

ACTION ON
ARMED VIOLENCE

AOAV

**EXPLOSIVE VIOLENCE
MONITOR 2019**



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A boy rides on the back of a truck through Khan Shaykhun, Syria. Anas Aldyab,
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Introduction

Last year, for the ninth year running, 90 per cent of people killed by explosive weapons in populated areas were civilians. I urge all governments to make a strong commitment to avoid the use of explosive weapons with wide-area effects in populated areas.

UN Secretary General.

Secretary-General's remarks to the Security Council on the protection of civilians in armed conflict, 27 May 2020.¹

In this report, Action on Armed Violence (AOAV) presents the 2019 findings from the Explosive Violence Monitoring Project (EVMP) – the ninth consecutive year of the monitor. The EVMP tracks the impact of explosive weapon use worldwide as reported in English-language media.

In 2019, AOA V recorded 29,485 deaths and injuries as a result of the use of explosive weapons.

As with every year for the past nine years, civilians continued to bear the burden of this violence. Of those harmed in 2019, two-thirds (66%) were civilians.

In 2019, of those reported harmed by explosive weapons in populated areas, 90% were civilians. In addition, civilian casualties in populated areas accounted for 92% of total civilian casualties.

These findings are part of a consistent pattern of harm that AOA V has persistently monitored since 2010. Over the last nine years of monitoring AOA V has found that when explosive weapons were used in populated areas, on average nine in every ten of the deaths and injuries caused were civilians.

Even when explosive weapons are targeted at military objectives, oftentimes bystanders are caught by the blast or hit by projected fragments, particularly when the explosive weapon used has wide area effects – this is a predictable harm that is repeatedly evidenced by AOA V² and its colleagues.³

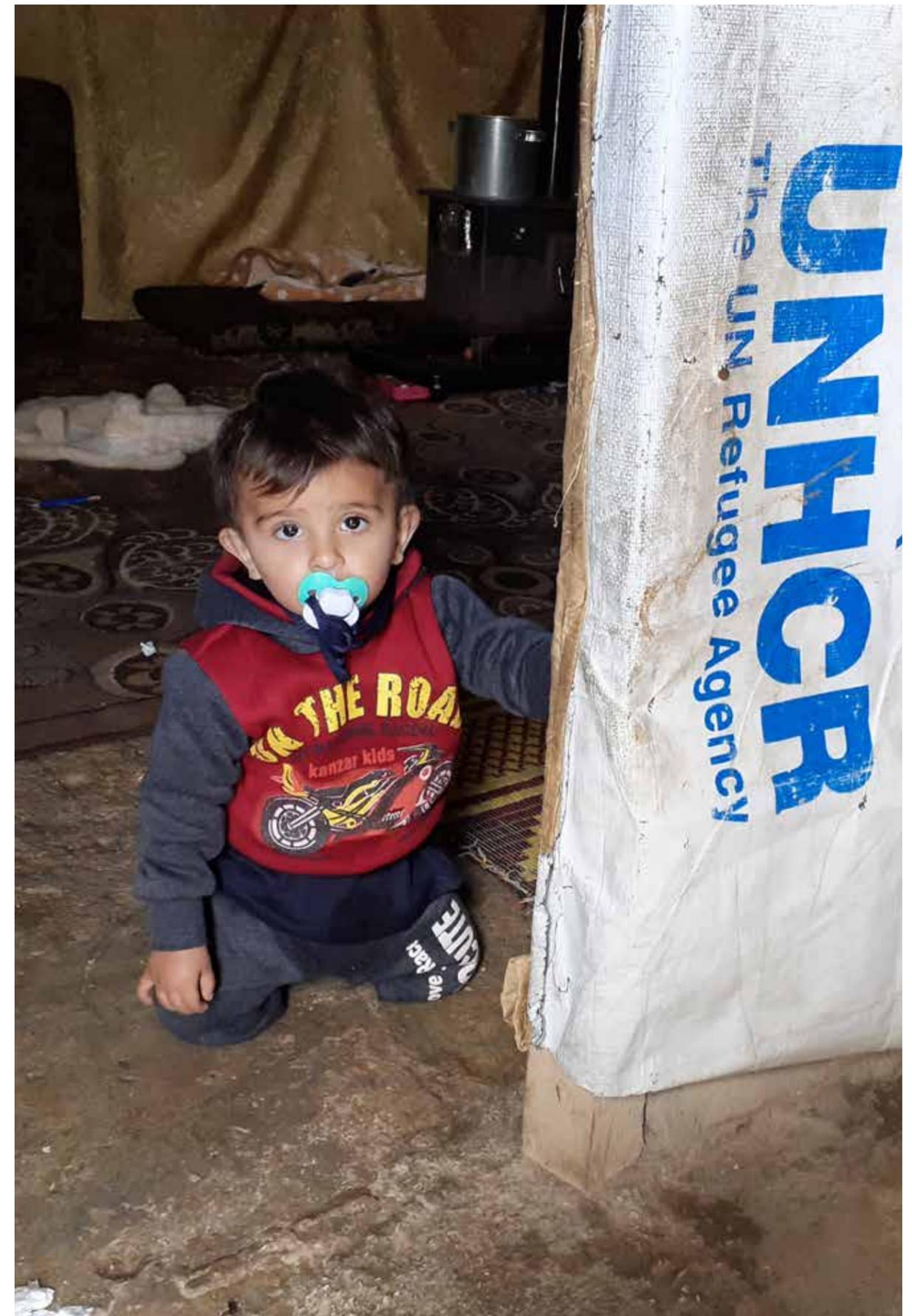
Specifically, in 2019, Syria remained the worst impacted country. Iraq dropped out of the five worst-impacted for the first time in seven years. Afghanistan continued to suffer high levels of civilian harm from explosive weapons: AOA V recorded an 8% increase in civilian casualties in Afghanistan compared to the previous year.

AOA V's data is not an attempt to capture every casualty of every incident around the world. No claims are made that this sample of data, taken from English-language media reporting, can represent the total impact of explosive weapons on civilians in 2019.

Since the monitor began in 2010, AOA V has recorded the appalling suffering caused across the globe by both manufactured and improvised weapons. States and other users must politically commit to stop using explosive weapons with wide area effects in populated areas. The harm recorded in 2019, and reflected in this report, illustrates the stark urgency needed to reach this commitment.

Explosive weapons:

Weapons that share common characteristics causing deaths, injuries, and damage by projecting explosive blast, heat and often fragmentation around a point of detonation. These weapons include a variety of munitions such as air-dropped bombs, mortars, improvised explosive devices (IEDs) and artillery shells.



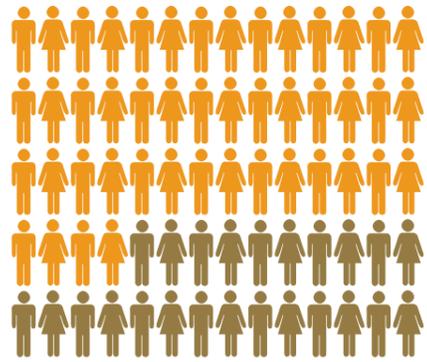
A child at a refugee camp in Bekaa Valley, Lebanon.

Key Findings

OVERVIEW

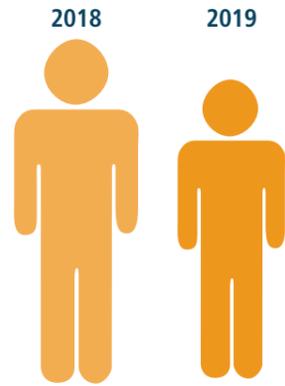
- When explosive weapons were used in populated areas, **90% of those killed and injured were civilians. This compares to 16% in other areas.**
- In total, **17,910 civilians** were **killed and injured** in populated areas.
- AOVAV recorded 29,485 deaths and injuries by explosive weapons in 3,816 casualty-causing incidents in 2019. Of these, **19,401 were civilians – 66%.**
- In total, 13,169 people were killed (of which 6,476 were civilians) and 16,316 were injured (of which 12,925 were civilians) by explosive weapons globally.
- Civilian deaths and injuries in populated areas represented **92% of all reported civilian deaths and injuries.**
- Civilian deaths and injuries from explosive violence saw a **decrease of 13%** in 2019, compared to 2018. This is the third consecutive year in which AOVAV has recorded a drop in civilian casualties from explosive violence globally.
- Manufactured explosive weapons accounted for at least **9,811 civilian casualties (52%).**
- Improvised explosive devices (IEDs) accounted for at least **9,089 civilian casualties (48%).**
- A further **501 civilian casualties** were caused by incidents using multiple types of launch methods.
- IEDs were responsible for at least **47% of all civilian casualties** from explosive violence in 2019. Air-launched explosive weapons were responsible for **28% of all civilian deaths and injuries.** Ground-launched explosive weapons were responsible for 20%. The remaining 4% were caused by incidents using multiples types of explosive weapons (3%), mines (1%), naval- launched explosives (<1%) and those recorded with an unclear launch method (<1%).
- **Syria, Afghanistan, Yemen, Somalia and Libya** saw the highest number of **civilian deaths and injuries in 2019** with 7,256, 4,630, 1,345, 950 and 906 civilian casualties respectively.
- Despite a fall in reported deaths and injuries, **Syria saw more than 8,774 deaths and injuries** recorded by AOVAV from explosive violence alone in 2019 – **83% were civilians.**
- **Afghanistan, Somalia, Libya and Sri Lanka** saw a significant rise in civilian deaths and injuries as a result of explosive weapons compared to the year before.
- **Eight countries and territories saw over 500 civilian deaths and injuries in 2019.**
- Casualty-causing incidents of explosive violence were **recorded in 60 countries and territories** around the world; four less locations than in 2018.

