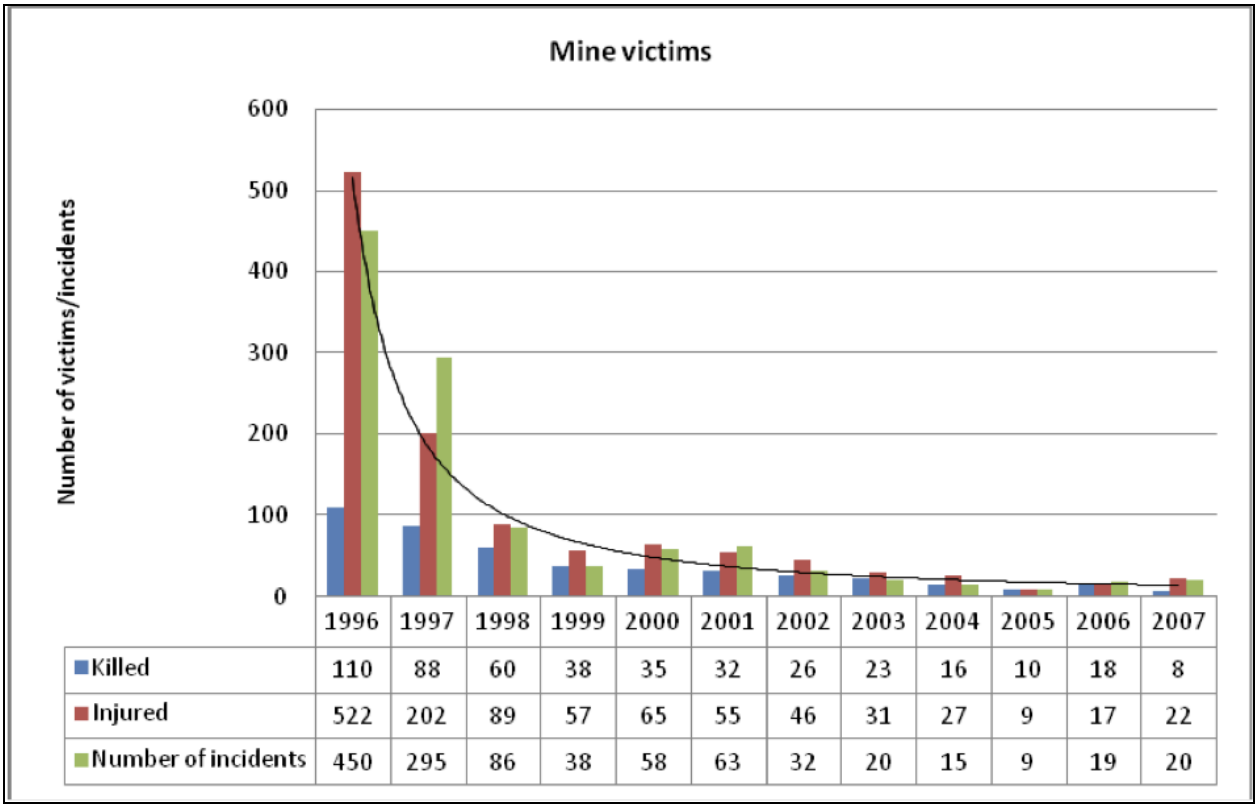
In 1999, BiH had committed under the Mine Ban Treaty to clear all AP landmines by 2009, ten years after entry into force. In 2008, it became clear to the BHMAC that the goal would not be met, so in 2008, BiH's Ministry of Civil Affairs submitted an extension request.[620] The request was approved the same year, and laid out a revised plan to achieve a "mine-free status" by 2019.

The extension request emphasized "new efficiency measures", the adoption of some forms of the "Land Release" methodology. Land release involves using "better survey techniques" to cancel or confirm suspected hazardous areas, rather than surveying and clearing every square meter as in the traditional demining. In practice, this meant more rigorous NTS and targeted TS to release low-risk land. For instance, a new general assessment in 2007 reduced the SHAs from 2,000 km^2 to 1,755 by canceling areas "unlikely" to contain mines.

The partial adoption of "Land Release" in NMAS between 2008 and 2009 allowed demining teams to focus on CHAs and improve cost-effectiveness. In its extension request, BiH also noted the major bottleneck: insufficient funding.[621] The plan projected a need of hundreds of millions of KM (Bosnian marks) through 2019, more domestic financing, and continued donor support.[622]

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[617] Ministry of Civil Affairs of Bosnia and Herzegovina, and Demining Commission of Bosnia and Herzegovina. 2008. "REQUEST For an extension of the deadline for completing the destruction of anti-personnel mines in mined areas in accordance with Article 5, paragraph 1." BHMAC, June 2008. P.5.
[618] Ibid.
[619] Ibid.
[620] Ibid.
[621] Ibid, 7.
[622] Ibid, 30.



	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Killed	110	88	60	38	35	32	26	23	16	10	18	8
Injured	522	202	89	57	65	55	46	31	27	9	17	22
Number of incidents	450	295	86	38	58	63	32	20	15	9	19	20

Figure 12.6. *A graph produced by the Ministry of Civil Affairs and BHMAC showing a decrease in mine accidents from 1996 to 2007.*[623]

12.2.5 National Mine Action Revisions: 2009-2013

Following the extension, BiH implemented a NMAS for 2009-2019 that aimed to meet the new deadline. Efforts in between 2009 and 2013 focused on accelerating land release and clearance in "high-priority" areas (category I).

The structure of BHMAC and the Demining Battalion of AF BiH was further streamlined in 2010. Working with the BHMAC and Demining Commission, the PA BiH drafted a new demining legislation, as amendments to the Demining Law were debated between 2009-2012 to improve funding mechanisms.[624] My interlocutor from BHMAC, notes that efforts to amend the

[623] Ministry of Civil Affairs of Bosnia and Herzegovina, and Demining Commission of Bosnia and Herzegovina. 2008. "REQUEST For an extension of the deadline for completing the destruction of anti-personnel mines in mined areas in accordance with Article 5, paragraph 1." BHMAC, June 2008. P.17.

[624] Person Person BMAC5-E, interviewed by author, May 18 2024. ; Bosna i Hercegovina Ministarstvo Civilnih Poslova. 2009. "Prijedlog - Zakon o Protuminskom Djelovanju u Bosni i Hercegovini." May, 2009.

2002 Demining Law were not so much focused on improving funding mechanisms, but rather the issue of authority regarding demining priorities.[625]

More specifically, my interlocutor notes that BHMAC and demining operators wanted the authority of entity governments devolved; as the 2002 Demining Law authorized entity governments to decide on demining priority sites, an "unproductive" trend emerged, where demining operators had to contribute roughly equal (50-50) demining attention to both entities despite different levels of contamination.[626]

The primary method of clearance remained MMC, although the use of MDDs and mechanical clearance for "ground preparation" continued; some pilot projects emerged with the aim to experiment with "advanced methods", such as using metal detectors with better discrimination, drones for survey.[627] International funding, however, began to decline after the immediate post-war decade.[628] The EU and UNDP ran several capacity-building projects, and bilateral donors like the US, Norway, and Japan funded specific clearance operations, primarily through the international demining NGOs.[629]

Clearance progress was mixed between 2009 and 2013: roughly 30 to 40 km^2 of minefields were being cleared or released each year, but that was offset by the still large area of CHAs. In 2013, BHMAC reported 1,230 km^2 (2.4% of BiH territory) remained mined across nearly 29,000 locations.

Recognizing shortfalls, BHMAC undertook an internal review of mine action in 2012-2013. This led to "refining priorities, with focus on socio-economic impact, not just number of mines, and improvements in information management".[630] National authorities also began planning for another likely extension of the Ottawa Treaty deadline beyond 2019, as it was evident that even

[625] Person Person BMAC5-E, interviewed by author, May 18 2024.
[626] Person Person BMAC5-E, interviewed by author, May 18 2024.
[627] Branislav Krljaš (Bosnia and Herzegovina Mine Actions Center, Internal Quality Control Department), interviewed by author, January 10, 2024.
[628] Ministry of Civil Affairs of Bosnia and Herzegovina, and Demining Commission of Bosnia and Herzegovina. 2008. "REQUEST For an extension of the deadline for completing the destruction of anti-personnel mines in mined areas in accordance with Article 5, paragraph 1." BHMAC, June 2008.
[629] Selma Antić (Norwegian People's Aid, Community Liaison Manager and EORE), interviewed by author, May 10, 2024.
[630] Branislav Krljaš (Bosnia and Herzegovina Mine Actions Center, Internal Quality Control Department), interviewed by author, January 10, 2024.

with land release, the 2019 goal would be hard to achieve given "substantial" funding and terrain challenges.

12.2.6 Floods and Landslides Displace Mines: 2014

In May 2014, BiH faced a natural disaster that compounded the mine problem: hit by its worst flooding in over a century, coupled with landslides, especially in the north and northeast. These floods struck many of the river valleys that coincidentally had been former frontlines and thus mined. Fast-moving waters and landslides unearthed and shifted landmines from known minefields, carrying some downstream or burying others in new locations. Mine warning signs were swept away, and previously cleared areas faced the risk of re-contamination by moved mines. In the aftermath, demining teams had to be redeployed for emergency response: authorities sent in deminers to search populated areas and river banks for displaced mines.

For example, along the Sava and Bosna rivers, several mines and UXO were found in villages that had earlier been declared safe. The 2014 floods underscored the persistent vulnerability of BiH's landscape to mines—not only were mines an artifact of war, but now also a hazard exacerbated by natural processes.

This event temporarily set back demining progress, as resources shifted to re-surveying flooded areas and re-marking known minefields. It also raised public awareness; media reports in 2014 showed images of mine warning signs bobbing in floodwaters. Fortunately, despite the scale of the disaster, there were relatively few mine accidents during the floods, thanks in part to quick action by mine action agencies. The floods reinforced the need for BiH to finish clearance as soon as possible, since unpredictable events could undo years of painstaking work.

Sometime between 2014 and 2015, the BHMAC officially requested demining assistance from the MAG.[631] It is plausible to assume that the "distress call" came amid the 2014 regional floods which displaced and shifted known and marked landmines and minefields. By that time, the international funding for demining in BiH had significantly decreased, and the BHMAC likely

[631] Jessica Hyland (Mines Advisory Group, Regional Director for Eastern Europe), interviewed by author, May 6, 2024. ;
Person MAG1-TO (Mines Advisory Group, Technical Operations), interviewed by author, May 18, 2024.

recognized that local capacities and funds were under strain and unlikely to meet set deadlines amid the emergency created by minefields dislocated by floods.

However, MAG's Regional Director for Eastern Europe, suggests that BHMAC, in their request, indicated that they wanted someone who was not aligned or attached to any existing demining structures in the country:

> One of the reasons we were invited and encouraged to go to BiH in 2017, which is quite late, is a little bit of a sense that people or the international organizations have gotten a bit caught up in some of the in-country dynamics, and they wanted someone who wasn't aligned or attached with someone, which is why we were able to enter Bosnia quite late.[632]

12.2.7 Adoption of Land Release Policy: 2015

By 2015, BiH formally adopted a comprehensive IMAS Land Release policy and updated NMAS to incorporate this approach. This policy, essentially an outcome of pilot projects and lessons learned in previous years, allowed BHMAC and demining operators to cancel or reduce SHAs through thorough NTS and "evidence-based assessment".

In practical terms, starting in 2015, mine action teams revisited minefield maps collected by IFOR and SFOR to verify whether mines were actually present. Large swathes of land with no indication of mines or where wartime records/interviews indicated no contamination were released without full clearance, thus focusing clearance assets on CHAs. BiH's adoption of land release was seen, by the international humanitarian demining administrators (UNMAS and GICHD), as crucial to meet its 2019 target. In 2015, the EU supported several "Land Release" pilot projects in BiH, which demonstrated significant time and cost savings. Additionally, BHMAC introduced the term "mine suspected area" (*bos. Minsko sumnjivo područje—MSP*) to replace "overly cautious" estimates with more accurate, evidence-backed figures. By the end of 2015, these efforts had refined the contamination estimate and slightly reduced the total suspect area. However, even with land release, the remaining confirmed minefields still required manual or mechanical clearance.

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[632] Jessica Hyland (Mines Advisory Group, Regional Director for Eastern Europe), interviewed by author, May 6, 2024.

Alongside policy changes, 2015 also saw BiH continue routine demining: dozens of square kilometers were cleared that year, and mine risk education was ongoing especially in rural communities. Adopting the land release approach was a positive development, standardizing what had been *ad hoc* and helping BiH align with IMAS. It set the stage for the final push to rid the country of mines, though it was clear that push would extend beyond 2015.

12.2.8 Continued Clearance: 2016-2024:

Over the last decade, BiH's demining efforts have persisted, albeit with multi-year trends that reflect both clearance achievements and ongoing challenges. A significant trend has been the steady decline in mine accidents: annual casualty numbers fell to single digits by the late 2010s, and in 2020 and 2024 there were zero mine injuries or deaths. This has been cast as "stark improvement" in the public discourse in BiH from the late 1990s when hundreds were casualties each year. This decline is attributed to extensive clearance of high-risk areas and effective risk education keeping people out of known mine zones.

On the clearance front, BiH continued to make incremental progress. By 2017, over 3,000 km² of land had been scanned and cleared or released since 1996. Yet, BiH continued to struggle to meet its Mine Ban Treaty 2019 deadline. In 2017, BHMAC estimated about 80,000 mines still present across 1,100+ km² (2.2% of total territory), and warned that at the current pace an additional five or more years would be needed. Consequently, BiH requested a second extension under the Mine Ban Treaty, and the deadline to be mine-free was officially moved to 2025.[633] International and domestic funding for demining has generally declined compared to the early 2000s, creating a budget shortfall that slowed operations. On the other side, new partnerships and targeted projects have helped keep progress alive. For instance, the U.S. funded the "Mine Free Sarajevo" initiative (2019-2021) that cleared all minefields in the hills around the capital Sarajevo, releasing 6 million m² of land and destroying 445 mines in that project alone.[634] Similar targeted operations have aimed to declare entire municipalities or regions mine-free: Brčko District and

[633] Bosnia and Herzegovina. 2020. "Request for Extension to the Deadline for Fulfilling Obligations as per Article 5, Para 1 of the Convention on the Prohibition of the Use, Stockpiling, Production and Transfer of Anti-Personnel Mines and on Their Destruction." June, 2020. https://www.apminebanconvention.org/fileadmin/_APMBC-DOCUMENTS/Meetings/2020/18MSP-Bosnia-and-Herzegovina-Extension-Request.

[634] Marija Trlin, Elise Becker, and Nataša Uršič. 2020. "The Mine Free Sarajevo Project," *The Journal of Conventional Weapons Destruction* 24 (2). https://commons.lib.jmu.edu/cisr-journal/vol24/iss2/8

some Cantons are on track to being cleared by the mid-2020s. Technological aids like drones and improved detectors have been used to tackle remaining mines, which are often in remote, hard-to-access areas. A trend in recent years is the concentration of remaining contamination in forested, mountainous regions that were lower priority, and these areas are slower to clear. The BiH Armed Forces Demining Battalion and local civilian protection teams now shoulder much of the clearance, alongside NGOs like NPA and MAG. By 2023, the total suspected hazardous area was down to about 840 km², around 2% of total territory.

12.3 Demining Structure

12.3.1 Institutional Framework and Demining Actors

The center of BiH's demining operations is the BHMAC (Bosnia and Herzegovina Mine Action Centre), established initially as the UNMAC in 1996 and later enshrined by national law in 2002. BHMAC acts as the technical body that plans, coordinates, and oversees all demining activities in the country. It operates under a state-level Demining Commission within the Ministry of Civil Affairs. Although the BHMAC is a central node in BiH's demining processes, staffers of BHMAC suggest that, *technically*, BHMAC is not the demining authority, but "just a technical and advisory body of the Demining Commission".[635]

Legally and institutionally, the BHMAC reports to the Demining Commission which reports to the state-level Ministry of Civil Affairs which reports to the Council of Ministers. Each of the two entities also has regional BHMAC offices, but strategic planning and standards are unified at the state level through BHMAC and the Demining Commission.

A number of actors carry out the actual clearance. As of 2024, 22 organizations, including 10 commercial, 7 non-governmental, 5 governmental held the BHMAC demining licences.[636] The Armed Forces of BiH maintain a demining battalion that conducts clearance tasks—this unit

[635] Branislav Krljaš (Bosnia and Herzegovina Mine Action Center, Internal Quality Control Department), interviewed by author, January 10, 2024. ;
Person BMAC1-I (Bosnia and Herzegovina Mine Actions Center, Quality control/Inspector), interviewed by author, May 7, 2024. ;
Person BMAC2-I, (Bosnia and Herzegovina Mine Actions Center, Quality control/Inspector), interviewed by author, May 7, 2024.
[636] Organization for Security and Co-operation in Europe. 2025. "OSCE QUESTIONNAIRE ON ANTI-PERSONNEL MINES." *OSCE, May 2025.* https://www.osce.org/files/f/documents/7/b/592664.pdf

combined the wartime entity armies' demining teams after the army merger in 2005. Civil Protection units in each entity also have demining sections. Importantly, several international and local NGOs and commercial companies are accredited for mine clearance, these include the NPA, MAG, and the NPA's Global Mine Detection Dog Center, and various local commercial firms. Coordination among actors is achieved through "regular coordination meetings and tasking orders issued by BHMAC".[637]

The UN and EU have played supporting roles, funding and oversight, and the GICHD provides technical advice. Overall, the institutional framework is a public-private mix: BHMAC proposes priorities and accredits operators, while a mix of military teams, NGOs, and commercial companies execute the work on the ground.

The architecture thus combines centralized standard-setting with pluralized execution, embedding BiH's demining efforts in both its consociational governance matrix and a wider humanitarian market. BHMAC's technical primacy is circumscribed by the Demining Commission's political gate-keeping, and by donor procurement cycles that shape which operators receive tasks. In effect, demining governance reproduces the post-Dayton political economy: fragmented authority at the top, competitive outsourcing at the bottom, and a perpetual need to negotiate legitimacy between domestic constituencies and external patrons.

12.3.2 Types of Demining

Demining in BiH is structured around three interlocking clearance modalities whose spatial and material properties map onto distinct scales of postwar territorial governance.

First, manual demining is the most fundamental method, and manual teams constitute the micro-scale foundation. Working with detectors, prodders and trowels, a single operator clears roughly 10–50 m² per day in "difficult" terrain, a rate confirmed by BHMAC field statistics and press coverage.[638] The bodily proximity of manual work, kneeling, probing, flagging, anchors

[637] Branislav Krljaš (Bosnia and Herzegovina Mine Actions Center, Internal Quality Control Department), interviewed by author, January 19, 2024.
[638] Ajdin Kamber. 2013. "Bosnian Countryside Scarred with Landmines." *Institute for War and Peace Reporting,* November 1, 2013. https://iwpr.net/global-voices/bosnian-countryside-scarred-landmines

what Elden terms the "violent constitution of territory"—the deminer's body literally [re]inscribes sovereign control, metre by metre.[639]

Second, the mine detection dogs (MDDs) introduce a meso-scale, and a bio-technical assemblage. Since early 2000s, the NPA has run its Global Training Centre for Detection Dogs on Sarajevo's outskirts, exporting more than 500 animals to operations worldwide and positioning BiH as a nodal site in the humanitarian security economy.[640]

Third, mechanical demining via demining machines operates at the macro scale. The deployment of EU-made machines evidences the regional political economy of post-conflict reconstruction: heavy machines are capital-intensive imports that couple BiH's clearance agenda to Balkan defence-industrial supply chains and EU-funded procurement cycles.

A common approach in BiH has been combining multiple methods for a single task: first, a non-technical survey team gathers information and marks suspected areas; next, MDDs or machines reduce the area by clearing vegetation or checking for mine scent; finally, manual deminers do the fine clearance on remaining high-risk spots. This integrated approach falls under the "land release" concept, ensuring that resources are applied efficiently.

Further demining capabilities extend the territorial reach of BiH's demining program. Diver-led underwater EOD units have removed ordnance from the Sava and other rivers, projecting state authority into hydro-territorial domains.[641]

Taken together, the manual, canine, and mechanical modalities form a multiscalar clearance system whose technical procedures have clear political effects. They determine the order in which territory becomes usable, embed BiH within donor-driven humanitarian networks, and leave a spatial pattern of recovery that mirrors existing hierarchies of value and risk.

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[639] Elden, Stuart. 2013. *The Birth of Territory*. University of Chicago Press.
[640] Norwegian People's Aid. n.d. "NPA's Global Training Centre for Mine and Explosive Detection Dogs." *NPA*. *https://www.npaid.org/mine-action-and-disarmament/land-release/global-training-centre*.
[641] Ivana Faryová and Pavel Švec. 2019. "Clearing Mines in the Sava River of Bosnia." *X-Ray Mag 93,* September 2019. https://xray-mag.com/content/clearing-mines-sava-river-bosnia

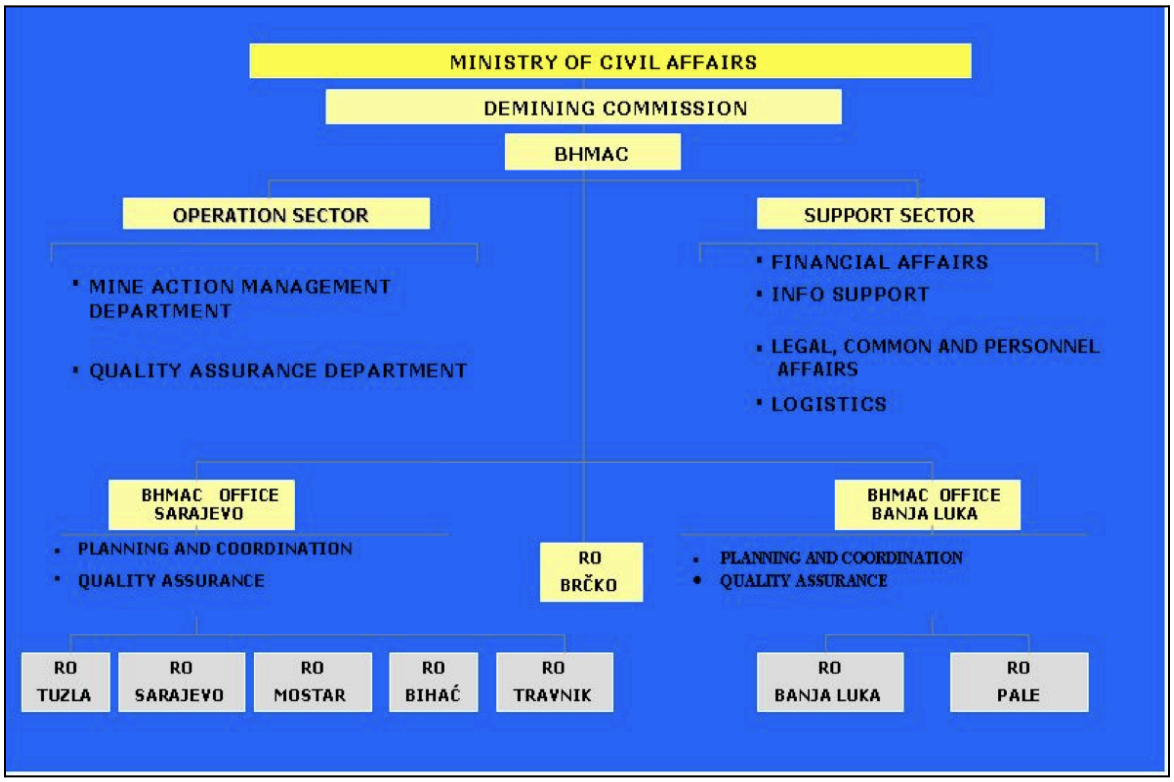


Figure 12.7. *The institutional structure for demining presented by the BiH Ministry of Civil Affairs.*[642]

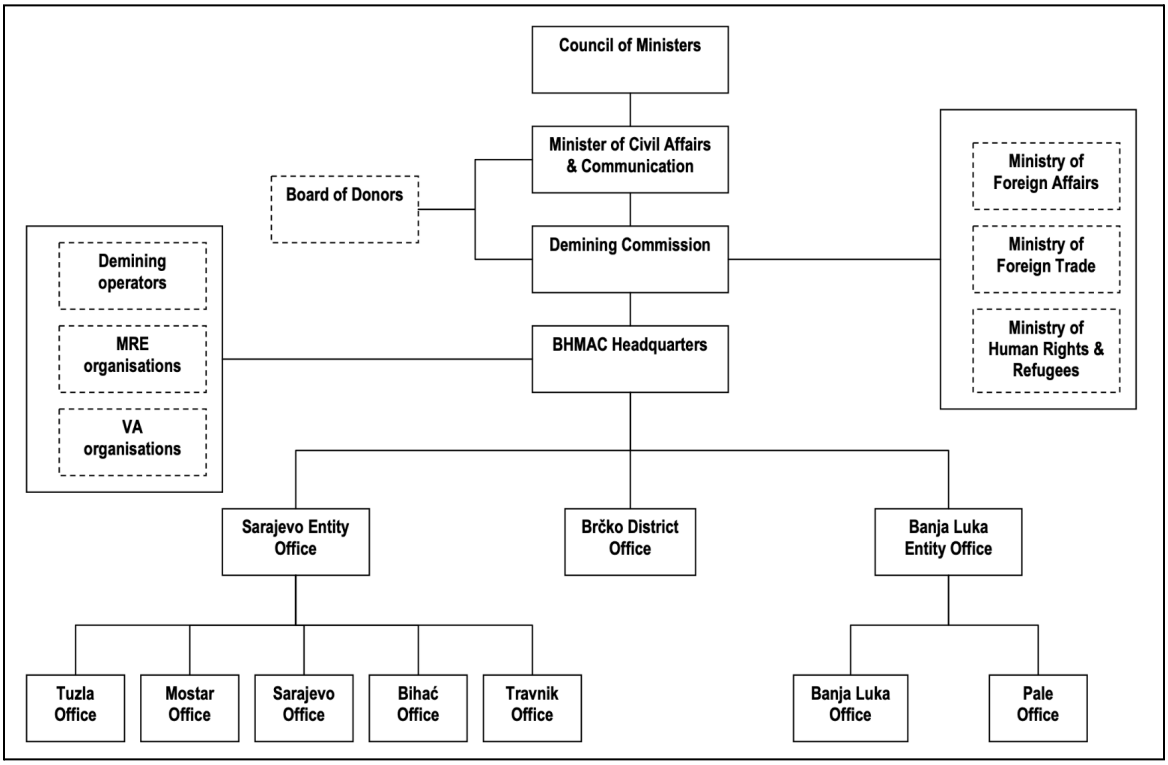


Figure 12.8. *The institutional structure for demining in BiH as interpreted by the GICHD.*[643]

[642] Ministry of Civil Affairs of Bosnia and Herzegovina, and Demining Commission of Bosnia and Herzegovina. 2008. "REQUEST For an extension of the deadline for completing the destruction of anti-personnel mines in mined areas in accordance with Article 5, paragraph 1." *BHMAC*, June 2008.
[643] Geneva International Centre for Humanitarian Demining. 2006. "Mid-term Review of the UNDP Integrated Mine Action Programme (IMAP) Final Report." www.gichd.org/fileadmin/uploads/gichd/Media/GICHD. July, 2006. Geneva: GICHD. P. xiv.

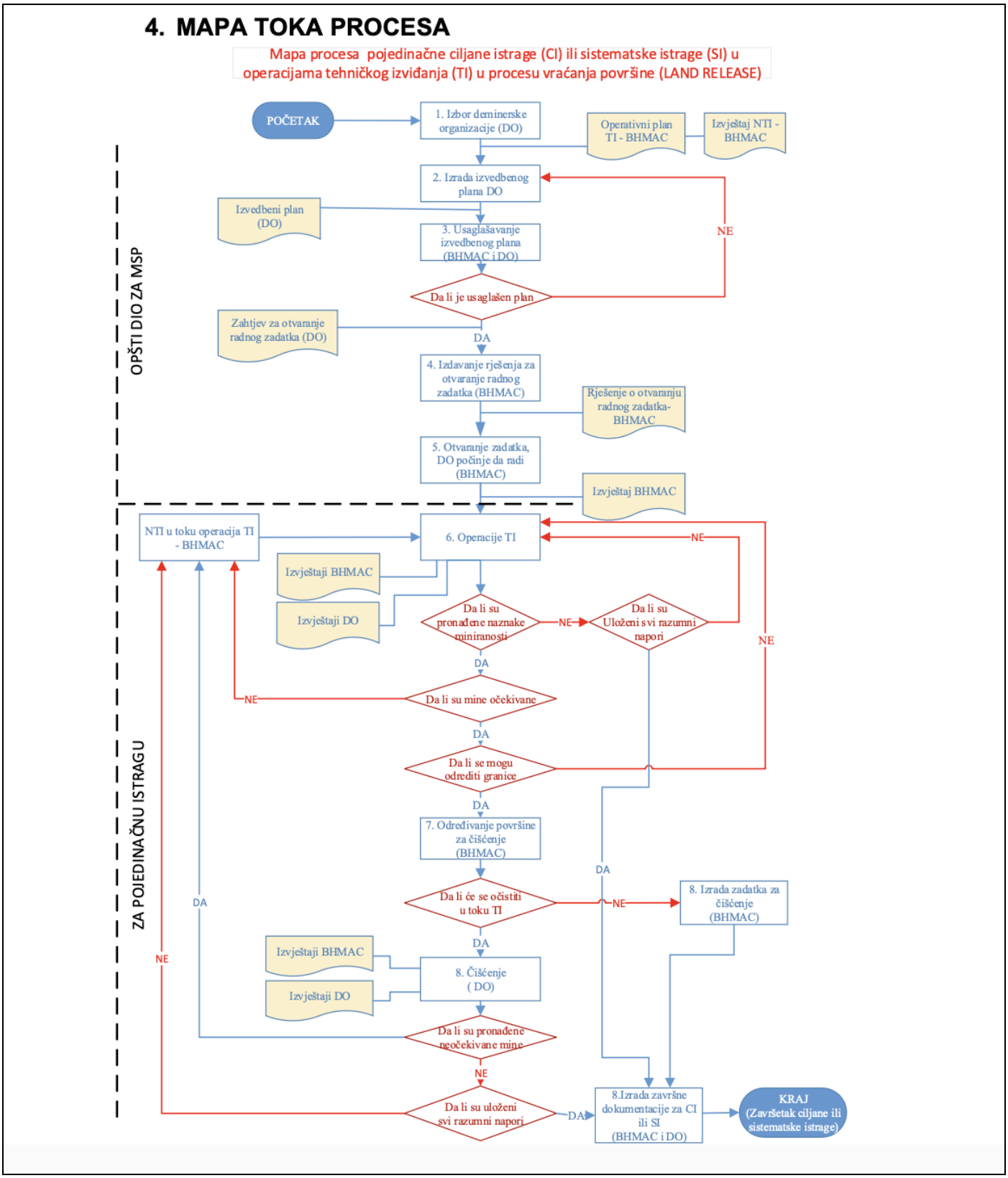


Figure 12.9. *An illustration of the multiple stages of the demining procedure in BiH, created by BHMAC, and based on the IMAS "land release" provisions.*[644]

[644] Komisija za demininranje u BiH, and Centar za uklanjanje mina u BiH. 2016. "Standard Protivminske Akcije u BiH, Poglavlje 3. Tehnicko Izvidjanje u Procesu Vracanje Povrsine (Land Release)." *BHMAC,* January, 2016. https://www.bhmac.org/wp-content/uploads/2024/06/Standard-za-PMA. P. 11.

