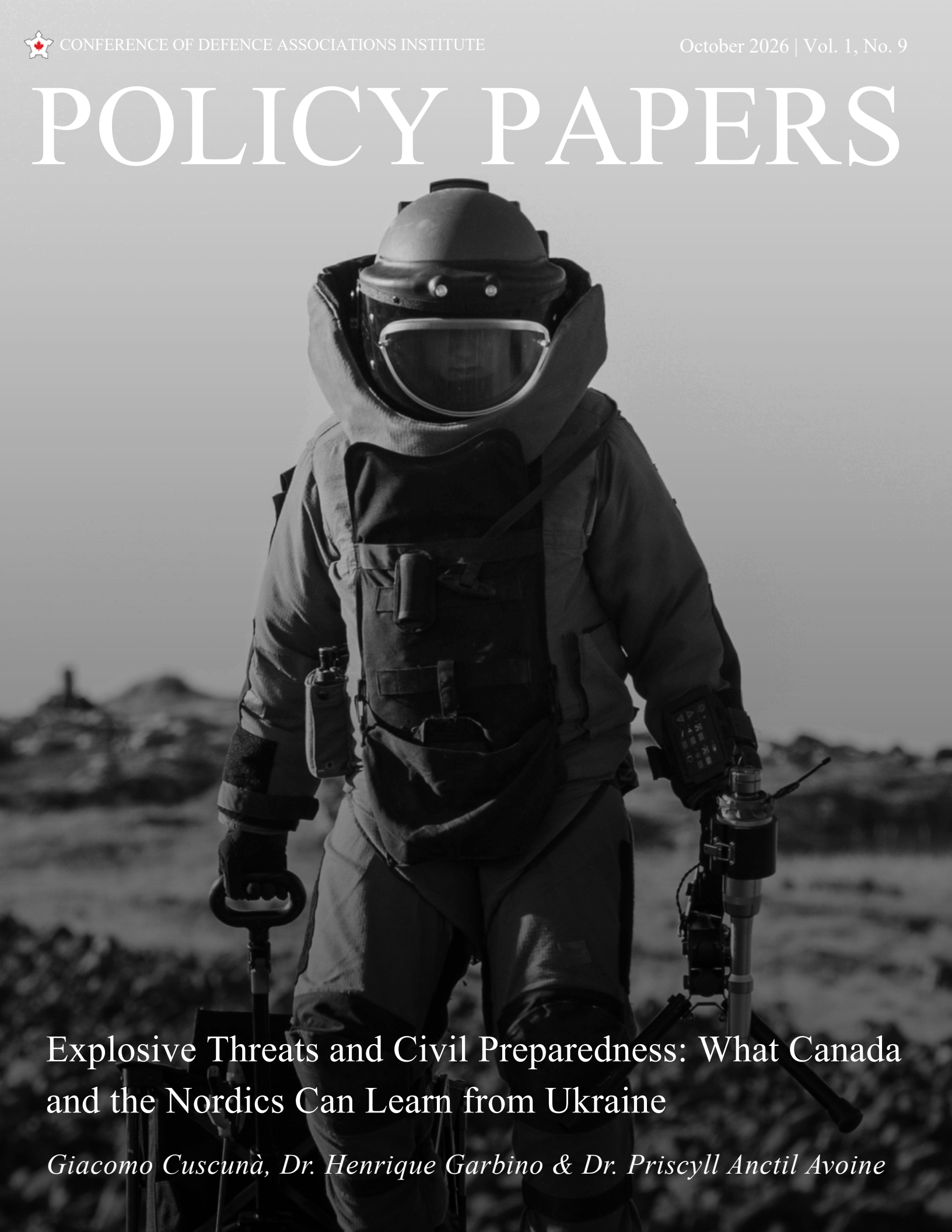


POLICY PAPERS



Explosive Threats and Civil Preparedness: What Canada
and the Nordics Can Learn from Ukraine

Giacomo Cuscunà, Dr. Henrique Garbino & Dr. Priscyll Anctil Avoine

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On The Cover

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"EX NORTHERN CHALLENGE 2024"

A member of the Canadian Fleet Diving Unit (Atlantic) wearing an explosive ordnance disposal (EOD) 9 bomb suit walks back towards his team after examining an explosive device during an EOD exercise as part of the annual EX NORTHERN CHALLENGE 2024, in Keflavik, Iceland on October 7, 2024.