EXPLOSIVE VIOLENCE IN 2019



66%
CIVILIAN CASUALTIES

TOTAL REPORTED DEATHS & INJURIES: 29,485
TOTAL CIVILIAN DEATHS & INJURIES: 19,401



13%
DECREASE IN TOTAL CIVILIAN DEATHS & INJURIES



31%
DECREASE IN AVERAGE NUMBER OF CIVILIAN DEATHS PER DAY

TARGETED AREAS

POPULATED AREAS



90% CIVILIAN DEATHS & INJURIES IN POPULATED AREAS



2,219 ATTACKS IN POPULATED AREAS

NON-POPULATED AREAS

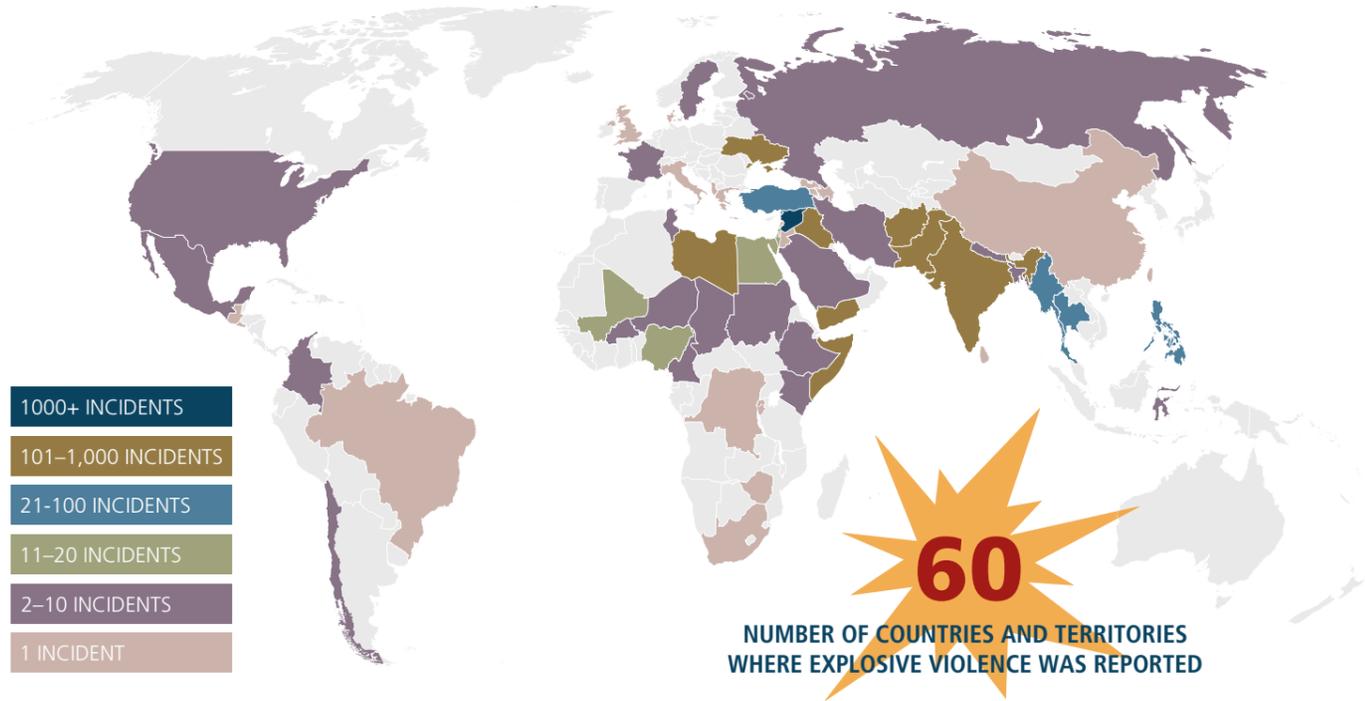


15% CIVILIAN DEATHS & INJURIES IN NON-POPULATED AREAS



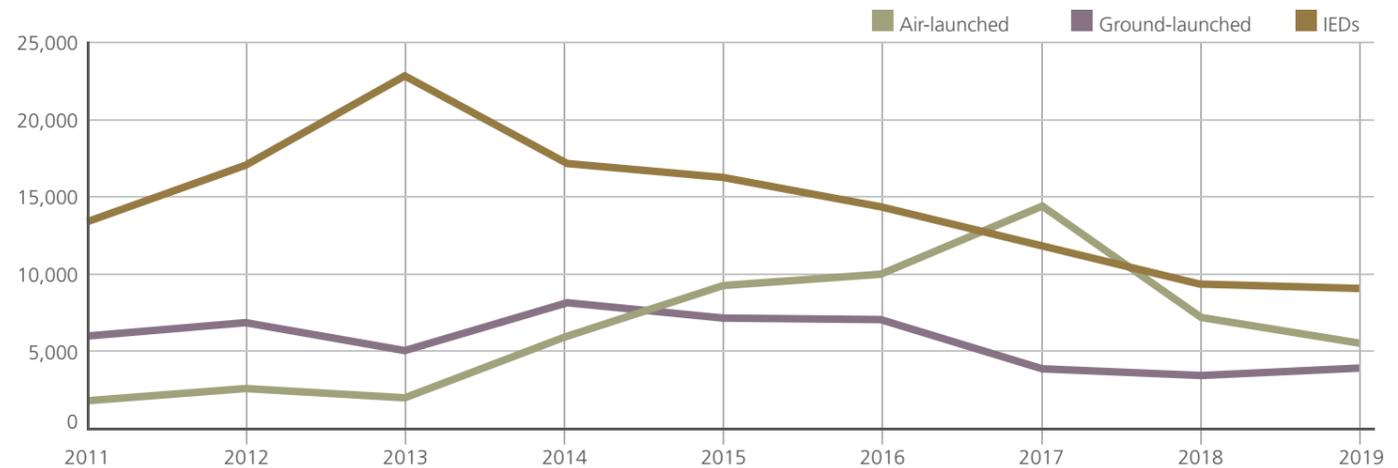
1,597 ATTACKS IN NON-POPULATED AREAS

	TOTAL DEATHS & INJURIES	CIVILIAN DEATHS & INJURIES	AVERAGE CIVILIAN DEATHS & INJURIES PER ATTACK
 URBAN RESIDENTIAL	3,597	92%	5
 VILLAGE	3,177	78%	4
 MARKETS	1,499	96%	19



DEADLY WEAPONS

CIVILIAN DEATHS & INJURIES BY AIR-LAUNCHED, GROUND-LAUNCHED AND IEDS, 2011 – 2019



CIVILIAN DEATHS & INJURIES BY WEAPON LAUNCH METHOD



Key terms

CIVILIAN/ARMED ACTOR OR SECURITY PERSONNEL:

Casualties were recorded as ‘armed actors’ only if they were reported as being part of the state military, were members of non-state armed groups, or were security personnel who AOA V considered likely to be armed. This includes police, security guards, intelligence officers, and paramilitary forces. All casualties not reported as belonging to these armed groups were recorded as civilians.

EXPLOSIVE VIOLENCE INCIDENT:

Refers to the use of explosive weapons that caused at least one casualty and took place in a 24-hour period.

POPULATED AREA:

Refers to areas likely to contain concentrations of civilians.⁴

WIDE-AREA EFFECTS:

Refers to the use of explosive weapons, which result in a large blast and fragmentation radius, lack accurate delivery systems, and/or, use multiple munitions.⁵

EXPLOSIVE WEAPONS TYPES:

Weapons were classified by AOA V based on consistently-used language in media reporting. The categories used are deliberately broad in order to capture a range of different weapon types in light of considerable variance in the level of detail provided by news sources.

- **Multiple types:** Used to refer to incidents where a combination of different explosive weapon types were used and it was not possible to attribute casualties to each munition. These can involve any combination of air, ground-launched, or improvised explosive devices. The category most commonly includes attacks where ground-launched weapons such as rockets and artillery shells were fired together.
- **Mine:** Refers to incidents where the explosive weapon was described as a mine or landmine. These include both antipersonnel and anti-vehicle mines.⁶

AIR-LAUNCHED:



- **Air strike:** The broadest recording category in this grouping. It refers to incidents where explosive weapons were reported as delivered by drones, planes, helicopters, or other aircraft, and the type of munition fired was not specified in the news source.⁷ Where the munition used is specified in news sources it is recorded as one of the following more specific weapon categories below.
- **Air-dropped bomb:** References to areas being ‘bombed’ by military aircraft were recorded as air-dropped bomb incidents. This can include makeshift manually-deployed bombs, as well as cluster bombs.
- **Missile:** Recorded where explosive missiles delivered by air were reported in a news source, most commonly in drone attacks.⁸
- **Rocket:** Typically used to refer to unguided missiles, rockets were recorded wherever they are specified in a news source.⁹

GROUND-LAUNCHED:



- **Shelling (unspecified):** The broadest recording category in this grouping. It refers to reports of the use of explosive shells that do not specify how they were delivered (e.g. mortars, rockets, artillery, or tanks).
- **Artillery shell:** An explosive projectile fired from a gun, cannon, howitzer or recoilless gun/rifle. This refers to medium and large-calibre munitions primarily designed to fire indirectly. Artillery shells were recorded wherever specified in news sources.
- **Missile:** Recorded where reported in news sources, or where a ground-launched missile type was reported in the incident (e.g. SCUD, MANPAD). Ground-launched missiles can range from shoulder-mounted to ballistic missiles.
- **Rocket:** Recorded where reported in news sources, or where a known ground-launched rocket type was reported in the incident (e.g. Grad, Katyusha).
- **Mortar:** Recorded where reports specified that a mortar bomb was the munition used.¹⁰
- **Tank shell:** Explosive shells fired by tanks.
- **Grenade:** Recorded where reports indicate grenades deployed an explosive blast and/or fragmentation. Grenades specified as ‘homemade’ were recorded as IEDs.
- **RPG:** Rocket-propelled grenades. Grenades which are rifle-launched were recorded as grenades rather than RPGs.

IMPROVISED EXPLOSIVE DEVICES (IEDS):



- **Non-specific IED:** The broadest recording category in this grouping. It refers to all IEDs which could not be categorised as either ‘roadside bombs’ or ‘car bombs.’
- **Car bomb:** Incidents where the IED was clearly described as a ‘car bomb,’ or other vehicles like trucks were used. IEDs which were reported as being attached to vehicles, such as a sticky bomb attached to a politician’s car or a remote control IED attached to a bicycle, were recorded as ‘Non-specific IEDs.’
- **Roadside bomb:** IEDs which were either specifically reported as ‘roadside bombs’ or where an IED was reported to be used alongside a road and no further information was provided.

2019 Overview

AOAV recorded **29,485** casualties (people who were killed or injured) by explosive weapons in **3,816** incidents in 2019.

Of the casualties recorded in 2019, **66%** were civilians (**19,401** civilians killed and injured).

This was a **13%** decrease in civilian casualties from explosive violence compared to 2018.

In 2019, AOA V recorded a decrease in deaths and injuries from explosive violence recorded around the world. In total, there was a 13% decrease in civilian deaths and injuries, compared to the previous year.

This is the third consecutive year in which AOA V has recorded a drop in total civilian casualties. This decrease is thought to reflect the continued fall in civilian casualties in Iraq and Syria, with less civilian casualties from ISIS' use of explosive weapons and a drop in state violence to target ISIS.

Despite such falls, other countries saw substantial increases in civilian casualties, particularly Afghanistan.

Globally, it remained the case that civilians constitute the majority of casualties from explosive weapon use, accounting for almost 66% of all recorded deaths and injuries.

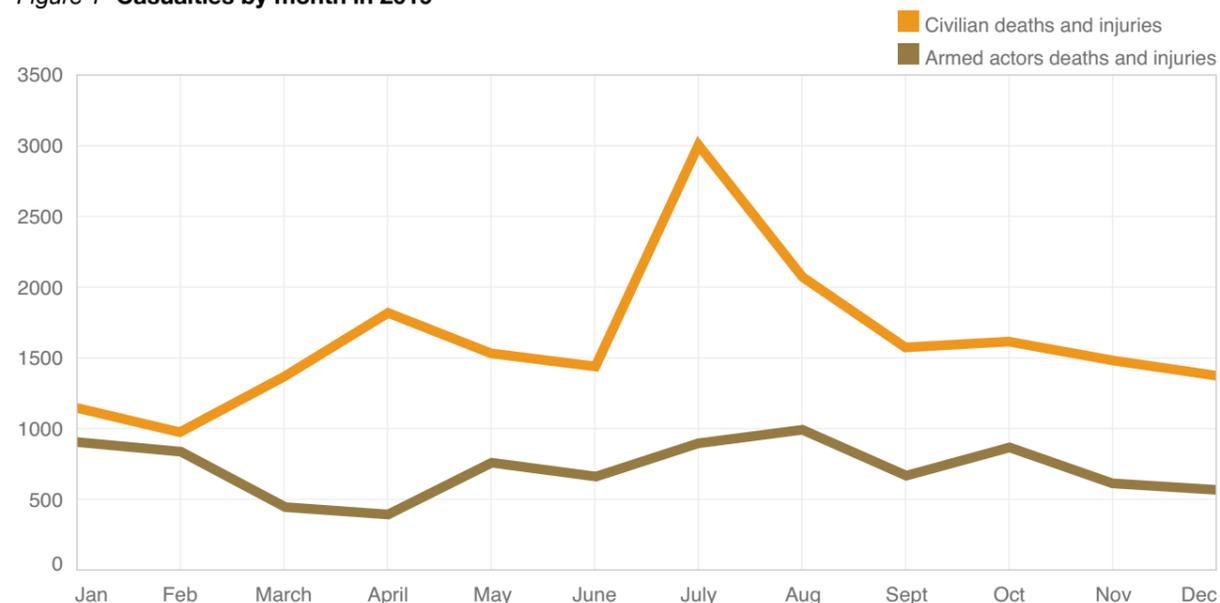
Civilians also continued to be most at risk when explosive weapons were used in populated areas – a well-established pattern of harm.¹¹

In 2019, 58% of all recorded incidents recorded took place in populated areas. In those attacks, 90% of those killed or injured were reported as civilians. This compares to 16% of victims being reported as

In 2019, AOA V recorded 29,485 people killed or injured by explosive weapons in 3,816 casualty-causing incidents around the world. Of these, 19,401 were civilians.

Overall, 13,169 people were killed by explosive violence, of which 6,476 were civilians. 16,316 people were injured by such weapons, of which 12,925 were civilians.

Figure 1 Casualties by month in 2019



Worst explosive incidents of 2019 in terms of civilian harm

Incident	Location	Civilian casualties
Multiple suicide attacks at churches and hotels across West and East Sri Lanka ¹²	Sri Lanka	753
Suicide bomber targets a wedding in Kabul ¹³	Afghanistan	245
Car bomb detonates in Somalia's capital, Mogadishu ¹⁴	Somalia	228
Car bomb targets crowded area of Ghazni city ¹⁵	Afghanistan	186
Saudi-led coalition airstrike hits Houthi detention center in Dhamar ¹⁶	Yemen	175
Airstrikes hit migrant detention centre outside Tripoli ¹⁷	Libya	174
Car bomb explodes outside police station in Kabul ¹⁸	Afghanistan	159
Russian airstrikes target market and residential areas in Maarat al-Numan ¹⁹	Syria	147
Bomb detonated outside Green Village compound in Kabul ²⁰	Afghanistan	135
Taliban suicide bomber detonates truck bomb near hospital in Qalat, Zabul ²¹	Afghanistan	134

civilians when explosive weapons were used in lesser populated areas.

On average, AOA V recorded 1,617 civilian casualties reported per month, compared to an average of 840 armed actors. This means that, every day, there were on average 53 civilians reported killed or injured by explosive weapons (compared to 28 armed actors).

18 civilians were reported killed, on average, every single day from explosive weapon use in 2019 around the world.

2019 HOTSPOTS

AOAV recorded at least one death or injury from an explosive weapon attack in 60 different countries and territories (see map on page 15).²² This is four less than recorded in 2018.²³

Casualties from explosive weapons were reported in 13 countries and territories in 2019 that had not been impacted in 2018.²⁴

As Figure 2 shows, Syria was the country with the most civilian deaths and injuries in 2019 followed by Afghanistan, Yemen, Somalia and Libya.

