



LPHR Q&A on Unexploded Ordnance in Gaza and its serious impact on civilians

This LPHR Q&A highlights the serious harm of unexploded ordnance (**UXO**) which pose a direct and prevalent threat, albeit often an invisible one, to communities in Gaza.

The exact number of unexploded ordnances (otherwise known as 'explosive remnants of war' (**ERW**)) in Gaza is unknown, but over the past three years, at least one unexploded ordnance-related incident has been reported in Gaza each month.¹ Recognising the serious post-conflict problems caused by UXOs in Gaza, it is critical to assess the legality of the use of explosive munitions with reference to international humanitarian law, and to provide awareness of legal obligations on states to clear, remove and destroy UXOs.

What are unexploded ordnances (UXOs)?

UXOs are conventional explosive munitions, such as bombs, artillery and tank rounds, mortar rounds, missiles, rockets, fuses, grenades and cluster munitions, that failed to detonate during armed conflict. These explosives may have been fired, thrown, dropped, projected, or launched with the intention of exploding, but upon failing to do so remain a serious danger to life and health. Since their state cannot be easily determined, UXOs are considered highly dangerous at all times: accidents involving them are often more lethal than landmines due to their higher explosive and fragmentation content.² Some countries have been affected by UXOs for more than 150 years, as some UXOs remain volatile for extended periods of time. In areas that have experienced bombing or protracted battles, large quantities of UXOs may contaminate the land and risk further damage to already vulnerable communities.³

UXOs are often extremely unstable and can detonate at the slightest touch. They are typically found in areas where fighting has taken place or at military firing ranges. UXOs can be discovered both inside and outside buildings, often found buried beneath the

¹ <https://reliefweb.int/report/occupied-palestinian-territory/saving-lives-through-art-mine-risk-awareness-gaza>

² https://www.unmas.org/sites/default/files/handbook_english.pdf

³ https://www.unmas.org/sites/default/files/handbook_english.pdf



ground or hidden beneath rubble and collapsed walls. They can even be found lodged in trees, fences and inside homes. Injuries can often occur when people are farming or undertaking construction work in a contaminated area and touch, move or tamper with UXOs. Some UXOs contain motion-sensitive fuses or magnetic sensors; others may have a timed self-destruct feature that may not have functioned properly. UXOs can lay dormant for years throughout the landscape and yet can explode at the slightest disturbance. This is worsened by the ease with which UXOs blend into the landscape. UXOs come in various “military colours” – khaki, brown, green, grey – or can be unpainted, and are usually made of metal or plastic. If they have been left in open terrain for a long time, UXOs may be rusted and discoloured, partially hidden, obscured by dirt and mud, which makes them difficult to recognise. Despite often looking harmless, they remain extremely dangerous.

What are the environmental impacts of UXOs?

UXOs do not only present a risk to human health through their potential to explode. The degradation of UXOs over time poses significant risks to human health through the contaminant that they release into the natural environment. Some of the contaminants include elements such as lead, antimony, uranium, dinitro toluene, trinitrotoluene, and hexahydro-1, -3,5-trinitro-1,3,5-triazine (RDX) which are generally resistant to biological treatment and remain in the biosphere.⁴ These contaminants can leak into groundwater, contaminate foodstuff, damage organs and skin via direct contact, and are often more resistant and expensive to clean up than the undegraded munitions themselves. Degraded munitions also have an increased potential to disseminate more widely, meaning that UXOs can have a geographically dispersed impact.⁵

What is the current situation with UXOs in Gaza right now?

Heavy conflict and frequent military offensives in Gaza have resulted in large areas of land being contaminated by various explosive remnants of war. There is no estimated total number, however, an indication of its large scale is provided by the United Nations Mine Action Service (**UNMAS**), which has reported that from 2014 to March 2022, Explosive Ordnance Disposal (**EOD**) callouts have led to the recovery and destruction of

⁴ https://aoav.org.uk/2020/the-environmental-consequences-of-explosive-weapon-use-uxo/#_edn1

⁵ <https://blogs.icrc.org/law-and-policy/2021/12/16/environmental-impacts-explosive-ordnance/>



8,786 UXO from UN premises, reconstruction sites and civilian structures under UNMAS supervision in Gaza.⁶ In June 2021, the Explosives Engineering Department in Gaza estimated there to be at least 700 new suspicious objects and exploded and unexploded ordnances in the Gaza Strip resulting from the May 2021 hostilities, including remnants of artillery and tank shells, shrapnel of guided missiles and shrapnel of air-dropped bombs.⁷ Furthermore, at that time it was reported that due to lack of equipment, resources and capabilities resulting from the Israeli-imposed closure on the Gaza Strip, the technical crews at the Ministry of Interior in the Gaza Strip were unable to deal with, defuse or destroy these munitions.⁸ It is also reported by UNMAS that it surged additional EOD and bomb clearance teams to Gaza to remove and destroy new and existing UXO contamination posing a threat to the UN and Gaza communities.

How many casualties of UXOs have there been in Gaza?