Photo: Private Felix Chagnon

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Abstract

The Russian full-scale invasion of Ukraine, launched on 24 February 2022, has renewed the focus on societal resilience and total defence in national debates and institutional planning globally. Ukraine provides daily reminders of how a nation can mobilize to resist external aggression while sustaining essential civilian functions under continuous attack. Yet, designing a whole-of-society approach able to withstand a contemporary large-scale armed conflict is a monumental challenge. As countries such as Canada and Sweden (re)think their total, whole-of-society defence policies, the Ukrainian experience with mine action offers an often-overlooked source of knowledge for designing resilient civilian institutions capable of operating throughout prolonged conflict and responding to explosive threats. This paper argues that civil preparedness planning should draw more systematically on humanitarian mine action by treating demining and risk education as resilience capabilities, preparing nationwide responses to explosive threats, investing in specialized civilian skills before crises, and safeguarding the legal distinction between civilian and military functions. It also provides policy recommendations grounded in lessons learned in Ukraine and beyond by actors working in humanitarian mine action and in the humanitarian sector at large.

Introduction

Building a prepared and resilient society is a monumental challenge. It requires preparing the armed forces, government bodies, civil society, the private sector, and other relevant actors to withstand crises and war, so that essential services, public institutions, and everyday life can continue to operate under severe pressure. This ability demands coordinated efforts from policymakers, civilian and military institutions, and ordinary citizens alike.¹ Tragically, Ukraine provides daily reminders of how a nation can mobilize to resist external aggression while sustaining essential civilian functions under continuous attack.

Russia's aggression against Ukraine in February 2022 has renewed the focus on civil preparedness and total defence in national debates and institutional planning, both in the Nordic and Baltic regions² and in Canada.³ Such attention and mobilization of resources are also in line with the Comprehensive Defence Handbook⁴ of the North Atlantic Treaty Organization (NATO).

While strengthening civil preparedness has become a top priority for national and international security agendas, there is no single vocabulary for describing this societal capacity. Countries and international organizations employ overlapping concepts, including “total defence”, “whole-of-society approach”, “comprehensive approach”, and “social resilience”. These concepts, however, are defined somewhat differently in terms of the threats covered, the actors involved, and

the division of civilian and military responsibilities.

The Swedish Civil Defence and Resilience Agencyⁱ defines civil preparedness as “[t]he ability to respond to several difficult threats and serious events” including armed conflict – with particular attention to war preparedness.⁵ Conversely, although Russia's invasion of Ukraine is considered a major contributor to the threat landscape impacting Canada,⁶ the Canadian National Risk Profile⁷ is primarily centred on natural disasters and the country's emergency management framework⁸ is characterized by a similar approach in its operationalization of the concept of resilience.⁹ Yet the Canadian Armed Forces have explicitly identified missile and drone technologies, and the explosive threat they pose, as part of the “changing character of conflict” whose developments “create new vulnerabilities” in Canada's threat environment, and have stressed the need for preparedness in response.¹⁰ This assessment draws partly on the war in Ukraine, where belligerents have combined emerging technologies with established military capabilities, including through the use of drones and missile systems.¹¹

For the purposes of this paper, *civil preparedness* refers to the capacity of civilian actors and institutions to protect the population, maintain essential functions, support the armed forces, and facilitate recovery during crises and war. *War preparedness* refers more specifically to measures taken across civilian and military sectors to enable the state and society to withstand and respond to armed attack. Although, in our definition, the concept of civil preparedness may include support to

ⁱ Formerly known as the Swedish Civil Contingencies Agency.

the armed forces, its primary purpose is to protect the population, society, and essential functions, whereas war preparedness is oriented towards enabling the state to withstand an attack and conduct military operations against the enemy. This paper focuses specifically on civil preparedness rather than narrower national concepts.

The war in Ukraine is a stark reminder that explosive threats affect not only the battlefield but also civilians and infrastructure.¹² Canada could face comparable explosive threats in a future conflict involving NATO, including through attacks on Canadian territory. Long-range cruise missiles and other land attack weapon systems are capable of reaching Canada and the US from Russian territory,¹³ and the Arctic no longer serves as a protective barrier. Hence, including explosive threats in civil preparedness architectures is increasingly critical, also in the Canadian context.