Syria

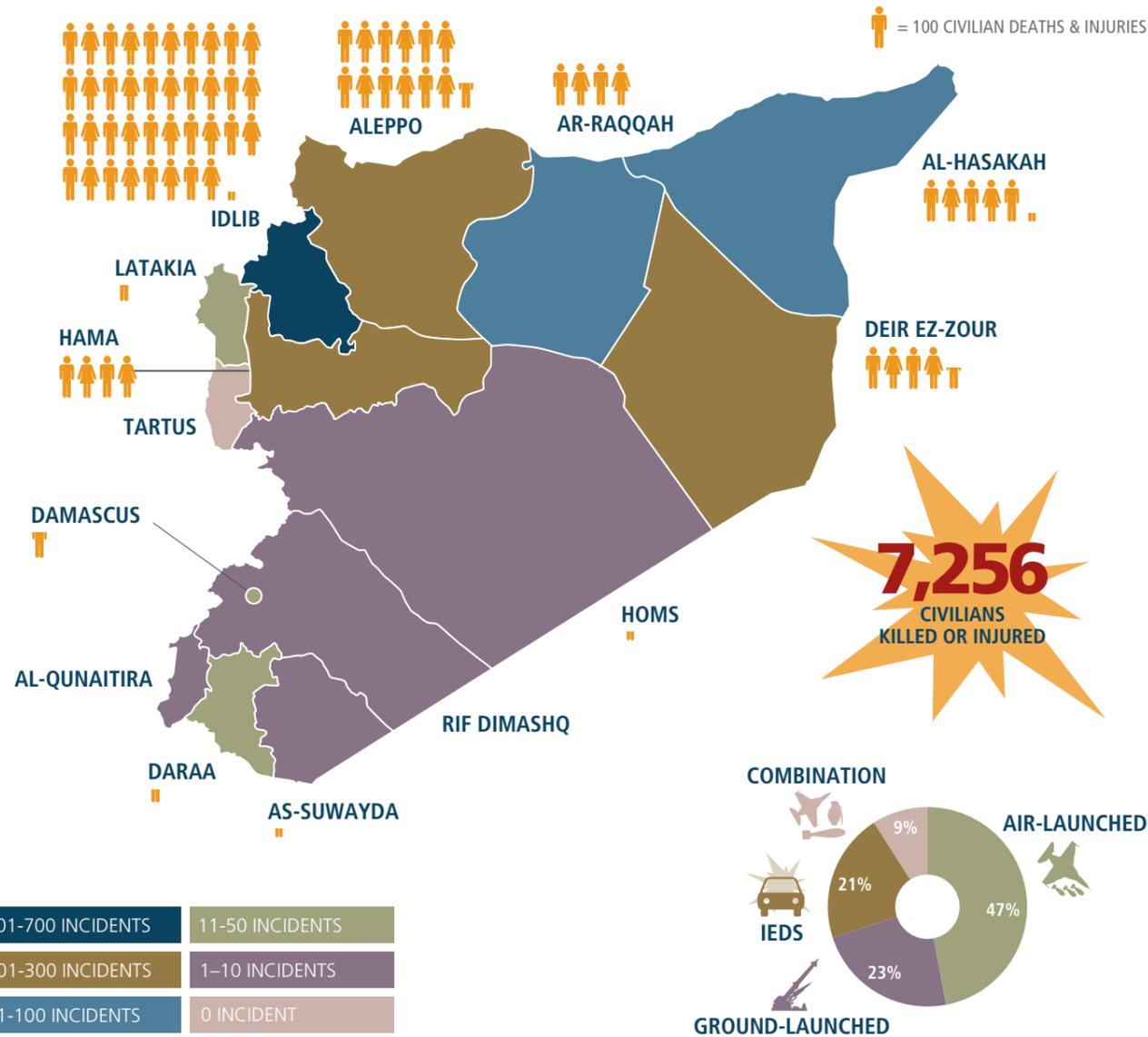
Although Syria remained the worst impacted country globally from explosive violence, AOA V recorded a 24% decrease in civilian casualties (from 9,588 in 2018 to 7,256 in 2019), alongside a rise in casualty-causing explosive incidents (from 1,224 in 2018 to 1,480 in 2019). This seems to be due to incidents using smaller devices, as well as the use of explosive weapons in areas that have experienced a lot of displacement.

The worst impacted regions were Idlib and Aleppo. In total, these areas accounted for 70% of all civilian casualties from explosive weapons in Syria, with 1,259 from Aleppo (17% of the total civilian casualties in Syria) and 3,824 from Idlib (53%).

Russian and Syrian airstrikes accounted for the majority of civilian casualties in Idlib. State actors were responsible for 91% of civilian casualties from explosive violence in Idlib in 2019.

In total, across the entirety of the country, state actors were responsible for at least two-thirds (66%) of civilian casualties from explosive violence. Airstrikes were responsible for 47% of total civilian casualties in Syria.

THE HARDEST-HIT PROVINCES IN SYRIA IN 2019



MONTHLY CASUALTIES OF EXPLOSIVE VIOLENCE IN 2019

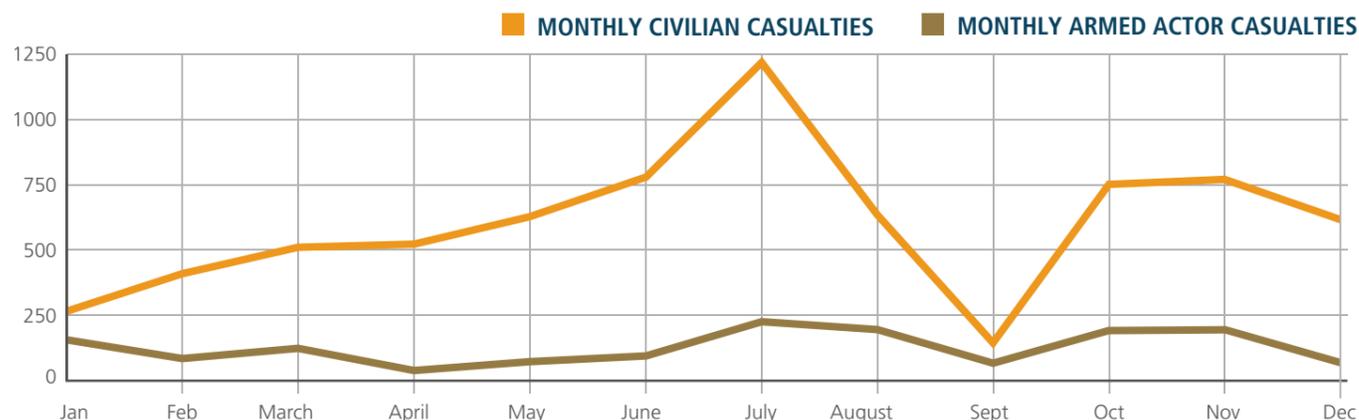


Figure 2 Most affected countries and territories in 2019

Position	Country/Territory	Civilian casualties	All casualties	Number of recorded incidents per incident	Average civilian casualties civilians	Percentage of casualties who were	Global ranking in 2018
1	Syria	7256	8774	1479	5	83%	1
2	Afghanistan	4630	9187	821	6	50%	2
3	Yemen	1345	1821	144	9	74%	3
4	Somalia	950	1482	124	8	64%	6
5	Libya	906	1001	125	7	91%	8
6	Sri Lanka	753	761	1	753	99%	36
7	Pakistan	719	1145	153	5	63%	5
8	Iraq	638	1358	245	3	47%	4
9	India	362	608	158	2	60%	9
10	Philippines	236	360	38	6	66%	10
11	Nigeria	211	329	19	11	64%	7
12	Turkey	200	233	30	7	86%	16
13	Myanmar	176	219	66	3	80%	23
14	Egypt	158	242	19	8	65%	25
15	Gaza	148	179	29	5	83%	12

Afghanistan

Afghanistan continued to see a rise in civilian casualties from explosive violence in 2019; following increases in both 2017 and 2018. Last year, there was an 8% increase in civilian casualties (from 4,268 in 2018 to 4,630 in 2019).

In Afghanistan, IEDs were responsible for the majority of civilian harm, accounting for 78% of civilian casualties in 2019. Civilian casualties from IEDs similarly rose by 8% last year (from 3,336 in 2018 to 3,596 in 2019). A similar rise in civilian casualties was also seen from airstrikes (8% increase from 463 in 2018 to 502 in 2019), while the increase in civilian casualties from ground-launched weapons stood at 36% (from 385 to 525).

Islamic State and the Taliban were responsible for the majority of attacks, though many casualty-causing incidents were reported where the perpetrator was unclear. At least 3,979 civilian casualties (86%) were caused in incidents perpetrated by non-state actors,

including 548 in Islamic State-perpetrated incidents and 1,896 in Taliban-perpetrated incidents.

Yemen

After reported civilian casualties from explosive violence in Yemen rose slightly in 2018 compared to the previous year (up 8%), 2019 saw a decrease in civilian casualties from explosive weapons (from 1,807 in 2018 to 1,345 in 2019).

The fall in casualties appears to reflect a decrease in civilian casualties from airstrikes, which nevertheless resulted in at least 688 civilian casualties in the country in 2019 (a fall of 55% from 1,523 in 2018). Civilian casualties from IEDs and shelling rose during the same period.

While the figures indicate an overall decrease in explosive violence, the humanitarian crisis continues to worsen, exacerbated by years of violence. With few reporters on the ground, our figures may not accurately reflect the true levels of harm.

Somalia

AOAV recorded 1,482 casualties from explosive violence in Somalia last year, with civilians accounting for 64% (950) of this total. This reflects a 14% rise in civilian casualties in 2019 (with 832 recorded the previous year).

Of civilian casualties recorded in the country in 2019, 93% were caused by IEDs. While the number of civilian casualties from IEDs rose in 2019 (from 779 in 2018, to 888 in 2019), the number of IED casualty-causing incidents recorded fell from 80 in 2018 to 62 in 2019. While this could reflect a growing sophistication in such attacks or in the production of IEDs, it appears that the numbers of security personnel casualties have decreased. This suggests that while there have been less attacks, civilians more often became the target. In 2018, 64% of IED incidents occurred in populated areas, compared to 74% in 2019.

18 civilian casualties also resulted from the United States' increasing use of airstrikes across the country targeting Al Shabaab fighters.

Libya

After a rise in violence in 2018, AOAV monitored further escalation in 2019. Last year, AOAV recorded 906 civilian casualties as a result of explosive weapon use in Libya. This amounts to a 131% increase from the harm seen in 2018, when 392 civilian casualties were recorded.

The dynamics of the violence have also changed. In 2018, IEDs were responsible for 81% of civilian casualties reported in Libya; in 2019, they accounted for just 72 recorded civilian casualties.

Civilian casualties from airstrikes in Libya rose from 21 in 2018, to 649 in 2019; while casualties from ground-launched weapons rose from 53 in 2018, to 169 in 2019.

This increase in civilian casualties reflects the rise in violence between Haftar and government forces, as well as more states increasingly becoming involved in the conflict in Libya.



Aftermath of the Jolo Cathedral bombings which occurred on January 27th 2019. Albert Alcain/Presidential Photo, January 28th 2019.

A GLOBAL PROBLEM

The results of explosive violence continue to be felt across the globe, from Colombia to the United States, from Kenya to the Ukraine.

Ambulances were scurrying and we only heard the wailing of the wounded – and families of those victims. What a terrible day! God will never forgive this carnage.

A shopkeeper in Colombo's Muslim neighbourhood told reporters after the suicide bombings on Easter Sunday in Sri Lanka.²⁵

Sri Lanka

On Easter Sunday 2019, suicide attacks took place across Sri Lanka; in Colombo, the country's capital, Negombo and Batticaloa. The attacks targeted churches packed with worshippers celebrating Easter, as well as luxury hotels in the capital. AOAV recorded 753 civilian casualties from the attacks.

This was the first suicide bombing in Sri Lanka since the civil war in Sri Lanka, a bloody conflict that ended with enormous loss of life a decade earlier.

Local militant group National Thowheed Jamath (NTJ) were blamed for the attack. Islamic State also claimed the attack, with the NTJ founder having pledged allegiance to that group.



One of the targeted hotels in the bombings in Colombo, The Kingsbury Hotel. AKS.9955, May 6th 2016. Wikipedia (CC BY-SA 4.0).

While such attacks on this scale are uncommon, the bombings across Sri Lanka on April 21st 2019 serve as a chilling reminder of the work that still needs to be done to counter IEDs and address extremism.

Myanmar

AOAV recorded 176 civilian casualties from explosive violence in Myanmar in 2019, having almost quadrupled from the 45 civilian casualties recorded the previous year. Most occurred across the Rakhine and Shan states, as conflict across these regions saw increasing civilian harm.

Artillery shelling and landmines pose the biggest threats to civilians in the area, with 100 civilian casualties caused by ground-launched explosive weapons and 47 from landmines. The remaining casualties were caused by an airstrike, IEDs and naval-launched explosives.