According to UNMAS, between 2009 and 2020, 337 people are reported to have been killed or injured by explosive remnants of war in Gaza and the West Bank.⁹ The fatalities include 25 adults and 16 children. There have been further victims and survivors of UXO incidents since 2020. For example, on 9 June 2021, an eight-year-old Palestinian boy was killed, and his 16-year-old brother was maimed when UXO they had found exploded in Gaza City.¹⁰ LPHR's Child Rights Bulletins have documented other tragic UXO fatality and injury incidents against children in Gaza over the last several years.¹¹ This aligns with the stark observation made by UNMAS in 2020:

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7 <https://pchrgaza.org/en/israeli-offensive-remnants-including-projectiles-and-explosive-objects-threaten-civilians-lives-in-gaza-strip/>

8 <https://pchrgaza.org/en/israeli-offensive-remnants-including-projectiles-and-explosive-objects-threaten-civilians-lives-in-gaza-strip/>

9 <https://www.unmas.org/en/programmes/state-palestine> (see Palestine Programme EORE Portfolio 2019/2020, pages 4-5)

10 https://www.dci-palestine.org/uxo_kills_palestinian_boy_in_gaza_city_maims_his_brother

11 <https://lphr.org.uk/latest-news/lphr-child-rights-bulletin-for-the-period-1-november-31-december-2020/>
Further LPHR Child Right Bulletins can be accessed here: <https://lphr.org.uk/legal-projects/childrens-rights-project/>



“Reflecting the pattern of the protracted crisis in Gaza and the pattern of military escalations, the number of ERW incidents resulting in injury and death has not declined. The incidents continue to occur despite the unremitting work of UNMAS in raising awareness and educating the population about the dangers of ERW, with a common cause behind ERW accidents being civilians tampering with discovered ERW.”¹²

Are the types of munitions involved in UXO-related incidents permissible or prohibited under IHL?

Israel's military forces has deployed explosive munitions during military operations in Gaza, including mortars, rockets and bombs. They are not prohibited under international humanitarian law, but their use in heavily populated areas would be illegal if used in violation of the international humanitarian law principles of distinction, proportionality and precaution. These principles have the status of customary international law, and are binding on all state and non-state actors.

Accordingly, the use of explosive munitions would be illegal under international humanitarian law if used in violation of the principle of distinction between civilian objects and military objectives, as attacks may only be directed against military objectives in armed conflicts. Similarly, their use would be illegal if used in violation of the principle of proportionality, which requires that even if an attack is allowed, the incidental loss of civilian life, injury to civilians, or damage to civilian objects, must not be excessive in relation to the expected military advantage. Finally, their use would be illegal if used in violation of the principle of precaution, which obliges that all feasible precautions must be taken to avoid, and in any event to minimise, incidental loss of civilian life, injury to civilians and damage to civilian objects.

White phosphorus (**WP**) is a chemical substance dispersed in bombs, rockets, mortars, and artillery shells, mainly used to disrupt visibility on the ground as it emits dense white smoke. WP reacts with oxygen and once in contact with air it becomes incendiary and burns through any substance it touches, including the human body.¹³ Israel's military forces repeatedly used WP munitions in populated areas during its “Operation Cast Lead” in December 2008-January 2009. The use of WP resulted in killing and injuring civilians, and damaging crucial civilian structures, including two hospitals, and a

¹² <https://www.unmas.org/en/programmes/state-palestine> (see Palestine Programme EORE Portfolio 2019/2020, pages 4-5)

¹³ <https://www.un.org/unispal/document/auto-insert-208982/>



humanitarian shelter for between 600 and 700 civilians.¹⁴ WP canisters were amongst the most common UXOs found in Gaza after Operation Cast Lead.¹⁵ While WP munitions are not considered chemical weapons and are not prohibited under law, the UN independent experts' Fact-Finding Mission commissioned to examine possible serious international crimes during Operation Cast Lead, made the following important finding in its September 2009 report:

“... [the Mission] finds that the Israeli armed forces were systematically reckless in determining its use in built-up areas. Moreover, doctors who treated patients with white phosphorous wounds spoke about the severity and sometimes untreatable nature of the burns caused by the substance. The Mission believes that serious consideration should be given to banning the use of white phosphorous in built-up areas.” (Para. 48 of report)

The UN independent experts' mission further found that *“the risks it [white phosphorous] posed to the civilian population and civilian objects in the area under attack were excessive in relation to the specific military advantages sought”*, in apparent serious violation of the obligations under international humanitarian law to comply with the fundamental civilian protection principles of proportionality and feasible precautions. Israel's military forces were reported to have used air-burst WP shells in populated areas, despite having direct access to a non-lethal alternative to WP smoke shells.¹⁶ As a result of its use, civilians needlessly suffered and died, as well as leaving a legacy of UXO contamination that posed a grave threat to the civilian population post-conflict. For example, the UN independent expert' mission reported in September 2009:

“Schools and the roads towards them occasionally remained unsafe because of the presence of explosive remnants of war. Two Palestinian children were killed by those explosives in Zeytoun shortly after the ceasefire was declared. The Mission heard reports that some children were injured by white phosphorus on their way to school.” (Para. 1272 of report)

14 <https://www2.ohchr.org/english/bodies/hrcouncil/docs/12session/a-hrc-12-48.pdf> Paragraph 890: “The Mission has recounted a number of incidents where it has particular concern about the choice to use white phosphorous. These incidents have been addressed in detail elsewhere and include the incidents at the UNRWA compound in Gaza City, the attacks on al-Quds and al-Wafa hospitals, also in Gaza City, and the use of white phosphorous in the attack on the Abu Halima family to the north of al-Atatra and in Khuz’a.”