Over the past five decades, the humanitarian mine action (HMA) sector has developed practical approaches to managing explosive hazards in societies. HMA comprises “activities which aim to reduce the social, economic and environmental impact of explosive ordnance”, including landmines as well as unexploded and abandoned ordnance.¹⁴ During this period, HMA practice has evolved from a predominantly technical focus on clearance into a comprehensive approach that also includes explosive ordnance risk education, victim assistance, and crucial governance

and capacity-building components. In other words, HMA has demonstrated that managing explosive hazards requires substantial civilian capacity, principled governance, a clear distinction between military and humanitarian actors, and sustained investment in institutions that strengthen civil preparedness.

As countries like Canada and Sweden are (re)thinking their war and civil preparedness policiesⁱⁱ, the Ukrainian experience with mine action offers an often-overlooked source of knowledge for designing resilient civilian institutions capable of operating throughout prolonged conflict. Although HMA is often associated primarily with landmine clearance, it addresses a wider range of explosive ordnance and its effects, including unexploded and abandoned artillery shells, rockets, missiles, aerial bombs, cluster munition remnants, and improvised explosive devices. Its lessons may also be relevant to managing other conflict-related hazards and disruptions. Furthermore, the conflict in Ukraine provides an opportunity to untangle and re-examine the relationship between civil and war preparedness architectures.

While Sweden and Baltic countries have already adopted and developed total defence frameworks with built-in societal war preparedness and resilience components, Canada has not yet fully committed to a specific model. This provides an opportunity to draw systematically on lessons from different operational contexts and fields, rather than

ⁱⁱ In the Nordic and Baltic countries, war and civil preparedness has traditionally been designed around a whole-of-society approach, aiming to leave no one behind, while requiring contributions from across society. This approach is also referred to as total or comprehensive defence, encompassing both military defence and civil defence, including, among other things, the protection of the population and the security of supply. The objective is to ensure that society can withstand disruption and continue to function during war and serves as a deterring factor increasing the risks and costs associated to an enemy’s aggression. See e.g., James Kenneth Wither, ‘Back to the Future? Nordic Total Defence Concepts’, *Defence Studies* (Abingdon) 20, no. 1 (2020): 61–81.

having to adapt an established architecture.¹⁵ Canada can therefore design its civil preparedness framework with its institutional specificities in mind, including its strategic interests and commitments to NATO, potential fiscal and financial constraints, and the need to coordinate responsibilities and resources across provinces, territories, and federal bodies.¹⁶

This paper argues that humanitarian demining should be understood as a core element of civil preparedness, rather than merely as a technical post-conflict activity or an auxiliary capability within war preparedness and total defence frameworks. By enabling the restoration of essential services, supporting practical coordination across conflict lines, and preserving humanitarian space, humanitarian demining can strengthen civilian resilience and contribute to de-escalation during and after hostilities. Drawing primarily on Ukraine, the paper identifies four broader lessons: demining and risk education should be treated as civil preparedness capabilities; responses to explosive threats should be organized nationwide; specialized civilian skills should be developed before crises; and clear distinctions between civilian and military functions should be preserved.

The paper proceeds in five steps. It first explains how humanitarian demining supports civilian resilience, essential services, and de-escalation. It then shows why contemporary explosive threats require a nationwide response and early investment in cross-sector civilian capacity. Building on these lessons, the paper examines the importance of preserving clear legal and operational distinctions between civilian and military roles within preparedness frameworks. It subsequently considers the implications for Canadian

policy and transatlantic cooperation. The conclusion presents policy recommendations for strengthening civil preparedness against explosive threats.

Humanitarian Demining, Civilian Resilience, and De-escalation

Ukraine's heavy reliance on complex civilian infrastructure to deliver essential services and sustain an industrial economy has shown how attacks on electricity networks, water systems, and transport infrastructure can generate reverberating effects across society, with civilians often bearing the heaviest costs.¹⁷ Recent research on Ukrainian willingness to defend similarly argues that armed resistance depends on the continued functioning of civilian life behind the front, and that local social ties help sustain that effort even when confidence in some state institutions weakens.¹⁸ Humanitarian demining can therefore be essential for maintaining and restoring basic services during conflict, rather than serving only as a post-conflict activity.

