

1 What is meant by the term "explosive weapons"?

Explosive weapons refer to munitions that are generally activated by the detonation of a high-explosive substance that creates thermal energy and a blast and fragmentation zone. This blast zone has the potential to directly kill or injure any person and damage, degrade, or destroy objects within its radius. The term explosive weapon is used to refer to bombs, artillery shells, missiles and rocket warheads, mortar rounds, multi-barrel rocket launchers and improvised explosive devices, among others.



2 When are explosive weapons considered to have "wide-area effects"?

Explosive weapons can be considered to have "wide-area effects", meaning that they are likely to impact an area significantly larger than the intended target, when one or a combination of the following criteria are fulfilled:



A large destructive radius from the blast that the explosive yield produces



An inaccurate delivery system



A delivery of multiple munitions simultaneously across a wide area

3 What is a "populated area"?

Populated areas are generally considered to be areas with a concentration of civilians or of civilians and civilian objects. Populated areas may be permanent or temporary, such as cities, towns and villages, or sites for refugees and internally displaced people, for example. And civilian objects are understood to be all objects that are not military objectives, such as housing, hospitals, food markets, places of worship, schools, energy and water and sanitation systems, among many others.



4 Why is the UN concerned about the use of explosive weapons with wide-area effects in populated areas?

The use of explosive weapons with wide-area effects in populated areas is a concern for the UN because of the significant likelihood that their effects will impact an area larger than the intended target, and thus impact civilians and civilian objects indiscriminately. Precisely because of the significant likelihood of having indiscriminate effects, the UN Secretary-General has appealed for a commitment to avoid their use in populated areas.¹ It has been estimated that when explosive weapons are used in populated areas, civilians constitute the majority of casualties and injuries.²

Beyond the devastating direct effects, the impacts from using explosive weapons with wide-area effects in populated areas also cause severe, broad, cumulative, and enduring indirect harm to civilians, commonly referred to as "reverberating effects". The reverberating effects are due to damage and destruction to critical infrastructure and include, for example, disruptions to essential services and contamination from explosive ordnance, leading to a range of harms such as health hazards and forced displacement – both within and across borders – among many other long-lasting humanitarian impacts.



1. See : <https://www.un.org/sg/en/node/262625?msclkid=f075797dae6b11e9fc3133097be2ec0>

2. For figures for the 2011-2020 period, see <https://aoav.org.uk/wp-content/uploads/2021/05/A-Decade-of-Explosive-Violence-Harm.pdf>

3. The POC Handbook by NATO refers to similar consequences under the terms "primary" and "second" order effects when referring to considerations that should be taken into account. Source: NATO, POC Handbook (2021), page 25.

4. As above, the POC Handbook by NATO (2021) refers to the term "third order effects" that should be taken into account. Source: NATO, POC Handbook (2021), page 25.

5. For further information on how sex and age disaggregated data on EWIPA can be used, see: <https://unidir.org/sites/default/files/2021-03/UNIDIR%20Factsheet%20-%20Gendered%20Impacts%20of%20Explosive%20Weapons%20in%20Populated%20Areas.pdf>

5 How does UNIDIR define direct and reverberating effects?



Direct effects are those caused directly by an explosion, as a result of the high-pressure blast wave from the detonation, and from the fragmentation of the munition. Direct effects cause civilian death and injury and damage and destruction to civilian objects, and include:³

Primary effects, such as blast overpressure, fragmentation, and heat.