15 <https://www.un.org/unispal/document/auto-insert-208982/>

16 <https://www.hrw.org/report/2009/03/25/rain-fire/israels-unlawful-use-white-phosphorus-gaza>



How can the risks of UXO be mitigated during armed conflict?

To mitigate the post-conflict risks and damage UXOs pose to civilians, explosive ordnance must be employed in such a way as to ensure that attacks are fully compliant with international humanitarian law obligations engaged by military targeting in armed conflict, including that those attacks are proportionate, directed at distinct military objectives, and that all feasible precautions are taken.

Widespread area bombardments and air-burst munitions, which treat distinct military objectives as a single military objective in civilian-populated areas, increase the risk of UXOs causing incidental, collateral civilian harm. The international legal framework for dealing with UXOs is a developing area of international law.

What international law governs states' obligations concerning UXOs?

The first multilaterally negotiated international legal instrument to deal with the problem of unexploded and abandoned ordnance was Protocol V on Explosive Remnants of War of the UN Convention on Certain Conventional Weapons, which came into force in 2006. To date, this remains the only instrument which sets out states' obligations concerning UXOs.

Article 3 sets out a range of commitments for contracting parties concerning the clearance, removal and destruction of explosive remnants of war following the cessation of hostilities. These obligations extend to include circumstances where contracting parties do not exercise territorial control over an area but have caused UXOs to be present there. In this scenario, the user of the UXO bears the responsibility to provide clear-up support through bilateral agreement or through a mutually agreed third party, including through the United Nations or other relevant organisations.

Article 4 also carries obligations for contracting parties and other parties to an armed conflict to record, retain and transmit information on the use or abandonment of UXOs for the facilitation of clearance, as well as to reduce the risk they pose to civilians.

Israel is not a contracting party to Protocol V on Explosive Remnants of War, and so the treaty carries no legal force against any UXOs arising out of their actions or in territory which they control. Palestine is a contracting party and so Protocol V does affect its obligations under international law.

Whilst Israel is not a signatory to Protocol V on Explosive Remnants of War, Article 54(2) of the 1977 Additional Protocol I prohibit states from attacking, destroying or rendering useless objects indispensable to the civilian population. The Additional Protocols of the



Geneva Convention are regarded as customary international law. Objects necessary to the functioning of the civilian population include items related to water supply, foodstuff, agriculture and more.¹⁷ During the May 2021 hostilities, it was reported that Israel destroyed the Explosives Engineering Department and its equipment in Gaza, crippling the work of the Department in its ability to deal UXOs.¹⁸ The consequence of this is that the Department has been unable to disarm UXOs and suspicious objects, thereby causing substantial risk to civilian functioning within the Gaza Strip.¹⁹ Israel's destruction of the Explosive Engineering Department could therefore result in the state bearing responsibility for the destruction of an indispensable service, as there is no other municipal body capable of disarming UXOs.

How will the threat of UXOs in Gaza develop over time?

While the international community seeks to address the post-conflict dangers of UXOs, including through international treaties, such as Protocol V, the root cause of UXOs remains active: the use of explosives in heavily populated civilian areas. International humanitarian law prohibits disproportionate and indiscriminate attacks in armed conflict. However, evidence is replete in conflict zones across the world that these fundamental civilian protection principles are being repeatedly violated, with impunity.

Accordingly, having international law requirements in place to govern the use of explosive weapons is not sufficient on its own. What is also crucially required is the will to carry out genuine investigations and pursue full legal accountability against individuals allegedly responsible for apparent serious violations, so to ensure the most effective deterrence against recurrent unlawful use of explosive weapons with devastating consequences for civilian harm. The International Criminal Court (ICC) was established around the turn of this century to fill the vacuum of impunity for such serious violations. In the context of Gaza, only time will tell whether or not the ICC can prove itself able to investigate and prosecute individuals allegedly responsible for using explosive weapons indiscriminately and/or disproportionately. If it proves unable, the serious and prevalent threat of UXOs to civilians in Gaza, is likely to persist for the foreseeable future.

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¹⁷ https://ihl-databases.icrc.org/customary-ihl/eng/docs/v1_rul_in

¹⁸ <https://pchgaza.org/en/israeli-offensive-remnants-including-projectiles-and-explosive-objects-threaten-civilians-lives-in-gaza-strip/>

¹⁹ <https://pchgaza.org/en/israeli-offensive-remnants-including-projectiles-and-explosive-objects-threaten-civilians-lives-in-gaza-strip/>