The Donetsk Water Filtration Station (DFS) illustrates this role. Between 2018 and early 2022, the water supply to 380,000 civilians on both sides of the line of contact in eastern Ukraine depended on daily "humanitarian corridors". These corridors allowed civilian workers to access the station, which was critically located near combat positions of both parties to the conflict. Their access to the facility, crossing the frontline and several combat positions, was facilitated by the crucial support of explosive ordnance disposal (EOD) teams from both sides' civil defence institutions.¹⁹ After the Russian full-scale invasion in February 2022, the DFS and

other similar operations were disrupted, leaving a significant number of Ukrainian civilians in occupied and frontline areas with limited, if any, access to potable water.²⁰

This example also shows that humanitarian demining can create opportunities for dialogue and practical coordination between conflict parties. By enabling agreements that allow repair teams to reach critical infrastructure, demining can help sustain essential services and preserve humanitarian space even amid hostilities.²¹

In countries unaffected by armed conflict, demining remains a specialized capability largely confined to the armed forces. However, decades of humanitarian mine action show that explosive hazards rapidly become a civilian governance challenge, requiring specialized institutions and civilian expertise.²² Humanitarian demining is therefore crucial for strengthening civil preparedness and supporting peacebuilding efforts.²³ Its value should not be mobilized merely within narrow narratives that compress societal resilience into components of war preparedness or wider total defence architectures, or that reduce civilian capabilities to auxiliary functions of defence.

Rather, humanitarian demining should be understood as a core element of civil preparedness and de-escalation, as it enables the restoration of essential services, supports practical coordination between conflict parties, and helps preserve humanitarian space during and after hostilities.

A Nationwide Response to Explosive Threats

The widespread use of long-range aerial strike systems in Ukraine, including ballistic and cruise missiles, one-way attack uncrewed aerial systems, and loitering munitions, has fundamentally changed the geography and temporality of the battlefield. In practical terms, this means that explosive threats are no longer confined to the frontline. They can reach cities, infrastructure, and communities hundreds of kilometres away, often with little warning.

Despite being located approximately 500–700 kilometres from the active frontlines, Kyiv is no less vulnerable than any other part of Ukraine. Populated areas in major cities and smaller towns, as well as electricity, heating, water, industrial, and agricultural infrastructure across the country, are regularly struck by explosive weapons. The resulting disruption has had severe consequences for civilians, who have been forced to endure adverse conditions, such as a lack of heating during freezing winter temperatures,²⁴ as well as disruptions in health care and education services.²⁵ At the same time, the increasing airtime of drones and loitering munitions extends the temporal dimension of the threat, allowing explosive hazards to hover and circle above populated areas for hours.²⁶

In a potential NATO conflict, particularly in the Arctic, or in the event of direct aggression, Canada could face the same challenges currently confronting Ukraine. Repeated deep strikes against critical infrastructure could cause extensive destruction while leaving behind unexploded ordnance and potentially

remotely delivered landmines. As underlined by a senior US military leader, Russia's expanding military presence in the region and the deployment and potential use of long-range cruise missiles and other land attack weapon systems capable of reaching the US and Canada directly from Russian territory mean the Arctic is no longer a protective barrier. Instead, it is a new potential approach route for modern conventional weaponry and its delivery systems.²⁷ Canada should therefore prepare in advance to address these risks.

Humanitarian demining is crucial not only for restoring essential public services and strengthening societal resilience, but also for economic and industrial recovery while hostilities continue. By facilitating the repair and operation of critical infrastructure, it helps preserve a country's capacity to respond to shortages, sustain essential economic activity, and maintain public services beyond mere survival. Risk education complements these efforts by helping workers, communities, and service providers identify and avoid explosive hazards, enabling essential activities to continue more safely in contaminated areas.

At the same time, the evolving use of explosive weapons means that emergency services and EOD personnel can no longer concentrate their efforts in a limited geographical area. Instead, they must be prepared to respond at any time and across the entire national territory, regardless of developments along the frontline. This places considerable operational, physical, and psychological demands on those responding to explosive threats and on the wider population, accentuating the need for

total defence frameworks capable of distributing these responsibilities across society.