12.3.3 The Process of Prioritization

In the immediate postwar years, the "main priority during humanitarian demining operations was return of population and establishment of safe socio-economic environment".[645] With international input from humanitarian demining NGOs, UNMAS, and GICHD, the BHMAC developed an "impact-based priority system".

Areas and communities were categorized by mine impact [high, medium, low], a formula based on factors of the population size, number of resident under "direct risk", the size of SHA/CHA within the administrative boundaries of a specific community, and the size of the administrative area of the community. Priority Category I included areas where mines posed an imminent threat to residents' safety or prevented large numbers of people from accessing farmland, schools, or roads. Within those communities, the BHMAC prioritized specific tasks: clearing around houses, roads, agricultural plots, and public utilities.[646] After the "most impacted locations", Category II areas, typically woodlands or peripheral lands were assigned to demining operators by the BHMAC, while Category III, the so-called "low-impact areas", inevitably fell to the bottom of the list.[647]

The impact-based prioritization schema adopted by BHMAC is best read as a device of governmentality rather than a neutral management tool. By translating heterogeneous spaces of risk into a scalar index, the state and its donors rendered Bosnia's post-war landscape "legible"—thus enabling technocratic allocation of scarce clearance resources and, crucially, disciplining local claims for assistance.[648] That quantification centred on demographic weight and the economic use-value of land, effectively privileging densely settled return corridors and transport nodes over peripheral commons or wooded foothills.

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[645] Ministry of Civil Affairs of Bosnia and Herzegovina, and Demining Commission of Bosnia and Herzegovina. 2008. "REQUEST For an extension of the deadline for completing the destruction of anti-personnel mines in mined areas in accordance with Article 5, paragraph 1." *BHMAC*, June 2008. P. 5.
[646] Branislav Krljaš (Bosnia and Herzegovina Mine Action Center, Internal Quality Control Department), interviewed by author, January 10, 2024.
[647] Ibid.
[648] Geneva International Center for Humanitarian Demining. 2006. "Mid-term Review of the UNDP Integrated Mine Action Programme (IMAP) Final Report." *GICHD,* July 2006. https://www.gichd.org/fileadmin/uploads/gichd/Media/GICHD-resources/rec-documents/Evaluation-Bosnia-UNDP-IMAPR-GICHD-July2006.pdf.

From an efficiency standpoint the calculus delivered early dividends. The Demining Commission and BHMAC, as chief demining coordinators in BiH, could argue that the fact that, by 2007, 78% of released land was category I risk area, suggests that the algorithm did funnel effort to sites where mines most conspicuously blocked social reproduction.[649]

Yet critical evaluations have pointed to two structural distortions. First, the model systematically undervalues dispersed rural livelihoods—forest foraging, transhumant grazing—that are difficult to capture with population-centric indicators.[650] Second, its promise of impartiality is undercut by episodic "priority leaps" for infrastructure megaprojects such as highways and energy corridors championed by entity governments and external lenders, revealing how macro-development logics can override humanitarian sequencing.[651]

These tensions mirror a broader dialectic of post-war territorial production. As Elden argues, territory is "constituted by violence" but subsequently reconfigured through calculative practices that naturalize new borders and hierarchies.[652] In BiH, the impact matrix performs that work: it converts the wartime geography of landmines into a peacetime geography of clearance, thereby scripting the order in which ruined landscapes are re-stitched into the national economy. Toal and Dahlman documented how such sequencing helped stabilize ethnically-filtered settlement patterns under the guise of "facts on the ground".[653]

Finally, the system's epistemic authority has important temporal consequences. Because BHMAC's annual operational plans are benchmarked to the matrix, any underfinancing—such as the budget shocks that triggered BiH's previous Article 5 extension requests—cascades

[649] Ministry of Civil Affairs of Bosnia and Herzegovina, and Demining Commission of Bosnia and Herzegovina. 2008. "REQUEST For an extension of the deadline for completing the destruction of anti-personnel mines in mined areas in accordance with Article 5, paragraph 1." *BHMAC*, June 2008.
[650] Matthew Bolton and Hugh Griffiths. 2006. "Bosnia's Political Landmines: A call for socially responsible and conflict-sensitive mine action." *Landmine Action,* September 2006. https://article36.org/wp-content/uploads/2008/10/bosnias-political-landmines.pdf
[651] Bosnia and Herzegovina Ministry of Civil Affairs, Demining Commission and Mine Action Center. 2018. "OPERATIONAL PLAN FOR MINE ACTION IN BOSNIA AND HERZEGOVINA for 2018." *AP Mine Ban Convention.* https://old.apminebanconvention.org/fileadmin/APMBC/clearing-mined-areas.
[652] Stuart Elden. 2009. *Terror and Territory : The Spatial Extent of Sovereignty*. Minneapolis: University Of Minnesota Press.
[653] Gerard Toal and Carl T. Dahlman. 2011. *Bosnia Remade : Ethnic Cleansing and Its Reversal*. Oxford: Oxford University Press.

disproportionately onto "lower rated" municipalities, effectively normalizing protracted risk for marginal communities.[654]

What appears, then, as a rational priority ladder is also a sovereign decision over which bodies and places can wait. Therefore, the impact-based approach has indisputably maximized aggregate humanitarian return per dollar spent, yet its technocratic veneer masks a politics of spatial triage that continues to reproduce centre-periphery inequalities.

12.3.4 Funding

Since the inception of the humanitarian mine action in BiH, demining funding has been structurally contingent on external largesse, but the degree of dependency and the composition of contributors have shifted over time. During the formative decade after the DPA , between 1996 and 2005, more than four-fifths of all resources were provided by bilateral donors. Landmine Monitor data record $36 million flowing from the ten largest donors in just the 1996-1998 window, and U.S. cumulative allocations would eventually exceed $105 million, out-distancing other major contributors such as Norway, Germany, Canada and Japan.[655]

The first-generation financing architecture relied on multilateral clearing houses. The United Nations Trust Fund for Assistance in Mine Clearance opened a BiH window in late 1996, while the International Trust Fund for Demining and Mine Victims Assistance—renamed ITF Enhancing Human Security—was established in March 1998 with an initial $28 million Congressional appropriation earmarked for BiH.[656]

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[654] Committee on Article 5 Implementation. 2018. "Analysis of the request submitted by Bosnia and Herzegovina for an extension of the deadline for completing the destruction of anti-personnel mines in accordance with Article 5 of the Convention." *AP Mine Ban Convention,* September 9, 2018. https://old.apminebanconvention.org/fileadmin/APMBC/clearing-mined-areas/art5_extensions/countries/17MSP-Bosnia_Herzegovina-analysis-5Oct-2018.pdf

[655] International Campaign to Ban Landmines and Landmine Monitor. 1999. "Landmine Monitor Report 1999 Toward a Mine-Free World." *HRW*. https://www.hrw.org/reports/1999/landmine/execsum/Execweb1-05.htm ; U.S. Department of State. 2016. "To Walk the Earth in Safety: Bosnia and Herzegovina." *Bureau of Political-Military Affairs.* https://2009-2017.state.gov/documents/organization/264164.pdf P. 32

[656] United Nations. 1996. "NEED FOR IMPROVED EFFORTS TO REMOVE ANTI-PERSONNEL LAND-MINES STRESSED THIS MORNING IN GENERAL ASSEMBLY." *Press Release GA/9185*, December 5, 1996. https://press.un.org/en/1996/19961205.ga9185.html. ; ITF Enhancing Human Security. n.d. "About Us." *ITF. https://www.itf.si/about-us/itf-in-a-nutshell.*

Domestic co-financing became a formal obligation only after the 2002 Demining Law, yet implementation lagged significantly. An internal review found that, over 2006-2017, barely half of the sums envisaged in national strategies were actually disbursed.[657]

The 2009-2019 BiH Demining Strategy projected that approximately $500 million would be required to render the country mine-free by 2019—a target predicated on both donor constancy and a steep rise in state and entity allocations.[658] Both assumptions proved optimistic. By 2020, the Demining Commission and BHMAC estimated that the financing mix had stabilized at roughly 55% donor funds to 45% domestic budgets, signalling progress toward "fiscal domestication" yet still exposing the program to external shocks.[659]

Chronic cash-flow deficits, rather than technical or organisational bottlenecks, were cited by BHMAC and the Demining Commission as the principal reason BiH failed to meet its original 1 March 2019 Article 5 deadline, forcing successive extension requests to 2025 and—most recently—to 2027.[660]

Notwithstanding systemic shortfalls, donors have continued to bankroll high-visibility projects. The European Union's Instrument for Pre-Accession Assistance (IPA-II) package "EU Support to Mine Action" committed €10 million for land release operations and information-management upgrades between 2020 and 2022, while earlier EU packages funded the "Confidence Building by Demining" series.[661] On the U.S. side, the "Mine-Free Sarajevo" campaign channelled $1.6 million between 2019 and 2021 to clear four metropolitan municipalities, underscoring a trend toward geographically bounded, impact-oriented

[657] Mine Action Review. 2019. "Clearing the Mines - Bosnia and Herzegovina." https://www.mineactionreview.org/assets/downloads/NPA_Clearing_the_Mines_2019. P. 45
[658] Bosnia and Herzegovina. 2020. "Request for Extension to the Deadline for Fulfilling Obligations as per Article 5, Para 1 of the Convention on the Prohibition of the Use, Stockpiling, Production and Transfer of Anti-Personnel Mines and on Their Destruction." *APMBC,* June 2020. https://www.apminebanconvention.org/fileadmin/_APMBC-DOCUMENTS. P. 7
[659] Statement of BiH, APMBC 18th Meeting of States Parties, November 16-20 2020. ; Mine Action Review. 2021. "Clearing the Mines - Bosnia and Herzegovina." https://www.mineactionreview.org/assets/downloads/BiH_Clearing_the_Mines_2021.pdf P. 49
[660] Mine Action Review. 2019. "Clearing the Mines - Bosnia and Herzegovina." https://www.mineactionreview.org/assets/downloads/NPA_Clearing_the_Mines_2019. P. 45
[661] European Commission. 2018. "INSTRUMENT FOR PRE-ACCESSION ASSISTANCE (IPA II) 2014-2020 - Bosnia and Herzegovina, EU Support for Mine Action." https://enlargement.ec.europa.eu/system/files/2019-02/ipa_2018_41501_ad11_bih_eu_support_to_mine_action__0.pdf Pp. 2-7

interventions.[662] In sum, BiH's demining finance remains characterised by donor‑driven surges, incomplete fiscal consolidation at state and entity levels, and recurrent volatility that continues to blunt clearance tempo and complicate long‑term strategic planning.

12.4 International Humanitarian Regime in BiH

In August 2024, the U.S. Embassy in BiH issued a press release celebrating thirty years of the U.S. humanitarian demining assistance to BiH marking, declaring:

> "The impact of U.S. humanitarian demining assistance in Bosnia and Herzegovina extends beyond the removal of landmines; it touches the very fabric of communities all across BiH, enabling them to reclaim their land, revive their livelihoods, and rebuild their futures [...] as Bosnia and Herzegovina approaches the 30th anniversary of the Dayton Peace Agreement, the legacy of U.S. humanitarian demining assistance stands as a powerful example of how international cooperation can help rebuild war-torn societies and lay the foundation for lasting peace".[663]

By situating its achievement within the approaching Dayton milestone, the Embassy's rhetoric crystallizes the wider "triumphalist moment" of liberal humanitarianism which Barnett situated in the mid‑1990s.[664] IFOR engineers, UNMIBH advisors and a cadre of British and Norwegian NGOs imported into BiH the technical repertoire—manual lanes, mine‑detection dogs, IMSMA software—that would later be codified as IMAS. The 2002 Law on Demining, drafted with GICHD assistance, required each clearance organization to submit standard operating procedures for approval by a state‑level BHMAC and demanded external quality assurance—the first national statute anywhere to incorporate what would become "IMAS 09.10 / 09.20 standards". In this sense, postwar BiH represents the incubator of the first‑generation humanitarian demining regime: a laboratory in which techniques, governance templates and a liberal peace narrative converged, allowing donors such as the U.S. to present demining as both a moral victory and as a

[662] Trlin et al. 2020. "The Mine Free Sarajevo Project."
[663] U.S. Embassy in Bosnia and Herzegovina. 2024. "Thirty Years of U.S. Humanitarian Demining Assistance in Bosnia and Herzegovina: A Legacy of Peace and Recovery." August 30, 2024. https://ba.usembassy.gov/thirty-years-of-u-s-humanitarian-demining-assistance-in-bih/.
[664] Barnett. 2011. *Empire of Humanity.*

tangible proof that its] post-Cold War interventionism could [re]order a shattered polity along preferred political and market lines.

12.4.1 Humanitarian Imperialism

The "triumphalist moment" of liberal humanitarianism in which humanitarian demining in BiH unfolded, was a period in which Western powers posited that expert intervention could knit shattered polities back into the fold of a stable international liberal democratic order. Demining became the spear-point of that vision: a way to translate kinetic victory into durable influence while cloaking power in the language of rescue. The resulting alignment of altruism and domination can be described as humanitarian imperialism, a politics that "sells" strategic tutelage under the banner of protecting victims.

The DPA supplied both the legal pretext and the territorial canvas. The DPA obliged former combatants to clear "all areas of mines," but the first mine-lifting was performed not by local forces but by NATO engineers, UN detachments, and a cadre of Anglo-Nordic NGOs that would later codify IMAS. Their arrival imported an entire minefield assemblage: manual clearance lanes, MDDs, IMSMA databases, donor audit templates, and discursive frames that equated hectares cleared with moral progress. From the outset, therefore, the choreography of "territorial recovery" was designed and funded in Brussels, Washington, and Geneva, then enacted on Bosnian soil.

This assemblage did more than remove explosives. It disciplined space. By converting "hazardous explosive danger" into GPS-referenced polygons, updated in IMSMA and reported to donor capitals, international actors re-inscribed ownership claims, cadastral lines, and mobility corridors according to liberal cartographies. Areas along strategic road axes jumped to the front of clearance queues, while remote forest zones slid to the bottom. The prioritization matrix BHMAC inherited from its UN mentors thus worked as a biopolitical technology: it reopened life-support channels for bodies deemed economically productive while confining others to what Mbembe calls "death-worlds," zones where uncleared belts remained a latent weapon of immobilization.

Dayton's demilitarized zones amplified this dual logic. Where minefields surrounded military sites, NATO's IFOR ruled that delays in clearance constituted treaty violations, linking technical work directly to coercive compliance. Conversely, uncleared strips along the IEBL were tolerated once fenced. This logic subsequently helped materially freeze the wartime frontlines. In this way, biopolitical life-enhancement and necropolitical containment operated simultaneously, anchoring BiH's postwar geography in soil literally saturated with selective threat.

Further, soft power flowed through demining standards. The 2002 Law on Demining, drafted with GICHD's assistance, made BiH the first state to embed forthcoming IMAS "quality assurance" clauses in national legislation. Accreditation now required every NGO, commercial company, and the Armed Forces to submit "Standard Operating Procedures" for external validation. Technical compliance became a gateway to donor finance, and sovereignty was effectively conditioned on obedience to transnational audit logics. Here, the imperial quality lay not in overt coercion but in the non-negotiability of global norms that arrived packaged as neutral safety measures.

Funding cycles cemented asymmetry. Between 1996 and 2005 more than two-thirds of demining funds originated in the U.S. and EU member states. This "generosity", however, was pegged to demonstrable progress: kilometres of road reopened, numbers of refugees returned, and annual casualty counts. When donor attention pivoted to Afghanistan and Iraq after 2001, funding contracted, and BiH missed its 2009 Ottawa Treaty deadline, forcing BHMAC to redraw national strategies for demining. The moral economy of aid thus disciplined recipients, compelling local institutions to narrate clearance in terms "palatable" to neoliberal reconstruction.

Three interlocking mechanisms rendered humanitarian demining in BiH an instrument of humanitarian imperialism: coercive conditionality, epistemic enclosure, and moral stratification.

The first tied demining benchmarks to the security certification under the DPA. The second established donor metrics as the only "authoritative truth": the IMAS standards of land release, NTS, TS, and impact surveys marginalized other [vernacular] ways to assess risk. And the third deployed and established a "casualty-reduction" rhetoric to rank lives: where urban populations and IDPs merited urgent salvation, inhabitants of small rural communities could wait.

Chapter 13

BiH Demining on the Ground: Slow Recoveries of Territory

13.1 Introduction

The Dayton Peace Accords have long been hailed as a "striking and surprising success" of the U.S.-led liberal international ordering practices—a peace treaty that had "stopped Europe's worst conflict and genocide since World War II".[665] Post-Dayton BiH became the principal laboratory in which the international humanitarian demining regime of the 1990s was institutionalized, attempting to stitch the country back together by "forcing" former belligerents to jointly recover BiH war-scarred territory through demining. The UN, NATO, and international humanitarian demining NGOs rallied to demine postwar BiH, and emplace institutional demining framework that would secure the sustainability of peace, allowing "normal life" to resume and peacetime to hold.

The fieldwork data collected in BiH, however, shows a localized picture at odds with universalist aspirations of the liberal international order and the international humanitarian demining regime. The complex and ethnicized political structure embedded in the DPA had trickled into the demining work, creating a form of demining governance fragmented along ethnonational lines. Concurrently, when the "international community" scaled down its demining presence in BiH, the priority of demining diminished, leading to widespread grievances of demining coordinators and operators alike. Whereas the former blame "the state" for not caring about its own problem [landmines], the latter battle with mistrust towards [state] institutions, and a sense of "unrecognized labor", and "lack of status".

This chapter turns to realities of demining in BiH on the ground. In so doing, it distinguishes the local demining realities from the architecture of the international humanitarian demining regime. The chapter discusses three distinct, but intertwined attributes of on-the-ground demining in BiH: the ethnonational fragmentation of landmine governance, institutional disregard, and unrecognized labor and mistrust.

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[665] Daniel S. Hamilton. 2020. "Fixing Dayton: A New Deal for Bosnia and Herzegovina." *Wilson Center*, November, 2020. https://www.wilsoncenter.org/publication/fixing-dayton-new-deal-bosnia-and-herzegovina.

13.2. Ethnonational Fragmentation of Landmine Governance

The demining governance in BiH was conceived in 1996, as a single, state-wide system that would translate the liberal humanitarian template to territorial recovery on the ground under the supervision of NATO, UN, EU and international humanitarian NGOs. But the humanitarian regime's liberal template collided nearly immediately with the consociational political system laid out in the DPA.

The ethnonational fragmentation of landmine governance is evident in three instances. The first includes the existence of the Demining Commission, where three commissioners, a Bosniak [Bosnian Muslim], a [Bosnian] Croat, and a [Bosnian] Serb, rotate chairmanship annually. The Commission not only approves national mine action strategies through consensus decision-making, but has authority over the clearance of the IEBL, and decides on the internal protocols of BHMAC.[666]

The second instance relates to the fact that the two entities, FBiH and RS, may deploy their entity-government demining units *only* within their entity borders. The entity-level demining teams within their respective Civil Protection units, FUCZ and RUCZ, also maintain separate budgets, funding pipelines, and separate task lists. And the third relates to the fact that the territorial semi-autonomy granted to entities by the DPA, had translated into the two polities having *de facto* authority in deciding demining priorities on the ground. More importantly, in approving deming priorities lists, the entities attempt to achieve a "50-50" balance in demining attention between the two, despite differing levels of contamination.[667]

For instance, estimates provided by BHMAC at the end of 2023, indicate a total of 838 km^2 of suspected and confirmed contaminated territory, where roughly 9,45 km^2 is located within RS, and the rest in FBiH and Brcko District.[668] But on the ground, priority lists are negotiated and demining tasks carried out as though contamination were quantitatively comparable. The

[666] Council of Ministers of Bosnia and Herzegovina. 2015. "Odluka o Osnivanju Komisije za Deminiranje u Bosni i Hercegovini." *Službeni glasnik BiH 67/15*, July 30, 2015. http://www.sluzbenilist.ba/page/akt/S2Or6s0wV6s=.
[667] Person BMAC5-E (Bosnia and Herzegovina Mine Action Center - BHMAC, External Relations Officer and EORE Educator), interviewed by author, May 18, 2024.
[668] Mine Action Review. 2024. "Clearing the Mines 2024, Bosnia and Herzegovina". https://www.mineactionreview.org/assets/downloads/BiH_Clearing_the_Mines_2024.pdf. P. 61.

clearance output for 2023 shows that out of 183,335 km^2 cleared, roughly 70% took place in FBiH, and 30% in RS, although the latter contains 1% of overall contamination.

Describing the impact of this on the demining operations, a staffer of the BHMAC notes:

> We have been trying to change this, to amend the Demining Law [since 2008], we want to change this; the entities should not decide on demining priorities, they are slowing us down, and want demining attention to be equally split, but Federation is much more contaminated.[669]

BiH's demining governance thus performs ethnopolitical parity, and exists as a material expression of the DPA's territorial compromise. Although intended to guarantee "equality and impartiality", the demining governance arrangement has [often] paralyzed budget approvals and clearance progress, as entities push for clearance inside their postwar administrative borders. As a consequence, BiH has been undergoing a chronic deadline slippage since the early 2000s: it has not once been "on track" to meet the clearance deadlines it committed to under the Mine Ban Treaty, and thus sought extensions to 2009, 2019, 2021, and most recently to 2027. Importantly, the BHMAC's minefield maps indicate a substantial number of SHA's and CHA's at the IEBL—where coordination of demining operations has been entrusted to the Demining Commission. This chronic lack of the demining attention to IEBL areas, either through entities' disregard or deliberate de-prioritization, has resulted in a material [although not necessarily readily observable] border between the two administrative units.

These empirical patterns show that ethnonational fragmentation of demining governance is not a managerial shortfall or nuisance, but a structuring principle of BiH's post-Dayton landmine governance. By retaining authority in deciding demining priorities, BiH's entities effectively re-territorialize a nominally humanitarian public good, mine-free land, and convert every clearance meter into an ethnonational claim on space and resources. Thus, BiH's minefields persist not only as hazardous residues of war, but a material frontier through which the country's divided and contested statehood is reproduced daily.

[669] Person BMAC5-E (Bosnia and Herzegovina Mine Action Center - BHMAC, External Relations Officer and EORE Educator), interviewed by author, May 18, 2024..

14.3 The State Turns a Blind Eye



Figure 13.1. *The headquarters of BHMAC in Sarajevo. The red arrow indicates entrance in the rear of the building; and two red circles indicate BHMAC plaque and service cars.*[670]

On January 10, 2024, I had my first visit to the BHMAC's headquarters in Sarajevo. Upon arriving at the address provided to me by their External Relations Office, I was momentarily uncertain I had the correct address: the sole visible tenant was an electronics retailer. After a brief moment, I finally saw the BHMAC plaque, attached to the entrance fence with parts of it blocked by the fence pickets—but I could not locate the door to their offices. A couple minutes later, I found the entrance to BHMAC tucked away to the very rear of the building, with no prominent signage except two of their service cars with half-peeled BHMAC insignia.

[670] A photograph of the BHMAC HQ in Sarajevo, taken by the author, January 10, 2024.

It took me but a brief second to realize how shocking this spatial arrangement was—the country's statutory body charged with coordinating national demining efforts confined to a rear suite of a nondescript commercial block whose principal street-level presence is dominated by an electronics retailer.

This spatial obscurity is not banal. In fact, it reveals literal and figurative institutional ambivalence and diminished priority of demining in BiH. What was once an urgent postwar humanitarian effort now inhabits an afterthought's back room, undercutting its visibility, prestige, and perceived importance among policymakers and the public alike.

Over forty semi-structured interviews, the empirical evidence reveals a pervasive sense among BiH deminers that their labour is simultaneously vital and invisible. Concurrently, many demining operators expressed distrust towards the BiH government's financial and operational handling of demining, and the BHMAC's coordinative roles, while BHMAC expressed frustration with the government's lack of care and interest in demining.

> "The biggest problems within the OS, to me, are finances, food and equipment. But primarily finances and food. Out in the field [on demining worksites], deminers are quite literally hungry".[671]

This was a remark by a deminer at the Armed Forces of BiH, who noted how equipment shortages, delayed pay, and "inappropriate" insurance packages have become a routine. The disjunction is exacerbated by legal classification: although every deminer must meet the rigorous IMAS provisions, the occupation *deminer*, according to my interlocutors, is absent from FBiH, RS, and state-level labour codes; in off-hand comments several respondents noted how "[in state labor codes] we are treated like "gardeners", that's our status".[672]

Institutional mistrust follows these sentiments. Operators often remark that "politicians stole the demining money," pointing to opaque transfers, and dissonance between the total sums allocated,

[671] Person AF1-D (Armed Forces of BiH, Demining Battalion, Deminer), interviewed by author, April 12, 2024.
[672] Person D8 (Federal Civil Protection Administration, Deminer), interviewed by author, May 16, 2024. ; Person D9 (Federal Civil Protection Administration, Deminer), interviewed by author, May 16, 2024. ; Person D10 (Federal Civil Protection Administration, Deminer), interviewed by author, May 16, 2024. ; Person D11, (Federal Civil Protection Administration, Deminer), interviewed by author, May 16, 2024.

deminers' salaries, and clearance outputs, and the BHMAC's alleged "chronic and deliberate" incompetence. BHMAC officials, in turn, express frustration that state-level government treats demining as a peripheral afterthought and approves only "skeletal budgets". For instance, in 2020, BHMAC stated that it would need at least BAM 336 million to meet the Mine Ban Treaty's 2025 clearance deadline, yet the Council of Ministers approved a budget of BAM 2 million to be spread out across that time frame.[673] At the same time, international donors insist that sustained national ownership must precede renewed grants, completing a circular blame game that leaves clearance teams stranded at its centre.

The cumulative effect is paralysis: funds arrive late or not at all, project pipelines stall, and BiH repeatedly petitions the Mine Ban Convention for deadline extensions, first to 2019, then 2021, and now tentatively to 2027, with a high likelihood for even further requests for deadline extensions.[674] Clearance statistics make this drift visible. In 2013 BiH "released" 44.3 km² of contaminated land, yet by 2023 annual clearance had collapsed to 0.36 km², the lowest figure on record.[675]

For deminers the message is unmistakable. Their labor may be invoked in political speeches as evidence of "post war reconciliation," yet materially it is remunerated and regulated as seasonal menial work. The state's back alley siting of BHMAC thus becomes a spatial metonym for the wider political economy of neglect: an economy sustained by low domestic budget allocations, residual donor goodwill, and by the vocational commitment of underrecognized deminers who risk hunger while protecting civilian life.

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[673] Bosnia and Herzegovina. 2020. "Request for Extension to the Deadline for Fulfilling Obligations as per Article 5, Para 1 of the Convention on the Prohibition of the Use, Stockpiling, Production and Transfer of Anti-Personnel Mines and on Their Destruction." June, 2020. https://www.apminebanconvention.org/fileadmin/_APMBC-DOCUMENTS/Meetings/2020/18MSP-Bosnia-and-Herzegovina-Extension-Request.pdf. P. 23-24. ; *Sarajevo Times*, 2024. "The Council of Ministers of BiH Approved Two Million BAM for Demining." *Sarajevo Times*, December 17, 2024. https://sarajevotimes.com/the-council-of-ministers-of-bih-approved-two-million-bam-for-demining/.

[674] Convention on the Prohibition of the Use, Stockpiling, Production and Transfer of Anti-Personnel Mines and on Their Destruction. n.d."Bosnia and Herzegovina - Article 5 (Mine Clearance)." https://www.apminebanconvention.org/en/membership/bosnia-and-herzegovina

[675] Mine Action Review. 2023. "Clearing the Mines 2023 - Bosnia and Herzegovina". https://www.mineactionreview.org/assets/downloads/BiH_Clearing_the_Mines_2024.pdf. P. 59

Chapter 14

Demining in Ukraine: A Timeline 2014-2024

Demining operations in Ukraine began in 2014 as a collection of ad-hoc, emergency responses in Donbas. Since 2022, these efforts evolved into an industrial-scale, internationally-supported effort. The following section traces the chronological progression of demining in Ukraine, and accounts for the key developments in the process. In so doing, the timeline demonstrates the exact steps through which "small and reactive" clearance efforts in and around Donbas transformed to a country-wide operation, and became an integral element of Ukraine's war effort against Russia.

14.1 First Emergency Responses: 2014

The outbreak of the conflict in Donbas marked the beginning of landmine contamination in Ukraine, but it also caught the country's demining capacity largely underdeveloped in terms of legislation, expertise, capacity and equipment. Prior to the Dobas conflict, the Ukrainian government's demining operations were contained to the Ukrainian military engineering units, and the State Emergency Service (*uk. Державна служба України з надзвичайних ситуацій*) or SESU/DSNS.

Mine Action Review reports that the Ukrainian government worked on developing a demining legislation and national demining authority prior to the outbreak of the Donbas conflict, in an effort to meet its Mine Ban Treaty commitments, which the country signed in 1999, and ratified in 2005.[676] Between 2006 and 2013, the Ukrainian Cabinet of Ministers set up an inter-ministerial working group comprising the Ministry of Defense, the Ministry of Emergency Situations, and Ukroboronservice, a state-owned company.[677] The group was tasked with putting together a proposal for a "national body to oversee demining" in December 2009.[678] But this process was soon disrupted, and remained as such for four years.

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[676] Mine Action Review. 2016. "Clearing the Mines 2016 - Ukraine". https://www.mineactionreview.org/assets/downloads/Ukraine-Clearing-the-Mines-2016.pdf. ; The Landmine and Cluster Munition Monitor. n.d."Mine Ban Policy - Ukraine". http://the-monitor.org/country-profile/ukraine/mine-ban-policy?year=2023

[677] Ibid, 211.

[678] Ibid.

The process resumed in 2013, when in September, the President of Ukraine issued "Presidential Decree No. 423 on the National Mine Action Authority" which authorized the establishment of a national mine action body to serve as Ukraine's NMAA. The Ministry of Defense and its Department for Environmental Safety and Mine Action were tasked with coordinating the demining work and serving as a secretariat of the newly-formed NMAA.[679]

Competing claims exist, however, suggesting that the legislative efforts between 2006 and 2013 may have only resulted in the establishment of a NMAA "on paper" and official designation of authority for demining to the Ministry of Defense. The former Minister of Defense of Ukraine, Oleksii Reznikov, states that the national demining body was only set up between 2022 and 2023, suggesting that: "[...] according to the Ukrainian law, the Defence Minister of the national demining agency. I set up this agency—it is just freshly new government order. I joined all different ministries and agencies to do it together".[680]

Regardless of the absence of reliable information on Ukraine's demining legislation, it is evident that there was a lack of operational capacity in demining at the onset of Donbas conflict in 2014. The SESU had minimal demining experience aside from occasional clearance of remnant munitions of WW2 and WW1, while the Ukrainian military sappers received training through "military sappers course", but did not conduct any significant demining operations prior to 2014. With the lack of alternatives, it was precisely military sappers and SESU bomb disposal units that carried out the earliest clearance efforts when the emergency demining responses were initiated in mid-2014.

Deming efforts began after the Ukrainian military [re]claimed the city of Slovyansk, and the separatist forces of the Donetsk People's Republic (DPR) withdrew on July 5 2014—the Ukrainian government tasked military sappers and SESU with clearing explosives left in the aftermath of DPR forces' withdrawal. This trend continued throughout the 2014—SESU and military sappers cleared roads, bridges, and other public spaces mined by the DPR forces as the Ukrainian military [re]claimed territories in Donbas.

[679] Mine Action Review. 2016. "Clearing the Mines 2016 - Ukraine". https://www.mineactionreview.org/assets/downloads/Ukraine-Clearing-the-Mines-2016.pdf. P. 211.
[680] Oleksii Reznikov (Ministry of Defence of Ukraine, Former Defense Minister), interviewed by author, May 31, 2024.