Explosive weapons alongside other forms of violence and oppression in the worst impacted areas of Myanmar have forced thousands into displacement, with even more in need of humanitarian assistance.

Philippines

The Philippines saw 360 casualties from explosive weapons recorded from English-language media sources last year. Of these, 236 were civilians (or 66%). The number of civilians killed and injured represented a 23% increase compared to the previous year.

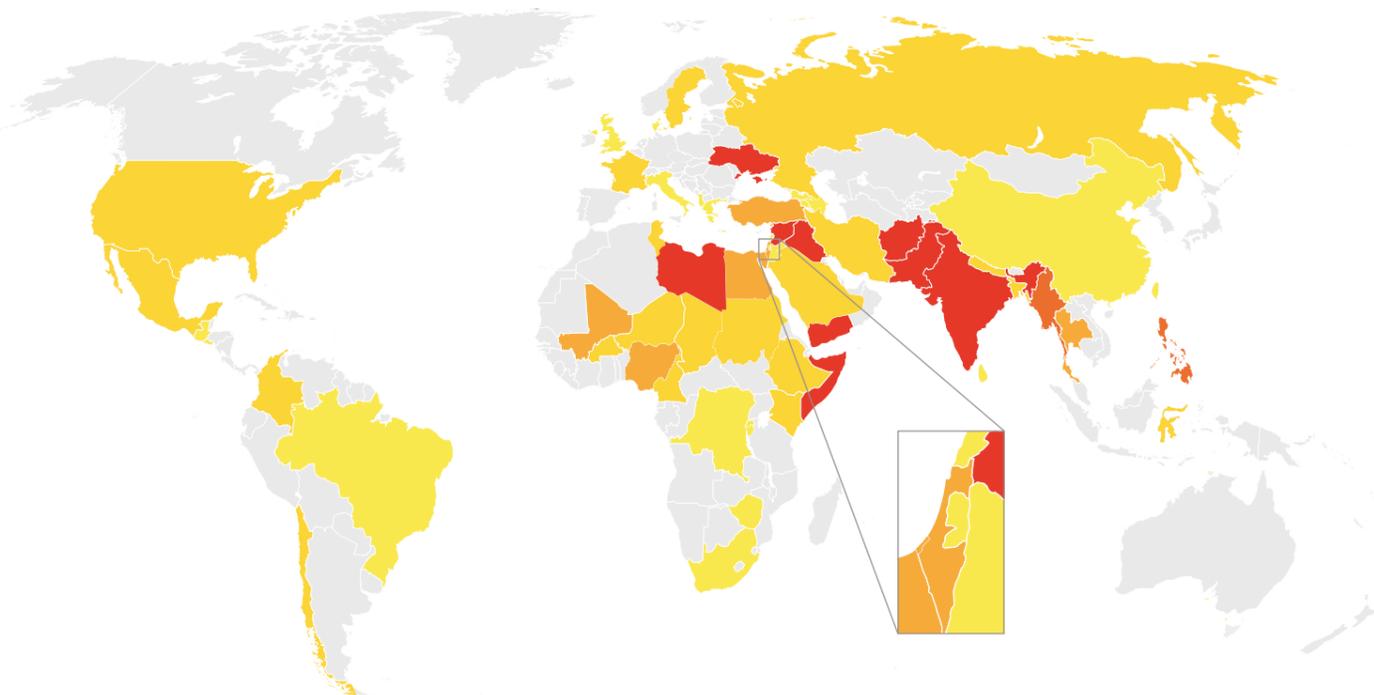
Similar to 2018, the majority of civilian casualties were caused by IEDs. 193 civilian casualties were caused by IEDs in the Philippines in 2019, accounting for 82% of total civilian casualties last year. 40 civilian casualties were due to grenade attacks and three from an airstrike.

A variety of armed groups are present in the Philippines, which meant often the perpetrators of attacks went unknown. Those groups recorded among the perpetrators include Bangsamoro Islamic Freedom Fighters (BIFF), Abu Sayyaf and the New People's Army (NPA).

Casualty-causing incidents of explosive violence recorded by AOVAV in 2019

AOAV recorded explosive violence in 60 countries and territories across the world.

Explosive violence was particularly intense in several contexts.



Countries and territories with between 101 and 2,000 incidents
 Afghanistan 821, India 158, Iraq 245, Libya 125, Pakistan 153, Somalia 124, Syria 1479, Ukraine 196, Yemen 144

Countries and territories with between 31 and 100 incidents
 Myanmar 66, Philippines 38

Countries with between 11 and 30 incidents
 Egypt 19, Israel 16, Gaza 29, Mali 20, Thailand 25, Turkey 30

Countries with between 2 and 10 incidents
 Bangladesh 5, Burkina Faso 5, Cameroon 4, Chad 2, Chile 2, Colombia 9, Ethiopia 5, France 2, Indonesia 4, Iran 3, Kenya 9, Mexico 2, Nepal 5, Niger 9, Russia 2, Saudi Arabia 4, Sudan 2, Sweden 2, Tunisia 8, USA 3

Countries and territories with 1 incident
 Albania, Armenia, Azerbaijan, Burundi, Brazil, China, Denmark, DRC, El Salvador, Georgia, Greece, Guatemala, Lebanon, Rwanda, South Africa, Sri Lanka, Taiwan, UK, West Bank

WHO IS BEHIND THE EXPLOSIVE VIOLENCE?

A significant proportion of explosive violence incidents recorded by AOVAV in 2019 went unclaimed and could not be attributed to a specific actor. In 9% of incidents it was unclear from reporting whether a state or non-state actor was responsible.

State actors

The 1,702 incidents that were attributed to a state, rather than a non-state group, caused 12,323 deaths and injuries in 2019. Of these 56%, 6,733, were civilians. This compares to 15,655 deaths and injuries in 2018, of whom 64% (10,041) were reported to be civilians. The most prolific state users of explosive weapons are listed in *Figure 3*.

Figure 3 Biggest state users of explosive weapons in 2019

States		
1	Syria	28% of incidents
2	Russia	11%
3	USA	6%
4	Turkey	6%
5	Afghanistan	5%

AOAV recorded 192 incidences of Russian attacks, resulting in 1,106 civilian deaths as well as 483 by Syrian forces, resulting in 2,135 civilian casualties. This represents a rise in civilian casualties from both actors, though this may be due to less being reported as unknown compared to the previous year.

Civilian casualties by the Saudi-led coalition decreased significantly from 1,535 civilian casualties in 2018 to 527 in 2019. Similarly, civilian casualties from US-led coalition explosive violence continued to fall, from 959 in 2018, to 243 last year.

Of the 2,135 civilian casualties recorded by explosive violence from Syrian forces, at least 87% were seen in Idlib.

Twenty-five different state forces used explosive weapons in 2019. This is a slight increase from 2018, where twenty-four states' use was recorded. However, many states operate under coalitions with

such attacks recorded under the coalition name. The two coalitions responsible for the largest number of civilian deaths and injuries were the Saudi-led coalition in Yemen, and the US-led coalition in Iraq and Syria. Joint attacks by Russia and Syria as well as by Afghanistan and the United States were also recorded. Civilian casualties were also recorded by NATO's use of explosive violence.

Non-State actors

Collectively, non-state actors caused 15,640 casualties in 2019, of whom 73% were civilians (11,418). This compares to 14,462 casualties in 2018, of whom 74% were civilians (10,716). These figures point to a 7% rise in civilian deaths and injuries. This is likely to be linked to the rises in violence recorded in Afghanistan last year. There was also a rise in non-state violence in Syria, with 326 incidents of non-state explosive violence recorded last year, compared to 326 in 2018.

AOAV recorded 44 different non-state actors using explosive weapons.²⁶ The most prolific non-state actors in 2019 are listed in *Figure 4*. In 2019, Islamic State was responsible for 19% of civilian casualties from non-state explosive violence. The Taliban were the reported perpetrators of 131 attacks, resulting in death or injury to 1,896 civilians, just over 17% of the total.

Figure 4 Biggest non-state users of explosive weapons in 2019

Non-state		
1	Islamic State	12% of incidents
2	Ukrainian separatists	9%
3	Taliban	7%
4	Houthi rebels	4%
5	Haftar forces	3%

Due to the understandable limitations of data collection, groups which do not routinely claim responsibility for their attacks, or which operate in areas where attribution to a specific actor is difficult, may have been responsible for more attacks than were recorded. Overall, 888 incidents were committed by non-state actors but not claimed by any group – half of a total of 1,763 recorded incidents.

Explosive weapons in populated areas

In 2018, **90%** of casualties in populated areas were reported as civilians. This is compared to **16%** in other areas.

The majority of casualty-causing explosive incidents - **58%** in 2019 – were perpetrated in populated areas.

Civilian deaths and injuries in populated areas represented **92%** of all reported civilian deaths and injuries from explosive weapons.

POPULATED AREAS

As *Figure 5* shows, in 2019 when explosive weapons were used in populated areas, 90% of the deaths and injuries were reported to be civilians. This compares to 16% in other areas. In total, 17,893 civilians were killed and injured in populated areas.

This is consistent with the pattern of harm AOA has persistently recorded since 2011. In every year of AOA's Explosive Weapons Monitoring Project, the use of explosive weapons in populated areas has been shown to overwhelmingly harm civilians: 84% in 2011, 91% in 2012, 93% in 2013, 92% in 2014, 92% in 2015, 92% in 2016, 92% in 2017 and 90% in 2018.

When explosive weapons are used in populated areas, areas with high concentrations of civilians, more people are killed or injured, and these – all too often – are civilians. Both state and non-state actors alike continue to deploy explosive weapons in populated areas, despite the likelihood of civilian casualties.

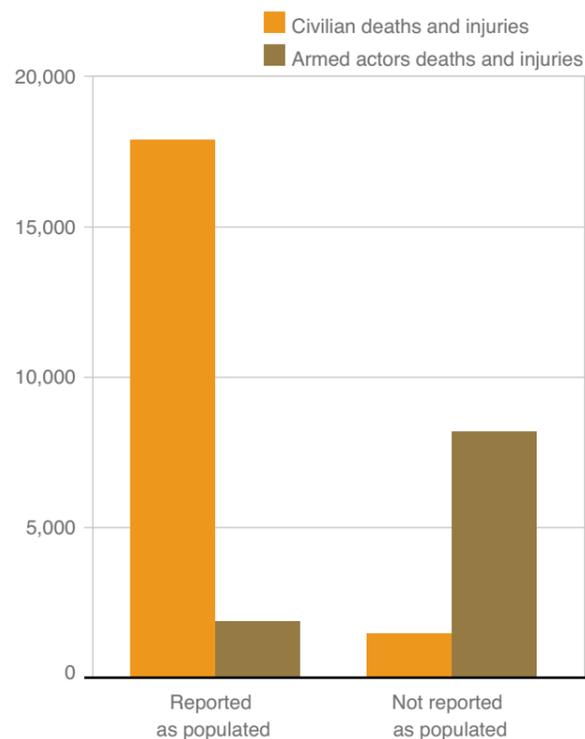
Despite the likely harm, the majority of reported casualty-causing explosive incidents – 58% in 2019 – were perpetrated in towns and cities. At least 2,219 incidents of explosive violence occurred in populated areas last year. This means slightly more incidents occurred in populated areas in 2019, compared to the previous year, when 1,928 were recorded.

In addition, civilian deaths and injuries in populated areas represented 92% of all reported civilian deaths and injuries from explosive weapons last year, demonstrating the disproportionate effect of explosives deployed in populated areas.

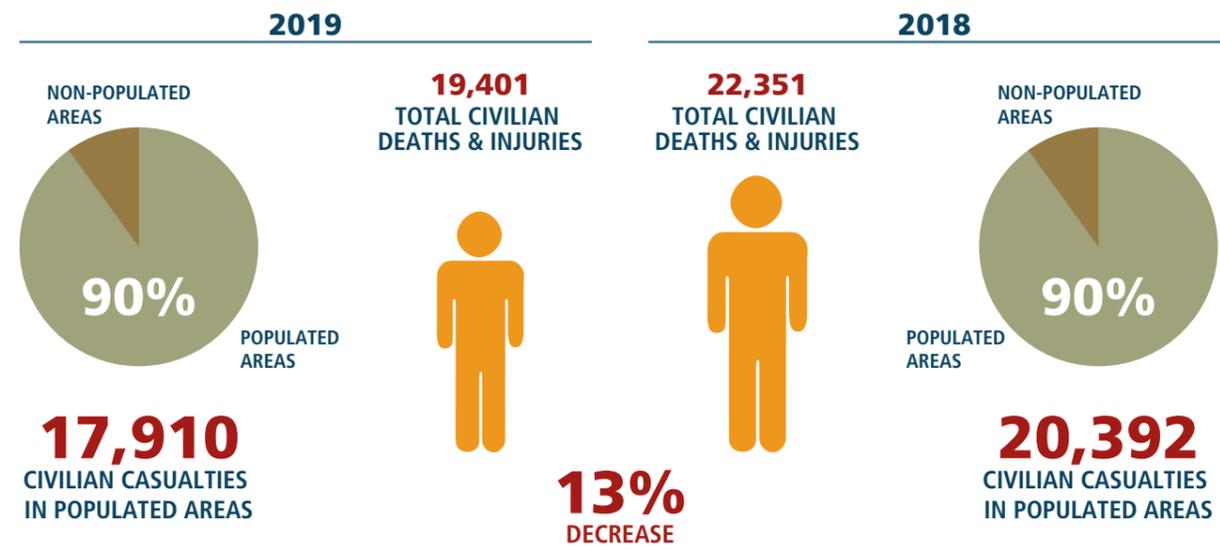
I rushed outside and saw several bodies just across the street. This is the second time in less than a month that a blast has broken our windows. I just fixed them a week ago.