For instance, localized expertise built in eastern Ukraine between 2014 and 2022 was forced to rapidly adapt, scaling up both skill set and operational coverage to meet the demands of an expanded threat landscape after the Russian full-scale invasion.²⁸ The implication for civil preparedness is clear: explosive ordnance risk education, explosive ordnance disposal, and emergency response in general, can no longer be organized as centralized capabilities or concentrated only in specific regions. Instead, they must be designed to operate continuously across the entire national territory throughout a prolonged armed conflict.

In Canada, vast geography and a dispersed population make this a particularly complex challenge, requiring coordination among provinces, territories, and local governments, especially to monitor and maintain critical civilian infrastructure in remote areas. Any emergency governance framework must account for the distinct constitutional jurisdictions and responsibilities divided among federal, provincial, and territorial governments.²⁹ These factors have indeed been included in the main Canadian emergency management policy documents, yet the response to explosive threats appears underdeveloped.³⁰

Early Cross-Sector Capacity and Awareness

In Ukraine, civil defence demining personnelⁱⁱⁱ are mainly trained according to

ⁱⁱⁱ In the context of Ukraine, "civil defence demining personnel" encompasses operators from the State Emergency Service of Ukraine (SESU), the State Special Transport Service (SSTS), and other relevant public institutions distinguished by their civilian status.

“military-oriented standards”, which differ from established humanitarian mine action ones. At the same time, the limited number of accredited training facilities for humanitarian deminers has constrained the sector’s capacity to meet growing operational needs.³¹ Analogous challenges have emerged in the health sector. The widespread use of explosive weapons in populated areas has placed increasing strain on Ukraine’s healthcare system and workforce. For instance, demand for blast trauma care and mental health services has risen significantly since 2022.³²

Education has likewise become a frontline sector. By February 2025, more than 1,600 schools in Ukraine had been damaged or destroyed, while increasing numbers of children and adolescents reported sadness, anxiety, and loneliness.³³ According to the Ukrainian Ministry of Defence, 110 children were killed or injured by landmines and explosive remnants of war between February 2022 and March 2025.³⁴ While this number is already unacceptably high, experience from HMA in other contexts indicates that the number of civilian victims, including children, tends to rise in the post-conflict phase.³⁵ Teachers therefore play a dual role: they support the educational and psychosocial needs of children and youth affected by conflict while also contributing to risk education, helping to reduce exposure to explosive hazards.

In the context of Canada, a 2008 report by the Standing Senate Committee on National Security and Defence highlighted insufficient training for local emergency management personnel and stressed the need for continuous investment in first-responder preparation to tackle explosive threats and ensure higher communication

and interoperability standards, both across agencies and across administrative regions.³⁶ More recent policy frameworks³⁷ have partially addressed broader inter-agency communication and interoperability standards, yet specialized mechanisms to tackle explosive threats across administrative regions and levels of government do not seem to be explicitly mentioned. Furthermore, potential vulnerabilities in the current civil preparedness of the Canadian health system have been highlighted as well.³⁸

HMA experience demonstrates that civil preparedness is not merely a matter of stockpiling equipment or securing supply chains. It depends on long-term investment in professional competencies, institutional planning and training that enable health systems, schools, and humanitarian organizations to adapt rapidly to wartime conditions and needs, while also preparing for early reconstruction. These capabilities and skills must be developed and trained before the onset of a crisis, to minimize institutional and individual shock and reduce the time needed to actually respond to the societal needs.³⁹

Civil preparedness requires early cross-sector investment in civilian skills, training, and institutional capacity, so that health systems, schools, humanitarian organizations, and demining actors can respond rapidly to wartime needs and support recovery from the outset. Canadian specialized civil society organizations, like the Canadian Landmine Foundation and Mines Action Canada, can play a role in supporting Canadian institutions and contributing to domestic peacetime preparation against the explosive threat, implementing the lessons and experiences learned from their international operations,

carrying on the spirit that led to the Ottawa Convention banning anti-personnel landmines.⁴⁰

Close cooperation between Canadian federal, provincial, and territorial institutions and community-based civil society initiatives is key to further developing inclusive, consistent, and interoperable civil preparedness architectures, ensuring that aid can be deployed seamlessly across jurisdictions. Investment in this multi-level governance approach should continue and expand the existing emergency management training and exercises implemented by Public Safety Canada, including preparedness for explosive threats. The enhancement of a comprehensive multi-level governance approach in emergency management, including explosive threats, would complement the policy recommendations to strengthen Arctic sovereignty and defence readiness advanced by Michael Joseph Hosken, Jeff Donaldson and Giovanni Fusina⁴¹ and expand them to develop community resilience as a strategic asset not only to adapt and respond to climate change, but also to respond to the new threat environment.