At this stage, SESU and Ukrainian military sappers were not trained in "humanitarian demining"—minefield records were virtually nonexistent, and the elaborate, multi-stage demining procedures stipulated by IMAS were not applied in practice.

Most importantly, in spring and summer 2014, reliable information on the locations and extent of landmine contamination was unavailable—the SESU bomb disposal teams tracked numbers of landmines and UXO they disposed of, but no agency, national or international, possessed reliable and comprehensive data or estimates on Ukraine's landmine situation. The "no information" problem was particularly prominent in areas that were not under Kyiv's control. Some NTS were conducted in government-controlled areas, but yielded "no exact information".[681] And the lack of access to "large areas of the contact line" as the conflict remained active, resulted in "no known form of NTS undertaken in the non-government-controlled areas".[682]

Amid limited technical capabilities, lack of equipment, and operational capacity, Kyiv requested international demining assistance. The staff of the OSCE Special Monitoring Mission to Ukraine (SMM), deployed by the OSCE in early 2014, suffered mine casualties by the end of April 2014, during a routine patrol of "accessible areas in the Donetsk and Luhansk regions" with one staffer killed and two injured.[683] The government's appeal for demining help, and the SMM's tragic incident spurred first changes in Ukraine's demining efforts: the daily tracking and reporting of the presence of landmines and UXO. The SMM in particular, took keen interest in landmine contamination, despite not being a demining operator. The presence of landmines and the lack of information about the whereabouts was not only an impending humanitarian catastrophe in SMM's understanding, but presented a direct obstacle to the SMM's mission because it restricted their movement.[684] The SMM thus began tracking and reporting landmine presence in late spring and early summer 2014.

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[681] Mine Action Review. 2016. "Clearing the Mines 2016 - Ukraine". https://www.mineactionreview.org/assets/downloads/Ukraine-Clearing-the-Mines-2016.pdf. P. 210.
[682] Edward Crowther. 2019. "Contamination in Eastern Ukraine: Observations by OSCE," *The Journal of Conventional Weapons Destruction*: Vol. 23 : Iss. 1 , Article 9. https://commons.lib.jmu.edu/cisr-journal/vol23/iss1/9. P. 25. ;
Organization for Security and Co-operation in Europe. 2017. "Spot Report: One SMM Patrol Member Dead, Two Taken to Hospital after Vehicle Hits Possible Mine near Pryshyb." *OSCE,* April 23, 2017. https://www.osce.org/special-monitoring-mission-to-ukraine/312971.
[683] Ibid, 24.
[684] Ibid.

Owing to the ongoing conflict and widespread "political uncertainty", the international support for demining operations was limited, if not minimal, throughout 2014. NATO provided some "non-lethal aid" to the Ukrainian military for "humanitarian demining".[685] Concurrently, three international humanitarian NGOs deployed to Ukraine in mid- and late 2014 and assisted with demining operations by conducting initial assessments and NTS: the HALO Trust, FSD and Danish Demining Group (DDG). Operations and research officers of the HALO Trust, reported that the organization began conducting open-source research (OSR) on Ukraine's landmine situation roughly at the same time as the SMM began their regular reporting initiative—the goal of which was to estimate the extent of contamination and geolocate the mines in preparation of their deployment to Ukraine's eastern territories.[686] The HALO Trust began their "scoping missions" in government-controlled eastern territories in late 2014 to plan for clearance operations.

In September 2014, the Trilateral Contact Group for Ukraine negotiated the Minsk Protocol (later called Minsk Protocol I) aiming to ensure an immediate ceasefire. The text of the Protocol did not include any provision on mine removal.[687] However, some SMM staff argued that in signing the Minsk Protocol, the belligerents "have already agreed to remove all mines and not to install or lay mines in the security zone".[688] The argument was likely derived from the Protocol's provision on withdrawal and disarmament of "illegal armed groups" which referenced military hardware.

By the end of 2014, the OSCE moved to provide technical support for demining at the request of the Ukrainian government, and furnished SESU with demining equipment: protective vests, ballistic safety helmets, and laptops with IMSMA software—deemed instrumental for "planning, monitoring and quality control of operations in line with international standards and best

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[685] Government of the United Kingdom. 2014. "Joint Statement of the NATO-Ukraine Commission." *GOV.UK*, December 2, 2014. https://www.gov.uk/government/news/joint-statement.
[686] Anda Riza and Andro Mathewson. 2024. "The Prioritization of Survey Through Open-Source Research in Ukraine," *The Journal of Conventional Weapons Destruction*: Vol. 28 : Iss. 2 , Article 5. https://commons.lib.jmu.edu/cisr-journal/vol28/iss2/5.
[687] "Protocol on the outcome of consultations of the Trilateral Contact Group on joint steps aimed at the implementation of the Peace Plan of the President of Ukraine, P. Poroshenko, and the initiatives of the President of the Russian Federation, V. Putin." S/2015/135, registration no. 15-02842. September 5, 2014. https://peacemaker.un.org/sites/default/files/document/files/2024/05/ua140905minskceasfireen.pdf.
[688] Crowther. 2019. "Contamination in Eastern Ukraine", 24.

practices".[689] Concurrently, the OSCE partnered with the GICHD to help train SESU staff in practices of "emergency response to explosive remnants of war contamination".[690] By December 30 2024, SESU reported detecting and clearing "31,700 items of explosive ordnance in Donetsk and Luhansk regions, including over 750 improvised devices".[691] Thus, by the end of 2014, a pattern of dual-purpose demining had already shaped up in Ukraine: combat-related clearance by military engineering units, and SESU-led demining for tactical and civilian safety reasons, and the first steps toward humanitarian mine action to "protect communities".



Figure 14.1. *First emergency-response demining in Ukraine. A Ukrainian deminer carries a mortar shell as the demining team neutralizes landmines and other explosives in the village of Semenovka in Donetsk on July 14, 2014.*[692]

[689] Organization for Security and Co-operation in Europe. 2014. "OSCE provides equipment for humanitarian demining in Ukraine." OSCE, December 30, 2014. https://www.osce.org/ukraine/133266.
[690] Ibid.
[691] Ibid.
[692] "UKRAINE-RUSSIA-CRISIS-POLITICS-MILITARY." Photographed by Genya Savilov for AFP. Source: Getty Images.

14.2 The Expansion of Demining Efforts: 2015

In 2015, the demining landscape in Ukraine changed in more pronounced ways. The government began expanding demining operations, and several international demining NGOs began NTS, TS, and clearance operations in Donbas. The *ad hoc* emergency clearance remained a predominant method of demining, and SESU and Ukrainian military sappers worked in tandem to "comb" through [re]claimed areas. One report suggested that SESU demining teams cleared "195,000 explosive devices across eastern Ukraine" between 2014 and 2015, however, these numbers seem unlikely as they suggest that nearly eleven thousand pieces of landmines and other explosive devices were placed daily over the course of eighteen months.[693] SESU and military sappers focused on clearing roadsides and former checkpoints.

In 2015, the Ukrainian government partnered with the OSCE and GICHD in an attempt to "professionalize" the country's demining sector.[694] IMSMA, introduced to SESU by the OSCE in December 2014, was piloted in four regions, including Donetsk and Luhansk in order to systemize information on landmine contamination.[695] The adoption of IMSMA was critical. The government commenced the development of a centralized database for planning of demining operations and the process of prioritization.

Several international demining NGOs began operations on the ground at various points in 2015. The HALO Trust established a permanent program after initial OSR and field assessments in late 2014. The organization began hiring and training local deminers to conduct NTS, TS and clearance in areas under government control.[696] HALO's initial priority were villages sitting on

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[693] Organization for Security and Co-operation in Europe. 2015."OSCE Helps Ukraine to Introduce Information Management System for Mine Action." *OSCE*, December 4, 2015. https://www.osce.org/ukraine/206881.

[694] Organization for Security and Co-operation in Europe. n.d. "Building Ukrainian Humanitarian Mine Action Capacity". OSCE. https://salw.osce.org/Projects/ViewPage/3200349-building-ukrainian-humanitarian-mine-action-capacity. ; Organization for Security and Co-operation in Europe. 2015. "OSCE Helps Ukraine to Clear Donetsk and Luhansk Regions of Unexploded Ordnance." *OSCE*, July 30, 2015. https://www.osce.org/ukraine/175256.

[695] Organization for Security and Co-operation in Europe. 2015."OSCE Helps Ukraine to Introduce Information Management System for Mine Action." *OSCE*, December 4, 2015. https://www.osce.org/ukraine/206881.

[696] The HALO Trust. n.d."Demining Ukraine". https://www.halotrust.org/where-we-work/europe-and-caucasus/ukraine.

the periphery of the conflict zone where landmines endangered civilians. Similar to the HALO Trust, the DGG (later DRC), which had presence in Ukraine in 2014, expanded its on-the-ground operations, while the FSD established on-the-ground operations focusing on the "Donbas region along the line of contact between areas controlled by the Ukrainian government and those under separatist control".[697] With the arrival of international demining NGOs, the demining landscape in Ukraine began transitioning from a purely emergency-style clearance to "humanitarian mine action" approach.

While landmines had already become a "problem" with the outset of the Donbas conflict in 2014, they were not initially recognized by the government as a distinct issue. In 2015, however, continuous verified and unverified reports of mine-usage by the Russia-back forces resulted in intra-government efforts working towards a "legislative solution". In other words, the Ukrainian government needed help demining its territories, but the legislative framework for demining did not exist. Working together with the OSCE advisors, the government began working towards a national mine action law. The purpose of establishing a policy framework was not only to move from scattered, *ad hoc*, emergency demining operations, but provide legislative structure that would facilitate the arrival of foreign demining experts and demining operators. By the end of 2015, data management tools, international partnerships and a policy framework were in the process of development.

14.3 Legal and Institutional Progress: 2016-2017

The legislative work regarding demining operations continued in 2016 and 2017. With Minsk Protocol II in place and somewhat of a reduction in active fighting, the government of Ukraine had the "bandwidth" to focus on the development of institutional and legal measures to regulate demining operations.

In the 2016-2017 period, the Ukrainian government made two major institutional-legal steps regarding its demining efforts. First, the government adopted IMAS as "trial national regulatory acts on 1 September 2016, under National Standardization Authority Order 230 of 8 August

[697] Fondation Suisse de Deminage. 2025. "FSD's Mine Action Programme in Ukraine." *FSD*, January 2025. https://fsd.ch/wp-content/uploads/2025/02/Ukraine-update-0125-EN.pdf. P. 7. ;
Danish Refugee Council. 2025. "Ukraine: Booklet on DRC activities overview." *DRC*, February, 2025. https://drc.ngo/media/f3nf4ccg/drc_en_general-brochure_2025.pdf

2016", and by November of the same year, the country adopted "42 international standards as national standards".[698] Second, the drafts of national demining law were put forward to the parliament and the Committee on National Security and Defence.[699]

Citing Geneva-based presentations and interviews given by Lt.-Col. Yevhenii Zubarevskyi from Ukraine's Ministry of Defence in February and May 2016, the Mine Action Review stated that by May 2016, the Ukrainian government was in the "process of passing mine action legislation that would list the executive bodies involved in mine action in Ukraine, regulate the national mine action authority, and mandate development of a priority action plan".[700]

A working group that comprised two ministries—Ministries of Defence, Emergency Situations—members of Verkhovna Rada, the Ukroboronservice, and advisors from the OSCE worked on the draft law on mine action.[701] The HALO Trust too, was reported to have been actively participating in "mine roundtables and public hearings on mine action legislation".[702] The most critical goal of the law-to-be was to clearly define and assign responsibilities among state institutions, create a "focal point" for demining or NMAA, regulate and facilitate the collaboration with foreign demining operators, and enable the inflow of international donations for demining.

In the process of drafting the law, the working group studied the experiences from other countries with the "landmine problem" in an attempt to gain insight on "international best practices".[703] Parallel to the legislative work, the government began preparing the adoption of National Mine Actions Standards (NMAS) that would be aligned with the IMAS. The government's goal was to have "technical standards" ready by the time the country's demining law is adopted. In theory, this would make the transition to institutionalized demining operations more "smooth"—the procedural practices of all existing demining operators would synchronize and become uniform.

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[698] Mine Action Review. 2017. "Clearing the Mines 2017 - Ukraine". www.mineactionreview.org. P. 217.
[699] Ibid, 215.
[700] Mine Action Review. 2016. "Clearing the Mines 2016 - Ukraine".www.mineactionreview.org. P. 212.
[701] Mine Action Review. 2017. "Clearing the Mines 2017 - Ukraine". www.mineactionreview.org. P. 215.
[702] Ibid.
[703] Tymur Pistriuha (Ukrainian Deminers Association/Demining Solutions, Director), interviewed by author, March 5 2025.

Without demining legislation in place, the coordination and management of demining activities remained principally in the hands of the National Security and Defence Council and the Ministry of Defence.[704] However, several other ministries were also involved, including "Internal Affairs (the National Police and National Guard), the Security Services, SESU (formerly known as the Ministry of Emergencies), the State Special Transport Services of the Ministry of Infrastructure, and the State Border Service".[705]

At this time, the "split" between military-type and humanitarian-type became more pronounced. The Ukrainian Armed Forces established their demining centre in Kamianets-Podilsky, and focused mainly on "building the military's capacity for explosive ordnance disposal (EOD), including training and testing of methods and equipment, quality assurance (QA), and provision of EOD, counter-IED, and demining specialists".[706] Notably, the military's demining center was also staffed by demining experts from NATO and Canada, who provided training and advice to Ukraine's military sappers, and deminers-to-be.[707] However, Lt.-Col. Yevhenii Zubarevskyi from Ukraine's Ministry of Defence communicated to the GICHD and Mine Action Review that "all Ukrainian Armed Forces engineering units were involved in humanitarian demining in eastern Ukraine".[708]

SESU, on the other hand, had "organizational control of humanitarian demining", and was "generally responsible for clearance".[709] SESU's responsibilities for demining were derived from Ukraine's Civil Protection Code, which tasked SESU with "demining all territory of Ukraine".[710] The remit of SESU's "Special Humanitarian Demining Center", established a year earlier in Kyiv, included "coordination of SESU pyrotechnical teams (akin to rapid-response EOD teams) involved in technical and non-technical survey (NTS), demining, internal quality control (QC) of SESU units, information management, and handover of land cleared by SESU to local authorities, as well as risk education".[711] At this time, SESU began working towards establishing

[704] Mine Action Review. 2016. "Clearing the Mines 2016 - Ukraine".www.mineactionreview.org. P. 212.
[705] Ibid.
[706] Ibid.
[707] Ibid.
[708] Ibid.
[709] Ibid.
[710] Person SESU (State Emergency Service of Ukraine), interviewed by author, March 20, 2025.
[711] Col. Oleh Bondar, SESU, presentation to GICHD in Geneva, 17 February 2016 ; Mine Action Review. 2016. "Clearing the Mines 2016 - Ukraine". https://www.mineactionreview.org. P. 212.

a "Regional Centre for Humanitarian Demining" in Lysychansk in Luhansk oblast, to "ensure trained SESU deminers" could be sent to "affected areas in the east under government control".[712] The center was planned to work alongside the already-established SESU training center "near Merefa" in Kharkiv oblast which focused on "EOD and battle area clearance (BAC)".[713]

By late fall 2016, "two draft bills were submitted to the parliament's Committee on National Security and Defense", and "one of the drafts (no. 5189), dated 28 September 2016, was put forward by a member of parliament".[714] The other draft, no. 5189-1, came from the Cabinet of Ministers of Ukraine and was dated to October 12, 2016.[715] The Committee on National Security and Defence recommended a rejection of both drafts to the Ukrainian Parliament in the first half of 2017.[716]

By the beginning of 2017, the government formed a subcommittee of mine action standardization to "help elaborate national mine action standards", and by April the National Standardization Authority announced a Technical Standardization Committee had been formed comprising the Ministry of Temporarily Occupied Territories and Internally Displaced Persons together with "other relevant ministries and departments".[717] The Mine Action Review, however, reported that such a Committee had not been formed in late 2017.[718]

In the meantime—during spring and summer 2017—the MOD prepared a draft NMAS in "accordance with international best practices and drawing on experience of other mine action programmes".[719] For this purpose, the MOD set up its own, 28-member "working group" or "sub-committee" within the ministry's Technical Committee TK176; this group involved members of international humanitarian demining organizations.[720]

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[712] Col. Oleh Bondar, SESU, presentation to GICHD in Geneva, 17 February 2016 ; Mine Action Review. 2016. "Clearing the Mines 2016 - Ukraine". https://www.mineactionreview.org. P. 212.
[713] Anton Shevchenko, OSCE, email to Mine Action Review Board, 14 June 2016. ;
Mine Action Review. 2016. "Clearing the Mines 2016 - Ukraine". https://www.mineactionreview.org P. 212.
[714] Mine Action Review. 2017. "Clearing the Mines 2017 - Ukraine". www.mineactionreview.org. P. 215.
[715] Ibid.
[716] Ibid.
[717] Ibid, 217.
[718] Ibid.
[719] Ibid.
[720] Ibid.

On the ground, demining efforts continued in government-controlled areas of Donbas, while the Mine Action Review reported that "separatists are said to be also clearing mines and ERW" in "areas controlled by pro-Russian rebel groups".[721] More specifically, the Mine Action Review reported that it was the former SESU personnel undertaking clearance "day and night" around Donetsk city.[722]

Within the Kyiv-controlled areas, the HALO Trust, FSD and DDG expanded their demining operations. At the end of 2016, HALO's team counted 91 deminers, and by October 2017 the figure stood at 220.[723] The organization remained active in areas more than 15 km from the contact line, and performed clearance or survey operations in eleven districts of the Donetsk region.[724]

Concurrently, the DDG launched its survey operations, and began training demining teams out of its offices in Kyiv, Mariupol and Severodonetsk.[725] By late spring 2017, the DDG was operational in six of Ukraine's regions.[726] Similarly, the FSD expanded its operations to survey and clearance teams in eastern Ukraine while "working closely with regional security forces"; the FSD's teams were reported to have training and accreditation in "full mine clearance and EOD capacity".[727]

Ukraine's government teams also continued and expanded their demining efforts, particularly regarding the demining personnel numbers.[728] The MOD remained responsible for "all areas where the military are permanently stationed as well as for the Anti-Terrorist Operation (ATO) zone" in Donbas; the State Border Service conducted demining in "areas under its control on land and in the sea"; the Ministry of Infrastructure's Special Transportation Service continued demining national infrastructure, such as railways and roads, while SESU conducted clearance of EOD and IEDs.[729]

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[721] Mine Action Review. 2017. "Clearing the Mines 2017 - Ukraine". www.mineactionreview.org. P. 219.
[722] Ibid.
[723] Ibid, 218.
[724] Ibid, 218-219.
[725] Ibid, 218.
[726] Ibid.
[727] Ibid, 219.
[728] Ibid, 218.
[729] Ibid.

By the end of 2017, the government had made progress in institutionalizing demining efforts, however, operations remained fragmented and lacked central authority. Additionally, the government-run demining teams lacked apt documentation and reporting mechanisms for clearance—no reliable clearance data was reported by the Ukrainian authorities. The international operators, on the other hand, reported their results to the Mine Action Review—the HALO alone cleared 52,887 m^2 of suspected and confirmed contaminated land.[730]

Most of Donbas remained inaccessible, as international NGOs, military sappers and SESU could neither conduct clearance or NTS and TS at the other side of the contact line. Unlike 2014 and pre-2014 however, local demining units and deminers had built useful experience amid three years of demining operations. HALO in particular pushed for further incorporation of humanitarian demining practices and trained SESU units in such practices.

14.4 The First Demining Law: 2018-2019

Three key developments took place in Ukraine's demining sector between 2018 and 2019. First, Kyiv made its first attempt to pass a demining law. Second, the national mine action standards were finalized by the MOD after "after multi-year input and review from key stakeholders".[731] And third, the FSD and DDG, two out of only three international demeaning operators, ceased survey and clearance operations—with FSD noting its suspended operations were due to funding issues.[732]

On December 6, 2018, the Verkhovna Rada adopted the country's long-awaited first demining law, marking a landmark legislative development.[733] The "Law No. 2642-VIII On Mine Action in Ukraine" was officially signed into law by the President's Office on January 22 2019, to set up a legal framework for all demining operations in the country.

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[730] Mine Action Review. 2019. "Clearing the Mines 2019 - Ukraine". https://www.mineactionreview.org/assets/downloads/NPA_Clearing_the_Mines_2019_Ukraine.pdf. P. 256. ; Emails from Gianluca Maspoli, GICHD, and Miljenko Vahtaric, OSCE PCU, to the Mine Action Review on September 25, 2018.
[731] Mine Action Review. 2017. "Clearing the Mines 2017 - Ukraine". www.mineactionreview.org. P. 220.
[732] Mine Action Review. 2019. "Clearing the Mines 2019 - Ukraine". https://www.mineactionreview.org/assets/downloads/NPA_Clearing_the_Mines_2019_Ukraine.pdf. P. 256.
[733] The Organization for Security and Co-operation in Europe. 2018. "Ukrainian parliament adopts legal framework for mine action, with OSCE advice provided." *OSCE*, December 10, 2018. https://www.osce.org/project-coordinator-in-ukraine/406043

This demining legislation, however, was interrupted nearly immediately after its signing into law—the implementation was "impossible" because the Cabinet of Ministers found it to be incompatible with Ukrainian constitution—the legislation gave the authority to create mine action institutions, such as NMAA or NMAC, to the Parliament, while the constitution afforded this responsibility of the Cabinet of Ministers instead.[734]

Nonetheless, the law attempted to clarify key features of the demining process, including the institutional framework, the "scope of mine action", standards and accreditation procedures, funding mechanisms, and data management. The law was a result of extensive and intensive collaboration with advisors working in the international demining sector: the OSCE, GICHD, UNDP, DDG, FSD, and HALO.[735] None of the aspects could be applied, however, as amendments needed to be introduced by Verkhovna Rada to address the discrepancies with the constitution.

The same group of international demining experts advised the government on its national demining standards. The first set of NMAS were published by the Ukrainian Institute of Standardization on December 19, 2018, shortly after the parliament adopted the demining legislation. The NMAS, approved by order Nº 511 "On the adoption of national standards", and set to enter into force on April 1 2019, but was not operationalized for the next several years.[736]

On the ground, clearance efforts continued throughout 2018 and 2019, and MOD retained its organizational control of demining operations across the Kyiv-controlled areas.[737] No reliable data exists on the total clearance outputs in this period. The DDG did not perform any survey or clearance operations throughout 2018, and the FSD suspended operations in 2019.[738] The HALO Trust, however, remained active and continued to expand its teams and operations—by summer 2019, HALO's staff totaled 418, a nearly double increase compared to 2017.[739] Additionally, the

[734] Mine Action Review. 2020. "Clearing the Mines 2020 - Ukraine." https://www.mineactionreview.org/assets/downloads/907_NPA_Clearing_the_Mines_2020_Ukraine.pdf. P. 279.
[735] Hewitt and Shenhav. 2021. "Developing National Landmine Clearance Capacity in Ukraine", 37.
[736] Ibid, 43.
[737] Mine Action Review. 2019. "Clearing the Mines 2019 - Ukraine". https://www.mineactionreview.org/assets/downloads/NPA_Clearing_the_Mines_2019_Ukraine.pdf. P. 254.
[738] Ibid, 256.
[739] Ibid.

organization began implementing mechanical clearance in 2018—the first operators in Ukraine to do so.[740]

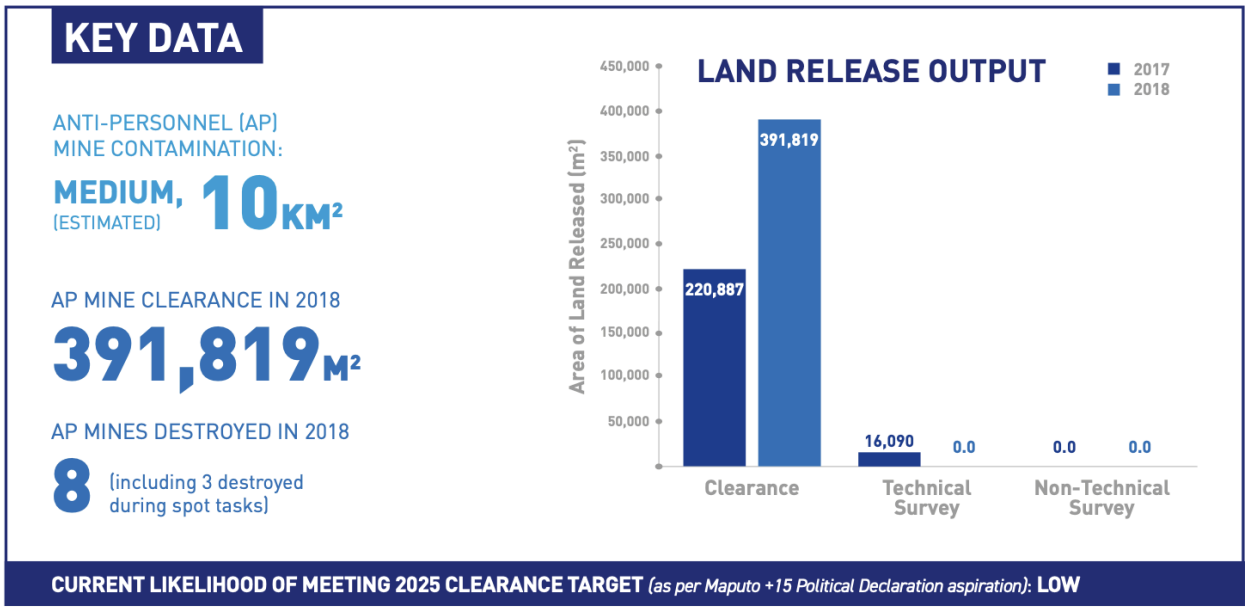


Figure 14.2. *An illustration of "key data" on demining in Ukraine in 2018 collected by the Mine Action Review, an independent research and analysis project tracking contaminated countries' adherence to the Mine Ban Treaty. The Mine Action Review is published by the Norwegian People's Aid, and funded by the Global Affairs Canada, the Royal Norwegian Ministry of Foreign Affairs, and the Swiss Federal Department of Foreign Affairs. The three major international humanitarian demining operators—HALO, NPA and MAG act as the project's Advisory Board.*[741]

Overall, although the demining legislation and national demining standards stalled and remained inoperative during this time, the 2018-2019 legislative drive was nonetheless pivotal. For the first time, Kyiv moved beyond *ad hoc* decrees toward a coherent institutional-legal framework for [humanitarian] demining. These initiatives—however truncated—signalled Ukraine's intent to clarify mandates, create funding pipelines, and impose unified technical standards, laying the administrative scaffolding on which a future mine action architecture could be built.

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[740] Mine Action Review. 2019. "Clearing the Mines 2019 - Ukraine". https://www.mineactionreview.org/assets/downloads/NPA_Clearing_the_Mines_2019_Ukraine.pdf. P. 256. ; Email from Yuri Shahramanyan, HALO Trust Ukraine, to the Mine Action Review on May 17, 2019.

[741] Mine Action Review. 2019. "Clearing the Mines 2019 - Ukraine". https://www.mineactionreview.org/assets/downloads/NPA_Clearing_the_Mines_2019_Ukraine.pdf. P. 252. ; Mine Action Review. n.d. "About Us | Mine Action Review." https://www.mineactionreview.org/about-us.

14.5 Institutional Developments and NMAS: 2019-2021

Between 2019 and 2021, Ukraine's survey and clearance outputs rose, yet the institutions meant to orchestrate a national response lagged behind, caught in constitutional quagmires, inter-ministerial turf battles and the COVID-19 pandemic. The result was a program that fell farther behind its Mine Ban Treaty obligations.

During this period, Ukraine's overall "demining performance" had been described as "slow", "disappointing", "extremely disappointing", "poor" and "very poor" by the international demining operators and stakeholders.[742] Despite several years of substantial international assistance in terms of funding, equipment, clearance, and expertise-sharing, in 2019-2020, Ukraine had no adopted demining legislation, no "formal mine action authority and functioning mine action center", no national demining strategy, no systematic and reliable contamination data and centralized database, and no standardized national criteria for prioritization in demining.[743]

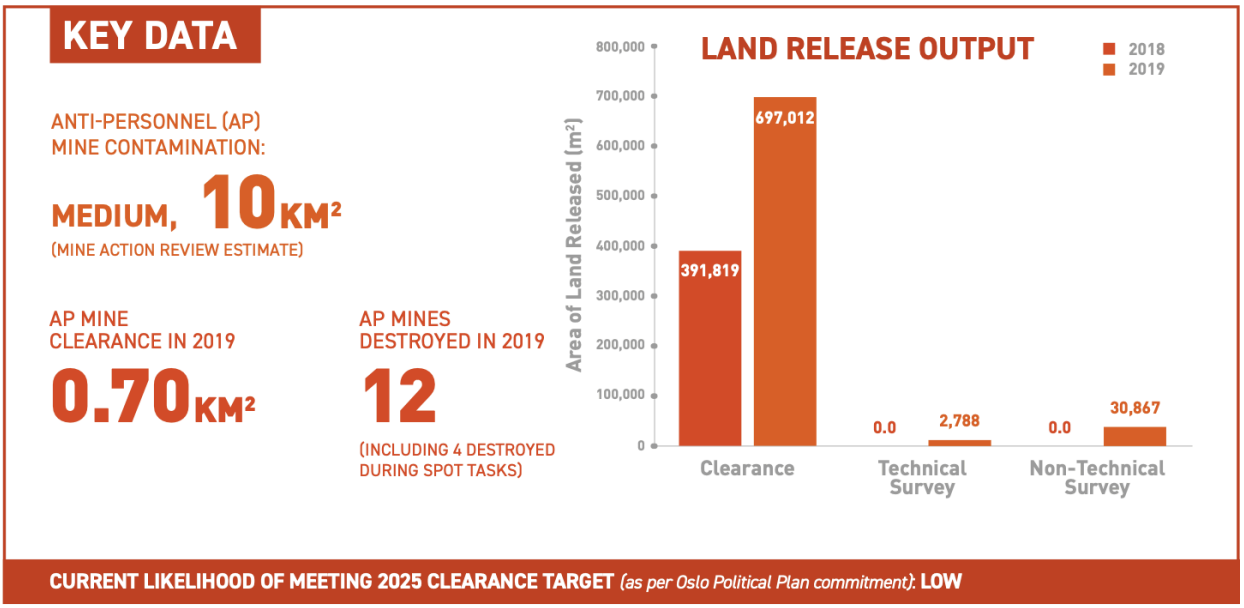


Figure 14.3. *An illustration of "key data" on demining in Ukraine in 2019 collected by the Mine Action Review. The graph shows that 2019 clearance outputs ticked upward compared to 2018, however, Ukraine's stalled legislative-institutional efforts eclipsed the developments on the ground.*[744]

[742] Mine Action Review. 2020. "Clearing the Mines 2020 - Ukraine". https://www.mineactionreview.org/assets/downloads/907_NPA_Clearing_the_Mines_2020_Ukraine.pdf.
[743] Ibid.
[744] Ibid, 276.