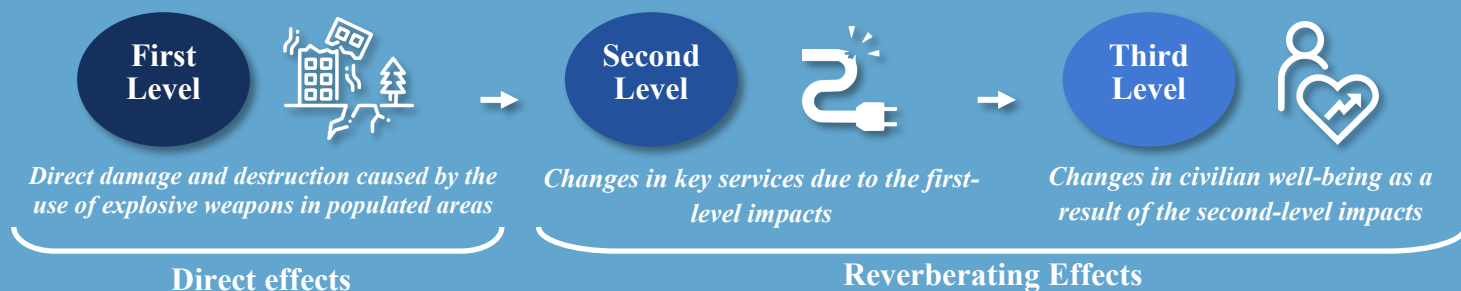
Secondary effects which can occur from the interaction of the blast, fragmentation, and heat with the surrounding environment. Some examples include secondary fragmentation, firebrands, ground shock and cratering, and flying and falling debris.



Reverberating effects, also known as indirect, tertiary or third order⁴ effects, are those that result as a consequence of the direct impacts from the explosion. These reverberating effects cause civilian harm beyond the time of the explosion and immediate blast zone. For example, damage and destruction to critical infrastructure caused directly by explosive weapons disrupts and degrades the provision of essential services (e.g., water, sanitation, healthcare), which can result in death, injury, and human suffering –as reverberating consequences.

6 What is UNIDIR doing to unpack the reverberating effects and help address this issue?

UNIDIR designed an *Impact Chain* to map the causal pathway of civilian harm resulting from the use of explosive weapons in populated areas. The *Impact Chain* starts from the damage and destruction to critical infrastructure caused by explosive weapons, which leads to disruptions in essential services and ensuing negative consequences for civilian well-being. As such, the UNIDIR *Impact Chain* has three levels:



In the UNIDIR *Impact Chain*, first-level impacts are direct effects (including both primary and secondary), and second- and third-level impacts are reverberating effects.

UNIDIR developed two *Menus of Indicators* to support efforts to examine and understand the reverberating effects from the use of explosive weapons in populated areas.

- The *First Menu of Indicators* enables the systematic documentation of civilian casualties and injuries, as well as disruptions to the infrastructure of sustainable cities and communities, good health, and education.
- The *Second Menu of Indicators* examines the consequences from disruptions to water, sanitation and hygiene services, food security, environmental standards, and economic opportunity.

UNIDIR also developed a *Factsheet* to better understand the gendered impacts of explosive weapons in populated areas.⁵ Knowledge about the different risks and vulnerabilities faced by women, men, girls and boys can inform prevention and protection strategies as well as response and recovery efforts, including assistance to survivors.

References:

- *“Menu of Indicators to Measure the Reverberating Effects on Civilians from the Use of Explosive Weapons in Populated Areas”*, Christina Wille and Alfredo Malaret Baldo, UNIDIR, 2021.
- *“Second Menu of Indicators to Measure the Reverberating Effects on Civilians from the Use of Explosive Weapons in Populated Areas”*, Alfredo Malaret Baldo and Francesca Batault, UNIDIR, 2022.
- *“Gendered Impacts of Explosive Weapons in Populated Areas”*, UNIDIR, 2021.
- *“Explosive Weapons with Wide Area Effects: A Deadly Choice in Populated Areas”*, Eirini Giorgou and Laurent Gisel, *International Review of the Red Cross*, 2022.
- *“ICRC O&A on the issue of explosive weapons in populated areas”*, *International Review of the Red Cross*, Vol. 98, No. 105, 2016: pp. 97-105.
- *“Explosive weapons in populated areas - Factsheet”*, 2016, *International Review of the Red Cross*, online resource.
- *“Explosive Weapons in Populated Areas”*, UN Office for the Coordination of Humanitarian Affairs, online resource.
- *“Protection of Civilians: ACO Handbook”*, North Atlantic Treaty Organization Supreme Headquarters Allied Powers Europe, 2021.
- *“A Decade of Explosive Violence Harm”*, Action on Armed Violence, 2021.
- *“The area effects of weapons and the risk of civilian harm”*, Laura Boillot, *Article 36*, 2021.