However, interoperability is not only an organisational or technical challenge. The way responsibilities are distributed among civilian, humanitarian, and military actors can affect their legal status, perceived neutrality, operational access, and safety. Preparedness frameworks must therefore combine effective coordination with clear distinctions between these roles.

A Principled Approach and the Issue of Distinction

The risks of failing to protect humanitarian roles are evident in Ukraine. Between 2025 and 2026 alone, two humanitarian demining teams clearing landmines and explosive remnants of war to allow access to essential infrastructure, farmland, and homes have been directly hit, killing at least four humanitarian workers and injuring at least 12 others.⁴² More broadly, humanitarians in Ukraine are unfortunately often exposed to severe risks regardless of the sector in which they operate.⁴³

Whether or not neutrality is a prerequisite for humanitarian action is the subject of heated debate beyond the scope of this policy paper.⁴⁴ However, a key lesson from HMA, and the humanitarian sector as a whole, is clear: both the principle of distinction and operational neutrality are vital. They do not just facilitate access to war-torn communities; they can also protect operators from being targeted due to perceived meddling in the conflict, even though they sometimes tragically fail to do so.

The distinction between civilian and military roles must therefore be considered within the broader frameworks through which states organize civil preparedness. Both civilian and military roles are central to NATO's approach to collective defence and are rooted in Article 3 of the North Atlantic Treaty.⁴⁵ Yet, the formulation of Article 3 remains general and gives operational latitude to NATO member states.^{iv}

^{iv} Article 3 of the North Atlantic Treaty reads: "In order more effectively to achieve the objectives of this Treaty, the Parties, separately and jointly, by means of continuous and effective self-help and mutual aid, will maintain and develop their individual and collective capacity to resist armed attack" (see endnote 48).

In Sweden, civil defence is structurally subordinate to, and designed to support, the military component within the national total defence framework.⁴⁶ In Ukraine, these civilian contributions to the war effort were encouraged by Ukrainian leadership⁴⁷ and included formal legislative documents,⁴⁸ but they also developed as an integral and organic element of the societal response and defence against the Russian invasion and even before 2022.⁴⁹

In Ukraine, the distinction between civilian and military actors can become blurred both visually and operationally. Visually, some actors provide aid and support to civilians while wearing military-style fatigues and protective equipment.⁵⁰ Operationally, some civil society organizations combine humanitarian assistance to people in need with the provision of material support to the armed forces.⁵¹

Yet, in war, clear boundaries can be a matter of life and death. Knowing who is who, who does what, and for what purpose can be the decisive shield for non-combatants delivering lifesaving support to civilians in need. Clear boundaries are also a means to keep a convincing path towards accountability open, should belligerents decide to target them anyway, as we too often see happening in Ukraine and in many other armed conflicts.

In Sweden, similar concerns have arisen regarding police officers' legal status in wartime. Policymakers and experts are debating whether a system allowing officers to shift between civilian and combatant roles would create a legal grey zone, potentially exposing them to attack and compromising their ability to perform essential policing functions.⁵² Additionally, in Sweden, alongside this debate, there are

also specific provisions defining the duties of the residents in the event of a heightened state of alert, including military conscription and civil duties.⁵³ While Canadian emergency legislation establishes explicit limitations on the conscription and mobilization of citizens,⁵⁴ the issue of civil-military integration should not be overlooked when developing Canadian war and civil preparedness frameworks.

Indeed, under International Humanitarian Law (IHL), an object may only be targeted if it satisfies the criteria of a military objective: “[t]he object to be attacked must by its nature, location, *purpose* or use contribute effectively to the enemy’s military action [...] [and] its partial or total destruction, capture or neutralization, must offer – in the circumstances ruling at the time – a definite military advantage”.⁵⁵ Paradoxically, within a total defence architecture such as Sweden’s, broadly designing civil defence explicitly as auxiliary to military operations carries the risk of compromising, or at least exposing, societal resilience by blurring the line between civil and military defence and civilian and military objects.