More specifically, between 2019 and mid-2020, Kyiv's institutional-legislative ambitions, which comprised the establishment of a national mine action authority and a national mine action center, had not been realized, while the published national demining standards remained "voluntary" pending the adoption of amended demining law.[745] The "long-awaited mine action legislation", which was adopted in late 2018 but immediately struck down as "unconstitutional" did not face notable legislative progress in 2020—by June 2020, the new legislation had not been adopted.[746]

Kyiv's legislative gridlock was palpable on the ground as the OSCE and international demining operators reported that the "voluntary" national standards were "not applied in practice".[747] Importantly, the "lack" of a national mine action center also resulted in no accreditation procedures for the international operators' SOPs who thus defaulted to following IMAS and "donor contractual obligations" in their demining operations rather than Kyiv's NMAS.[748]

Predictably, the governance of the country's demining program remained stalled and fragmented. The MOD continued its operational control of demining, while SESU and other governmental agencies—the Security Service, the State Special Transport Service (SSTS), and the State Border Service—ran separate operations.

However, some operational progress was made in 2019 when HALO expanded its team with additional 100 deminers, and the MOD established "quality control inspection teams" to conduct "post-clearance inspection visits, which enabled official handover of land to take place for the first time".[749]

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[745] Mine Action Review. 2020. "Clearing the Mines 2020 - Ukraine". https://www.mineactionreview.org/assets/downloads/907_NPA_Clearing_the_Mines_2020_Ukraine.pdf. P. 277.
[746] Ibid, 276.
[747] Mine Action Review. 2020. "Clearing the Mines 2020 - Ukraine". https://www.mineactionreview.org/assets/downloads/907_NPA_Clearing_the_Mines_2020_Ukraine.pdf. P. 281. ; Email from Miljenko Vahtaric, OSCE PCU, to the Mine Action Review on May 31, 2019.
[748] Mine Action Review. 2020. "Clearing the Mines 2020 - Ukraine". https://www.mineactionreview.org/assets/downloads/907_NPA_Clearing_the_Mines_2020_Ukraine.pdf. P. 281. ; Email from GICHD to the Mine Action Review on May 13, 2020.
[749] Mine Action Review. 2020. "Clearing the Mines 2020 - Ukraine". https://www.mineactionreview.org/assets/downloads/907_NPA_Clearing_the_Mines_2020_Ukraine.pdf. P. 281.

By late 2020, Kyiv's legislative efforts culminated when the President signed a new demining law, described as a "comprehensive amendment package", in December 2020.[750]

A group of international organizations—UNDP, OSCE, HALO Trust and DRC—worked closely with the Ukrainian government on modelling the amended law according to the "best international practices", and the "recommendations of the working group were broadly taken into account" by Kyiv.[751] The new law improved "the safety and efficiency of mine action operators", clarified insurance requirements, and "removed the territorial restriction for operators' right to request support from the local authorities".[752] However, the legislation left two areas unresolved: the license for demining operators to "carry out disposal, destruction, and transportation of explosive items for explosive ordnance disposal (EOD) procedures", and the license for operators to import and use "so-called dual-use items".[753]

Most importantly, the new law established a framework for humanitarian demining by dividing responsibilities among the governmental institutions and "foreseeing" the creation of a national mine action authority.[754] Moreover, contrary to legislative and institutional practices in other mine-contaminated states, Kyiv's new law stipulated the creation of two national mine action centers—a move described as peculiar, anomalous, and potentially inefficient by the international demining operators and administrators.[755] This decision was reported to have been a result of Kyiv's effort to settle an inter-ministerial turf battle between the MOD and the Ministry of Interior (MOI).[756] The two ministries' competition over who should lead the country's mine action program thus resulted in one military-oriented mine action center housed by the MOD, and one civilian-humanitarian national mine action center housed by the MOI.

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[750] The Verkhovna Rada of Ukraine. *On Amendments to the Law of Ukraine "On Anti-Mine Activity in Ukraine"*. September 17, 2020. https://ips.ligazakon.net/document/T200911?an=1. ;
Mine Action Review. 2021. "Clearing the Mines 2021 - Ukraine".
https://www.mineactionreview.org/assets/downloads/Ukraine_Clearing_the_Mines_2021.pdf. P. 297.
[751] Mine Action Review. 2021. "Clearing the Mines 2021 - Ukraine".
https://www.mineactionreview.org/assets/downloads/Ukraine_Clearing_the_Mines_2021.pdf. P. 300.
[752] Ibid.
[753] Ibid.
[754] Ibid.
[755] Ibid.
[756] Miljenko Vahtavic, OSCE PCU, interviewed by the Mine Action Review on May 10, 2021. ; Mine Action Review. 2021. "Clearing the Mines 2021 - Ukraine".
https://www.mineactionreview.org/assets/downloads/Ukraine_Clearing_the_Mines_2021.pdf. P. 301.

Furthermore, clearance and survey operations continued throughout 2020, despite somewhat of a slow-down amid the COVID-19 pandemic, and the introduction of pandemic-related restrictions.

Amid the social distancing restrictions, the FSD was forced to "limit the information-gathering methods of non-technical surveys", and "conduct two separate basic clearance operator trainings instead of one"—these measures added time constraints and financial costs.[757] The DRC, on the other hand, suspended operations on two occasions amid restrictions and infections among team members, while the HALO Trust suspended clearance only briefly before redeploying under "strict preventative measures".[758]

The HALO Trust subsequently reported "minimal impact" of the pandemic on its operations.[759] In fact, data collected by the Mine Action Review indicates that clearance output in 2020 was higher compared to 2019.

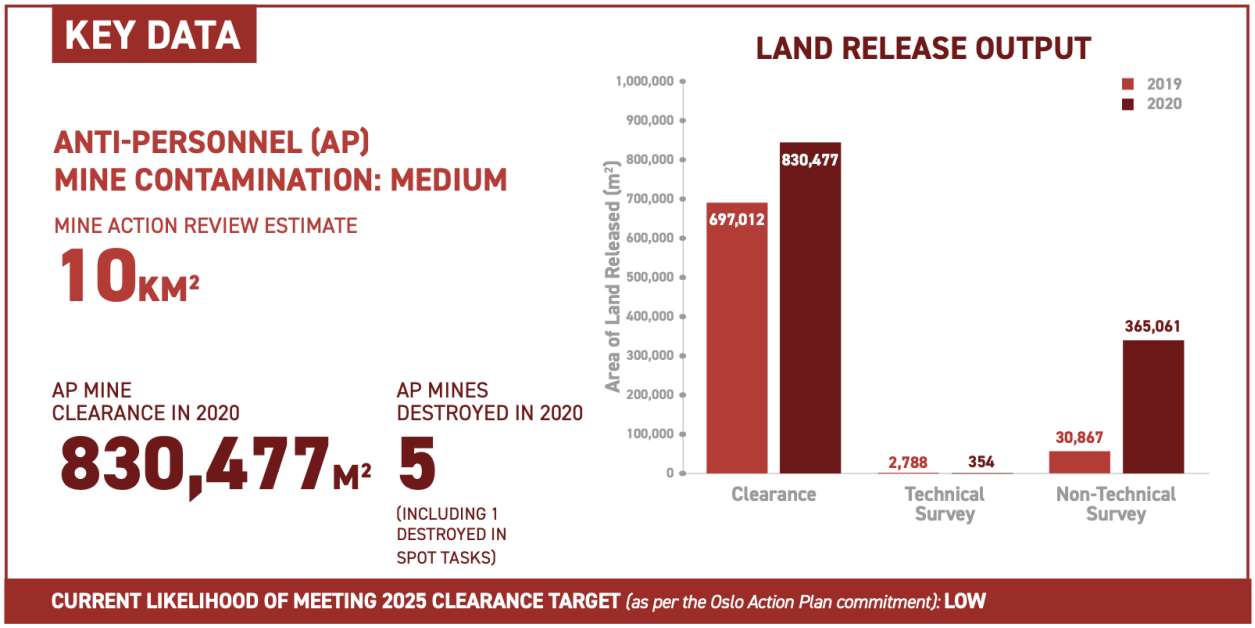


Figure 14.4. *An illustration of clearance output data collected by the Mine Action Review. The graph shows an increase in demining outputs in Ukraine in 2020 compared to 2019.*[760]

[757] Mine Action Review. 2021. "Clearing the Mines 2021 - Ukraine". https://www.mineactionreview.org/assets/downloads/Ukraine_Clearing_the_Mines_2021.pdf. P. 304
[758] Ibid.
[759] Ibid.
[760] Ibid, 297.

Additionally, Kyiv made progress in its demining information management practices by migrating its double IMSMA databases—one owned by the MOD and the other by the MOI's SESU—to IMSMA Core, a "state-of-the art Geographic Information Systems software" launched in 2018.[761] The transition was completed with the support of the GICHD between 2019 and 2020, and the MOD subsequently partnered with the GICHD and OSCE to develop and publish an "interactive map of areas contaminated with mines and explosives" for demining operators to use during their planning and clearance work.[762]

Building on the progress made in 2020, Kyiv planned to finally set up and operationalize the national mine action authority and two mine action centers envisioned by the 2020 amendments to the Mine Action Law. The amended legislation stipulated the establishment of the three institutions within a six-month period, thus by June 2021.

In practice, however, only the MOI's Humanitarian Demining Centre in Merefa opened on schedule, while the MOD's mine action center was reported to be "in an advanced stage in Chernihiv but not yet fully established" as of May 2021.[763] Similarly, the National Mine Action Authority (NMAA) had not been fully established by July 2021, however, the operators on the ground reported that the MOD "was assuming an NMAA role on a de-facto basis".[764] Therefore, as a consequence of yet another period of institutional delays, in 2021, Ukraine still did not have a national mine action strategy, as the responsibility for its development was assigned to the future NMAA.[765] Additionally, the development of national criteria for the prioritization of demining tasks was absent and pending the establishment of the MOD's mine action center,

[761] Mine Action Review. 2021. "Clearing the Mines 2021 - Ukraine". https://www.mineactionreview.org/assets/downloads/Ukraine_Clearing_the_Mines_2021.pdf. P. 302 ; Geneva International Center for Humanitarian Demining. n.d. "Our Response - Information Management - IMSMA CORE". https://www.gichd.org/our-response/information-management/imsma-core/.
[762] Mine Action Review. 2021. "Clearing the Mines 2021 - Ukraine". https://www.mineactionreview.org/assets/downloads/Ukraine_Clearing_the_Mines_2021.pdf. P. 302.
[763] Ibid, 301.
[764] Email from Miljenko Vahtavic, OSCE PCU, to the Mine Action Review on July 23, 2021. ; Email from Almedina Musić, DRC, to the Mine Action Review on July 26, 2021. ;
Mine Action Review. 2021. "Clearing the Mines 2021 - Ukraine". https://www.mineactionreview.org/assets/downloads/Ukraine_Clearing_the_Mines_2021.pdf. P. 301.
[765] Mine Action Review. 2021. "Clearing the Mines 2021 - Ukraine". https://www.mineactionreview.org/assets/downloads/Ukraine_Clearing_the_Mines_2021.pdf. P. 303.

resulting in a continued *ad hoc* and asynchronous prioritizations practices that varied across different operators.[766]

Overall, the legislative, institutional and operational developments of Ukraine's demining sector between 2019 and 2021 illuminate the friction between the expectations of the international humanitarian demining regime and its architecture and Ukraine's lived condition as a state defending sovereignty along a fluid frontline.

While clearance and survey numbers multiplied, the institutional developments faced chronic delays and legal-bureaucratic obstacles. Still, institutionally, Ukraine moved from "no law", to an "invalid law", to a "compromise law" between 2019 and 2021, although the legislative-institutional progress failed to create a single command-and-control node.

Therefore, 2019-2021 was a period of continuous but slow progress in building Ukraine's demining capacities. By the eve of the 2022 inter-state war, Ukraine had the legal framework, partly-established demining institutions, multiple Ukrainian and international demining actors, and had cleared a modest amount of territory. The demining challenge, however, remained significant, and numerous institutional and operational plans were still pending finalization.

14.6 Escalation of the Conflict and Increased Contamination: 2022

When the Russo-Ukrainian war broke out in late February 2022, the intensity of combat profoundly transformed Ukraine's demining landscape through new and increased mine contamination and substantial strain on the nascent demining structures.

Prior to 2022, landmines and demining efforts had been concentrated in Donetsk and Luhansk Oblasts, however, the landmine contamination soon extended to at least ten other oblasts: Kyiv, Chernihiv, Kherson, Kharkiv, Zhytomyr, Poltava, Sumy, Mykolaiv, Zaporizhizha, Odesa, and Dnipropetrovsk.[767]

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[766] Email from Henry Leach, DDG Ukraine, to the Mine Action Review on May 2, 2019. ; Email from Yuri Shahramanyan, HALO Trust Ukraine, to the Mine Action Review on May 16, 2019. ; Mine Action Review. 2021. "Clearing the Mines 2021 - Ukraine". https://www.mineactionreview.org/assets/downloads/Ukraine_Clearing_the_Mines_2021.pdf. P. 303.
[767] Human Rights Watch. 2023. "Landmine Use in Ukraine." *HRW*, June 2023. https://www.hrw.org/sites/default/files/media_2023/06/UkraineLM_Briefing_June2023.pdf. P. 2

In the initial months of the war, February to March 2022, [humanitarian] demining efforts in Donbas were either put on hold or terminated altogether due to active combat.[768] The priority for Ukraine's military engineers and sappers was combat breaching and defensive mine-laying rather than humanitarian clearance.[769] Consequently, 2022 produced a dual dynamic. On one hand, 2022 marked a massive increase in mine contamination, and the urgent need for demining in areas where active combat ceased. On the other hand, the escalation of conflict caused disruptions to the nascent demining structures as resources were diverted to war-fighting and emergency responses. Notably, the MOI/SESU main server was subject to cyberattacks shortly before the conflict escalation—this led Kyiv to turn both MOD and MOI servers into cloud-based databases with the GICHD's help.[770]

The most substantial new mine contamination was a result of Russian forces retreating from their combat positions and areas under their control. For instance, in April 2022, Ukrainian forces reported "thousands of landmines" in northern Ukraine, particularly in and around Kyiv.[771] Once Russian troops retreated from northern Ukraine—Kyiv, Chernihiv, Sumy areas—in spring 2022, SESU teams rapidly deployed to those regions for emergency clearance. This was reminiscent of SESU's first emergency mission in 2014, but on a much larger scale. By May, Ukrainian authorities reported that its teams disposed of "tens of thousands of mines and other explosive ordnance".[772] Importantly, the scale of the new mine contamination took an immediate toll on Ukraine's demining teams, with SESU reporting that 29 of its deminers had been killed and 73 injured by April 15.[773]

However, Ukraine's mine action coordination did not collapse under the escalation of conflict, rather, it adapted. The formation and operationalization of the national mine action centers was

[768] Tymur Pistriuha (Ukrainian Deminers Association/Demining Solutions, Director), interviewed by author, March 5 2025.
[769] Ibid.
[770] Mine Action Review. 2022. "Clearing the Mines 2022 - Ukraine". https://www.mineactionreview.org/assets/downloads/Ukraine_Clearing_the_Mines_2022.pdf P. 343.
[771] Mak, Tim, 2022. "Zelenskyy accuses Russians of leaving thousands of land mines in the Kyiv area." NPR, April 12, 2022. https://www.npr.org/2022/04/12/1092290573/russia-kyiv-landmines.
[772] Mine Action Review. 2022. "Clearing the Mines 2022 - Ukraine". https://www.mineactionreview.org/assets/downloads/Ukraine_Clearing_the_Mines_2022.pdf P. 336.
[773] Isabelle Khurshudyan and Max Bearak. 2022. "Clearing the Deadly Litter of Unexploded Russian Bombs in Ukraine." *The Washington Post*, April 15, 2022. https://www.washingtonpost.com/world/2022/04/15/ukraine-clearing-unexploded-russian-bombs-missiles

initially disrupted, but operations and meetings suspended in late February 2022 resumed shortly thereafter and entered a period of rapid institutional, legislative and operational development and progress. By September, the MOD's mine action center which previously faced stalled development and operationalization, received accreditation, and the long-awaited NMAA became operational and assumed full responsibilities.[774] Thus, by the end of 2022, Kyiv's key demining institutions—two mine action centers and the NMAA—were set up and fully operational.



Figure 14.5. *A SESU deminer carries a shell during an emergency demining operation on April 21, 2022, near Bervytsia, a village in Kyiv Oblast where active fighting ceased.*[775]

Meanwhile, demining actors multiplied. Four major international humanitarian demining organizations—the NPA, MAG, Humanity & Inclusion, and DanChurchAid (DCA)—deployed

[774] Email from GICHD to the Mine Action Review on October 20, 2022. ; Mine Action Review. 2022. "Clearing the Mines 2022 - Ukraine". https://www.mineactionreview.org. P. 340. ; Mine Action Review. 2023. "Clearing the Mines 2023 - Ukraine". https://www.mineactionreview. P. 359.
[775] "Mine Clearance Mission In Kyiv Region". Photograph by Evgen Kotenko for Ukrinform/NurPhoto. Source: Getty Images.

to Ukraine for the first time and began setting up their programs in 2022.[776] Concurrently, the Ukrainian military, SESU, and local demining NGOs expanded their demining teams, with SESU reporting the organization was in a rush to hire more deminers.[777] Two existing international operators, HALO and FSD, also expanded their teams and operations on the ground.[778]

International assistance surged. The U.S., Canada, UK, EU, and Japan announced large funding packages for demining throughout 2022, and specialized equipment packages consisting of mine detectors, protective gear, and demining machines began arriving as emergency aid from Ukraine's Euro-Atlantic allies.[779] The net effect by the end of 2022 was that Ukraine's contaminated land area had ballooned to levels described as "unknown, but massive", with Ukrainian authorities estimating total contamination of 174,000 km².[780] Concurrently, the Ukrainian government acknowledged its inability to meet the Mine Ban Treaty Article 5 deadline of December 2023, and began preparing for an extension request. Yet, the war had forced rapid and substantial progress—international aid multiplied, while Kyiv established its long-awaited institutional framework for demining.

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[776] Email from Roxana Bobolicu, International Policy Manager, MAG, to the Mine Action Review on September 21, 2022 ; Email from Alberto Serra, Programme Manager, NPA, to the Mine Action Review on July 5, 2022. ; Mine Action Review. 2022. "Clearing the Mines 2022 - Ukraine". https://www.mineactionreview.org. P. 345. ; Mine Action Review. 2023. "Clearing the Mines 2023 - Ukraine". https://www.mineactionreview.org. P. 359.

[777] Mine Action Review. 2022. "Clearing the Mines 2022 - Ukraine". https://www.mineactionreview.org/assets/downloads/Ukraine_Clearing_the_Mines_2022.pdf P. 345.

[778] Ibid, 146.

[779] United Nations Development Programme. 2022. "Japan Contributes US$4.5 Million to Clear Explosive Ordnance and Remove Debris in Ukraine." *UNDP*, April 6, 2022. https://www.undp.org/ukraine/press-releases/japan-contributes-us45-million-clear-explosive-ordnance-and-remove-debris-ukraine. ; U.S. Embassy in Ukraine. 2022. "$89 Million in New U.S. Humanitarian Demining Assistance for Ukraine Archives." *Office of the Spokesperson*, August 9, 2022. https://ua.usembassy.gov/tag/89-million-in-new-u-s-humanitarian-demining-assistance-for-ukraine/. ; Government of Canada. 2024. "Economic, humanitarian and development assistance, and security and stabilization support – Russia's invasion of Ukraine." https://www.international.gc.ca/world-monde/issues_development-enjeux_developpement/response_conflict-reponse_conflits/crisis-crises/ukraine-dev.aspx?lang=eng. ; European Union External Action Service. 2025. ""International Mine Awareness Day: Clearing the Path to Safety with EU Support for Mine Action." *EEAS*, April 4, 2025. https://www.eeas.europa.eu/eeas/international-mine-awareness-day-clearing-path-safety-eu-support-mine-action_en.

[780] Mine Action Review. 2023. "Clearing the Mines 2023 - Ukraine". https://www.mineactionreview.org. P. 359-60.

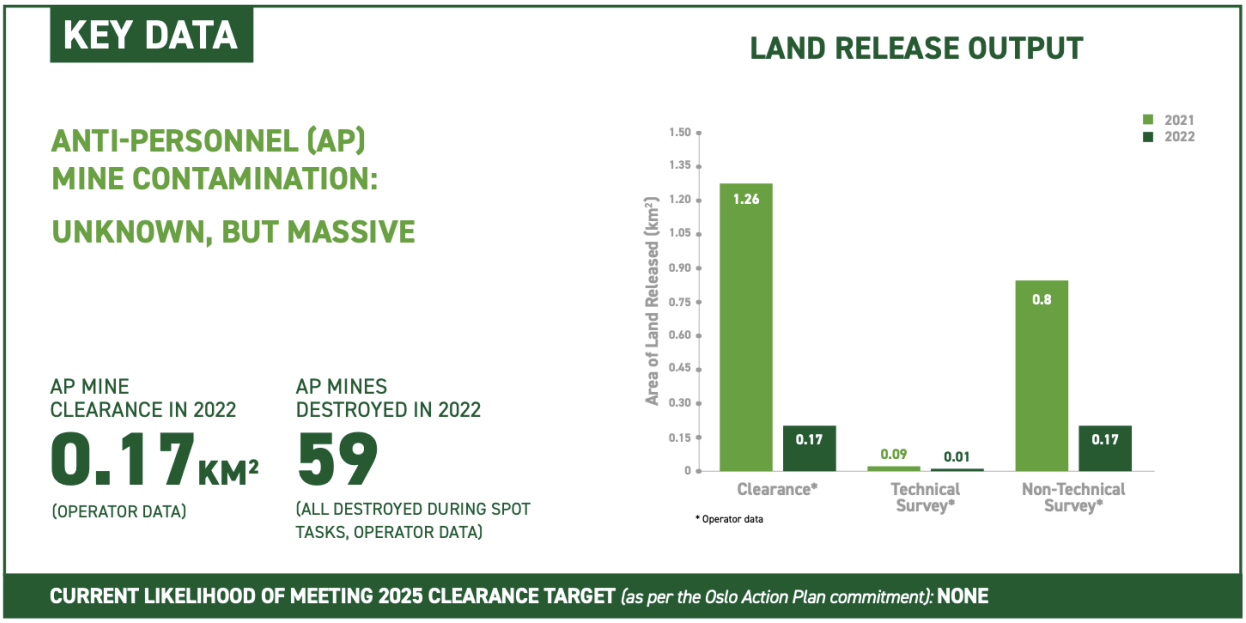


Figure 14.6. *The Mine Action Review's clearance data for Ukraine in 2022, showing "unknown" level of contamination.*[781]



Figure 14.7. *Deminers of SESU carry out emergency clearance on the outskirts of Kherson on November 16, 2022, shortly after the active fighting stopped in the area.*[782]

[781] Mine Action Review. 2023. "Clearing the Mines 2023 - Ukraine". https://www.mineactionreview.org. P. 359.

[782] "Ukrainian sappers carry out demining near a burned-out car." Photograph by Oleksii Chumachenko for SOPA Images/LightRocket. Source: Getty Images.

14.7 Scaling Up Demining Operations: 2023-2024

In 2023 and 2024, Ukraine's demining efforts scaled up to an industrial level, synchronizing unprecedented technical capacity with the wider war economy and a surge of foreign assistance.

Clearance executed by international demining operators rose more than three-fold in 2023 compared with 2022, and by mid-2024 more than forty national and international operators were accredited for demining work.[783] Simultaneously, Kyiv's contamination estimates rose to 156,000 km^2—almost a third of the country—with 35.22 km^2 already recorded as confirmed minefields, mostly in the north, central and south Ukraine.[784]

In early 2023, the Cabinet of Ministers created an "Inter-ministerial Committee on Humanitarian Demining", to "oversee mine action".[785] The specific tasks and responsibilities of the Committee remained unknown at the time of its establishment, and international operators reported not knowing whether it was operational in 2024.[786]

Concurrently, Kyiv established another agency—the Inter-agency Working Group on Humanitarian Demining—chaired by the Minister of Economy, with the purpose of coordinating national mine action activities.[787]

At the same time, the mandates of twin mine action centers crystallized with both sharing "the remits of information management (IM), quality assurance (QA), monitoring, planning, and certification of the operators".[788] Additionally, the revised NMAS issued in 2023 adopted

[783] Mine Action Review. 2024. "Clearing the Mines 2024 - Ukraine". https://www.mineactionreview.org/assets/downloads/Ukraine_Clearing_the_Mines_2024.pdf. P. 387.
[784] Ibid, 388.
[785] Mine Action Review. 2023. "Clearing the Mines 2023 - Ukraine". https://www.mineactionreview.org. P. 360.
[786] Mine Action Review. 2024. "Clearing the Mines 2024 - Ukraine". https://www.mineactionreview.org/assets/downloads/Ukraine_Clearing_the_Mines_2024.pdf. P. 388. ; Mine Action Review. 2023. "Clearing the Mines 2023 - Ukraine". https://www.mineactionreview.org. P. 360.
[787] Mine Action Review. 2024. "Clearing the Mines 2024 - Ukraine". https://www.mineactionreview.org/assets/downloads/Ukraine_Clearing_the_Mines_2024.pdf. P. 395.
[788] Mine Action Review. 2023. "Clearing the Mines 2023 - Ukraine". https://www.mineactionreview.org. P. 365 ; The Law of Ukraine on Mine Action, N.2642-VIII, Chap. III, Art. 23; DRC-DDG Legal Alert Special, "Mine Action Law Amendment", Issue 56, September 2020.

"national standards on IMSMA and QA", while standards on land release, demining machines and mine detection dogs were in the drafting process.[789]

Capacity expansion continued on the ground: by June 2024 forty-two operators had been certified, including novel local NGO and start-ups, while Ukraine "launched a "Made in Ukraine" policy to support the production and procurement of much-needed demining equipment in-country".[790]

The financing landscape grew in parallel. The World Bank's 2024 update placed full clearance costs at $34.6 billion, while Kyiv set aside roughly $76 million for demining in its 2024 state budget.[791] These figures build on record donor flows in 2022 and 2023, when Ukraine became the top recipient of U.S. demining aid, and the single largest recipient of global demining aid.[792]

On the ground, Ukraine's operational priorities in demining reflected economic logic, with the Minister of Economy pledging to return eighty percent of potentially contaminated land to "productive use" within ten years.[793]

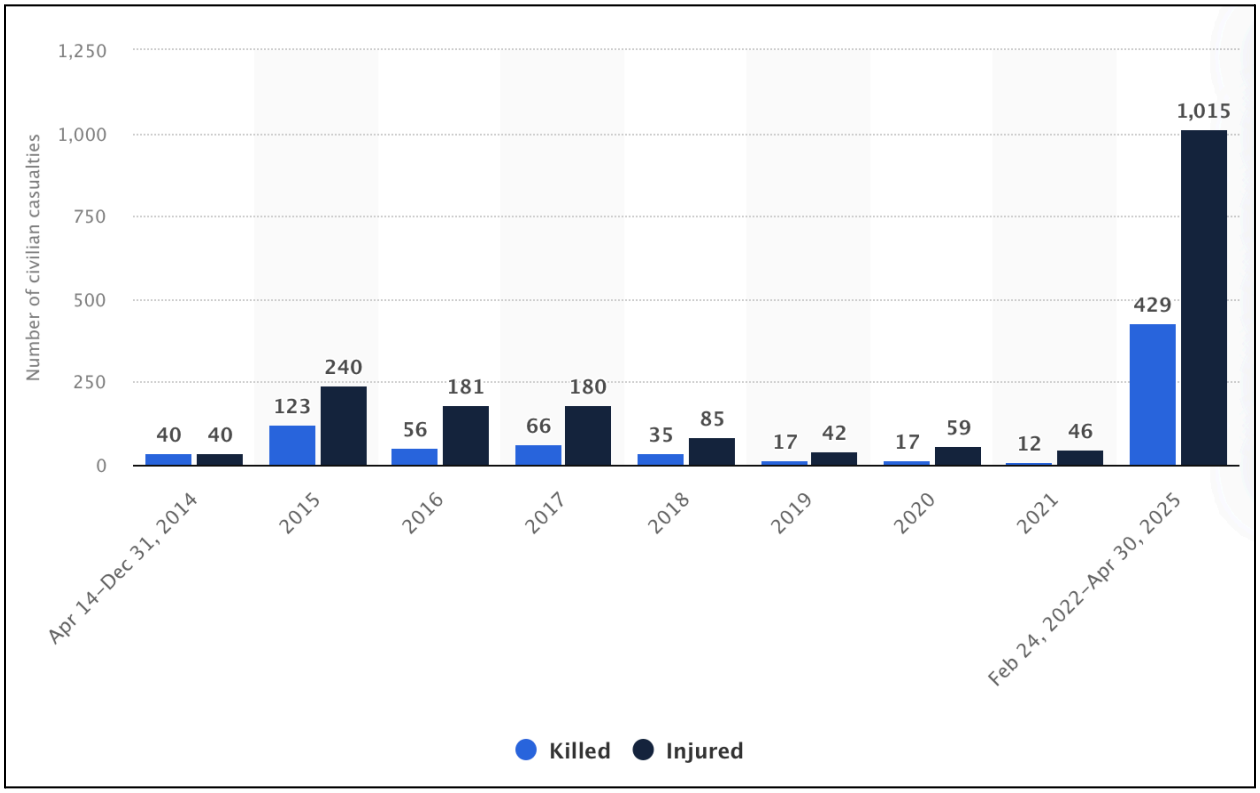
Thus, in addition to critical infrastructure and frontline breaching, Ukraine's demining operators contributed particular demining attention to the country's grain-rich areas. More specifically, the Mine Action Review 2024 assessment noted how "mine action and the restoration of agricultural livelihoods have become highly integrated in Ukraine, with close collaboration between Ukraine's MoE, the FAO, WFP, and mine action implementing partners".[794]

However, despite the industrial-level expansion in clearance efforts, the dynamics of war continue to generate new explosive hazards. For instance, the destruction of the Kakhovka dam

[789] Mine Action Review. 2024. "Clearing the Mines 2024 - Ukraine". https://www.mineactionreview.org/assets/downloads/Ukraine_Clearing_the_Mines_2024.pdf. P. 389.
[790] Mine Action Review. 2024. "Clearing the Mines 2024 - Ukraine". https://www.mineactionreview.org/assets/downloads/Ukraine_Clearing_the_Mines_2024.pdf. P. 404.
[791] Ibid, 396.
[792] Mine Action Review. 2023. "Clearing the Mines 2023 - Ukraine". https://www.mineactionreview.org. P. 367.
[793] Mine Action Review. 2024. "Clearing the Mines 2024 - Ukraine". https://www.mineactionreview.org/assets/downloads/Ukraine_Clearing_the_Mines_2024.pdf. P. 393.
[794] Presentation by Oleg Stoiev, NDM, in Geneva on May 1, 2024. ; Mine Action Review. 2024. "Clearing the Mines 2024 - Ukraine". https://www.mineactionreview.org/assets/downloads/Ukraine_Clearing_the_Mines_2024.pdf. P. 401.

in June 2023 shifted and scattered marked and unmarked minefields downstream, forcing operators to suspend work until waters receded.[795]

Moreover, mine accidents continued to happen to both civilians and deminers. Drawing on data collected by the UN Human Rights Office of the High Commissioner, the Landmine and Cluster Munition Monitor (LCMM) reports that between February 2022 and December 2024, there were at least 1,379 civilian mine casualties, 413 of whom were killed and 966 injured.[796]



14.8. *Civilian mine victims in Ukraine between 2014 and April 2025. The data, illustrated by Statista, had been sourced from the reports of the United Nations Human Rights Office of the High Commissioner.*[797]

[795] Mine Action Review. 2024. "Clearing the Mines 2024 - Ukraine". https://www.mineactionreview.org/assets/downloads/Ukraine_Clearing_the_Mines_2024.pdf. P. 391.
[796] Landmine and Cluster Munition Monitor. 2024. "Impact - Ukraine". https://www.the-monitor.org/country-profile/ukraine/impact?year=2023.
[797] Statista. 2025. "Number of civilian casualties caused by mines, explosive remnants of war (ERW), and handling explosions of military depots in Ukraine from April 14, 2014 to April 30, 2025." https://www.statista.com/statistics/1294148/civilian-casualties-of-mine-related-incidents-ukraine/

Drawing on the same data over the past ten years, other sources suggest there were some 1,239 civilian mine victims in Ukraine between 2014 and 2021, whereas between 2022 and early 2025, the number of victims had jumped to 1,444.[798]

The Ukrainian government, on the other hand, reports that between 2022 and 2024, there have been "607 incidents within government controlled areas, affecting 889 civilians, resulting in 277 deaths (14 children) and 612 injuries (74 children)".[799]

The UN had further claimed that mine accidents in Ukraine had contributed to a 22% increase in global mine victim figures in 2024.[800] These figures and statistics, however, remain unreliable and potentially contentions. The Ukrainian government and its demining agencies seldom make such data publicly available, and this is likely to remain the case until after the war's end.