A shopkeeper in Kabul reported after a bomb blast.²⁷

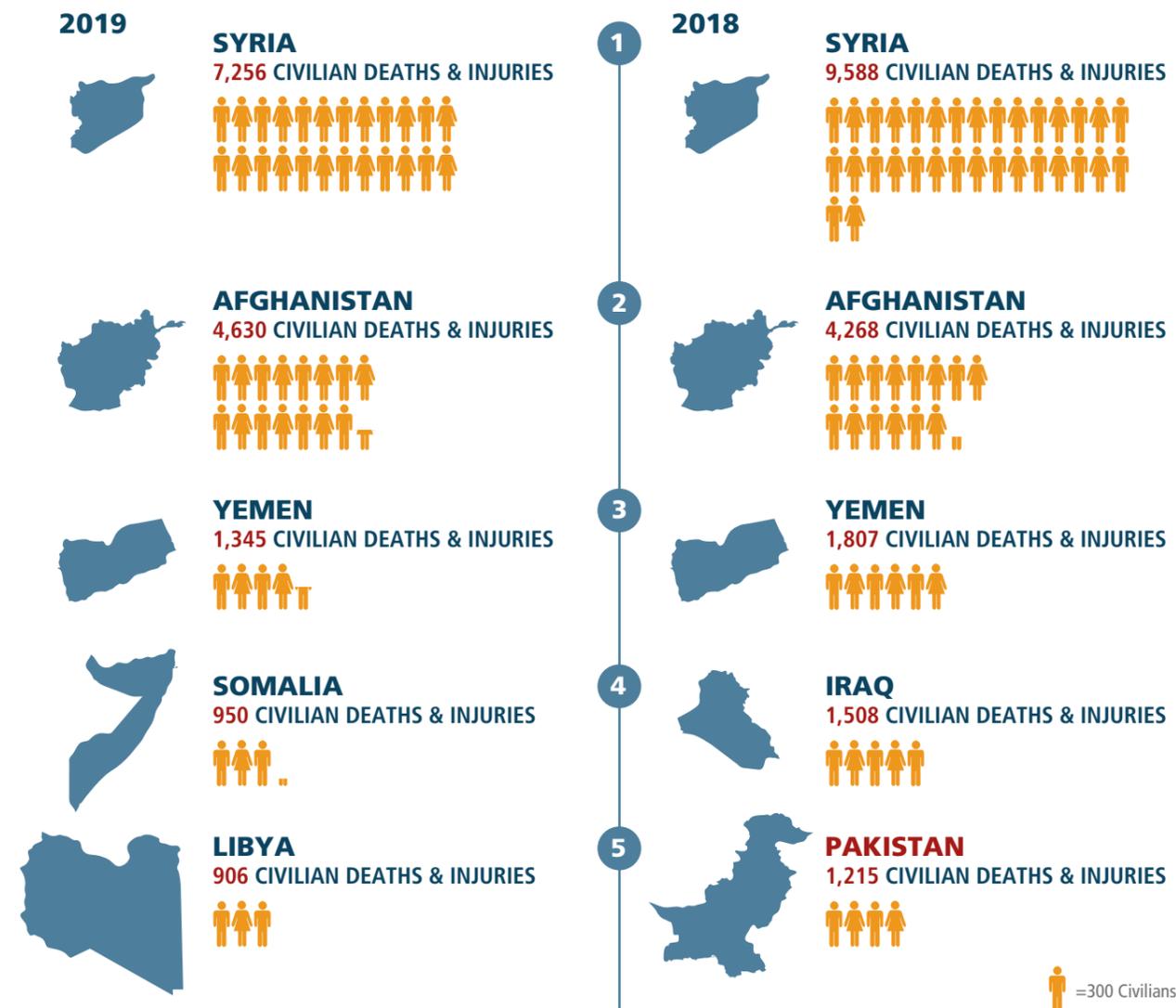
Figure 5 Total casualties by populated area / non-populated area



CIVILIANS KILLED & INJURED: 2018 v 2019



THE MOST DANGEROUS PLACES TO BE A CIVILIAN



LOCATION

RESIDENTIAL

The highest number of civilians killed and injured were from incidents in residential areas or civilian houses. AOA V recorded 646 such incidents in 2019.

These incidents resulted in 3,294 civilian deaths and injuries, a rise of 47% from 2018 when 2,244 civilian casualties were recorded from 383 incidents in such areas.

As in previous years, due to the frequency of bombardment in some areas many incidents in urban areas became categorised under “multiple (urban)”. An additional 202 explosive violence incidents were recorded in these multiple locations, resulting in 3,170 civilian casualties. 171 of such incidents were recorded in Syria.

Of the casualties recorded in urban residential areas, airstrikes accounted for 38% of the civilian casualties caused there; IEDs accounted for 30%, as did ground-launched explosive attacks.

There was a huge boom and the hall went dark. People were running and falling in all corners. It was like doomsday.

Sakhi Mohammed, a guest at a wedding in Kabul where a suicide bomber targeted in August 2019.²⁸

VILLAGES

732 incidents were recorded from the use of explosive violence in villages, resulting in 2,600 civilian casualties.

Many of these incidents (454) were perpetrated in Syria, which accounts for 62% of the civilian casualties from explosive weapon use in villages, followed by Afghanistan, Pakistan and Yemen.

Most civilian casualties from these incidents were caused by airstrikes, accounting for 47% of civilian harm in villages.

MARKET BOMBINGS

Similar to 2018, last year about 2% of all explosive incidents recorded (77 incidents) happened in market places. Last year, AOA V recorded 1,499 casualties from incidents of explosive violence in markets, including 1,435 civilians.

This means that of those killed and injured in the market bombings recorded, 96% were civilians. The average explosive violence incident in a market resulted in 19 civilian casualties.

64% of all civilian deaths and injuries from market bombings were recorded in just two countries: Iraq (38%) and Pakistan (26%).

IEDs make up the majority of civilian casualties recorded from market bombings, accounting for 58% of attacks.

The country worst impacted by market bombings were Syria and Afghanistan, where the majority of civilian casualties were caused by IEDs.

TARGETING

As has consistently been seen to be the case throughout AOA V’s records, the targeting of armed actors with explosive weapons did not prevent civilians from being killed or injured. In 2019, 15% of those killed or injured by attacks which were explicitly coded as targeting armed actors were civilians. In populated areas this rose to 58%, whilst in non-populated areas it fell to 3%.

It must be stressed, then, that the use of explosive weapons that impact a wide area particularly endangers civilians, even if these weapons are directed at a military objective.

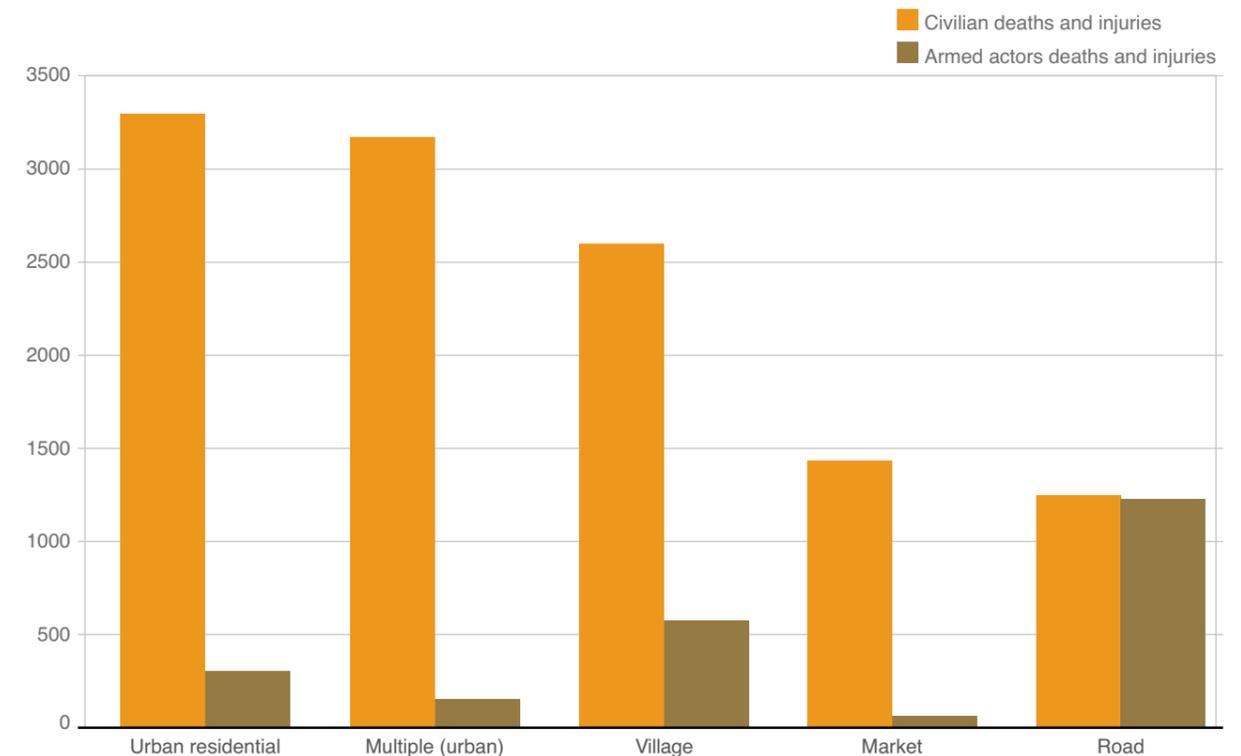
WOMEN

The majority of media sources did not include reporting of the gender of victims in 2019.

Women were reported among those killed and injured in 637 incidents, including those incidents where no figure was given. Overall, 1,008 women were reported killed or injured in 610 incidents.

This figure does not include armed actors. Likewise, it does not include female suicide bombers. In 27

Figure 6 Locations with the most civilian deaths and injuries



incidents women were reported amongst the casualties but no figure of women killed was given.

The majority of women who were killed or injured were victims of attacks in populated areas. It was found that 96% of female casualties recorded, occurred in populated areas.

CHILDREN

The majority of media sources did not include reporting of the age of any victims in 2019.

In 2019, AOA V recorded 2,019 child deaths and injuries in 778 incidents. Of these, a gender was given for 465 individuals, of whom 204 were girls and 261 were boys.

The rest were reported without specifying gender. In a further 32 incidents, no figures were given for numbers of children killed or injured but children were reported to be amongst the victims.

In the incidents where child casualties were recorded there were 8,255 total casualties (including 7,807

civilians). So, in incidents of explosive violence where a figure was given for the number of children among the casualties, children accounted for 24% of total casualties (or 26% of civilian casualties).

Of the incidents reported that saw children killed or injured, at least 88% took place in populated areas.



Refugee and his children in Bekaa Valley, Lebanon.

AIR-LAUNCHED EXPLOSIVE WEAPONS



5,517
CIVILIANS KILLED & INJURED IN 2019



5 IN 10 INCIDENTS OCCURRED IN POPULATED AREAS



90% OF DEATHS & INJURIES IN POPULATED AREAS WERE CIVILIANS



INCIDENTS WERE RECORDED IN **16 COUNTRIES AND TERRITORIES** IN 2019

GROUND-LAUNCHED EXPLOSIVE WEAPONS



3,926
CIVILIANS KILLED & INJURED IN 2019



7 IN 10 INCIDENTS OCCURRED IN POPULATED AREAS



93% OF DEATHS & INJURIES IN POPULATED AREAS WERE CIVILIANS



INCIDENTS WERE RECORDED IN **35 COUNTRIES AND TERRITORIES** IN 2019

IMPROVISED EXPLOSIVE DEVICES (IEDs)



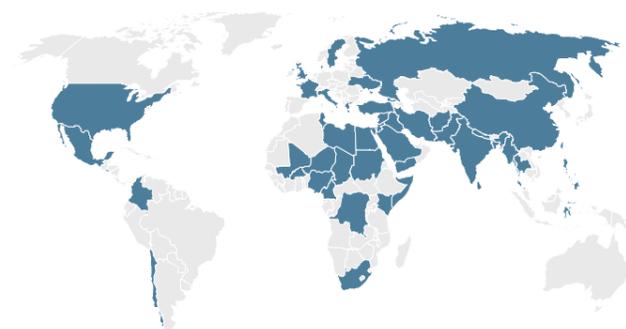
9,089
CIVILIANS KILLED & INJURED IN 2019



6 IN 10 INCIDENTS OCCURRED IN POPULATED AREAS



90% OF DEATHS & INJURIES IN POPULATED AREAS WERE CIVILIANS



INCIDENTS WERE RECORDED IN **51 COUNTRIES AND TERRITORIES** IN 2019

Explosive weapon types

AOAV records information on the explosive weapon used in any incident. The full list of the recording types used can be found on pages 7-8. These are kept deliberately broad in order to reflect the language commonly used in source reporting (i.e. 'shelling', which can cover several types of ground-launched weapons). More specific weapon types are used where such information is available in the source material.