The framework proposed in *Preparing Canada’s health system for conflict: a framework for civilian–military medical readiness*⁵⁶ is particularly relevant. Because military hospitals, like civilian hospitals and other medical facilities, enjoy special protection from attacks under IHL,⁵⁷ the civilian-military medical integration put forward in the framework does not impact the protected status of medical facilities. However, it speaks to a broader debate about the co-location and even integration of other civilian and military capabilities, often prescribed in total defence frameworks. This is especially worrisome

considering the growing trend of attacks on health care⁵⁸ and humanitarian in general.⁵⁹

Implications for Canada and Transatlantic Cooperation

Canada, the Nordic and Baltic countries, and other European partners would benefit from closer coordination on civil preparedness against explosive threats. Such cooperation should complement ongoing efforts to modernize military defence while preserving the distinct purposes and responsibilities of civilian institutions. HMA provides a useful foundation because it already operates through established international standards, specialized organizations, coordination platforms, and experienced practitioners. Rather than creating new mechanisms in isolation, these countries could cooperate on training, explosive ordnance risk education, institutional capacity-building, and resource sharing.

The need for such cooperation has become more urgent following Russia's full-scale invasion of Ukraine. The conflict has served as a catalyst for technological, tactical, and doctrinal developments on the battlefield, offering a glimpse of how future inter-state wars may be fought and how rapidly they may evolve as they unfold.⁶⁰ The armed conflict has also had profound implications for geopolitical dynamics and for an already fragile international order.⁶¹

The events in Ukraine are taking place at the heart of the European continent and have direct impacts on the European security architecture.⁶² At the same time, the global threat environment continues to deteriorate and to fragment, with direct consequences for Canadian and North

American security. As underlined in *Our North, Strong and Free: A Renewed Vision for Canada's Defence*, the challenges to the international order are shaping the new threat environment, and the escalation of the armed conflict in Ukraine might still be regionally confined, yet it has global implications, including for Canada's security and defence.⁶³

Canada has reaffirmed its commitment to preserving and strengthening the international norms and rules that underpin collective security. From a military perspective, and despite unpredictable behaviour from the United States administration, the modernization of NATO remains essential to Canadian security.⁶⁴ Canada's commitment to the alliance is made explicit by ongoing investment in domestic and North American military infrastructure. On the Eastern European front, its commitment is demonstrated through continuous contribution to NATO's Forward Land Forces in Latvia and the bilateral security arrangement with Ukraine, which includes dedicated military assistance under Operation UNIFIER.⁶⁵ Yet, as demonstrated by Ukrainian institutions and society, military capabilities are not the only key component of an effective and resilient defence.

Jan Ångström and Kristin Ljungkvist underline that total defence is also a "deterrence-by-denial strategy [...] [which] rather than punishing a challenger [...] aims to convincingly raise the costs of an attack".⁶⁶ HMA demonstrates that responding effectively to explosive threats is a complex and resource-intensive endeavour. It requires sustained financial and material investments, and long-term development of specialized civilian

expertise and institutions capable of supporting societal resilience throughout prolonged armed conflicts. Identifying and integrating these lessons into total defence planning would strengthen societies' ability to sustain essential civilian functions and recover while conflict continues. The Canadian Armed Forces recognize explosive weapons as a growing threat, driven by advances in missile and drone technologies that challenge Canada's defence and war preparedness architecture.⁶⁷ Nevertheless, this is not fully reflected in the relevant civilian emergency response policy documents.⁶⁸

Greater coordination should not, however, mean subordinating civil preparedness to the needs of military defence. Enhanced interoperability among Canadian federal, provincial, territorial, municipal, Indigenous, and civil society actors, as well as with international partners, could strengthen preparedness without automatically integrating civilian capabilities into military structures.⁶⁹ This would allow Canada and its transatlantic partners to build collectively on shared expertise, standards, and resources while preserving clear civilian and military roles.