In summary, 2023-2024 has been characterized by scaling up on all fronts: more contamination, more deminers, more funding, more technology, and tighter integration of demining into Ukraine's overall war recovery plan. Ukraine began treating demining as an essential service while President Zelenskyy highlighted humanitarian demining as a key component of "future Ukraine doctrine" and a way to "restore security to the entire Ukrainian territory".[801]

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[798] Statista. 2025. "Number of civilian casualties caused by mines, explosive remnants of war (ERW), and handling explosions of military depots in Ukraine from April 14, 2014 to April 30, 2025." https://www.statista.com/statistics/1294148/civilian-casualties-of-mine-related-incidents-ukraine/

[799] Mine Action Support Team of the Ministry of Economy of Ukraine, Cabinet of Ministers of Ukraine. 2024. "National Mine Action Strategy for the period up to 2033." *Demine Ukraine,* June 28, 2024. https://demine.gov.ua/static-objects/demine/uploads/public/676/004/a22/676004a224dd4084346105. P. 2.

[800] United Nations. 2025. "Ukraine: Mine contamination is lethal legacy of Russia's invasion." April 7 2025. https://news.un.org/en/story/2025/04/1161956#:~:text=Rising%20toll.

[801] Ministry of Internal Affairs of Ukraine. 2023. ""Humanitarian demining" is an important component of the security project of the Ministry of Internal Affairs, announced in the doctrine of the President of Ukraine." *MVS,* August 1, 2023. https://mvs.gov.ua/en/news/gumanitarne-rozminuvannia.

Chapter 15

Post-Humanitarian Demining in Ukraine

15.1 Introduction

The demining process, particularly humanitarian demining, has historically emerged in post-war contexts. At times, the arrival of humanitarian demining organizations would overlap with the lead-up to the formal peace treaty and official cessation of armed violence.

Since 2022, however, the number of operators of humanitarian demining in Ukraine has increased significantly. Indeed, my interlocutors from three international humanitarian demining organizations, NPA, MAG and FSD, remark that Ukraine presents an outlier in international humanitarian demining modus operandi.[802] Only a few countries have seen humanitarian demining operators commit to mine clearance while the countries were still at war, and such examples involved small-scale and limited projects. Since 2022, the number of demining actors in Ukraine has not only increased, but the totality of demining operations has reached an "industrial scale". The demining situation in Ukraine appears to blur a clear distinction between humanitarian efforts and war efforts, and necessitates a critical interrogation of the process of demining in the country.

The following section of this chapter interrogates if demining in Ukraine functions as part of the country's broader war effort against the Russian Federation. In doing so, it examines the following aspects of the demining process: 1) institutional framework, 2) demining actors, 4) types of demining, 5) process of prioritization, 6) demining funding, 7) demining challenges, and 8) demining outcomes.

The empirical evidence gathered from international and local demining operators in Ukraine points to a complex demining situation. First, it shows that there exist three distinct forms of demining in Ukraine: 1) humanitarian, 2) operational, and 3) military demining. Second, it shows

[802] Jessica Hyland (Mines Advisory Group, Regional Director for Eastern Europe), interviewed by author, May 6, 2024. ;
Selma Antić (NPA BiH EORE and Community Liaison Manager), interviewed by author, May 10 2024. ;
Eleanor Porritt (Fondation Suisse de Déminage, Program Director for Ukraine), interviewed by the author, February 28, 2025.

that humanitarian demining operators perform clearance only away from frontline areas as the Ukrainian government requires a minimum distance of 20 kilometers. Third, it shows distinct administrative features of wartime demining management—the Defense Ministry is a *de facto* demining authority, and requires that aspiring deminers learn practices of mine-laying in order to become certified deminers. Fourth, it shows that humanitarian demining operators are concentrated in areas under Kyiv's *de facto* control, effectively assisting only one party to the war. And finally, it shows that all of the demining operations—humanitarian, operational, and military—are understood by demining operators as broadly helping Ukraine's war effort against Russia, regardless of the site and purpose—breaching a frontline minefield is nominally equal to clearing agricultural fields and residential buildings. There is no empirical evidence that humanitarian demining organizations perform military demining of frontlines, contact lines and contested territories. On the contrary, empirical evidence shows that humanitarian demining operators do not engage in operations that could be of direct support to the Ukrainian military.

However, despite the absence of direct collaboration between humanitarian demining operators and Ukrainian military, this chapter posits that demining operations in Ukraine are, effectively, a form of "war-making". Because humanitarian demining projects further the aims of one party to the war in opposition to another, and help "secure", "reclaim", and "restore" territories, they exist as part of Ukraine's campaign to restore its territorial sovereignty.

15.2 Demining Structure

15.2.1 Institutional Framework

The institutional framework for demining in Ukraine has been in development over the course of the past sixteen years, and substantially shaped by the exigencies of war. The first steps towards establishing an institutional framework for demining were made several years before the Donbas conflict, but the conflict interrupted this process.[803]

The Donbas conflict, and escalation of conflict in 2022 then subsequently sped up the efforts of the Ukrainian government to create a national institutional framework for demining, as landmine

[803] Mine Action Review. 2016. "Clearing the Mines 2016 - Ukraine". https://www.mineactionreview.org/assets/downloads/Ukraine-Clearing-the-Mines-2016.pdf P. 211

contamination increased. As such, the legislative-institutional framework for demining exists as a "hybrid civil-military" system with several layers.

Nominally, there are four "national supervisory and management bodies" for demining in Ukraine.[804]

First, the inter-ministerial National Mine Action Authority (NMAA) provides strategic direction.[805] The NMAA was operationalized in 2022, after the Cabinet of Ministers issued a resolution to form NMAA in November 2021.[806] The NMAA exists as an essential coordination mechanism that brings together the Ministry of Defense (MOD), Ministry of Internal Affairs, which oversees SESU, Ministry of Reintegration of Temporarily Occupied Territories, and several other bodies.[807] The NMAA is specifically responsible for "developing and approving mid-term and long-term national plans for mine action, alongside operative plans", while the Cabinet of Ministers issues "final approval for Ukraine's National Mine Action Strategy".[808] The Mine Action Review notes that, while the NMAA sits at a ministerial level, it also has "some managerial functions":

> The NMAA coordinates the ministries, central and local state bodies, local government, and other organisations (including mine action operators). The NMAA approves and ensures national mine action policy; monitors and reports on State progress in fulfilling its obligations in mine action field taken under international treaties; and coordinates the

[804] Mine Action Review. 2024. "Clearing Cluster Munitions 2024 - Ukraine". https://www.mineactionreview.org. P. 220
[805] DRC Danish Refugee Council. 2023. "Ukraine: Strengthening National Mine Action Capabilities." *DRC,* February 9, 2023. https://drc.ngo/resources/news/ukraine-strengthening-national-mine-action.
[806] Resolution No. 1207 "On Establishment of National Mine Action Authority" IN Mine Action Review. 2023. "Clearing the Mines 2023 - Ukraine". https://www.mineactionreview.org. P. 365.
[807] Tymur Pistriuha (Ukrainian Deminers Association; Demining Solutions, Director), interviewed by author, March 5 2025.
[808] Ministry of Economy of Ukraine. 2024. "Cabinet of Ministers of Ukraine - Government Approves National Mine Action Strategy and Operational Plan for Its Implementation for the First 3 Years." *Kmu.gov.ua*, June 28, 2024. https://www.kmu.gov.ua/en/news/uriad-skhvalyv-natsionalnu-stratehiiu-protyminnoi-diialnosti-ta-operatsiinyi-plan-ii-realizatsii-na-pershi-3-roky. ; DRC Danish Refugee Council. 2023. "Ukraine: Strengthening National Mine Action Capabilities." *DRC,* February 9, 2023 https://drc.ngo/resources/news/ukraine-strengthening-national-mine-action-capabilities/.

development and execution of mine action strategy, the national mine action programme, and action plans.[809]

Second, the Inter-ministerial Committee on Humanitarian Demining, established in 2023, involves the deputy ministers and the Prime Minister's office in oversight. Since its creation, the Committee superseded the NMAA in authority, and now sits at the top of Ukraine's institutional demining hierarchy.[810] The exact tasks that the Committee performs is unclear, however, given its "top role", it likely has the final say in setting demining priorities, approving national mine action plans, and ensuring inter-agency cooperation. Indeed, the Mine Action Review notes that it remains unclear if the Committee is operational at all.[811] Some of my interlocutors noted that "clear prioritization strategy" does not exist, however, and operators perform tasks by communicating with other operators, and determining what geographic areas are "not covered" by existing operators.[812] Nominally, the formation of the Committee in the midst of war indicates the government's understanding that demining is central to "national security" and [territorial] recovery. Indeed, Mine Action Review notes how, since 2022, "mine action has gained critical relevance in Ukraine's national plans for post-conflict recovery and development".[813]

Third and fourth, two National Mine Action Centres (NMACs) exist under the NMAA, a structural feature often criticized as redundant by the international humanitarian demining operators.[814] One NMAC sits under the MOD, and its headquarters are located in Chernihiv. This NMAC is connected to the State Special Transport Service (SSTS), a specialized military unit for engineering tasks. The center focuses "operational matters, coordination, tasking", and

[809] Mine Action Review. 2023. "Clearing the Mines 2023 - Ukraine". https://www.mineactionreview.org. P. 365. ; The Law of Ukraine on Mine Action, N.2642-VIII, Chap. III, Art. 23 ; DRC Special Legal Alert – "NMAA Framework 2022", Issue 73, January 2022.
[810] Mine Action Review. 2024. "Clearing the Mines 2024 - Ukraine". https://www.mineactionreview.org/assets/downloads/Ukraine_Clearing_the_Mines_2024.pdf P. 394.
[811] Ibid, 388.
[812] Jessica Hyland (Mines Advisory Group, Regional Director for Eastern Europe), interviewed by author, May 6, 2024. ;
Eleanor Porritt (Fondation Suisse de Déminage, Program Director for Ukraine), interviewed by the author, February 28, 2025 ;
Tymur Pistriuha (Ukrainian Deminers Association; Demining Solutions, Director), interviewed by author, March 5 2025.
[813] Ibid, 393.
[814] Jessica Hyland (Mines Advisory Group, Regional Director for Eastern Europe), interviewed by author, May 6, 2024. ; Eleanor Porritt (Fondation Suisse de Déminage, Program Director for Ukraine), interviewed by the author, February 28, 2025.

military-operational demining.[815] The center coordinates combat-zone clearance, recording military minefields, and liaising with humanitarian actors when territory "shifts" from conflict to post-conflict, or when the Ukrainian government forces [re]claim territory from the Russian forces.

The second NMAC is the "the Interregional Centre for Humanitarian Demining and Rapid Response", or simply "Humanitarian Demining Centre" which sits under SESU and MOI, and is located in Merefa.[816] This MAC has, since 2022, been accredited for "NTS, TS, battle area clearance (BAC), manual mine clearance, EOD, and risk education" in 2022.[817] Nominally, this MAC handles coordination of civilian demining activities: accrediting NGOs, planning survey and clearance, and managing risk education and victim assistance programs. My interlocutor from SESU, however, notes that despite the "humanitarian tag", SESU does not perform humanitarian demining activities, and focuses solely on rapid tasks and operational demining.[818]

The Demining Law, originally passed in 2018, and then again in 2020 in an amended version, authorized the formation of two MACs, effectively allowing one centre to be headquartered in a military facility and the other in a civilian agency. The two MACs work in tandem, sharing the IMSMA database and dividing tasks by "context".[819]

In addition to the four chief demining bodies, the Ukrainian government established two additional state bodies in 2023, one in 2022, and one in 2025.

First, the Ministry for Reintegration of the Temporarily Occupied Territories set up the "Social-Humanitarian Response Centre" in 2022 to "help guide State policy in mine action".[820] This Center primarily performs tasks of mine risk education, conducts surveys of UXO presence

[815] Mine Action Review. 2024. "Clearing the Mines 2024 - Ukraine". https://www.mineactionreview.org/assets/downloads/Ukraine_Clearing_the_Mines_2024.pdf P. 394.
[816] Mine Action Review. 2024. "Clearing the Mines 2024 - Ukraine". https://www.mineactionreview.org/assets/downloads/Ukraine_Clearing_the_Mines_2024.pdf P. 394.
[817] Ibid, 395.
[818] Person SESU (State Emergency Service of Ukraine), interviewed by author, March 20, 2025. ;
[819] Tymur Pistriuha (Ukrainian Deminers Association; Demining Solutions, Director), interviewed by author, March 5 2025.
[820] Mine Action Review. 2024. "Clearing the Mines 2024 - Ukraine". https://www.mineactionreview.org/assets/downloads/Ukraine_Clearing_the_Mines_2024.pdf P. 394.

and "compiles specialized maps".[821] The Ministry which houses the Center has since developed a database of landmines and UXO victims, based on the Center's work.[822]

Second, Ukraine's Ministry of Economy (MOE), which collaborates with the Cabinet of Ministers, and is part of the NMAA, set up a "Sectoral Working Group on Humanitarian Demining (SWG) in September 2023. The SWG, envisioned as an advisory body at the MOE, functions as a "unified platform for coordinating and aligning cooperation efforts in the field of humanitarian demining between Ukrainian governmental authorities and development partners".[823] Importantly, the SWG differs from other national demining bodies because two out of three of its chairs are allocated to non-Ukrainian personnel—one to the "Ambassador Extraordinary and Plenipotentiary of Japan to Ukraine", and one to the "UN Resident Coordinator and Humanitarian Coordinator in Ukraine".[824]

Third, the Economic and Finance Department of the Secretariat of Cabinet of Ministers established a Center for Humanitarian Demining (CHD) in April 2023, as a "state institution".[825] The CHD functions as a "secretariat and think-tank, which collects and analyses information on demining needs from the MoD, MoI, SESU, regional military administrations, partner countries, and international organisations, with the aim of improving coordination and mobilising national and international resources".[826]

Citing "Russian aggression", and humanitarian demining as the "first stage in the restoration of the de-occupied territories, which makes it possible to start rebuilding housing and critical infrastructure", the Prime Minister of Ukraine authorized CHD's formation.[827] Mine Action

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[821] Mine Action Review. 2024. "Clearing the Mines 2024 - Ukraine". https://www.mineactionreview.org/assets/downloads/Ukraine_Clearing_the_Mines_2024.pdf P. 395.
[822] Emails from Roxana-Cristina Bobolicu, Danish Refugee Council (DRC), April 1, 2023, and Denys Holovetskyi, the HALO Trust, May 29, 2023 to the Mine Action Review.
[823] Demine Ukraine. 2024. "The Sectoral Working Group." *Demine Ukraine*, July 2, 2024. https://demine.gov.ua/en/partners/the-sectoral-working-group.
[824] Ibid.
[825] Mine Action Review. 2024. "Clearing the Mines 2024 - Ukraine". https://www.mineactionreview.org/assets/downloads/Ukraine_Clearing_the_Mines_2024.pdf P. 394.
[826] Ibid.
[827] Cabinet of Ministers of Ukraine. 2023. "Humanitarian demining center to be established in Ukraine: Prime Minister." *Communications Department of the Secretariat of the CMU*, February 11, 2023. https://www.kmu.gov.ua/en/news/humanitarian-demining-center-to-be-established-in-ukraine-prime-minister.

Review reports that the CHD has taken "a leading role on fundraising and cooperation with donors.".[828]

And fourth, the MOE launched yet another body in early 2025, a "Coordination Platform for Innovations in Humanitarian Demining", to build "a system aimed at creating, testing, and implementing innovations in the demining sector".[829] Citing Ukraine as a "unique testing ground for developing new demining methods", the MOE justified the creation of this body with the objective of generating new demining technologies that Ukraine could later "export" to other mine-affected countries.[830]

Ukraine's institutional framework for demining is thus multi-layered with several overlapping roles and authorities. Indeed, several demining operators note the difficulties and complexities associated with coordinating demining efforts in Ukraine amid this institutional framework.[831] And Ukraine's Deputy Minister of Economy also noted how "the system is not stable enough [...] it still depends too much on specific individuals and their personal contribution".[832] Figure 17.1. shows the diagram of Ukraine's institutional demining framework envisioned in 2020/2021, before the escalation of conflict. The actual framework since developed partly resembles this diagram, albeit with several more institutions added. For instance, the reported roles and authorities of SESU's MAC largely overlap with those of the NMAA, and the MOD's MAC. The quality control and management procedures, as well as certification of demining operators and processes are carried out by SESU's MAC, MOD's MAC, and a separate Demining Centre of

[828] Mine Action Review. 2024. "Clearing the Mines 2024 - Ukraine". https://www.mineactionreview.org/assets/downloads/Ukraine_Clearing_the_Mines_2024.pdf P. 394.
[829] Demine Ukraine. 2025. "The Ministry of Economy Launches a Coordination Platform for Innovations in Humanitarian Demining." Demine Ukraine, February 17, 2025. https://demine.gov.ua/en/news/the-ministry-of-economy-launches-a-coordination-platform-for-innovations-in-humanitarian-demining.
[830] Ibid.
[831] Emails from Vanja Sikirica, Norwegian People's Aid, April 21, 2024, and Dino Šujak, Head of ITF Implementation Office – Ukraine, May 16, 2024 to the Mine Action Review. ;
Jessica Hyland (Mines Advisory Group, Regional Director for Eastern Europe), interviewed by author, May 6, 2024. ;
Eleanor Porritt (Fondation Suisse de Déminage, Program Director for Ukraine), interviewed by the author, February 28, 2025.
[832] Ihor Bezkaravaynyi, Deputy Minister of Economy of Ukraine, interviewed by Kateryna Pryshchepa, for New Eastern Europe, August 7, 2024. https://neweasterneurope.eu/2024/08/07/ukraine-is-creating-a-system-of-large-scale-humanitarian-demining-for-which-there-are-no-models-in-the-world-today/.

Military Unit A2641.[833] While coordination and operational activities typically exist as two separate institutional roles in mine-contaminated countries, the Ukrainian government has endowed multiple national bodies with both.

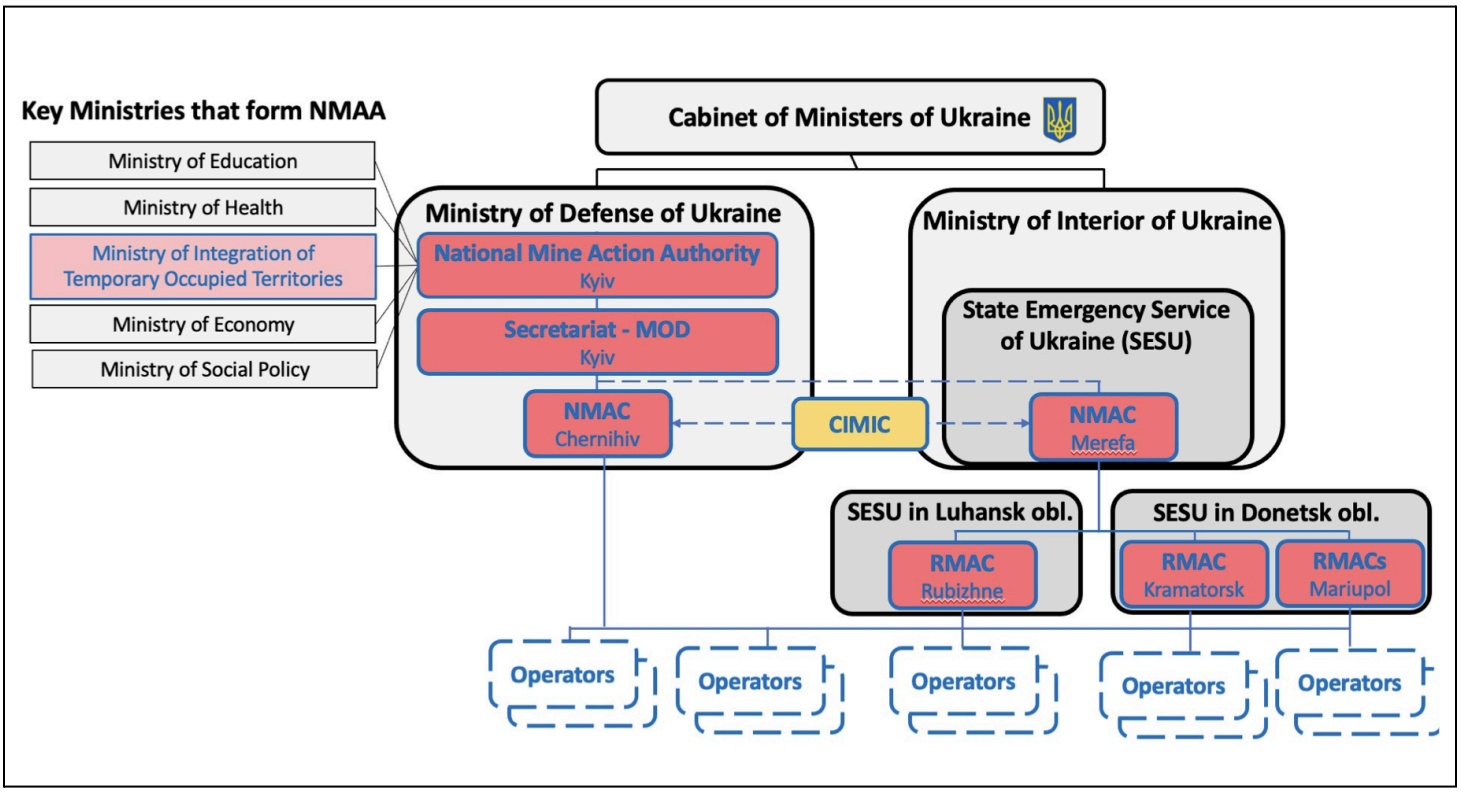


Figure 15.1. *Institutional framework of demining in Ukraine drafted in 2020/2021.*[834]

[833] Mine Action Review. 2024. "Clearing the Mines 2024 - Ukraine". https://www.mineactionreview.org/assets/downloads/Ukraine_Clearing_the_Mines_2024.pdf P. 394.
[834] United Nations Ukraine. 2020. "Mine Action in Ukraine". https://www.mineaction.org/sites/default/files/2.4_masg_meeting_undp_ukraine.pdf P. 3.

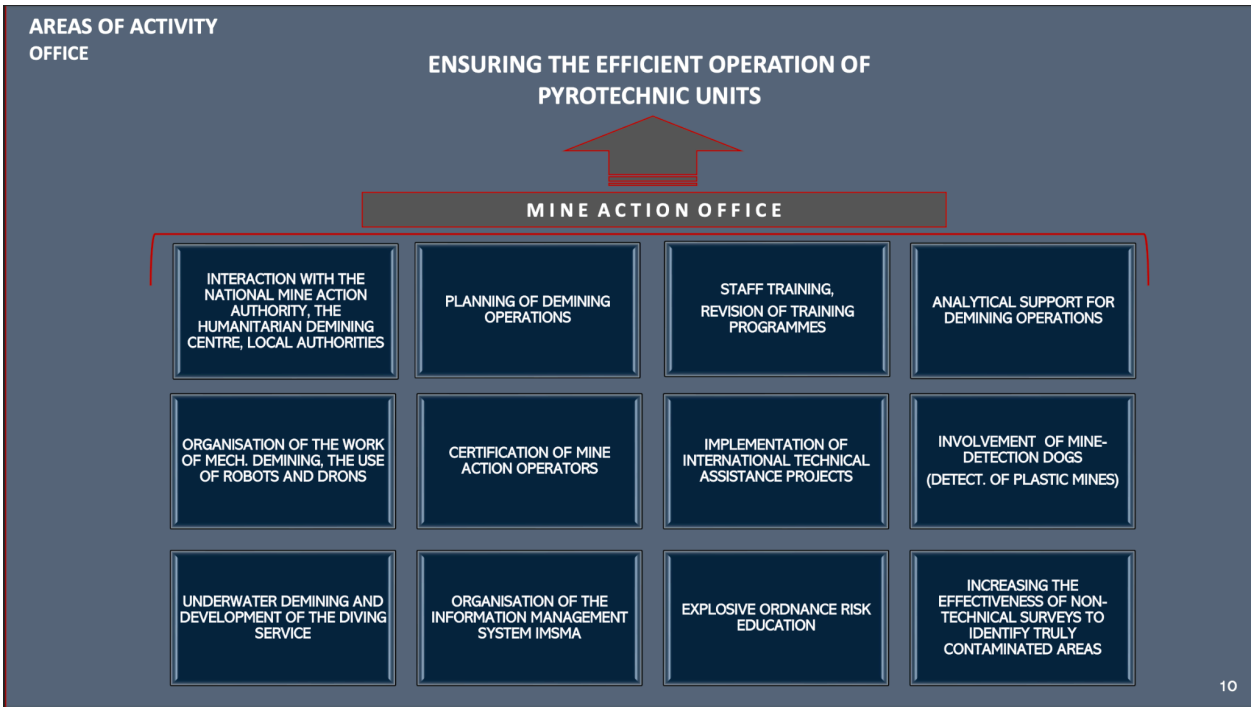


Figure 15.2. *The list of SESU's demining roles.*[835]

On the ground, however, the MOD and its MAC play the chief role in coordinating and planning demining operations in Ukraine.[836] While Ukraine's institutional framework designated the MOD and its MAC as just one of several demining actors, the MOD cites the active warfare and martial law to justify its leadership role and decision-making primacy in demining the country.[837]

There are several ways to interpret the character of Ukraine's institutional framework for demining, and the on-the-ground realities regarding authority and leadership in carrying out demining efforts in the country.

Chapter 3 described the mechanism through which the UN's IMAS proliferated and continues to be "the standard for humanitarian demining" across the globe. Because the key international demining operators, such as the HALO Trust, MAG, NPA, DRC, and FSD, are involved in the structure of the "international humanitarian demining regime", their decisions to deploy to

[835] State Emergency Service of Ukraine (SESU). "Demining Ukraine" - Presentation. P. 10.—email from Person SESU (State Emergency Service of Ukraine) to the author on March 21, 2025.
[836] Ibid. ; Yevhenni Zubarevskyi (Ukraine Ministry of Defence, Administrator, Information Management System for Mine Action), interviewed by Mine Action Review in Geneva, May 1, 2024.
[837] Yevhenni Zubarevskyi (Ukraine Ministry of Defence, Administrator, Information Management System for Mine Action), interviewed by Mine Action Review in Geneva, May 1, 2024. ; Oleksii Reznikov (Ukraine Ministry of Defence, Former Minister of Defence), interviewed by author, May 31, 2024.

mine-affected countries are often contingent upon the client state making "necessary" institutional changes to accommodate their operations. These institutional changes typically involve adopting the IMAS, and creating an NMAA or NMAC to oversee and coordinate demining activities. Importantly, the foreign donor money and funding for demining "flows" through these international humanitarian demining actors.

The majority of Ukraine's institutional structure for demining was only put in place and operationalized since the escalation of conflict in 2022.[838] The current legislative-institutional structure nominally reflects demining as a civilian-humanitarian endeavor, and satisfies the legal separation of demining and Ukraine's war effort. This has allowed the Ukrainian government to "unlock" donor money for humanitarian demining, even though the most substantial demining operations are carried out by national "security and defense forces", and the MOD is effectively in charge of demining across the country, making demining operations in Ukraine a *de facto* military-defense activity.[839] Tymur Pistriuha, the director of UDA and Demining Solutions further affirms the MOD's central role in demining: "according to legislation, according to how our mine action system is built, all official information, all technical and operational coordination goes through Ministry of Defence, so the Ministry of Defence is a [de facto] National Mine Action Authority".[840]

However, international humanitarian demining operators, as well as international humanitarian demining coordinators and donors, are cognizant of Ukraine's hybrid civil-military system for demining.[841] In fact, the Ukrainian government has installed a "special" coordinating body, the Civil-Military Cooperation (CIMIC) within its demining system. The CIMIC represents an "activity of the armed forces aimed at interacting with the civilian environment to create

[838] Mine Action Review. 2024. "Clearing the Mines 2024 - Ukraine". https://www.mineactionreview.org.
[839] Ukraine Ministry of Defence. 2025. "17,000 sq. km of Ukrainian territory have been cleared for use — outcomes of demining efforts in 2024." *MOD Ukraine*, January 21, 2025. https://mod.gov.ua/en/news/17-000-sq-km-of-ukrainian-territory-have-been-cleared-for-use-outcomes-of-demining-efforts-in-2024.
[840] Tymur Pistriuha (Ukrainian Deminers Associations/Demining Solutions, Directors), interviewed by the author, March 5, 2025.
[841] Jessica Hyland (Mines Advisory Group, Regional Director for Eastern Europe), interviewed by author, May 6, 2024. ;
Eleanor Porritt (Fondation Suisse de Déminage, Program Director for Ukraine), interviewed by the author, February 28, 2025.

favourable conditions for the fulfilment of certain tasks using military and non-military forces and means".[842]

The fact that international humanitarian demining operators rallied to demine Ukraine after the escalation of conflict in 2022 cannot be explained by the formation of legal-institutional frameworks for humanitarian demining only, or the mere "scale of contamination". The Ukrainian government's decision to set up, and operationalize the legal-institutional demining system facilitated the arrival of international humanitarian demining organizations which were not present in Ukraine prior to 2022. However, their decisions to deploy amid active conflict were a direct consequence of the contested geopolitical context of early 2022 in which a coalition of liberal democratic states rallied to support Ukraine's war effort against Russia. In Euro-Atlantic political discourse, the escalation of the conflict in 2022 cast Ukraine as the frontline in a wider contest between liberal-rule-based order and neo-imperial revisionism.[843] This normative framing had immediate practical effects in the humanitarian demining field: Western donors fast-tracked funding, and Ukraine's authorities granted rapid accreditation to specialist NGO demining actors whose deployment elsewhere has historically taken years. [844]For instance, the HALO Trust arrived in Laos forty-four years after the conflict, and nineteen years after the conflict in Cambodia, while the Mines Advisory Group arrived to BiH twenty years after the war.[845]

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[842] Mykola Sunhurovskyi, Oleksiy Melnyk, Andriy Bychenko, Danylo Dobrovolskyi, Leonid Polyakov, Oksana Markeieva, Yuriy Lashkay, Viktor Zamiatin. 2023. "Civil-Military Co-Operation in Protection of Civilians During the Ukraine War." Razumkov Center: Kyiv. https://razumkov.org.ua/images/2024/02/2024-Sunhurovskyi-CIVIL-WAR-ENGL-F.pdf. P. 6.