The total number of civilian casualties recorded by AOA from each explosive weapon type is shown in *Figure 7*. There are different ways of evaluating the threat that various explosive weapons have had for civilians in 2019. These are explored over the following sections.

In order to better understand how these different explosive weapons have endangered civilians in 2019, AOA has split them into three different groups based on their launch method.

Air-launched weapons include any explosive munition dropped from an aircraft. If a bomb, missile or rocket is specified in the reporting of an incident (e.g. 'Hellfire' missile, FAB aircraft bomb) it is recorded under these narrower categories.²⁹ Other explosive attacks from the air are coded more generally as 'Air strike'.

Ground-launched weapons are manufactured conventional ordnance that range from small hand grenades to heavy artillery and multiple rocket launchers. They can be fired from a variety of platforms, but all are launched from surface level.

IEDs are improvised explosive devices. These cover any explosive weapon not manufactured through a commercial process, although they can include conventional ordnance. IEDs vary greatly in purpose, size and power, and in their mode of detonation. The broadest recording type is 'Non-specific IED' which encompasses anything from a magnetic bomb attached to a car to a vest of explosives detonated in a market square.

In addition to these three categories, AOA records casualties from attacks where multiple launch

methods are used to deploy explosive weapons. AOA also records reported casualties of landmines. These are excluded from analysis in the following sections.³⁰

Figure 7 Civilian casualties by weapon type in 2019

Weapon type	Civilian casualties	Average civilian casualties per incident
Air-launched	5517	4
Air Strike	4865	4
Air-dropped bomb	382	3
Missile	150	4
Multiple explosive weapons	118	30
Rocket	4	1
Ground-launched	3893	4
Artillery shell	382	4
Grenade	378	4
Missile	185	3
Mortar	812	6
Multiple explosive weapons	90	5
Rocket	710	4
RPG	11	1
Shelling	1325	3
Tank shell	0	0
IED	9122	7
Car bomb	3426	21
Multiple explosive weapons	254	36
Non-specific IED	4392	6
Roadside bomb	1050	3
Mine	285	2
Anti-personnel mine	2	2
Anti-vehicle mine	8	8
Landmine	275	2
Multiple types	501	19
Multiple explosive weapons	501	19
Naval-launched	22	7
Artillery shell	10	5
Missile	12	12
Unclear	61	5
Missile	54	5
Rocket	7	7

Air-launched explosive weapons

Air-launched explosive weapons killed and injured **5,517** civilians in 2019 (**28%** of all recorded).

Civilians accounted for **51%** of total casualties from airstrikes recorded.

When airstrikes were recorded in areas reported as being 'populated', **90%** of those killed and injured were civilians.

DEATHS AND INJURIES

Air-launched explosive weapons include a wide variety of ordnance, from bombs dropped out of planes or helicopters, to missiles fired by unmanned drones.

A fall in civilian casualties from airstrikes continued last year. AOV recorded 5,517 civilian casualties from airstrikes in 2019, compared to 7,202 civilian deaths and injuries from the previous year.

Last year, air-launched weaponry accounted for 28% of all civilian deaths and injuries recorded worldwide.

In total, AOV recorded 10,815 total deaths and injuries from aerial explosive weapons in 2019. Civilians accounted for 51% of these casualties, a lower share than last year, when they accounted for 59%.

When aerial explosive weapons were used in areas reported as being 'populated', 90% of those killed and injured were civilians. In areas that were not recorded as populated, that figure dropped to 8%.

In 2019, 54% of air-launched explosive violence incidents were recorded in populated areas; a slight increase compared to 2018 where 52% of airstrike incidents were recorded in populated areas.

COUNTRIES

The majority of civilian casualties from air-launched explosive weapons in 2019 were recorded in Syria (see *Figure 8*). The civilians killed and injured by air-launched weapons in Syria account for 62% (3,434) of all civilians killed or injured worldwide by such weapons. 2,607 occurred in Idlib alone.

Yemen, Libya and Afghanistan also saw high numbers of casualties from airstrikes, with 688, 649, and 502 civilian casualties from air-launched explosive violence respectively.

While Yemen experienced a 55% decrease in civilian casualties from airstrikes, both Afghanistan and Libya saw increases. Afghanistan saw civilian casualties from airstrikes rise by 8% (from 463 in 2018 to 502 last year).

Libya saw an almost 3000% increase in civilian casualties from airstrikes in 2019 – from 21 in 2018 to 649 last year.

USERS

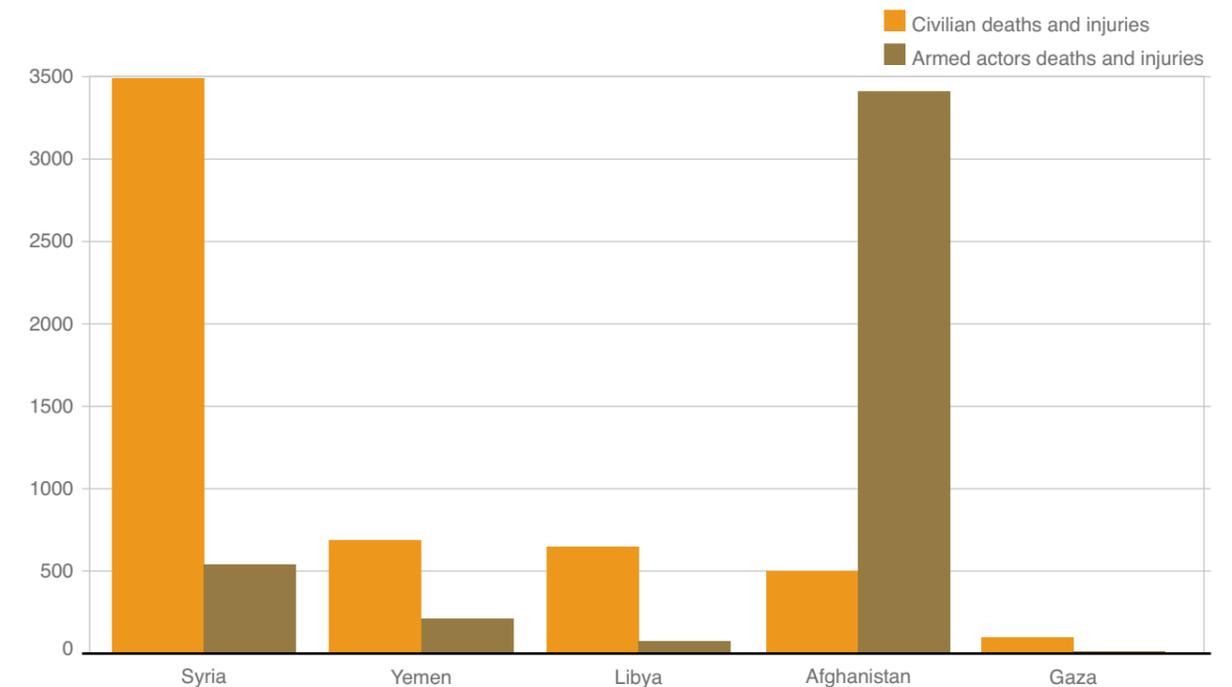
While the number of civilian casualties from airstrikes fell in 2019, compared to the previous year, there was actually an increase in the number of air-launched explosive incidents; from 983 in 2018 to 1,305 last year. This seems to reflect a rise in airstrikes by Russia and the regime forces in Syria, Haftar forces in Libya, and by Afghanistan in their own country.

In Syria, the Russian and Syrian governments continued to carry out airstrikes. While more were identified than in previous years, it remains the case that it is often difficult to identify whether strikes were carried out by Syria or Russia, or both.

Nevertheless, last year AOV identified Syria as responsible for 1,367 civilian casualties from airstrikes and Russia for 1,094; this was an increase of 41% and 58% in civilian casualties respectively compared to the year before.

Where the United States specifically was identified as the perpetrator, as opposed to the US-led coalition, these strikes accounted for 8% (98) of total, global air-launched incidents, and resulted

Figure 8 Worst five countries for air launched weapons in 2019

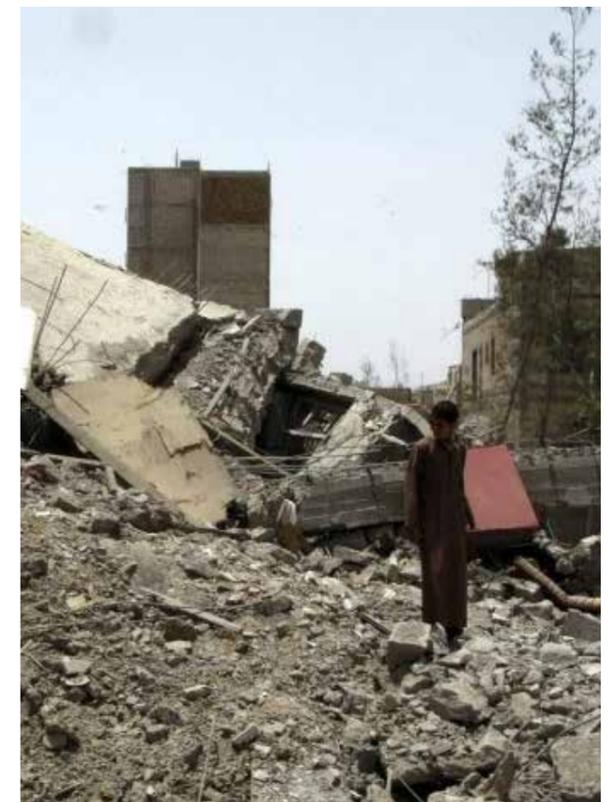


in at least 287 civilian casualties. Of these, 211 occurred in Afghanistan, 18 in Somalia and 58 in Syria. The US-led coalition accounted for another 53 incidents and 243 civilian casualties.

Other perpetrators seeing high levels of civilian casualties from their airstrikes include Turkey (214 civilian casualties from airstrikes), the Saudi-led coalition (527 civilian casualties), Haftar's forces in Libya (515), and Israel (140).

I got injured in my head and I was bleeding. I ran away from the hospital with my colleague to a safe place but we found nothing that could help me stop the bleeding. It was the most difficult moment of my life.

An injured health worker reported after an airstrike hit near a hospital in Kitaf in March 2019.³¹



A school in Yemen bombed by the Saudi-led Coalition. Felton Davis, April 8th 2019. Flickr (CC BY 2.0).

Ground-launched explosive weapons

Ground-launched explosive weapons reportedly killed and injured **5,321** people in 2019.

74% of casualties from ground-launched explosives last year were civilians.

67% of all ground-launched incidents recorded were reported as taking place in populated areas.

DEATHS AND INJURIES

Ground-launched weapons are manufactured conventional ordnance that range from small hand grenades to heavy artillery and multiple rocket launchers. They can be fired from a variety of platforms, but all are launched from surface level.

In total, these weapons reportedly killed and injured 5,321 people in 2019; 3,926 of whom were civilians (74% of total deaths and injuries from this weaponry). This is a slight rise in casualties compared to the year before for this launch method. In 2018, 4,524 casualties were recorded from ground-launched weapons, including 3,444 civilians.

Civilian casualties from ground-launched weapons accounted for 20% of total civilian casualties from explosive weapons in 2019.



The destruction in Khay Shaykhun, Syria. Anas Aldyab, July 18th 2019. Pexels.

We all would have died if we stayed, so we fled.

a villager said after artillery fire hit their village in Myanmar's Rakhine State in March 2019.³²

As in previous years, reported ground-launched explosive attacks were more likely to be in populated areas than other kinds of incident. 67% of all ground-launched incidents recorded were reported as taking place in populated areas, compared to 54% of air-launched incidents and 57% of IED incidents.

COUNTRIES

AOAV recorded casualties from ground-launched explosive weapons in 35 countries and territories in 2019. 43% of the deaths and injuries from this launch method were in Syria.

Afghanistan, Yemen, India, Pakistan, Libya, Turkey and Myanmar all saw over 100 civilian casualties from ground-launched explosives.

PERPETRATORS

Ground-launched explosive weapons were used by state and non-state actors for a similar number of incidents last year. Non-state actors were recorded as responsible for 44% of incidents and state actors for 39% of all ground-launched attacks. 166 incidents (16%) were recorded without it being known whether it was caused by a state or non-state actor.