Canada's close coordination with Nordic partners is especially valuable here, given the challenges in the Arctic environment. Lessons from HMA in Ukraine can also be applied both at home and abroad. Canadian governing institutions must strengthen resilience against explosive threats as part of their Arctic security posture, ensuring that remote northern communities and critical infrastructure are integrated in relevant emergency response planning and management architectures – including from a mine action perspective. In this sense, Public Safety Canada must bridge federal

defence planning with provincial and territorial first-responder protocols, ensuring that civil preparedness against explosive threats is treated as a pillar of civil preparedness and not as an auxiliary military responsibility. Making explosive threats a pillar of civil preparedness in coordination with Nordic and Baltic partners would support lesson-sharing and interoperability across borders, building complementary national and multinational capabilities.

Conclusion

As debates over national defence and the use of explosive weapons, including anti-personnel mines,⁷⁰ have intensified, so too has the need to confront the wider consequences of explosive hazards. Landmines and explosive remnants of war do not only kill and injure civilians. They also paralyze critical civilian infrastructure, devastate urban centres, and cripple national agrifood systems by preventing farmers from cultivating their fields, exposing agricultural workers to danger, and disrupting exports.

In such circumstances, the management and disposal of explosive hazards become cornerstones of any civil preparedness architecture. Even more so, as battlefields increasingly impact urban areas, critical civilian infrastructure is routinely targeted, and civilians are directly exposed to the devastating effects and lasting presence of explosive ordnance.

To design resilient frameworks, policy-makers can draw lessons from humanitarian mine action and the broader humanitarian movement in Ukraine and beyond. To guide strategic planning, the following policy recommendations are organised into ge-

neral principles relevant for countries revising their total defence policies and developing new frameworks for civil preparedness, and specific measures for the Canadian context.

General policy recommendations:

1. Humanitarian demining is a crucial resilience capability, yet as the capability and use of explosives evolve, responses must be structured and planned on a nation-wide, sustainable basis throughout the conflict and post-conflict phases.
2. Societal resilience against explosive threats requires specialized skills, not mere material stockpiling. This includes blast-trauma training for healthcare and rescue personnel and contingency plans to rapidly introduce explosive ordnance risk education if required.
3. Governments must proactively operationalize specialized emergency response skills and plans, comprehensive of the explosive threats perspective, across the health and education sectors during peacetime through regular multi-agency exercises.
4. Civil preparedness must preserve clear distinctions between civilian and military roles, in humanitarian demining as well as other sectors where visibly civilian and principled action is essential for the protection of non-combatants.
5. When designing whole-of-society defence frameworks, the legal and societal implications of decisions about who performs which tasks should be explicitly tackled by policymakers and

civil society, especially for critical activities such as HMA.

6. In an interconnected security environment, strengthening civil preparedness against explosive threats is most effective when pursued collectively, building on shared expertise, established standards and common goals.

Canada-specific policy recommendations:

1. To develop comprehensive civil preparedness policies and practices, future iterations of the Canadian National Risk Profile and other relevant documents should incorporate conventional threats specifically connected to explosive weapons and explosive remnants of war and the relevant basic guidelines on how to face such threats should they materialize.
2. Given Canada's federal system, federal, provincial, territorial, Indigenous, and municipal authorities should coordinate preparedness while respecting their respective responsibilities. This could include adaptable blast-trauma training for healthcare and rescue personnel and contingency plans that enable provincial and territorial education authorities to rapidly introduce explosive ordnance risk education if required. Federalism can serve as an asset by supporting locally adapted implementation within a nationally coordinated framework.
3. Public Safety Canada should explicitly expand current interoperability initiatives to dedicated civil defence mechanisms focused on explosive hazard preparedness, aligning mun-

icipal provincial, and territorial emergency response without surrendering such responsibilities to the military defence component

In other words, a whole-of-society approach requires acknowledging that explosive threats have become spatially and temporally boundless. Civil preparedness must look beyond mere material supply chains and military logistics. Drawing lessons from humanitarian mine action and humanitarian principles, policymakers can ensure that essential public services, institutional competencies, and legal protections remain robust, sustainable, and functional in the event of an armed conflict, and are adequate to face the evolving and multifaceted explosive threat.

For Canada and its European partners, developing their civilian preparedness against explosive threats in synergy offers an opportunity to strengthen their individual defence policy frameworks and future collective societal resilience.

Endnotes

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