[843] PBS News. 2022. "Russia Invades Ukraine on Multiple Fronts in 'Brutal Act of War." *PBS News Hour*, February 24, 2022. https://www.pbs.org/newshour. ; Jim Garamone. 2022."Russian Forces in Initial Phase of Invasion of Ukraine, Official Says." *U.S. Department of Defense, DOD News*, February 24, 2022. https://www.defense.gov/News. ; Amnesty International. 2022. "Invasion of Ukraine Is an Act of Aggression and Human Rights Catastrophe." *Amnesty International*, March 1, 2022. https://www.amnesty.org/. ; UK Government. 2022. "The UK Government's Response to the Russian Invasion of Ukraine." *GOV.UK*, 2022. https://www.gov.uk.

[844] Elena Davlikanova. 2024. "West Joins Ukrainian Race to Clear Mines." *CEPA*, July 9, 2024. https://cepa.org/article/west-joins-ukrainian-race-to-clear-mines/.

[845] The HALO Trust. N.d. "Where We Work - Laos". https://www.halotrust.org/where-we-work/south-asia/laos ; The HALO Trust. N.d. "Where We Work - Cambodia". https://www.halotrust.org/where-we-work/south-asia/cambodia ; Mines Advisory Group. 2017. "Bosnia and Herzegovina." https://www.maginternational.org/what-we-do/where-we-work/bosnia-and-herzegovina/.

Leading up to February 2022, Ukraine had three international demining operators, and six local teams deployed by SESU, MOD, and other ministries.[846] By mid-2024, the number of operators had increased to forty-five.[847] Organizations which define the international humanitarian demining regime—the HALO Trust, NPA, and MAG—decided to deploy to Ukraine or significantly scaled up their existing presence in the country within a few months of conflict's escalation.

The NPA explicitly linked their new demining mission in Ukraine as the goal to "alleviate civilians' suffering from the effects of landmines" amid the humanitarian imperative created by "Russian attack" as a "serious attack on democracy and democratic processes".[848]

The HALO Trust had a small presence in Donbas prior to 2022. However, the organization expanded their mission to several other oblasts, and increased staff from 400 to 1,500, arguing that their demining work "is fundamental to save lives and support Ukraine's long-term reconstruction and economic recovery".[849] The MAG, whose demining missions are largely contained in Africa, South America, and Asia, launched a demining mission in Ukraine at "the start of the invasion", after receiving funds from the U.S. Department of State, foreign affairs ministries of Germany, UK, Netherlands, Canada, Italy, the UNDP, and the European Commission.[850] In the wake of conflict escalation, MAG's Director of Programmes, urged a "coordinated demining response", arguing that it is critical for Ukraine's "recovery and eventual reconstruction".[851]

The swift arrival of regime-defining international demining organizations illustrate how a "favorable" geopolitical context and narrative not only accelerated the diffusion of IMAS in

[846] Mine Action Review. 2022. "Clearing the Mines 2022 - Ukraine". https://www.mineactionreview.org/assets/downloads/Ukraine_Clearing_the_Mines_2022.pdf. P. 345.
[847] Ibid, 403.
[848] Norwegian People's Aid. 2022. "Mine Action and Disarmament - Where We Work - Ukraine". https://www.npaid.org/mine-action-and-disarmament/where-we-work/ukraine. ; Norwegian People's Aid. n.d. "DEVELOPMENT AND HUMANITARIAN COOPERATION - Where We Work - Ukraine". https://www.npaid.org/development/where-we-work/ukraine.
[849] The HALO Trust. 2022. "Where We Work - Europe and Caucasus - Ukraine". https://www.halotrust.org/where-we-work/europe-and-caucasus/ukraine.
[850] Mines Advisory Group. N.d. "What We Do - Where We Work - Ukraine". https://www.maginternational.org/what-we-do/where-we-work/ukraine/.
[851] Greg Crowther. 2022. "Ukraine: Coordinating the Response," *The Journal of Conventional Weapons Destruction*: Vol. 25 : Iss. 3 , Article 3. https://commons.lib.jmu.edu/cisr-journal/vol25/iss3/3. P. 6-7.

Ukraine, but directly reconfigured the existing humanitarian demining regime into a hybrid, "post-humanitarian mine action regime" in Ukraine, where saving [civilian] lives, warfighting, defending and restoring territory, and enabling future markets have become a single strategic and operational apparatus.

International humanitarian NGOs execute Western-funded demining projects "alongside" Ukrainian military forces, SESU, and the emergent local market of commercial demining contractors and NGOs. While the military forces attempt to breach frontlines in the east and south, the international NGOs clear former battle sites, and areas which the Ukrainian military had recently [re]claimed. The MAG, and FSD staff note that Ukraine's government mandates that their operations be no more than 20 km close to the active frontline areas.[852] MAG's Director for Ukraine further notes that their teams "interrupt" their demining work when military forces pass through the area so that the organization's "humanitarian" agenda may not be seen as directly supporting military operations.[853] Another staffer of MAG, a manager of technical operations previously deployed to Sri Lanka and currently in BiH, noted that MAG's demining operations in Ukraine cannot be seen as anything but "purely humanitarian", because the organization does not perform counter-mining but "saves lives of ordinary Ukrainians".[854]

15.2.2 Demining Actors

The landscape of demining actors in Ukraine comprises forty-five actors, including governmental units, international and local NGOs, commercial companies, and international support and assistance teams.

Local demining actors include the Armed Forces of Ukraine, SESU, and several commercial companies and NGOs. By 2024, the number of local demining operators has increased to eighteen, compared to pre-2022 landscape which counted six local operators.[855] There are sixteen

[852] Eleanor Porritt (Fondation Suisse de Déminage, Program Director for Ukraine), interviewed by the author, February 28, 2025 ; Jessica Hyland (MAG Regional Director for Eastern Europe), interviewed by author, May 6 2024.
[853] Jessica Hyland (MAG Regional Director for Eastern Europe), interviewed by author, May 6 2024.
[854] Person MAG-TO, interviewed by author, May 18, 2024.
[855] Mine Action Review. 2024. "Clearing the Mines 2024 - Ukraine". https://www.mineactionreview.or. P. 389 ; Mine Action Review. 2021. "Clearing the Mines 2021 - Ukraine". https://www.mineactionreview.org. P. 298.

international demining actors, seven of which are international humanitarian demining operators, and nine other international demining actors who provide demining assistance.[856] Prior to 2022, the two groups counted a total of six actors.[857]

The Armed Forces of Ukraine engineering units perform counter-mining and mine-breaching operations at active battle sites. Since 2023, these units have become integral to Ukraine's combat operations given the increased mine-laying operations on the part of the Russian forces, where "nearly every meter of frontlines is mined".[858] When territory is "liberated", AFU engineers often do initial clearance of main roads and militarily-relevant sites.

SESU on the other hand, performs "operational demining" tasks, a distinct form of clearance that is neither entirely humanitarian nor military-type demining.[859] My interlocutor from Ukraine's NMAA, and a member of State Finance Institution for Innovation (SFII), suggests that "operational demining" is unique to Ukraine—a way of clearance developed in 2022 to handle emergency clearance tasks amid active warfare.[860] While my interlocutor from SESU notes that operations demining has, since 2022, become the modus operandi of SESU units.

The demining units of SESU currently count 380 teams and 2,400 personnel, whereas pre-2022, SESU held 600 personnel across 120 teams.[861] The legal mandate of SESU is humanitarian, yet its budget is embedded in the MOI. This arrangement blurs the boundary between civilian and security provision and, in regime-theoretical terms, places humanitarian clearance within a securitised bureaucratic silo.

Layered onto these public pillars is a donor-brokered international humanitarian complex. The U.S., EU, Japan, Canada, Norway and the UK channel funds through two paths: security-sector

[856] Mine Action Review. 2024. "Clearing the Mines 2024 - Ukraine". https://www.mineactionreview.or. P. 389.
[857] Mine Action Review. 2021. "Clearing the Mines 2021 - Ukraine". https://www.mineactionreview.org. P. 299.
[858] Maryan Kushnir and Serhiy Nuzhnenko. 2024. "The Life, and Nail-Biting Work, of a Ukrainian Sapper." *RadioFreeEurope/RadioLiberty*, November 24, 2024. https://www.rferl.org/a/ukraine-sapper-life-russia-mines-danger/33213839.html.
[859] Person SESU (State Emergency Service of Ukraine), interviewed by author, March 20, 2025.
[860] Person SFII/NMAA (State Finance Institution for Innovation/National Mine Action Authority), interviewed by author, June 18, 2024.
[861] State Emergency Service of Ukraine (SESU). "Demining Ukraine" - Presentation. P. 9. _ email from Person SESU (State Emergency Service of Ukraine) to the author on March 21, 2025.

assistance that bundles demining hardware with armour and bridging equipment, and multi‑donor trust funds managed by UNDP and the World Bank that pay for IMAS‑compliant land‑release in “liberated” oblasts.

Five large international NGOs, the HALO Trust, MAG, NPA, FDS, and DanChurchAid, draw on those funds to employ approximately 2,400 Ukrainian staff. Each organization signs an annual memorandum of understanding with SESU specifying district allocations and hectare targets, and their operational SOPs are vetted by a Joint Quality Management Team chaired by GICHD. Although formally neutral, the NGOs’ tasking priorities are negotiated in monthly sub‑cluster meetings where SESU and MOD representatives press for polygons that facilitate military logistics corridors, illustrating donor-operator entanglement typical of “post‑humanitarian” regimes.

A domestic commercial sector has filled technological niches since 2022. Kyiv‑based Demining Solutions markets AI‑supported orthomosaic mapping that feeds directly into the national IMSMA Core instance. The DronAid prototypes lightweight robotic manipulators for sub‑munition removal. These firms operate under MOD licences and often share investors with the Ukrainian tech‑defence cluster, exemplifying the co‑production of humanitarian and military value chains. The UDA, founded in 2023, professionalizes veteran sappers through lobbying for tax incentives and a national certification pathway, thereby creating a domestic epistemic community positioned to outlive the war.

15.2.3 Types of Demining

Demining in Ukraine can be categorized into several types of operations, each nominally serving different objectives, yet all contributing to the overall war effort. The coexistence of these types is what characterizes Ukraine’s post-humanitarian demining. Local demining operators and coordinators categorize demining methods in Ukraine as: 1) military demining or counter-mining, 2) operational demining, and 3) humanitarian demining.[862]

[862] Tymur Pistriuha (Ukraine Demining Association/Demining Solutions, Director), interviewed by author, March 5, 2025. ;
Person SESU (State Emergency Service of Ukraine), interviewed by author, March 20, 2025. ;
Person NMAA/SFII (Ukraine National Mine Action Authority/State Finance Institution for Innovation of Ukraine), interviewed by author, June 18, 2024.

The first type is performed primarily by Ukraine's military forces, military sappers, and military engineering units. In order for the government forces to advance, the engineering units must "breach enemy minefields". In fact, since 2023, counter-mining has become an essential skill to Ukraine's military after the planned offensive in summer 2023 had been substantially stalled by minefields laid by Russian forces.[863]

Namely, in June 2023, Ukraine launched its "long-anticipated counter-offensive" which pushed into the Zaporizhzhia and Donetsk fronts, specifically "Zaporizhzhia axis", "Bakhmut axis", and "Berdiansk axis".[864] The counter-offensive had been months in the making, starting in January 2023, and aimed to "sever the connection between the Russian mainland and Crimea.[865] But shortly after the counter-offensive was launched, it ran into dense belts of Russian landmines. This made counter-mining—breaching with UR-77 line-charges, Western-supplied MICLICs, Leopard 2R mine-plough tanks, and hand-clearing by infantry sappers—into the tactical problem of the summer.[866] Drone footage and reports of immobilized tanks, such as Bradleys and Leopard 2s, as well as the first-hand accounts from Ukraine's troops brought landmines back to the front pages of global news outlets. Shortly thereafter, various sources dubbed Ukraine "the most mined country on earth".[867] The sudden visibility of counter-mining not only framed the operational stalemate of summer 2023 but also reignited global debate about the Ottawa Treaty and the humanitarian cost of mine warfare, underscoring how the success of Ukraine's broader campaign hinged on a gruelling, metre-by-metre duel between military sappers and mined soil.[868]

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[863] Andrew Harding. 2023. "Ukraine War: The Lethal Minefields Holding up Kyiv's Counter-Offensive." *BBC News*, July 3, 2023. https://www.bbc.com/news/world-europe-66080652.
[864] Mariano Zafra and Jon McClure. 2023. "Mapping Ukraine's Counteroffensive." *Reuters*, June 26, 2023. https://www.reuters.com/graphics/UKRAINE-CRISIS/MAPS/klvygwawavg/.
[865] Ibid.
[866] Daniel Boffey. 2023. "Ukraine Desperate for Help Clearing Mines, Says Defence Minister." *The Guardian*, August 13, 2023. https://www.theguardian.com. ;
Vikram Mittal. 2023. "Drones and Landmines: The Conjoined Challenges of the Ukrainian Counteroffensive." *Forbes*, August 25, 2023. https://www.forbes.com.
[867] Eve Sampson and Samuel Granados. 2023. "Ukraine Is Now the Most Mined Country. It Will Take Decades to Make Safe." *The Washington Post*, July 22, 2023. https://www.washingtonpost.com. ;
Cédric Pietralunga, and Emmanuel Grynszpan. 2023. "An Area the Size of Florida Has Been Landmined by Russia in Ukraine." *Le Monde*, June 14, 2023. https://www.lemonde.fr/en/international/article/2023/06/14/an-area-six-times-larger-than-belgium-has-been-land-mined-by-russia-in-ukraine_6031533_4.html.
[868] Daniel Boffey. 2023. "You Don't Survive That': Ukraine Sappers Dice with Death to Clear Russian Mines." *The Guardian*, August 13, 2023. https://www.theguardian.com/world/2023/aug/13/ukraine-sappers-mine-clearers-russia-war. ; Charlie

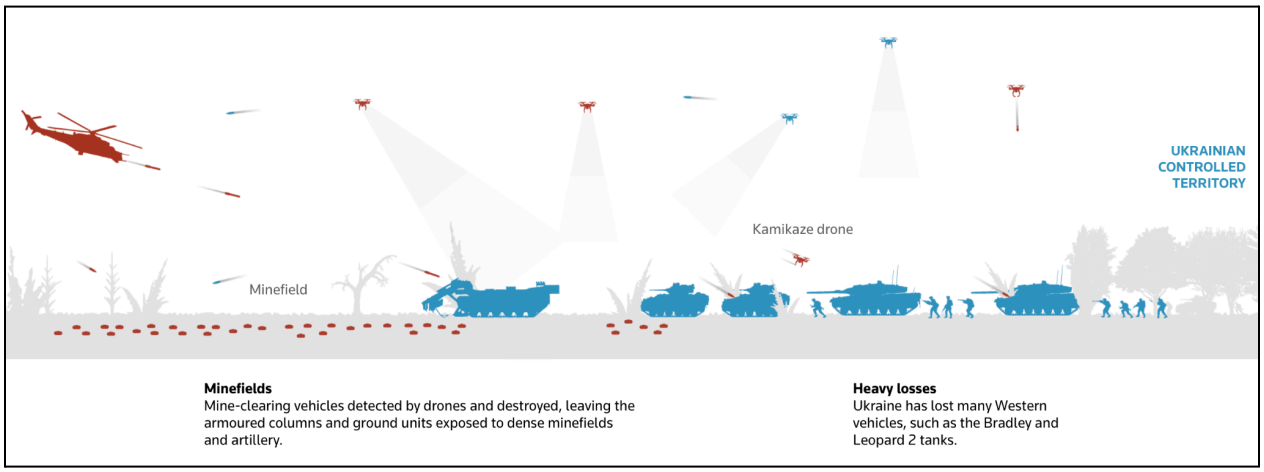


Figure 15.3. *An illustration of how Russian minefields have stalled Ukraine's counteroffensive in summer 2023.*[869]



Figure 15.4. *July 11, 2023 in Zaporizhzhia region. Members of Ukrainian military conduct a demining exercise along a grassy track as it became evident that Russian minefields were stalling the counter-offensive, and Ukrainian troops became reliant on manual mine clearance in order to advance on the frontline.*[870]

D'Agata, Agnes Reau, and Tucker Reals. 2023. "Meet Ukraine's 'Sappers,' Working to Clear Ground Retaken from Russian Troops Who 'Mine Everything.'" *CBS News*, July 18, 2023. https://www.cbsnews.com/news/russia-ukraine-war-land-mines-sappers-working-to-clear-reclaimed-ground/.

[869] Mariano Zafra and Jon McClure. 2023. "Mapping Ukraine's Counteroffensive." *Reuters*, December 21, 2023. https://www.reuters.com/graphics.

[870] Photographed by Ed Ram for Washington Post. Source: Getty Images.

The second type, operational demining or "rapid tasks", is performed by SESU, and functions as a type of "emergency clearance". The purpose of "operational demining" is vital trafficability: streets, power substations, and medical facilities must be rendered safe within seventy-two hours to avoid secondary civilian casualties and to permit stabilization aid. SESU technicians rely on handheld dual-sensor detectors and water-jet disruptors. Where large subsurface charges are suspected, Croatian-donated MV-4 flails create a six-metre sterile lane for manual entry.[871] Because these interventions occur while artillery threat is still non-negligible, the task balance tips toward risk acceptance rather than full clearance. Contrary to humanitarian demining, operational demining includes no quality control or clearance guarantee processes.[872]

The third type of demining is the humanitarian land-release clearance led primarily by international demining organizations. The international humanitarian NGOs perform the "canonical" IMAS land-release sequence: NTS, TS, and "full" clearance, before handing land back to authorities or [civilian] end-users. In wooded terrains, manual teams and MDD pairs perform clearance, while mechanical demining is used on farmland. Quality assurance is conducted by a Joint QM Cell chaired by GICHD, and results feed directly into the national IMSMA Core.

Reflecting on the humanitarian demining operations in Ukraine, MAG's Program Director for Eastern Europe notes that the organization's humanitarian demining practices in Ukraine differ from its missions elsewhere. Whereas training a humanitarian deminer typically takes four weeks, in Ukraine such training takes up to six weeks, because the government mandates that NGOs train their deminers-to-be in mine-emplacement and minefield-creation techniques—the Ukrainian government, in other words, requires that humanitarian deminers pass the "sappers course".[873] The FSD's Program Director noted this too, and further noted that recently, the FSD "found somewhat of a way around it" by creating its own "sappers course".[874] Although formally neutral, polygon selection is conditioned by donor priorities: in 2024–25, thirty-one percent of

[871] Ministry of Defence of Ukraine. 2024."There have been 17 newly added models of demining equipment this year." *MOD Ukraine,* October 14, 2024. https://mod.gov.ua/en/news.
[872] Person SFII/NMAA (State Finance Institution for Innovation/National Mine Action Authority), interviewed by author, June 18, 2024.
[873] Jessica Hyland (Mines Advisory Group, Regional Director for Eastern Europe), interviewed by author, May 6 2024.
[874] Eleanor Porritt (Fondation Suisse de Déminage, Program Director for Ukraine), interviewed by the author, February 28, 2025.

cleared area lay along the M-03 and H-32 logistics corridors "feeding" the eastern counter-offensive.

15.2.5 The Process of Prioritization

Ukraine does not possess a nationally-agreed criteria for prioritization of demining work and sites.[875] In fact, the 2024 Ukrainian National Mine Action Strategy notes that "a unified prioritisation system for mine action tasks is currently absent as well as criteria it will be based upon".[876] This newly-adopted strategy, however, suggests that:

> A top priority is to ensure the possibility of carrying out urgent mine action activities to unblock roads, critical infrastructure objects, and provide electricity, water, heating, and gas supply. This also includes facilitating repair and restoration works and enabling the safe return of people to their abandoned places of residence.[877]

In practice, however, several ways of prioritizing demining sites have emerged from on-the-ground realities, involving internal humanitarian matrices of international NGOs, objectives of the Ukrainian MOD and local military administrators, needs of local communities, and donors' preferences and restrictions.

First, amid the absence of a national prioritization formula, the international humanitarian demining operators prioritize demining sites according to donors' preferences and restrictions, humanitarian impact, and needs of local communities.[878]

The HALO Trust utilizes its "internal prioritization matrix", taking into account humanitarian factors such as the "number of people who use the area of the task, proximity to settlements,

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[875] Mine Action Review. 2024. "Clearing the Mines 2024 - Ukraine". https://www.google.com/url?q=https://www.mineactionreview.org/assets/downloads/Ukraine_Clearing_the_Mines_2024.pdf&sa=D&source=docs&ust=1752087965636049&usg=AOvVaw0fI9t0Q2Sz6. P.402.
[876] Mine Action Support Team of the Ministry of Economy of Ukraine, Cabinet of Ministers of Ukraine. 2024. "National Mine Action Strategy for the period up to 2033." *Demine Ukraine*, June 28, 2024. https://demine.gov.ua/static-objects/demine/uploads/public/676/004/a22/676004a224dd4084346105.pdf. P. 16.
[877] Ibid.
[878] Emails from Almedina Musić, Danish Demining Group, 23 April 2020, and Toby Robinson, The HALO Trust, 27 April 2020, to Mine Action Review. ;
Mine Action Review. 2024. "Clearing the Mines 2024 - Ukraine". https://www.mineactionreview.org. P.402.

proximity of schools and hospitals, number of accidents recorded, as well as threat type, balancing these considerations with security and access considerations".[879]

The NPA uses a needs-basis criteria, and prioritizes tasks "according to victim and accident data as well as on requests and tasking from local administrations and the MAC".[880]

The FSD's prioritization matrix is driven by potential impact of demining work, the number of people who would potentially benefit from clearance, the size of landmine threat, and donor guidelines which restrict the organization's direct and indirect involvement with Ukraine's military structures and objectives.[881] The DRC liaises with both NMACs and local authorities to "obtain tasks in areas that align better with its integrated mine action and wider development programming.[882]

My interlocutor from Ukraine's SFII and NMAA, suggests that despite the absence of national priority formulas, there are clear prioritization practices on the ground:

> When an area is liberated, you need to clean critical infrastructures, logistics infrastructures as far as possible, because you need to renew life in this area; the second priority is collective civilian cities, like squares, parks, and the third priority is the agricultural land.[883]

A senior staffer of SESU, however, contends that priorities are ultimately decided by local military administrations: "priority work in Ukraine, especially for de-occupied territories, is prepared by local military administrations".[884] He further contends that the priority matrix used

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[879] Email from Imogen Churchill, The HALO Trust, 23 March 2022, to Mine Action Review. ; Mine Action Review. 2024. "Clearing the Mines 2024 - Ukraine". https://www.mineactionreview.org. P.402.
[880] Email from Vanja Sikirica, Norwegian People's Aid, 21 April 2024, to Mine Action Review. ; Mine Action Review. 2024. "Clearing the Mines 2024 - Ukraine". https://www.mineactionreview.org. P.402.
[881] Eleanor Porritt (Fondation Suisse de Déminage, Program Director for Ukraine), interviewed by the author, February 28, 2025. ; Email from Tony Connel, Fondation Suisse de Déminage, 26 June 2023, to Mine Action Review. ; Mine Action Review. 2024. "Clearing the Mines 2024 - Ukraine". https://www.mineactionreview.org. P.402.
[882] Email from Sophie Breinholdt Nielsen, Danish Refugee Council, 10 May 2024, to Mine Action Review. ; Mine Action Review. 2024. "Clearing the Mines 2024 - Ukraine". https://www.mineactionreview.org. P.402.
[883] Person SFII/NMAA (State Finance Institution for Innovation/National Mine Action Authority), interviewed by author, June 18, 2024.
[884] Person SESU (State Emergency Service of Ukraine), interviewed by author, March 20, 2025.

by the MOD and local military administrations is thus reflected in SESU's demining work: "For us this is a priority, we accepted to provide [...] for critical infrastructures".[885]

The absence of a national prioritization formula, and simultaneous emergence of a bricolage of prioritization matrices is not simply a technical-institutional issue. Rather, it is a window into the broader struggle over Ukraine's wartime territory.

Ukraine sits at the intersection of two ordering logics: a trans-Atlantic humanitarian regime that valorizes the protection of civilians, and a militarized state project intent on recovering sovereign control over territory wrested away since 2014. Each logic mobilizes a different scale of authority—international donors, the Kyiv ministries, local military administrations, community councils—and therefore inserts a different set of criteria into the clearance queue. The absence of a single, state-level formula thus reflects the layered "geopolitical field" within which Ukraine now negotiates its future. In Nexon and Cooley's terms, the emergent prioritization order is an improvised patch between liberal-international expectations and urgent territorial counter-claims.

From a territorial recovery perspective, every clearance map is simultaneously a map of anticipated postwar governance. When MOD and local military administrations direct SESU and other operators toward "critical infrastructure", such as bridges, roads, gas pipelines, and railways, they are in effect "pre-configuring" the future space of the state by stitching together mobility corridors and fiscal lifelines.

Demining farmland serves a triple purpose: it recovers livelihoods of farmers, restores taxable acreage to the treasury, and reassures international markets that Ukraine can resume grain exports critical for global food security.[886] The selection of those rural over forests near depopulated villages exemplifies a biopolitical calculus: the state "makes live" particular "productive populations" while leaving marginalized communities in zones of continued exposure.[887]

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[885] Person SESU (State Emergency Service of Ukraine), interviewed by author, March 20, 2025.
[886] Olesia Safronova and Kateryna Chursina. 2024. "Ukraine Clears Land Mines to Revive War-Torn Farms." *Bloomberg*, November 17, 2024. https://www.bloomberg.com/news/articles/2024-11-17/ukraine.
[887] Nicolas Dunais, Stephan Jensen, Edmund Clarke, Rory Meryon, Harry Kirk, and Matteo Giugovaz. 2024. "From Economic Recovery to Global Food Security: The Urgent Need to Demine Ukraine." *Tony Blair Institute*, September 10, 2024. https://institute.global/insights/geopolitics-and-security/the-urgent-need-to-demine-ukraine.

Yet this biopolitical agenda is shadowed by necropolitical calculus. Along the frontlines, large swaths of contested grey zone remain unsurveyed because international operators, bound by Ukrainian government and foreign donor clauses that prohibit proximity to active hostilities and frontlines, are not allowed to perform NTS, TS, or clearance. Humans and non-humans in these zones thus occupy spaces the state tacitly defines as temporarily killable: demining such places is postponed until the frontline stabilizes, effectively extending the lethal agency of landmines well beyond the moment of emplacement.

Even if frontline areas receive demining assistance, they fall in either of the two categories of demining that Ukrainian government employs: operational demining or counter-mining. Both of these types focus on rapid clearance rather than "complete clearance". As my interlocutor from Ukraine's SFII and NMAA noted:

> Twenty kilometers zone from the line of defence is forbidden for humanitarian demining, but it doesn't mean that no one lives there, for example Kherson, so we created a new term, operation task or rapid tasks; it means that government forces are cleaning this area, they are using international standards like IMAS, but there are no quality control, no guarantee and land release process, they just sign a paper that they cleaned this area, and that's it.

Competing humanitarian matrices crystallize these tensions. HALO's matrix assigns the greatest weight to population density and proximity to social infrastructure, while NPA's "victim-centric" formula elevates casualty history over economic potential. Meanwhile, FSD's donor-restricted template screens out tasks that overlap with military objectives.

Local administrators, under severe budget strain, often lobby operators to clear revenue-generating facilities first— sunflower-oil presses, grain silos, gravel pits—thus gaming the humanitarian criteria to secure economic returns that can fund social welfare.[888] The result is a constantly renegotiated hierarchy of tasks that tracks the ebb and flow of frontline dynamics, donor preferences, Kyiv's war-fighting imperatives, and needs of local communities and regional authorities.

[888] Person SFII/NMAA (State Finance Institution for Innovation / National Mine Action Authority), interviewed by author, June 18, 2024.

None of these trade-offs is neutral. They delineate whose landscapes are re-inserted into circuits of life and capital, and whose remain suspended in the mine-scarred temporality of waiting. Prioritization, in other words, is where biopolitics, necropolitics, and territorial recovery converge: mines are cleared not simply where they endanger lives, but where their removal aligns with the scalar politics of restoring—and narrating—the state.

In short, Ukraine's demining prioritization exists as a "contested wartime reply", and a struggle over the very map on which Ukraine's postwar future will be plotted.

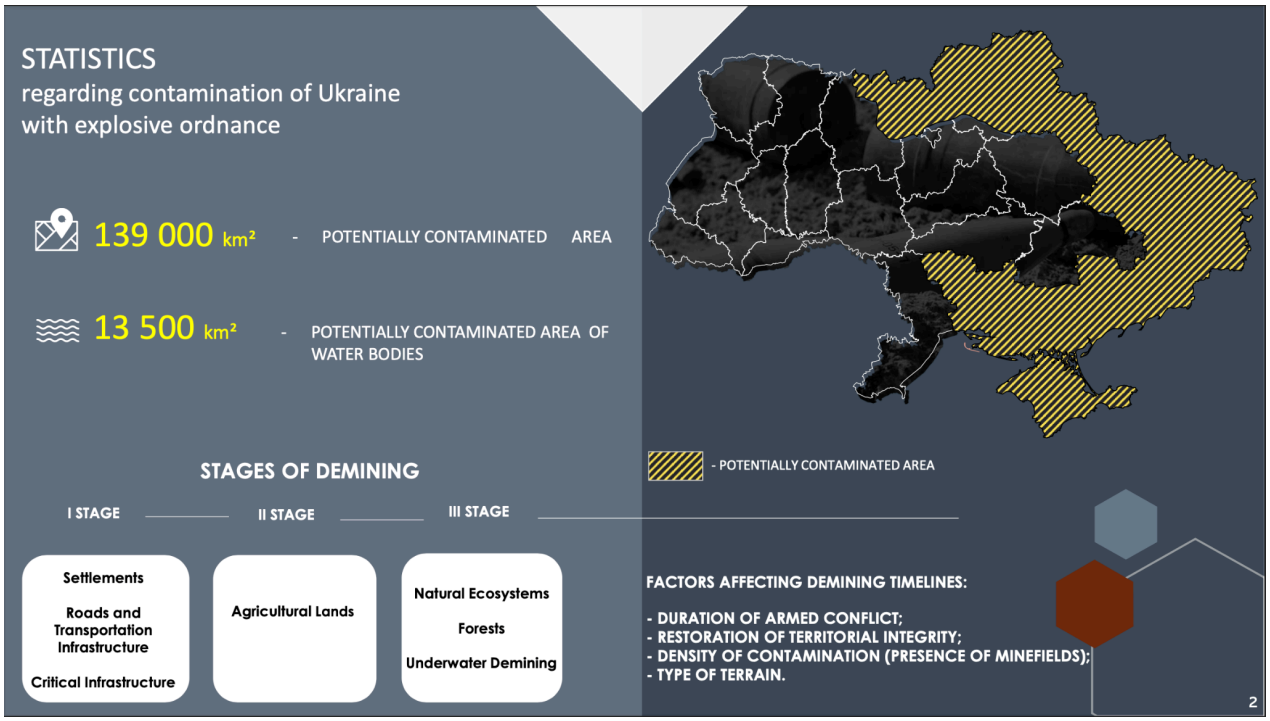


Figure 15.5. *The demining prioritization stages of SESU.*[889]

[889] State Emergency Service of Ukraine (SESU). "Demining Ukraine" - Presentation. P. 2._email from Person SESU (State Emergency Service of Ukraine) to the author on March 21, 2025.

15.2.6 Funding

Demining in Ukraine is financed through a dual-track architecture that mirrors the hybrid civilian-military logic of demining operations. On one hand, funds and equipment for demining move through the security sector assistance lines where demining is coupled with broader offensive aid. On the other hand, individual governments, tech companies, and private donors inject funds for demining through the international humanitarian demining organizations which are deployed in Ukraine.