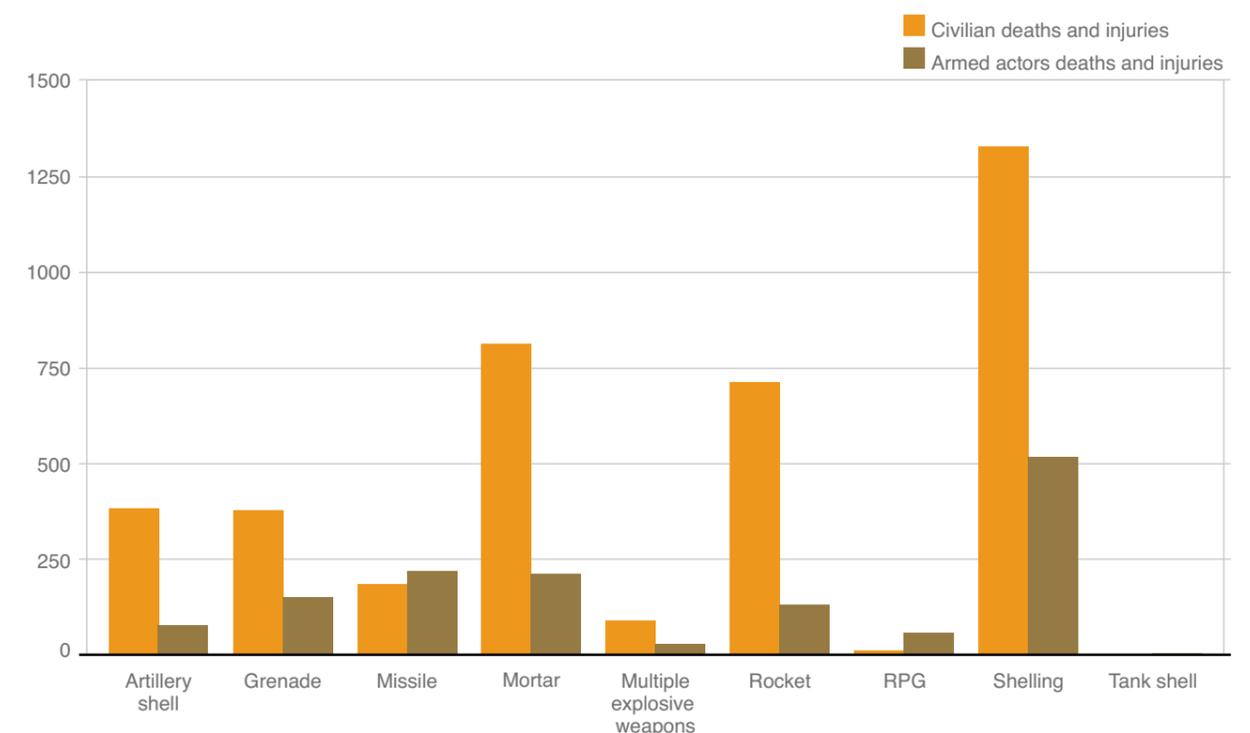
SPECIFIC TYPES

Figure 9 illustrates the range of ground-launched weapon types that AOAV tracks, and their respective impact on civilians in 2019.

Non-specific shelling accounted for the largest amount (34%) of civilian deaths and injuries from ground-launched weaponry. 55% of all non-specific shelling causing deaths and injuries occurred in Syria.

Grenades, mortars and rockets also caused a significant amount of civilian harm, responsible for 378 (10%), 812 (219%) and 710 (18%) civilian casualties respectively, compared to 851 (25%), 666 (19%) and 262 (8%) in 2018.

Figure 9 Casualties by ground-launched weapon type



Improvised explosive devices (IEDs)

In 2019, AOA V recorded **12,171** deaths and injuries from IEDs.

IEDs accounted for **47%** of all civilian casualties recorded last year.

IEDs resulted in at least one casualty in **51** different countries and territories.

DEATHS AND INJURIES

In 2019, AOA V recorded 12,171 deaths and injuries from IEDs. Civilians continued to see the majority of harm from such devices, accounting for three-quarters (75%) of casualties from IEDs.

The number of casualties is similar to the previous year, with just a slight decrease from the 12,535 casualties, of which 9,374 were civilian, recorded in 2018.

IEDs accounted for 47% of all civilian casualties recorded last year. So, while manufactured weapons account for the majority of civilian casualties, IEDs account for more civilian casualties than ground-launched or air-launched explosives.

As with other launch-method types, IEDs caused particularly high levels of civilian harm when used in populated areas, which was the case in 57% of all recorded attacks – totalling some 706 incidents. In these incidents, 90% of reported deaths and injuries were civilians, contrasting with 25% in other areas. On average, IED incidents in populated areas killed or injured 12 civilians per attack.

COUNTRIES

In 2019, IEDs resulted in at least one casualty in 51 different countries and territories, two more than in 2018. *Figure 10* shows the seven countries that saw the most civilian casualties from IEDs in 2019.

In 2019, six countries saw more than 500 civilian deaths and injuries from IED attacks: Afghanistan, Syria, Somalia, Sri Lanka, Pakistan and Iraq.

For the third consecutive year, Afghanistan was the country worst impacted by IEDs, with the most civilian casualties from this weapon type – despite Syria seeing more IED incidents. This is largely due to the fact that in Syria most IEDs seem to be victim-operated ones laid by ISIS compared to the more infrequent suicide attacks and car bombs in Afghanistan.

Of the 308 IED attacks recorded in Afghanistan, 45 (15%) were suicide attacks, resulting in 1,865 civilian casualties; 52% of all civilian casualties from IEDs in Afghanistan. On average, each suicide attack in Afghanistan saw 41 civilian casualties, compared to an average of 7 civilian casualties in non-suicide IED incidents.

Nevertheless, Syria saw a slight increase in civilian casualties from IEDs. AOA V recorded 337 IED incidents in Syria an increase of 43%, compared to the previous year. This was matched by a 25% increase in civilian casualties; from 12,209 in 2018, to 1,515 last year.

USERS

IEDs were exclusively used by non-state actors in 2019. AOA V recorded IED usage by 34 non-state entities.

Of the 431 incidents for which responsibility was assigned, 44% were attributed to Islamic State groups, though these accounted for 39% of civilian deaths and injuries from IED incidents where the perpetrator was identified. Following Islamic State, the largest numbers of civilian deaths and injuries were caused by the Taliban (32%), Al Shabaab (15%) and Boko Haram (4%).

I was not very far away from where the blast occurred, and I could see several people lying [on the ground], some of them dead with a pool of blood .

Abdikarim Mohamed told reporters after the car bombing in Mogadishu in July 2019.³³

Figure 11 shows the locations where the most civilian harm resulted from IED attacks. IED attacks on roads caused the highest number of civilian deaths and injuries in 2019. AOA V recorded 362 incidents of this kind resulting in 2,089 deaths and injuries, of which 50% (1,047) were civilians. While roadside bombings are frequent, they usually impact civilians and armed actors relatively equally.

Other particularly badly affected areas included residential areas, places of worship, and markets. Such locations prove to be popular targets as they often have a particularly dense concentration of civilians.

DELIVERY METHOD AND DETONATION SYSTEM

AOA V's recording distinguishes between car bombs,³⁴ roadside bombs and more general non-specific IEDs.

The majority of incidents (55%) reported were recorded as non-specific IEDs. Roadside bombs accounted for a further 31% and car bombs for 13%. As is typically the case given their greater payload capacity, car bombs were the most injurious IED type for civilians, killing and injuring on average 21 civilians per incident.

Non-specific IEDs saw an average of six civilian casualties per incident. Roadside bombs saw three.

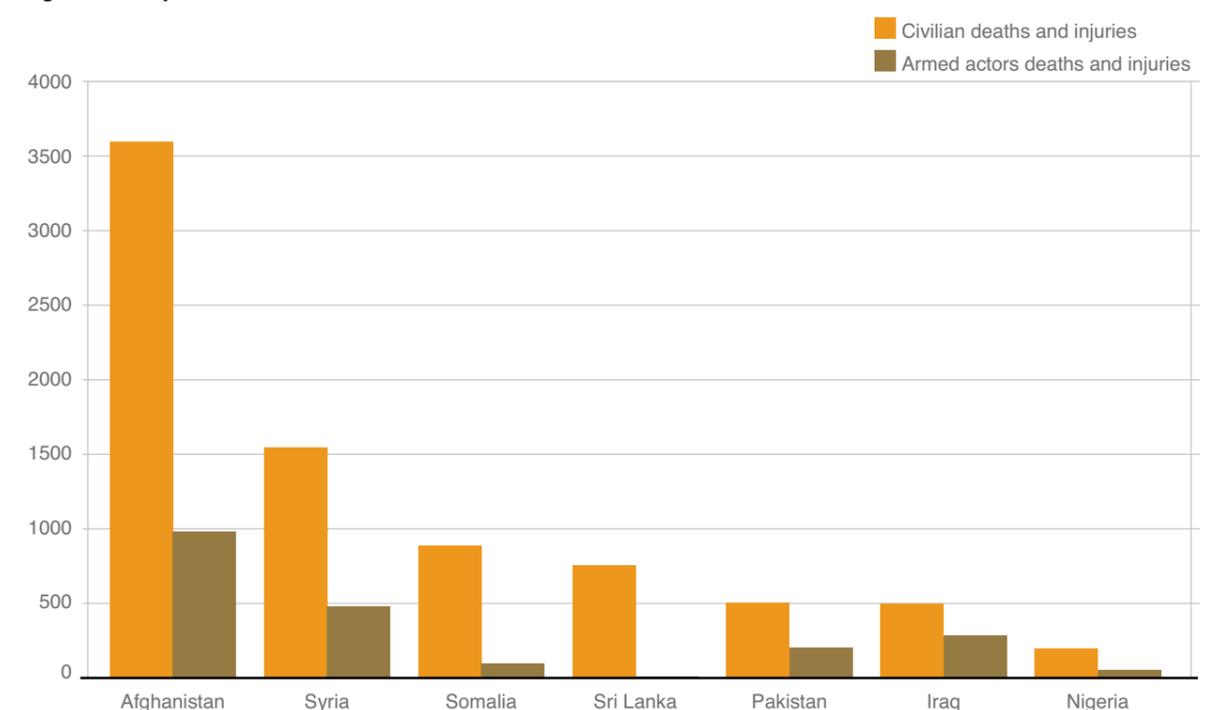
For the majority of IED incidents no detonation mechanism was reported, as it often the case. Despite this, AOA V recorded detonation mechanisms for 40% of reported incidents.

VICTIM-ACTIVATED IEDS

Victim-activated devices are most commonly detonated when a person or animal stands on them, or when they are driven over.³⁵ IEDs detonated in this fashion are typically considered as de facto antipersonnel mines³⁶ under the Mine Ban Treaty and are therefore prohibited under international humanitarian law.³⁷ Their random trigger mechanism means that they cannot distinguish between armed actors and civilians, and as such are inherently indiscriminate.

AOA V recorded 297 incidents involving victim-activated IEDs in 2019, or 13% of the total number of victims from IEDs (12% of civilian casualties from IEDs) and 8% of the total number of explosive violent incidents worldwide.

Figure 10 Top seven countries for civilian IED casualties in 2019



In 2019, victim-activated IEDs resulted in an average of four civilian casualties in each attack; this is slightly higher than last year when there were two victims recorded per attack.

COMMAND-OPERATED IEDS

These are detonated generally by radio signals or command wire. AOA V divides these IEDs between those detonated by remote-control or command, and those that involved the suicide of the perpetrator.

Command-operated IEDs should technically provide the greatest level of control for a user. However, this is not necessarily an assurance of higher protection standards for civilians.

AOAV recorded an average of four civilian deaths and injuries per remote-detonated IED attack in 2019. Even where they are used to target armed actors, civilians were often killed or injured by these IEDs in 2019, either because of their large blast effects or the deployment of these weapons in populated areas.

In 2019, 53% of remote-detonation incidents recorded took place on roads. Remotely-detonated IEDs are particularly harmful to civilians when used in populated areas. In those attacks, 81% of those harmed were civilians (243 in total), compared to 24% in non-populated areas (160 in total).