This system allows simultaneous funding of humanitarian land release and frontline counter-mining. This reveals the post-humanitarian character of demining in Ukraine through which financial flows become acts of both war-fighting and [humanitarian] territorial recovery. These parallel pipelines further demonstrate how financial capital itself is mobilized as a geopolitical actor, shaping where and how minefields are cleared, which communities are reconnected to state services, and which areas are consigned to "necropolitical limbo".

The first line of funding moves through the "European Deterrence Initiative (EDI), Ukraine Security Assistance Initiative (USAI), Foreign Military Financing (FMF), and Presidential Drawdown Authority (PDA)".[890] Here, the U.S., NATO, and EU member states provide funds and "non-lethal equipment" for the Ukrainian military forces and SESU who perform counter-mining at frontline areas, and rapid operational demining tasks.[891] The EU dubs aid as "assistance for humanitarian demining", despite the fact that its recipients, such as the State Special Transport Service of Ukraine (SSTS) is a specialized military unit of Ukraine's MOD, and does not perform humanitarian demining.[892] NATO's funds, the Comprehensive Aid Packages (CAP), in particular, unite short-term battlefield support with long-term recovery and reconstruction aid, thereby treating removal of landmines as inseparable from the mere conduct

[890] Ukraine Oversight, Special Inspector General for Operation Atlantic Resolve, Promoting Whole of Government Oversight of the U.S. Ukraine Response. n.d. "Security Assistance". https://www.ukraineoversight.gov/Funding/Security-Assistance/.
[891] NATO. 2025. "Comprehensive Assistance Package (CAP) for Ukraine." NATO. 2025. https://www.nato.int/cps/en/natohq/topics_231639.htm?utm_source=chatgpt.com.
[892] Delegation of the European Union to Ukraine. 2024. "EU Continues Providing Ukraine with Modern Mine-Clearing Machines and Demining Equipment." *EEAS*, August 16, 2024. https://www.eeas.europa.eu/delegations/ukraine/eu-continues-providing-ukraine-modern-mine-clearing-machines-and-demining-equipment_en?s=232.

of hostilities.[893] The paradox of uniting demining aid with broader offensive aid was recognized by Austria, when its government hesitated to provide demining aid in early 2023, after its Defense Minister argued that it is "impossible to distinguish between a humanitarian and a military demining".[894] The post-humanitarian present of Ukraine's demining process is thus characterized by a blurred separation and distinction between lethal and life-saving work, equipment, and intention.

The second line of funding involves a broader list of donors, combining not only individual governments, but tech companies and other private enterprises and funders. This line of funding moves directly through the humanitarian demining organizations, and is restricted to specifically carrying out humanitarian demining operations.[895]

All seven demining NGOs in Ukraine receive funds from the U.S. government, either through the U.S. Department of State, Department of Defense, NORAD, and until recently the USAID.[896] Other government funders include Norway, Germany, the UK, the EU, Netherlands, Canada, France, Japan, Sweden, Denmark, Switzerland, Luxembourg, Czech Republic, Malta, Latvia, Finland, and Australia.[897] The financial records of humanitarian NGOs indicated that, in addition to governments, their demining programs are funded by tech companies, such as Google,

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[893] Delegation of the European Union to Ukraine. 2024. "EU Continues Providing Ukraine with Modern Mine-Clearing Machines and Demining Equipment." *EEAS*, August 16, 2024. https://www.eeas.europa.eu/delegations/ukraine/eu-continues-providing-ukraine-modern-mine-clearing-machines-and-demining-equipment_en?s=232.

[894] Julia Dahm. 2023. "Vienna Divided over Demining Aid for Ukraine." *Euractiv*, May 19, 2023. https://www.euractiv.com/section/politics/news/vienna-divided-over-demining-aid-for-ukraine/.

[895] Eleanor Porritt (Fondation Suisse de Déminage, Program Director for Ukraine), interviewed by the author, February 28, 2025.

[896] DanChurchAid. n.d. "DanChurchAid & Norwegian Church Aid in Ukraine." https://www.danchurchaid.org/what-we-do/where-we-work/danchurchaid-in-ukraine. ;
Humanity and Inclusion. n.d. "Ukraine." https://www.hi-us.org/en/country/ukraine. ;
DRC Danish Refugee Council. n.d. "Ukraine." https://drc.ngo/where-we-work/europe/ukraine/. ;
Norwegian People's Aid. n.d."Ukraine." https://www.npaid.org/mine-action-and-disarmament/where-we-work/ukraine. ;
Mines Advisory Group. n.d. ""Ukraine". https://www.maginternational.org/what-we-do/where-we-work/ukraine/. ;
The HALO Trust, n.d. "Ukraine". https://www.halotrust.org/where-we-work/europe-and-caucasus/ukraine. ;
Fondation Suisse de Déminage. n.d. "Finances". https://fsd.ch/en/about-us/finances/

[897] Ibid; Ibid ; Ibid ; Ibid ; Ibid ; Ibid; Ibid.

Microsoft, Adobe, Meta and Amazon Web Services (AWS), charitable foundations such as the Howard G. Buffett Foundation, and pharmaceutical companies such as Bayer.[898]

The majority of funds, however, are provided by the government actors—the FSD's Program Director for Ukraine notes that demining requires large funds, and it is primarily government actors who are able to provide such large funding packages.[899]

The biopolitical and necropolitical logic is evident in the two parallel streams of funding. While the security-defense line of funding directs financial capital where life must be made "killable" or disposable to advance the war effort, the humanitarian line of funding streams funds to areas where life and livelihood must be restored [again]. The former's necropolitical logic, however, is justified with biopolitical imperatives: it is the lives of Russian forces that are designated "killable" so that Ukrainian lives and livelihoods may be defended, thereby ensuring a livable future.

Yet the two streams of funding also produce necropolitical margins, or places where neither the military nor humanitarians demine—the latter because of donor restrictions, and the former because of war-fighting priorities.

These two pipelines of funding intersect in a dynamic assemblage of state agencies, international NGOs, tech firms, and private contractors. For instance, funds from Palantir-backed innovation grants, part of the MOE's 2025 Coordination Platform, feed into AI-driven impact-assessment tools that aggregate both military and humanitarian data streams to prioritize land parcels for clearance.[900]

The resulting hybrid pipeline funnels US-supplied mine-plough tanks into frontline counter-mining and breaching, even as HALO's donor-funded manual teams return to those same places months later to conduct TS and manually clear residual threats. In this way, financial

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[898] The HALO Trust. n.d. "Ukraine." *HALO.* https://www.halotrust.org/where-we-work/europe-and-caucasus/ukraine. Danish Refugee Council. n.d. "Ukraine." *DRC.* https://drc.ngo/where-we-work/europe/ukraine/. ; Fondation Suisse de Déminage. n.d. "Finances." *FSD.* https://fsd.ch/en/about-us/finances/.

[899] Eleanor Porritt (Fondation Suisse de Déminage, Program Director for Ukraine), interviewed by the author, February 28, 2025.

[900] Vera Bergengruen.2023. "Ukraine Is Using AI to Help Clear Millions of Russian Landmines." *TIME*, November 2, 2023. https://time.com/6330445/demining-ukraine.

flows themselves act as material agents, scripting the choreography of counter-mining, emergency clearance, and humanitarian land-release.

15.7 Demining Challenges

Ukraine's hybrid demining regime faces several interrelated constraints and challenges. The first is the fact that the exact scale and extent of landmine contamination remains unknown.[901] The active conflict prevents systematic technical and non-technical surveys of Ukraine's territory, and continually adds to the contamination level. Additionally, areas which have not been under Kyiv's control since 2014 have not been surveyed at all by the government agencies or international humanitarian NGOs; no knowledge exists whether Donbas separatists ever demined areas under their control prior to 2022, while Ukrainian OSINT indicates that Russian forces performed demining during the Easter truce in April, 2025.[902]

The second challenge is linked to the first. The active conflict not only consistently adds to landmine contamination levels, but often results in previously-cleared areas being mined again. In fact, SESU notes that its demining units frequently have to demine the very same place over and over again, at times counting sixteen to seventeen demining operations in the same area.[903]

The third challenge is the type of landmines that Russian forces have used in Ukraine since 2014, and particularly since 2022. Namely, Russia's landmine arsenal includes many "legacy" landmines, developed by the Soviet Union during the Cold War. However, since 2022, this arsenal has incorporated novel landmine types that the Russian military had only recently developed. Human Rights Watch, for instance, noted that "several new, previously unseen Russian landmines have been identified in use for the first time, including some antipersonnel mines produced as late as 2021".[904] While the GICHD similarly noted the existence of several types of Russian-made landmines about which "little is known", including how exactly they

[901] Mine Action Review. 2024. "Clearing the Mines 2024 - Ukraine". https://www.mineactionreview.org. P. 390.
[902] The New Voice of Ukraine. 2025. "Russian Forces Use 'Easter Truce' for Demining and Reinforcements." *New Voice*, April 20, 2025. https://english.nv.ua/nation/easter-truce-how-russians-use-it-photos-from-front-line-published-50507838.
[903] Ibid.
[904] Human Rights Watch. 2023. "Landmine Use in Ukraine". *HRW*, June, 2023. https://www.hrw.org/sites/default/files/media_2023/06/UkraineLM_Briefing_June2023.pdf. P. 3.

operate or how to safely neutralize them.[905] The combination of novel and legacy landmines has direct material consequences for demining efforts: it not only complicates *in situ* clearance, but requires that demining operators continuously recalibrate their SOPs and training requirements.

The fourth challenge relates to the equipment and personnel scarcity, and financial constraints. Since 2022, Ukraine has become the "top recipient" of funding for demining, particularly from the U.S. government.[906] For instance, Landmine Monitor notes that 22 foreign donors contributed $308.1 million for demining in Ukraine in 2023, representing not only an increase of $145.8 million compared to 2022, but 39% of total global contributions for all mine-affected countries.[907]

Similarly, since 2022, the FSD's demining in Ukraine has accounted for most of the organization's financial cost. The number of demining personnel, and demining equipment has, likewise, increased significantly, with Ukrainian Prime Minister, Denys Shmyhal, suggesting that there are "almost 70 mine action operators, more than 4,000 sappers and about 150 pieces of equipment are currently engaged in demining operations".[908] Similarly, SESU notes how, at the start of 2022, the agency had 2 demining machines used for mechanical demining, whereas it currently has a fleet of 92.[909]

The national and international demining operators in Ukraine, however, contend that significantly more funds, equipment, and personnel are needed to demine Ukraine. Ukraine's Prime Minister argues that $37 billion and 10,000 deminers are required to clear Ukraine's land. While the UNDP, drawing on the World Bank data, contends that the total cost of demining

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[905] Geneva International Center for Humanitarian Demining. 2022. "Explosive Ordnance Guide For Ukraine." 2nd edition. *GICHD*, September 22, 2022. https://www.gichd.org/publications. ;
Geneva International Center for Humanitarian Demining. 2025. "Explosive Ordnance Guide For Ukraine." 3rd edition. *GICHD*, February 11, 2025. https://www.gichd.org/publications.
[906] Duzor Megan. 2023. "Ukraine Is Top Recipient of US Mine Clearing Aid." *Voice of America News*, April 4, 2023. https://www.voanews.com/a/7035800.html.
[907] Landmine and Cluster Munition Monitor. 2023. "Support for Mine Action - Ukraine." https://www.the-monitor.org/country-profile/ukraine/support?year=2023
[908] Ukrinform. 2024. "Almost 70 Operators Engaged in Demining in Ukraine - Shmyhal." *Ukrinform*, December 2, 2024. https://www.ukrinform.net/rubric-defense/3933512.
[909] Person SESU (State Emergency Service of Ukraine), interviewed by author, March 20, 2025.

Ukraine is "expected to be around US$34.6 billion".[910] According to the World Bank, this figure represents only 3% of total financial capital needed for "recovery and reconstruction needs".

Citing presentations by UNMAS officials, however, the Mine Action Review notes that "donor fatigue" is among key challenges for Ukraine's mine action, in addition to "conflicting donor priorities inside and outside Ukraine".[911] Responding to the Ukrainian PM's plea to the "entire civilised world to increase support for Ukraine in the field of demining", the FSD's director noted that he is afraid that donors are not really prepared to sustain the demining effort for a long time.[912]

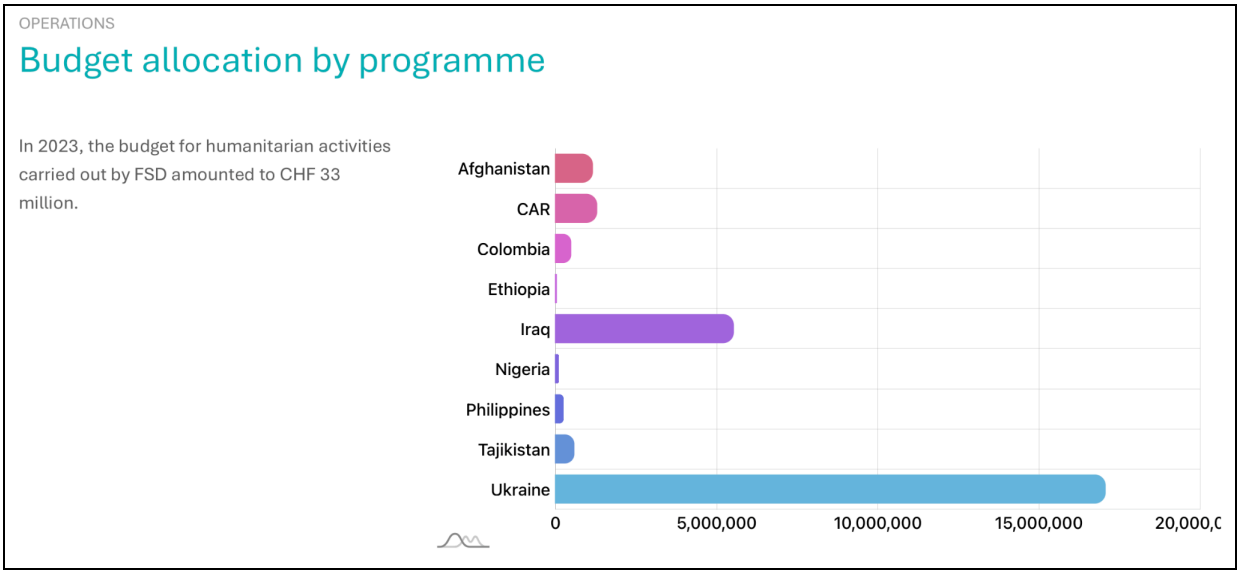


Figure 15.6. *The FSD's budget allocation in 2023.*[913]

The dissonance between funds needed and funds provided (and promised) for Ukraine's demining work reveal a friction within the multiscalar landmine governance: national ambitions collide with visions and objectives of international donors, and regional-local demining capacities.

[910] United Nations Development Programme. "In Ukraine, Tackling Mine Action from All Sides to Make Land Safe Again." *UNDP*, October 14, 2024. https://www.undp.org.
[911] Presentation by Denise Brown, UN Resident Coordinator, and Paul Heslop, UNDP, NDM, Geneva, 29 April 2024, in Mine Action Review. 2024. "Clearing the Mines 2024 - Ukraine". https://www.mineactionreview.org. P. 396.
[912] Emma Farge. 2024. "Ukraine Seeks Global Help with Massive Task of Landmine Clearance at Swiss Meeting." *Reuters*, October 17, 2024. https://www.reuters.com/world/europe/ukraine-seeks-global-help.
[913] Fondation Suisse de Déminage. n.d. "Finances". *FSD.* https://fsd.ch/en/about-us/finances/

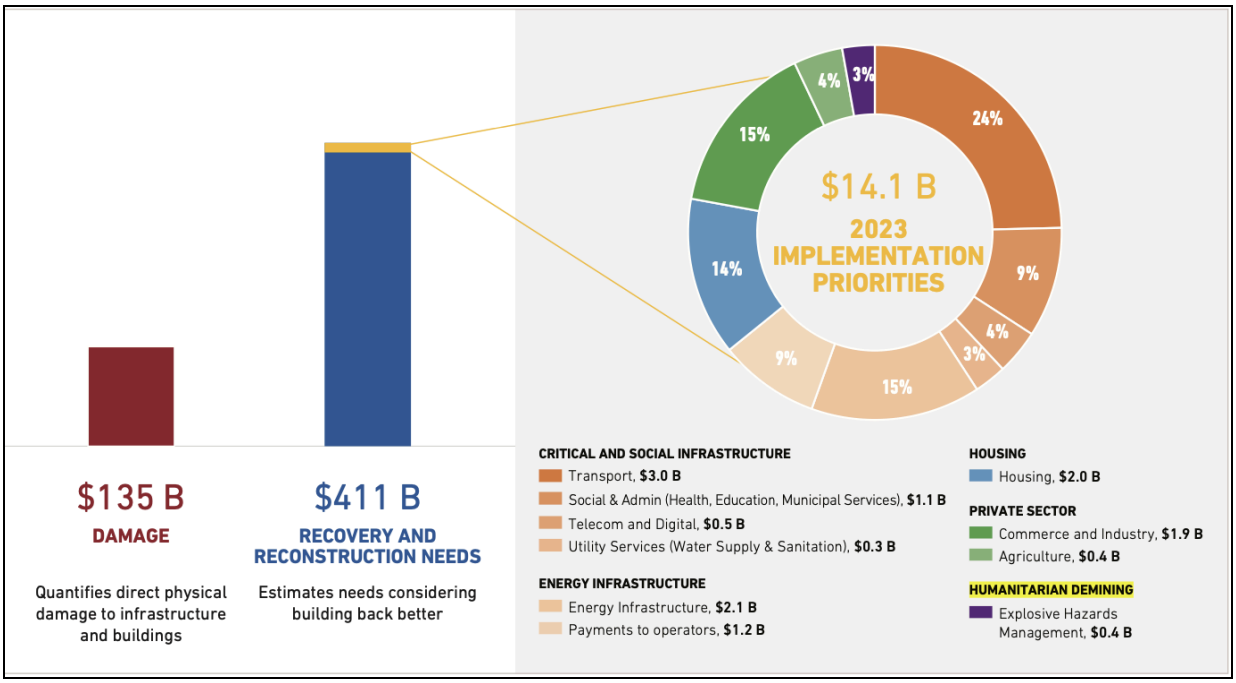


Figure 15.7. *The World Bank's recovery cost estimate for Ukraine. Demining is highlighted in yellow.*[914]

At the international scale, Western allies frame supporting Ukraine's demining effort as an imperative act of international solidarity—a defense of the "international liberal order" against "autocratic aggression". The news of Russian minefields stalling Ukraine's counter-offensive in 2023, and interrupted agricultural output with "global food security implications", in particular, rallied the Western demining support and aid to Ukraine in 2023. These two events prompted Latvia to form a coalition for demining Ukraine, and individual Western states, charitable organizations, and UN agencies to formally commit funding for demining efforts.[915] The fact that it was these two events—stalled counter-offensive and decreased agricultural output—that rallied support for demining reveal an implicit prioritization matrix of state and non-state funders alike: high-visibility areas [frontlines and farms] with symbolic value to the "liberal international

[914] The World Bank, Government of Ukraine, European Union, and the United Nations. 2023. "UKRAINE RAPID DAMAGE AND NEEDS ASSESSMENT, FEBRUARY 2022 – FEBRUARY 2023". *WB*, February 2023. https://documents1.worldbank.org/curated/en/099184503212328877. P. 5.

[915] Ukrainian World Congress. 2023. "Lithuania to Create Coalition for Demining Ukraine." *UWC*, July 19, 2023. https://www.ukrainianworldcongress.org/lithuania-to-create-coalition-for-demining-ukraine/. ; United Nations Development Programme. 2023. "UNDP and Croatia Allocate $240,000 to HALO Trust Ukraine for Mine Clearance." *UNDP*, August 9, 2023. https://www.undp.org/ukraine/press-releases/undp-and-croatia-allocate-240000-halo-trust-ukraine-mine-clearance. ; Relief Web. 2023. "Howard G. Buffett Makes 'Moonshot' Investment of $33M to Clear Landmines in Ukraine [EN/UK] - Ukraine." *ReliefWeb*, December 3, 2023. https://reliefweb.int/report/ukraine/howard-g-buffett-makes-moonshot-investment-33m-clear-landmines-ukraine-enuk. ; Michal Hudec. 2023. "President Čaputová: Slovakia Can Aid Ukraine in Demining Efforts." *Euractiv*, May 2, 2023. https://www.euractiv.com/section/politics/news/president-caputova-slovakia-can-aid-ukraine-in-demining-efforts/.

order", one physically defending the "free democratic world" from illiberalism, and the other feeding the "underdeveloped" countries that the liberal democratic West has been "taking care of" through its "humanitarian disposition".

However, on the national level, Kyiv's demining ambitions encompass much more than frontlines and farms. Driven by the commitment to restore its territorial sovereignty, Ukraine wants to "return 80% of the territories directly affected by armed aggression to productive use" by 2033.[916] Ukraine's Minister of Economy, Yuliia Svyrydenko, encapsulated the national ambition to "demine everything quickly":

> Demining of Ukrainian lands in a few years, not decades, will be the best response to the aggressor who is trying to steal our future and kill Ukrainians even after the war. To do this, we must join the efforts of the entire civilised world.[917]

This vision of "comprehensive territorial recovery" involves not only restoring mobility corridors, but also "ensuring the socio-economic reintegration of 100% of individuals affected by explosive ordnance", and minimizing the impact of landmines on Ukraine's [natural] environment—two mine action activities that have historically taken decades elsewhere.[918] Ukraine's national demining ambitions thus clash with visions and priorities of the international donors: national demining planners must consistently confront the national imperative of comprehensive territorial recovery with the liberal-international insistence on either "depoliticized humanitarian action" of densely populated and "productive" areas, or overt military support.

This friction is further compounded by regional and local capacities. Since 2022, demining has acquired substantial social traction inside Ukraine, morphing into a quasi-civic vocation. Public enthusiasm has been stoked by high-visibility symbols such as Patron, the Jack Russell terrier

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[916] Mine Action Support Team of the Ministry of Economy of Ukraine, Cabinet of Ministers of Ukraine. 2024. "National Mine Action Strategy for the period up to 2033." *Demine Ukraine,* June 28, 2024. https://demine.gov.ua/static-objects/demine/uploads/public. P. 21.
[917] Government of Ukraine. 2023. "Cabinet of Ministers of Ukraine - Demining Ukraine in a Few Years, Not Decades, Is the Best Response to the Aggressor: Yuliia Svyrydenko." *Ministry of Economy Ukraine,* August 18, 2023. https://www.kmu.gov.ua/en/new.
[918] Mine Action Support Team of the Ministry of Economy of Ukraine, Cabinet of Ministers of Ukraine. 2024. "National Mine Action Strategy for the period up to 2033." *Demine Ukraine,* June 28, 2024. https://demine.gov.ua/static-objects/demine/uploads/public. P. 23-24.

who became a "sensation" and the official mascot of the SESU after detecting more than 200 explosive devices and receiving a presidential medal in 2022.[919]



Figure 15.8. *The Ukrainian president awards the mine detection dog, Patron, with a presidential medal on May 8, 2022, in Kyiv.*[920]

Furthermore, Ukraine's Prime Minister, Denys Shmyhal, suggests that the number of certified demining operators ballooned from just six at the start of 2022 to nearly 70 by December 2024, while the cadre of trained and certified deminers jumped from roughly 1,500 to more than 4,000.[921] Similarly, Ukraine's MOD reported that by late June 2025, the government certified 108 demining operators, suggesting that "over the year the scope of humanitarian demining in Ukraine has increased by 50%".[922] This data signals a labor market boom that has likely made deminer training courses one of the most sought-after forms of technical education in the country.

[919] Léonie Chao-Fong. 2022. "Ukraine's Mine-Sniffing Dog given Medal after Finding over 200 Explosives." *The Guardian*, May 9, 2022. https://www.theguardian.com/world/2022/may/09/ukraine.
[920] Reuters Staff. 2022. "Ukraine's Mine Sniffing Dog Patron Awarded Medal by Zelenskiy." *Reuters*, May 8, 2022. https://www.reuters.com/world/europe/ukraines-mine-sniffing-dog-patron-awarded.
[921] Ukrinform. 2024. "Almost 70 operators engaged in demining in Ukraine - Shmyhal." *Ukrinform*, December 2, 2024. https://www.ukrinform.net/rubric-defense/3933512-almost-70-operators.
[922] Ministry of Defence of Ukraine. 2025. "Over the year, the scope of humanitarian demining in Ukraine has increased by 50%." *MOD Ukraine,* June 13, 2025. https://mod.gov.ua/en/news.

Popularity, however, does not equal capacity, and despite significant expansion in demining operators, personnel and their popularity, Ukraine is short of an estimated 10,000 deminers that local operators claim are required to meet the country's 2033 clearance targets.[923] In fact, Ukrainian Deputy Minister of Economy, Ihor Bezkaravainyi, cautions that the shortfall is so wide that "all the sappers in the world" would still be insufficient for Ukraine's demining needs.[924]

Recognizing that personnel and local demining capacities may become a chokehold for the country's clearance aspirations, the government lifted the Soviet-era national ban on women working as deminers in 2022.[925] Unlike in post-conflict demining contexts where former combatants transition into demining roles upon the end of hostilities, Ukraine cannot rely on mobilizing [male] combatants into demining roles, because they are needed at the frontlines. However, some draft-eligible men have signed up with demining operators, and—as my interlocutor from FSD reports—this move is widely read inside Ukraine as a discreet way to avoid conscription.[926] Although this solves the immediate shortage of deminers, it risks politicizing the civilian teams Kyiv is trying to build up. Unless Ukraine can integrate these recruits, attract additional operators and funders, and weld donor agendas into a single sovereign strategy, the promise of eighty percent clearance by 2033 will most likely remain elusive.

Taken together, these observations reveal a compound constraint whereby epistemic uncertainty about the scale of contamination, the technological complexity of legacy and novel mines, and chronic deficits in funding, equipment, and trained personnel mutually reinforce one another. These interlocking challenges illuminate how [humanitarian] demining has become a site where competing rationalities of security, sovereignty, and donor governance intersect, rendering demining in Ukraine as much a struggle over political authority and knowledge production as a matter of technical clearance.

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[923] Olena Marchenko. 2025. "Humanitarian demining of Ukraine: a problem for 30 years." *Ukrainian Energy*, January 18, 2025. https://ua-energy.org/en/posts/28-01-2025.
[924] United Nations Development Programme. 2024."In Ukraine, tackling mine action from all sides to make land safe again." *UNDP, October 14, 2024.* https://www.undp.org/eurasia/stories/ukraine.
[925] Verkhovna Rada. 2022. "LAW OF UKRAINE On the organization of labor relations under martial law." Article 9. https://zakon.rada.gov.ua/laws/show/2136-20#Text. ; Méheut, Constant, and Finbarr O'Reilly. 2024. "War Is Draining Ukraine's Male-Dominated Work Force. Enter the Women." *The New York Times*, August 20, 2024. https://www.nytimes.com/2024/08/20.
[926] Eleanor Porritt (Fondation Suisse de Déminage, Program Director for Ukraine), interviewed by the author, February 28, 2025.

15.8 Demining Ukraine: "Essential War Work"

> "This is a global project that will be crucial for the security of our country and for the future of the whole world."—Denys Shmyhal, Prime Minister of Ukraine.[927]

On April 4th 2025, the CEO of HALO Trust, James Cowan, spoke to the British *Telegraph* about HALO's demining work in Ukraine. He discussed HALO's demining practices amid active war, describing the agency's role as "essential war work", and Ukraine as an avenue for developing novel demining technologies and expertise.[928] Cowan's description aptly encapsulates the character of Ukraine's demining landscape.

Classic humanitarianism drew its legitimacy from an exceptionalist claim: "neutral" relief would appear only after the guns fell silent, and would retreat once the state re-established public order.[929] Over the past two decades that boundary has frayed. Duffield describes a "post-humanitarian present" in which aid is permanently embedded in armed politics, governed through risk management, digital surveillance, and public-private outsourcing rather than the older "Red-Cross ethic of neutrality".[930] Donini similarly argues that contemporary relief fulfills "meta functions" for the liberal order, stabilizing contested peripheries while projecting moral authority.[931]

Ukraine's demining arena exemplifies this shift. Over forty-five national, international and commercial deining operators were accredited by mid-2024—an expansion unparalleled in an active war zone. Humanitarian clearance, operational "rapid tasks," and military counter-mining now unfold on the same terrain, financed by interlocking security and development budgets. The result is a post-humanitarian demining regime: a hybrid field in which saving lives, restoring markets, and sustaining the war effort are inseparable logics rather than sequential phases.

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[927] Iryna Voichuk. 2023. "PM Shmyhal at Demine Ukraine Forum: $37 Bn and 10,000 Deminers Needed for Ukrainian Mine Cleanup." *Euromaidan Press*, September 28, 2023. https://euromaidanpress.com/2023/09/28/pm-shmyhal-at-demine-ukraine-forum.
[928] David Knowles. Interview with James Cowan, Dominic Nicholls and Darya Tsymbalyuk. The Telegraph Ukraine: The Latest. Podcast audio. April 4, 2025 https://podcasts.apple.com/us/podcast/ukraine-the-latest/id1612424182?i=1000702214991&r=1061.
[929] Barnett, 2011. *Empire of Humanity.*
[930] Mark Duffield. 2018. *Post-Humanitarianism*. John Wiley & Sons.
[931] Antonio Donini. 2010. "The Far Side: The Meta Functions of Humanitarianism in a Globalised World." *Disasters* 34 (2): S220–37. https://doi.org/10.1111/j.1467-7717.2010.01155.x.

The Ukrainian government itself speaks of an "industrial-scale" clearance model, while field managers from MAG and FSD describe Ukraine as an outlier in international humanitarian demining practices where the "canonical" sequencing, war-ending treaty, stabilization, then humanitarian land-release, has been compressed into a single, overlapping time-frame.

That compression is made possible by a hybrid civil-military architecture purposely built to meet expectations of two audiences at once. In theory, an Inter-Ministerial Committee sits above a National Mine Action Authority, which in turn supervises two Mine Action Centres, one under the MOD in Chernihiv, and one under the SESU in Merefa. Layered beside them are three additional [and new] demining agencies. Each node has overlapping mandates for tasking, accreditation and quality control. The redundancy is not accidental: the civilian *façade* unlocks Western grants earmarked for "humanitarian land release", while the MOD retains *de facto* command over priorities, task lists and, crucially, the national IMSMA-Core database that stitches every operator's daily reports into the wider military common-operating picture. Governance thus happens through interfaces: shared dashboards, donor portals, rapid accreditation apps, rather than through a single sovereign command.

The actor landscape mirrors that architecture. Military engineer brigades breach Russian defensive belts, SESU teams conduct "rapid tasks" on power lines and hospitals just behind the line of contact, while international NGOs such as HALO, MAG, NPA and FSD move in once combat stops, clearing farmland and village margins under IMAS land-release rules. At the same time, Ukrainian tech firms provide drone-based surveys, and AI risk-scoring that feed both humanitarian and military systems, while donors pay through two distinct pipelines.

Demining prioritization, the "mundane" act of deciding which area is cleared next, reveals the politics that such hybridity enfolds. Kyiv publicly promised that 80% of mine-affected territory will be "returned to productive use" by 2033, but no single state formula exists. Instead, overlapping matrices guide tasking: HALO weights population density and proximity to social infrastructure; NPA privileges accident history; FSD screens out areas too close to active hostilities to satisfy donor neutrality clauses; oblast military administrations push for bridges and grain silos that restore tax flows; and the MOD quietly steers operators toward corridors that support future counter-offensives. Every clearance map is therefore simultaneously a

humanitarian‑impact chart and a projection of the postwar territorial state: biopolitics and necropolitics converging in a spreadsheet of hectares, victims, tractors and road kilometres.

Operationally, the mine threat is evolving as quickly as the governance landscape. The HRW has documented at least five newly developed Russian APLs, some produced as late as 2021, used for the first time in Ukraine, and complicating SOPs drafted for Soviet-era munitions. At the other end of the spectrum, vast tracts within twenty kilometres of the front remain unsurveyed because humanitarian teams are barred by donor guidelines, and military units lack the time for full clearance. These "grey zones" extend the lethal agency of mines long after emplacement, deferring civilian return and leaving ecologies in what Mbembe might call a necropolitical limbo.

Technology is offered as the exit strategy. Ukraine's Ministry of Economy markets the country's landmines problem as a "unique testing ground" for AI detection, robotic manipulators and rapid digital accreditation, innovations the ministry intends to export once the war ends. In this sense, post-humanitarian demining is not only a protection activity but a speculative frontier where capital, data and security imaginaries co-produce new markets. Clearing mines becomes both an act of saving lives and a venture in future trade, further dissolving the boundary between humanitarianism and economic value.

Seen through the dissertation's lens of thick geopolitics, Ukraine's demining field is, therefore, best understood as an infrastructure that simultaneously expresses and reproduces the layered geopolitical context in which it is embedded.

It translates Euro-Atlantic alliances, donor risk appetites and Ukrainian sovereignty claims into counter-mining and humanitarian demining. It is structured by that context yet also structuring of it, because every demarcated "safe" area recalibrates where civilians can live, where armies can manoeuvre, where markets can re-open, and where the state can re-tax. Ukraine's post-humanitarian demining is thus the material hinge between war-making and life-making: it is at once a weapon of territorial contestation and an emblem of the liberal order that proclaims to abhor such weapons.

Chapter 16

Conclusion

16.1 Summary of Key Findings

16.1.1 Geopolitical Context and Demining

This dissertation set out to answer how the process of demining is shaped by contrasting geopolitical contexts comprising both the international ordering practices, and geopolitical fields.

By comparing the case of postwar Bosnia-Herzegovina—an incubator of international humanitarian demining regime, and wartime Ukraine—an incubator of a post-humanitarian demining, the dissertation demonstrates that demining is not just a technical matter, but also a geopolitical one. It is a practice of territorial recovery whose goals, meaning, priorities, and form are [re]scripted by the broader configurations of power in which it unfolds.

More precisely, this dissertation has shown that demining processes cannot be divorced from the international power constellations in which they are embedded. Bosnia-Herzegovina's postwar clearance effort unfolded in a moment of U.S. unipolar dominance, liberal-peace orthodoxy, and a near-unquestioned liberal humanitarian script. That geopolitical milieu branded landmines a relic of uncivilized warfare and endowed clearance with a moral valence: to restore safe space for the return of refugees, for life to return to normalcy, and for peace to hold.

By contrast, wartime Ukraine occupies a contested order in which NATO states openly arm a belligerent and treat territorial defense as the overriding public good. In this environment, landmines are reframed from "taboo weapons" to expedient tools of "democracy protection", while IMAS-compliant demining is recast as an instrument of manoeuvre support and macro-economic resilience.

The comparison underscores a core claim: geopolitical context is not a backdrop but the primary driver that specifies the goals, forms, and [discursive] framing of demining.

16.1.3 Territorial Practices and Reorganization

Demining is always a territorial practice—an attempt to reorganize space in line with prevailing political projects. In BiH, clearance priorities followed the Dayton map: corridors for refugee return, densely-populated areas, and infrastructure critical to "everyday life". The practice thus helped stabilize the new consociational boundaries and added to the normalization of ethnically-divided governance.

Ukraine demonstrates a different territorial logic: land release clusters along east–west logistics axes, grain-export corridors, and newly liberated salients, thereby enabling the tactical depth and economic throughput necessary for continued resistance. In both cases the act of removing explosives is simultaneously an act of spatial inscription, [re]allocating mobility, labor and capital in ways that mirror the larger geopolitical alignment of each state.

16.1.4 Transformation of Demining Nature and Impact

Across the two cases we observe a profound transformation from humanitarian to post-humanitarian demining. BiH's model sought to erase wartime territoriality, although it fell short. Ukraine's model co-exists with, and even accelerates the war effort. The impact metrics bear this out. BiH "released land" slowly but reduced civilian casualties to single digits by 2015, embedding clearance in environmental restoration programmes. Ukraine releases land at twice BiH's peak rate, yet residual deep-soil threats persist and casualty figures plateau around 35 per month. The nature of the practice has shifted from risk-averse, labor-intensive, community-oriented clearance to risk-tolerant, machine-heavy, corridor-oriented clearance—mirroring the shift from a "liberal-peace order" to a "coalition-war order".

16.2 Theoretical Contributions

The conceptual and analytical framework laid out in Chapter 2 combined two key concepts—geopolitical context, and territorial recovery, several secondary concepts—humanitarianism, material agency, assemblage, biopolitics and necropolitics with the analytical framework of thick geopolitics to explain two contrasting articulations of the demining process. The dissertation's empirical chapters yield theoretical contributions along five fronts.

First, the dissertation developed the concept of "geopolitical context" as a nested, practice-shaping ecology. Building on Nexon and Cooley's distinction between architecture and infrastructure of international orders, and Toal's notion of the geopolitical field, Chapter 2 defined geopolitical context as a layered configuration of norms, material flows and spatial power relations.

The Bosnia—Ukraine contrast operationalizes this. BiH exhibits a dense and congruent liberal architecture: nearly universal donor adherence to the Mine Ban Treaty norm, a single set of IMAS drafts shepherded by GICHD, and Dayton-mandated demining coordination through BHMAC. Its infrastructure—steady Western funding lines, engineering mentors, and Western-run demining training—aligned seamlessly with that architecture. The resulting field was cooperative: clearance priorities were negotiated, multi-ethnic teams rotated across entity lines, and demining functioned as a war-reversing practice aimed at territorial normalization.

Ukraine, by contrast, operates within a sparse and conflictual war-coalition architecture. Core norms have fragmented. NATO states endorse Ukraine's mine use, while Russia rejects and violates the Mine Ban Treaty outright. Infrastructure bifurcates: one stream channels humanitarian grants through UNDP, another funnels armoured breacher vehicles via security-sector assistance. The geopolitical field is adversarial and dynamic, punctuated by moving frontlines. Clearance therefore becomes war-advancing: infrastructure and corridor-centric, machine-heavy, risk-tolerant, and temporally synced to offensive operations.

Thus the dissertation demonstrates empirically what Giddens and Massey theorized: context is both structuring—shapes the "menu" of legitimate actions, and emergent—continuously [re]organized by those actions. Geopolitical context thus decisively conditions and shapes the goals, forms and ethics of territorial practices. In BiH, a coherent liberal order structured demining toward restitution, while in Ukraine an emergent, contested order [re]structures the same technical regime toward strategic mobility. The process, goals, meaning, and forms of territorial practice thus hinge not on the intrinsic logic of clearance technologies but on the architectures, infrastructures and spatial power relations that surround them.

Second, the dissertation reimagines "territorial recovery" as an anticipatory, open-ended process. Scholars of territory, such as Sack, Agnew, Elden, and Paasi focus on how power fixes space into

bounded, sovereign units. This dissertation builds on existing scholarship on territory by advancing territorial recovery as a fundamentally temporal and anticipatory project. Actors clear and sometimes lay mines not only to reoccupy past space but to secure an imagined future geography, one whose contours differ according to the geopolitical context.

In BiH, demining efforts pursued territorial recovery along the lines of ecological restoration and socio-economic normalization. Ukraine, by contrast, enacts militarized recovery, where clustered along logistics corridors, key "breadbaskets", and "newly-liberated areas" or "de-occupied" areas in Ukrainian government's lexicon. The envisioned future space is not a return to early 2014 borders alone, but a fortified, corridor-secure landscape that maximizes military manoeuvre and [food] export resilience in an ongoing war.

This duality shows that recovery is heterogeneous, contingent, and perpetually unfinished. By foregrounding how competing futures animate present territorial practices, the concept infuses temporal dynamism into a scholarly literature on territory. Territory, in short, is not only what is "bounded", but what is "scheduled", an ever-moving target shaped by actors' projections of safety, profit, or security into the years ahead.

Third, in the scholarly literature on humanitarianism, scholars such as Barnett and Duffield have traced how relief agencies, once rhetorically wedded to neutrality, become entangled in security agendas, remote management and biometric control. Demining, however, has not been a subject to sustained scrutiny, possibly because it appears as an unalloyed "good": the removal of an indiscriminate hazard. This dissertation complicates that consensus by describing a post-humanitarian-type demining in Ukraine. The phrase marks a shift from clearance as a "war-reversing activity" embedded in peacebuilding to clearance as a "war-enabling activity" embedded in active combat logistics, all while retaining the outward syntax of humanitarianism, such as IMAS compliance, casualty-prevention rhetoric, and UN coordination codes.

The case of Ukraine reveals a "subtle" pathway of regime change through "technical regime capture." Here, existing rules and norms remain textually intact, but the technical instruments that implement them, such as IMAS guidelines, IMSMA database, and land-release algorithms, are repurposed to serve a state's wartime strategy. For example, "IMAS 07.11 land-release" was drafted to accelerate rural livelihoods while in Ukraine it is used to fast-track clearance of grain

corridors vital to state revenue and donor food-security optics. And the "IMSMA-Core" system, originally designed for transparency and community accountability, now doubles as real-time logistics tools for engineer brigades planning counter-offensive routes.

Fourth, by layering Bennett's "vibrant materialism" on Deleuze and Guattari's concept of the assemblage, the dissertation re-casts mines as agents whose capacities frequently exceed, resist, or re-direct the designs of both combatants and humanitarians. Empirical evidence from BiH and Ukraine crystallizes this claim. In BiH, as in Ukraine, landmines have drawn in foreign experts and foreign-designed demining expertise, including standards of clearance, marking, and mine risk education. APLs with particularly lethal outcomes, such as PROM-1 in BiH, and butterfly mines in Ukraine have recalibrated risk perceptions of civilians and demining experts alike. In both cases, wider ecological forces have resulted in dislocated minefields and landmines. These examples illustrate a minefield assemblage composed not just of explosives, but of ecological actors, affective atmospheres of fear or fatigue, and foreign technical expertise.

Treating mines as participants in such assemblages enriches New Materialism debates in two ways. First, it demonstrates that even within a domain of tight humanitarian regulation through IMAS, material objects remain lively, capable of reconfiguring territorial plans and temporal horizons. Second, it foregrounds the political generativity of non-human actors: displaced mines catalyze donor emergency appeals, and mine warning signs erode public trust. In short, the dissertation shows that humanitarian technologies are not merely governed; they also govern back, co-producing the spatial and affective landscapes.

Finally, Foucault's concept of biopolitics identifies the techniques through which modern states "make live and let die," while Mbembe's necropolitics foregrounds the zones where sovereignty is exercised chiefly as a power to expose populations to death. Demining proves to be an empirical site where these two modalities are not sequential but synchronous. Clearance programmes are explicitly biopolitical: priority matrices, medical risk scores, and land-release certificates decide whose bodies may farm, commute, rebuild houses or attend school. In BiH, an area ranked "category 1" received demining attention years before a "category 3" area, thereby re-distributing life chances along an algorithmic logic. Conversely, uncleared belts function as necro-geographies: they delimit spaces of suspended development, enforce out-migration, and

naturalize the presence of lethal residue. Thirty years after the war, elderly residents of rural BiH still collect firewood along prescribed “safe lanes,” a quotidian choreography that materializes the power to let die slowly.

Wartime Ukraine intensifies this duality. The national mine action strategy extends biopolitical protection to export grain and military logistics, while deep-soil mines left beneath “quick-push” agriculture institutionalize a managed hazard for future farmer-generations: necropolitics by deferred detonation. The dissertation thus reveals territorial recovery as a double project: a life-support apparatus for selected spaces and populations, and a spatialized necropolitics for those relegated to the slow violence of uncleared terrain. By anchoring biopolitical and necropolitical concepts in the mundane instruments of demining governance, the dissertation converts the two theoretical insights into concrete spatial analysis.

16.3 Final Thoughts

It is a striking historical inversion that the very liberal international order that midwifed the 1997 Mine Ban Treaty, and the entire humanitarian demining regime now finds itself defending democracy with the same weapon it once sought to ban.

In November 2024, Washington approved transfers of U.S.-stockpiled APLs to Ukraine on the grounds that the devices were essential to halt Russian advances, while in March 2025, Poland, Estonia, Latvia, and Lithuania announced their withdrawal from the Ottawa Treaty so that their forces, too, could rearm with landmines against fear of a revanchist Kremlin.

This paradox is rendered sharper by historical rhyme: it was the Soviet invasion of Afghanistan and the Red Army’s prolonged seeding of PFM-1 landmines that galvanized Western NGOs and middle powers to launch the ICBL, and codify humanitarian demining standards in the 1990s.

Now, four decades later, Russian mine warfare in Ukraine is not consolidating the ban but instead normalizing a “post-humanitarian logic” in which liberal states simultaneously finance IMAS-compliant clearance and supply fresh mine stocks. In effect, landmines have been recast from “the most hated weapon” to contingent instrument of “territorial democracy-defense,” and the regime born to eradicate them has been repurposed to manage—rather than abolish—their strategic utility, an epochal shift that might be summarized as “laying landmines for peace”.

APPENDIX A: A Note on Pseudonyms

In the course of conducting my interview research, I adhered to the IRB ethical guidelines by obtaining informed consent from all interlocutors. During the consent process, interviewees were asked to permit voice recording and to have their names and job titles included in the dissertation. The consent forms explicitly noted that, should any participant wish to remain anonymous, pseudonyms or alternative coding would be employed to protect their identity.

In practice, rather than assigning arbitrary pseudonyms, I opted to code participants' names based on their institutional affiliations. This coding method was chosen in order to maintain both the integrity of the data and the confidentiality of those who did not consent to public disclosure of their names. The following list details the codes used:

- **State Emergency Service of Ukraine (SESU)**
    1. Person SESU (The interlocutor opted for anonymizing their job title).
- **State Finance Institution for Innovation of Ukraine (SFII) and National Mine Action Authority of Ukraine (NMAA)**
    1. Person SFII/NMAA (The interlocutor opted for anonymizing their job title).
- **Armed Forces of Bosnia and Herzegovina (AFBiH):**
    1. Person AF1-D—Deminer, Demining Battalion, Armed Forces of BiH.
    2. Person AF2-MC—Army Major, Armed Forces of BiH; Former Combatant of ARBiH.
    3. Person AF3-E—EOD Officer, EOD Operations and Training, Operational Command of AFBiH, Armed Forces of BiH.
    4. Person AF4-BC—Brigadier, Armed Forces of BiH; Former Combatant of ARBiH.

- **European Force in Bosnia and Herzegovina (EUFOR)**:

    1. Person EFR1-L—Liaison Assistant and Interpreter, Liaison Observation Team (LOT), EUFOR.
    2. Person EFR2-E—EOD Officer, EOD Unit, EUFOR.
    3. Person EFR3-E—EOD Officer, EOD Unit, EUFOR.

- **Parliamentary Assembly of Bosnia and Herzegovina (PA BiH)**:

    1. Person PBiH1—Member of the House of Peoples, Parliamentary Assembly of Bosnia and Herzegovina.

- **Mines Advisory Group (MAG)**:

    1. Person MAG-TO—Technical Operations Manager, MAG Mission in Bosnia and Herzegovina.

- **Bosnia and Herzegovina Mine Action Center (BHMAC):**

    1. Person BMAC1-I—Quality control/Inspector, BHMAC.
    2. Person BMAC2-I—Quality control/Inspector, BHMAC.
    3. Person BMAC3-I—Quality control/Inspector, BHMAC.
    4. Person BMAC4-I—Quality control/Inspector, BHMAC.
    5. Person BMAC5-E—External Relations Officer and EORE Educator, BHMAC.

- **Deminers of the Federal Civil Protection Agency**:

    1. Person D1—Deminer, EOD technician, medic, FUCZ; Former Combatant of ARBiH.
    2. Person D2—Deminer, FUCZ.
    3. Person D3—Deminer, FUCZ.

4. Person D4—Deminer, FUCZ.
5. Person D5—Deminer, FUCZ.
6. Person D6—Deminer, FUCZ.
7. Person D7—Deminer, FUCZ.
8. Person D8—Deminer, FUCZ; Former Combatant of ARBiH.
9. Person D9—Deminer, FUCZ.
10. Person D10—Deminer, FUCZ.
11. Person D11—Deminer, FUCZ.

- **Medics of the Federal Civil Protection Agency**:

12. Person M1—Medic, certified deminer; FUCZ.
13. Person M2—Medic, certified deminer; FUCZ.

This approach ensures that the institutional affiliation of my interlocutors, and thus the institutional context remains transparent and traceable. The approach also ensures that individual identities are safeguarded in accordance with the ethical guidelines of the IRB, and commitments made during the consent process.

Additionally, some of my interlocutors expressed opinions, thoughts and perspectives that are provocative, accusatory, and potentially incriminating. Despite being given permission to reveal identities and institutional affiliations of some of them, I decided to safeguard their identities. In sections of the dissertation where such "provocative" marks are cited, I use vague codes in an alphabetic order, such as Person A, Person B, Person C, and similar. In addition to obscuring their identities, I also decided to obscure the exact dates when such conversations/interviews took place, because citations with full names or codes referencing institutional affiliations include dates, and make it possible to connect and trace "controversial" quotes to actual people.

APPENDIX B: List of Interviews

1. Branislav Krljaš, Department for Quality Control Management, Bosnia and Herzegovina Mine Action Center (January 10 and January 19 2024), personal interview with author in Sarajevo, BiH.

2. Person AF1-D, Deminer, Demining Battalion, Armed Forces of BiH (April 12, 2024), personal interview with author in Jablanica, BiH.

3. Muamer Husilović, Director of Demining Department, Federal Civil Protection Administration (April 23, 2024), personal interview with author in Sarajevo, BiH.

4. Enver Grahić, Senior Officer for EOD, Procedures and Security Control; Former Deminer, Federal Civil Protection Administration (April 23, 2024), personal interview with author in Sarajevo, BiH.

5. Bruno Budimir, Mine Action Specialist; Former Deminer, Federal Civil Protection Administration (April 23, 2024), personal interview with author in Sarajevo, BiH.

6. Mustafa Kadribegović, Assistant Director, Federal Civil Protection Administration (April 23, 2024), personal interview with author in Sarajevo, BiH.

7. Jessica Hyland, Regional Director for Eastern Europe, Mines Advisory Group (May 6, 2024), personal communication with author over Zoom.

8. Ferhat Ljuca, Senior Officer for Quality Control, Federal Civil Protection Administration (May 7, 13 and 16 2024), personal interview with author in Konjic, BiH.

9. Person D1, Demining Team Leader, EOD officer, Federal Civil Protection Administration (May 7, 2024), personal interview with author in Konjic, BiH.

10. Person D2, Deminer, Federal Civil Protection Administration (May 7, 2024), personal interview with author in Konjic, BiH.

11. Person D3, Deminer, Federal Civil Protection Administration (May 7, 2024), personal interview with author in Konjic, BiH.

12. Person D4, Deminer, Federal Civil Protection Administration (May 7, 2024), personal interview with author in Konjic, BiH.

13. Person D5, Deminer, Federal Civil Protection Administration (May 7, 2024), personal interview with author in Konjic, BiH.

14. Person D6, Deminer, Federal Civil Protection Administration (May 7, 2024), personal interview with author in Konjic, BiH.

15. Person D7, Deminer, Federal Civil Protection Administration (May 7, 2024), personal interview with author in Konjic, BiH.

16. Person M1, Medic, certified deminer; Federal Civil Protection Administration (May 7, 2024), personal interview with author in Konjic, BiH.

17. Person M2, Medic, certified deminer; Federal Civil Protection Administration (May 7, 2024), personal interview with author in Konjic, BiH.

18. Person BMAC1-I, Quality Control/Inspector, Bosnia and Herzegovina Mine Action Center (May 7, 2024), personal communication with author in Konjic, BiH.

19. Person BMAC2-I, Quality Control/Inspector, Bosnia and Herzegovina Mine Action Center (May 7, 2024), personal communication with author in Konjic, BiH.

20. Selma Antić, Community Liaison Manager and EORE, Norwegian People's Aid (May 10, 2024), personal interview with author in Blagovac/Vogošća, BiH.

21. Azemina Voloder, Medic, Norwegian People's Aid (May 10, 2024), personal interview with author in Blagovac/Vogošća, BiH.

22. Vitomir Vasić, Deminer, Norwegian People's Aid (May 10, 2024), personal interview with author in Blagovac/Vogošća, BiH.

23. Siniša Ilić, Internal Quality Control Officer, Norwegian People's Aid (May 10, 2024), personal interview with author in Blagovac/Vogošća, BiH.

24. Person AF2-MC, Army Major, Armed Forces of BiH; Former Combatant of ARBiH (May 9, 2024), personal interview with author in Rajlovac, BiH.

25. Person AF3-E, EOD Officer, EOD Operations and Training, Operational Command of AFBiH, Armed Forces of BiH (May 13, 2024), personal interview with author in Sarajevo, BiH.

26. Person EFR1-L, Liaison Assistant and Interpreter, Liaison Observation Team (LOT), EUFOR (May 15, 2024), personal interview with author in Sarajevo, BiH.

27. Person EFR2-E, EOD Officer, EOD Unit, EUFOR (May 15, 2024), personal interview with author in Sarajevo, BiH.

28. Person EFR3-E, EOD Officer, EOD Unit, EUFOR (May 15, 2024), personal interview with author in Sarajevo, BiH.

29. Kemal Adžem, Demining Team Leader/EOD technician, BiH Federal Civil Protection Administration, (May 16, 2024), personal interview with author.

30. Person BMAC3-I, Quality control/Inspector, Bosnia and Herzegovina Mine Action Center (May 16, 2024), personal interview with author in Zebina Šuma, BiH.

31. Person BMAC4-I, Quality control/Inspector, Bosnia and Herzegovina Mine Action Center (May 16, 2024), personal interview with author in Zebina Šuma, BiH.

32. Person D8, Deminer, Federal Civil Protection Administration (May 16, 2024), personal interview with author in Zebina Šuma, BiH.

33. Person D9, Deminer, Federal Civil Protection Administration (May 16, 2024), personal interview with author in Zebina Šuma, BiH.

34. Person D10, Deminer, Federal Civil Protection Administration (May 16, 2024), personal interview with author in Zebina Šuma, BiH.

35. Person D11, Deminer, Federal Civil Protection Administration (May 16, 2024), personal interview with author in Zebina Šuma, BiH.

36. Person BMAC5-E, External Relations Officer and EORE Educator, Bosnia and Herzegovina Mine Action Center (May 18, 2024), personal interview with author in Sarajevo, BiH.

37. Person MAG-TO, Technical Operations Manager, Mines Advisory Group Mission in Bosnia and Herzegovina (May 18, 2024), personal interview with author in Sarajevo, BiH.

38. Oleksii Reznikov, Former Defence Minister of Ukraine (May 31, 2024), personal communication with author in Washington DC, USA.

39. Person SFII/NMAA, State Finance Institution for Innovation, and National Mine Action Authority of Ukraine (June 18, 2024), personal interview with author over WhatsApp.

40. Person PBiH1, Member of the House of Peoples, Parliamentary Assembly of Bosnia and Herzegovina (December 7, 2024), personal communication with author in Washington DC, USA.

41. Person AF4-BC, Brigadier, Armed Forces of BiH; Former Combatant of ARBiH (February 27, 2024), personal communication with author in Washington DC, USA.

42. Eleanor Porritt, Program Director for Ukraine, Fondation Suisse de Déminage (February 28, 2025) personal interview with author over Zoom.

43. Tymur Pistriuha, Head of the Ukrainian Deminers Association (March 5, 2025), personal interview with author over Google Meets.

44. Person SESU, State Emergency Service of Ukraine (March 21, 2025), personal interview with author over Zoom.

APPENDIX C: A Note on Numbers and Statistics in Demining

Over the course of research and data collection for this dissertation, I found that numbers, and particularly statistics, are tremendously contentious in the world of landmines. This applies to all aspects of this weapon—production, usage, clearing, casualties, and costs.

My first encounter with the "number problem" regarding landmines was in a book on the history of the weapon, written by a former deminer who summarized the problem as "Landmines, Damn Lies and Statistics". I initially understood this as a problem that once characterized the landmine business in the first half of the 20th century. However, as my research progressed, the "number problem" became a common theme—I found it not only in texts, reports and scholarly articles, but listened to my interlocutors in the demining world repeat it like a mantra. Everyone seemed to be "making up numbers, inflating and exaggerating numbers, and presenting bogus figures and statistics".

The trend of "Landmines, Damn Lies and Statistics", argued one deminer, started with the UN in the early 1990s. The organization was under pressure to estimate global landmines contamination because clearance programs needed to be created and budgets allocated. The UN used a "rule of thumb", and said there were 100 million landmines buried around the Earth requiring 1000 years of clearance work. Afghanistan was thought to be the most contaminated, and used as a benchmark to estimate mine numbers in other countries. This was done partly because of the lack of access to contaminated countries, and partly because the irregular nature of mine warfare in the second half of the 20th century resulted in no data or no reliable data. Figures published later were lower, indicating that at the time the UN published their "100 million landmines globally" estimate, the numbers were allegedly a lot closer to 60 million. A demining operator that conducted technical surveys and clearance in most countries included in the UN's estimate then came forward with yet another number: between 1.6 and 2.5 million.

Brigadier General Patrick Blagden, the UN mine clearance chief who came up with these numbers, later admitted to providing patently false and wrong numbers for global and by-country estimates. He argued that inflated numbers were simply "worst case scenarios for planning purposes". Others argued that the UN kept using inflated numbers even when it became obvious that contamination was much smaller, because "big numbers" could be effective in mobilizing

donors. Some deminers agree with the approach, but many more do not—the latter group claims that dramatic numbers make the landmines problem look insurmountable. The former welcomes the "biblical numbers" because demining is dependent on large funds, and large funds are given for large problems. "Demining follows the money, and the kind of money we need is given only by governments" were the words of one of my interlocutors from an international demining organization.

Worse, the trend of bogus numbers was picked up by many international and national demining organizations, and national mine action authorities. One of my interlocutors went even further, claiming that the national mine action authority in his country was not only inflating numbers and sizes of minefields, but deliberately slowing down the clearance process—a "mine-free future" he said, "is an existential threat to demining bureaucrats; once the last mine is destroyed, they're out of business". This accusation is not new, in fact, in the early 2000s, the HALO Trust, publicly criticized staffers of demining administration and monitoring for their lack of interest in actual demining. The sense that demining bureaucrats have an interest in perpetuating the problem rather than ending it seems widespread. One former deminer articulated the problem in a more somber fashion, saying that the lack of urgency and speed in solving the global mine problem exists because there is a great deal of self-interest in perpetuating it. If "all demining bureaucrats, advocates, monitors and administrators were formed into demining platoons and marched off to contaminated places", he continued, "the mine problem would be solved in short order". During my research, the rift between deminers/demining operators and demining administrators was at times palpable, and numbers seem to be at the heart of it, because many deminers understand inflated numbers as a source of injustice: bureaucrats get accolades, large salaries, and no risk to life and limb, while deminers do the "actual dirty work".

Because the "number problem" in the world of landmines and demining seems ubiquitous, I decided, to borrow an apposite metaphor, to "tread carefully" when coming across figures and statistics describing all and any aspects of the weapon—production, usage, clearing, casualties, and costs. I used figures and numbers in parts of the dissertation where they proved useful for illustrating a point. However, even as such, they should not be given too much credence; and they should certainly not be taken as definitive markers and descriptors of landmines, mine-laying or demining operations.

APPENDIX D: Institutional Sources for BiH and Ukraine

Institutional Sources: BiH		
#	**Name of Institution/Organization**	**Type and Level**
1	Armed Forces of Bosnia and Herzegovina (OSBiH)	Government; National
2	Bosnia and Herzegovina Mine Action Center (BHMAC)	Government; National
3	Council of Ministers of Bosnia and Herzegovina	Government; National
4	Department for Public Safety Brčko District	Government; Entity-Level
5	European Union Force in BiH (EUFOR)	Intergovernmental Military Organization
6	Federation of BiH Civil Protection Agency (FUCZ)	Government; Entity-Level
7	Geneva International Centre for Humanitarian Demining (GICHD)	International, NGO
8	International Committee of the Red Cross BiH (ICRC BiH)	International
9	ITF Enhancing Human Security (ITF)	Government/International (Slovenia)
10	Joint Commission for Defense and Security BiH	Government; National
11	Mines Advisory Group International (MAG)	International
12	Mine Action Review	International
13	Ministry of Civil Affairs of Bosnia and Herzegovina (MCP)	Government; National
14	Ministry of Defense of Bosnia and Herzegovina (MOD)	Government; National
15	Ministry of Security of Bosnia and Herzegovina (MSB)	Government; National

Institutional Sources: BiH		
16	Norwegian People's Aid in Bosnia and Herzegovina (NPA BiH)	International
17	NVO Posavina Bez Mina (eng. NGO Posavina without mines)	NGO
18	Office of the High Representative BiH (OHR)	Diplomatic; Government
19	Organization for Security and Co-operation in Europe in BiH (OSCE BiH)	Intergovernmental
20	Parliamentary Assembly of Bosnia and Herzegovina (PA BiH)	Government; National
21	Republika Srpska Civil Protection Agency (RUCZRS)	Government; Entity-Level
22	United Nations Development Program (UNDP)	International; Intergovernmental
23	United Nations Mine Action Service (UNMAS)	International; Intergovernmental
24	United Nations Mission in Bosnia and Herzegovina (UNMIBH)	International; Intergovernmental
25	United States Department of State (DOS)	Government; Federal (U.S.)

Institutional Sources: Ukraine		
#	**Name of Institution/Organization**	**Type and Level**
1	Centre for Humanitarian Demining of the State Enterprise "Ukroboronservice" (a subsidiary of the State Company "Ukrspecexport")	Government-owned Defense Company; National
2	Danish Refugee Council (DRC)	NGO; International
3	Demining Solutions	Private Commercial Company; National and Regional (Eastern Ukraine)
4	Fondation Suisse de Déminage (FSD)	International, NGO
5	Geneva International Centre for Humanitarian Demining (GICHD)	International, NGO
6	ITF Enhancing Human Security (ITF)	Government/International (Slovenia)
7	Mine Action Review	International
8	Mines Advisory Group International (MAG)	International
9	Ministry of Defence of Ukraine (MOD)	Government; National
10	Ministry of Economy of Ukraine	Government; National
11	National Mine Action Authority (NMAA)	Government; National
12	National Security and Defense Council of Ukraine (RNBO)	Government; National
13	NIBULON	Private Commercial Company; National

Institutional Sources: Ukraine		
14	Norwegian People's Aid in Ukraine (NPA)	International
15	Office of the President of Ukraine	Government; National
16	State Emergency Service of Ukraine (SES)	Government; National
17	The HALO Trust	International
18	UA National Mine Action Center (UANMAC)	Government; National
19	UA State Special Transport Service	Government; National
20	Ukrainian Deminers Association (UDA)	NGO; National
21	Ukrainian Demining Services (UDS)	Private Commercial Company; National
22	United Nations Development Program (UNDP)	International; Intergovernmental
23	United Nations Mine Action Service (UNMAS)	International; Intergovernmental
24	United States Department of State (DOS)	Government; Federal (U.S.)
25	Verkhovna Rada of Ukraine	Government; National

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