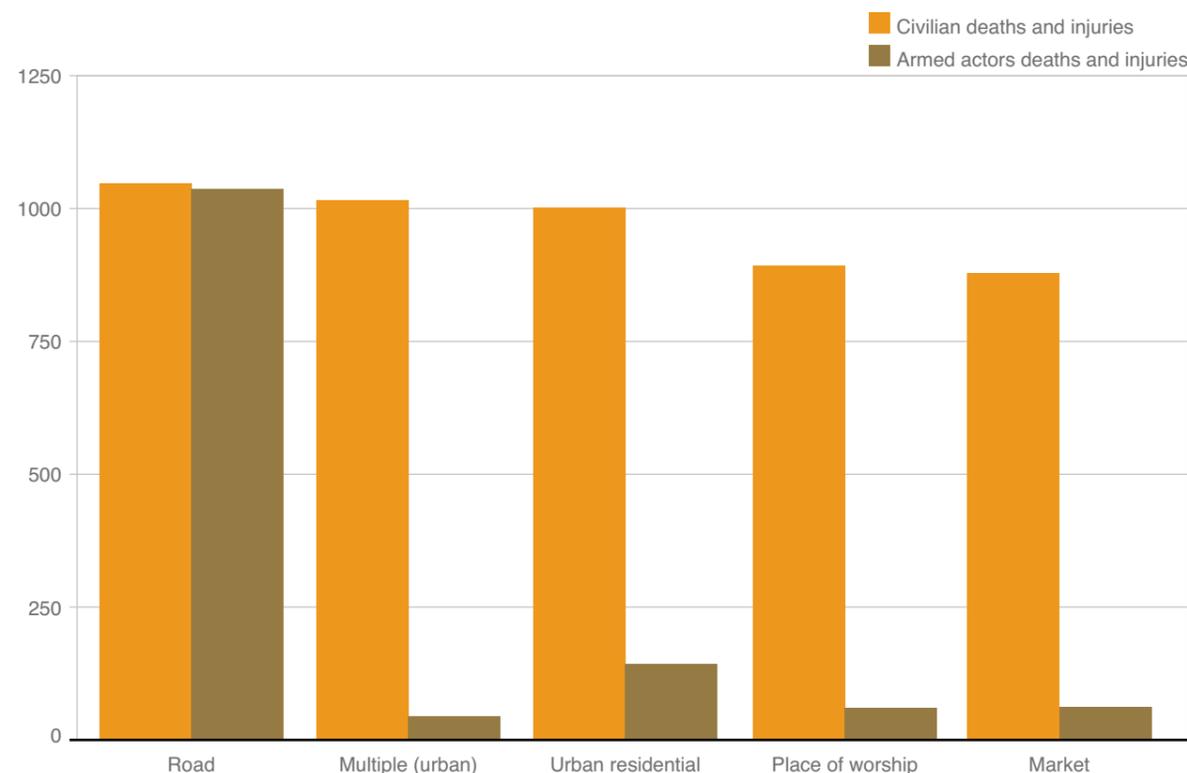
SUICIDE BOMBINGS

Suicide bombings, including car bombs operated by suicide bombers, are a form of command-operated IEDs. In total, AOA V recorded 133 suicide bombings in 2019, killing and injuring a reported 5,131 people. 4,063 of those casualties were civilians (79%), representing a decrease of 26% compared to 2018.³⁸

On average, 31 civilians were killed and injured by each suicide bombing – 5 more than in 2018, when the average was 26.

Although suicide bombings represented only 11% of all IED incidents recorded, they accounted for 45% of all deaths and injuries from harmful IED attacks.

Figure 11 Locations where the most civilian harm resulted from IED attacks

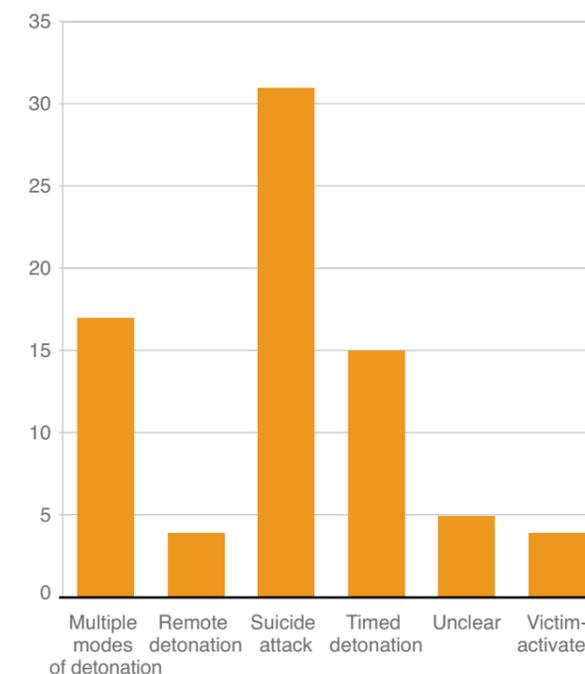


52% (69 incidents) of the suicide bombings reported were recorded as non-specific IEDs, which, in the case of suicide bombings, largely refers to suicide vests. 47% (62 incidents) were recorded as car bombs. Non-specific suicide IED attacks caused an average of 33 deaths and injuries per incident, including 28 civilians, whilst suicide car bombs caused an average of 43, including 32 civilians. As would be expected, suicide car bombs generally cause the greatest number of casualties.

AOAV recorded suicide attacks in 21 countries. The countries worst affected by suicide bombings in 2019 were Afghanistan (1,865 civilian deaths and injuries), Sri Lanka (753), Somalia (649), Nigeria (151) and the Philippines (138).

After a consistent increase in civilian casualties from suicide attacks since 2013, last year Afghanistan saw a decrease in civilian casualties from suicide attacks, despite total civilian casualties continuing to increase across the country. Afghanistan saw a 27% fall in civilian deaths and injuries from suicide attacks in 2019 compared to the previous year.

Figure 12 Average civilian deaths and injuries by IED detonation method



Eugeniy Dubitsky was injured by shelling in 2017 in eastern Ukraine.

Nevertheless, Afghanistan continued to be the country worst impacted by suicide attacks. 51% of all civilian casualties from suicide attacks in Afghanistan last year took place in just one city – Kabul. For incidents where the perpetrator group was identified, the Taliban was responsible for 80% of civilian casualties, whilst Islamic State was responsible for 20%. This the reverse of the situation in 2018, when Islamic State were responsible for three-quarters of civilian casualties from suicide attacks in Afghanistan, when a perpetrator was identified. Though this is more consistent with the trends of previous years.

Nevertheless, Islamic State suicide attacks in Afghanistan were more likely to result in civilian casualties. Of all casualties from suicide attacks in Afghanistan where Islamic State were identified as the perpetrator, civilians accounted for 94% of the casualties. When the Taliban were identified as the perpetrator of such attacks, civilians accounted for 79% of the casualties.

As with other explosive weapon types, when suicide bombings were used in populated areas they inflicted much higher levels of civilian harm. 66% of recorded incidents took place in populated areas. In these attacks, around 91% of those killed and injured were civilians. This compares to 5% in other areas.

In total, 99% of the civilian casualties from suicide attacks occurred in populated areas. Suicide attacks in populated areas caused an average of 46 civilian deaths and injuries per incident.

Conclusion

Though global casualties from explosive violence continue to fall over the last few years, civilians continue to suffer disproportionately from the use of such weapons. This is especially so when explosive weapons, particularly those with wide area effects, are used in populated areas.

AOAV's data has consistently shown that when explosive weapons are used in populated areas this will almost inevitably cause civilian deaths and injuries. Explosive violence in populated areas is used by both state and non-state actors alike, despite such evidence showing that over 90% of those killed and injured will be civilians.

Civilian deaths and injuries in populated areas represented 92% of all reported civilian deaths and injuries in 2019. Far more needs to be done to protect civilians from the use of explosive weapons in populated areas.

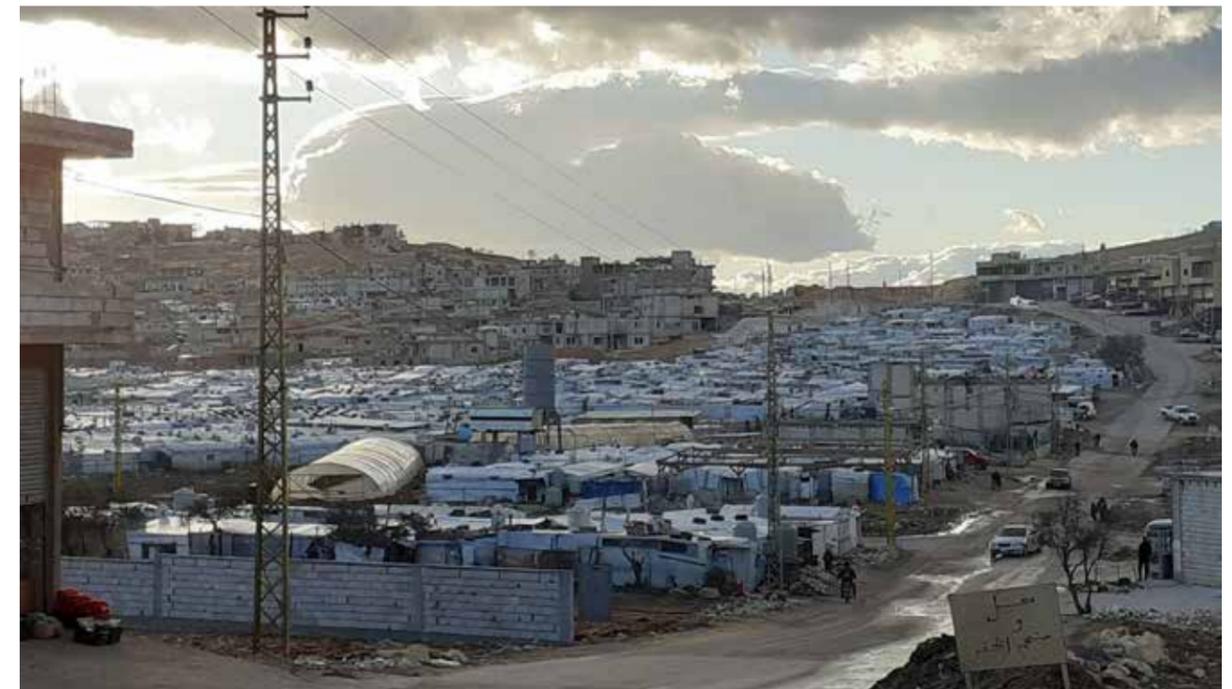
The use of explosive violence in these areas not only leads to civilian deaths and injuries but also destroys infrastructure, which may deprive communities of water, sanitation, electricity and/or medical care for example, and forces civilians to flee their homes.

Research by AOA and our colleagues from the International Network on Explosive Weapons (INEW) on the reverberating effects from the use of explosive weapons repeatedly shows the long-term devastation that continues to devastate the lives of civilians even long after the bombardment has ended.

While the number of casualties from the use of IEDs continued to fall in 2019, such improvised weapons left over 12,000 casualties; their use remains a source of concern. The impacts of IEDs



Aftermath of Saudi-led Coalition airstrikes on university being used as a Houthi detention center in Dhamar, Yemen. Mohamed Al-Sayaghi/Reuters. Felton Davis, September 2nd 2019. Flickr (CC BY 2.0).



Syrian refugee camp in Aarsal, Lebanon.

have been felt globally. While Iraq, Syria and other countries continue to feel the impacts of the victim-activated, left by armed groups, other countries have witnessed the devastation of large coordinated attacks on civilians, as was seen in Sri Lanka last year, and frequently across Afghanistan.

Overall, the tragic reality is that numbers of civilians killed or injured by air and ground-launched explosive weapons, as well as by IEDs, is almost certainly higher than the 19,401 that AOA has recorded.

In this 2019 publication, AOA has sought to use the data to illuminate the suffering caused by explosive weapons. Inevitably, as we sift through information and mark trends, it becomes easy to see death as a number though each represents a human life lost, a family destroyed.

The international community must not only take note of the scale of the figures we have included in this report, but be cognisant of the fact that each number represents a life, frequently young, and almost always a civilian.

As a member of the International Network on Explosive Weapons (INEW), AOA and its colleagues urges states and all users of explosive weapons to:

- Acknowledge that use of explosive weapons in populated areas causes severe harm to individuals and communities and furthers suffering by damaging vital infrastructure;
- Strive to avoid such harm and suffering in any situation, review and strengthen national policies and practices on use of explosive weapons and gather and make available relevant data;
- Work for full realisation of the rights of victims and survivors;
- Develop stronger international standards, including certain prohibitions and restrictions on the use of explosive weapons in populated areas.

In developing these standards, states and other actors should make a commitment that explosive weapons with wide area effects will not be used in populated areas.

Recommendations

- States and other actors should stop using explosive weapons with wide area effects in populated areas.
- Previous AOV reports, along with other notable publications by UNOCHA, ICRC and CIVIC, have shown the impact that strong, progressive rules of engagement can have in limiting the impact of explosive weapons on civilians.³⁹ States should review their policies and practices on the use of explosive weapons in populated areas, particularly those which may be expected to impact a wide area.
- States, international organisations and civil society should work together to develop the international political declaration to address the harm caused to civilians by the use of explosive weapons in populated areas, in line with the recommendations of the United Nations Secretary General.
- States should be transparent about civilian casualties and casualty recording methods, and should routinely investigate and report on every casualty caused by their use of explosive weapons.
- States, international organisations, and non-governmental organisations should gather and make available data on the impacts of explosive weapons. Data on the casualties of explosive violence should be disaggregated so that stakeholders can accurately assess the impact of explosive weapons. More should also be done to protect and support people and organisations who gather such data, including providing access to journalists on the ground.
- States should be cognisant of the fact that even where civilians have not been immediately killed or injured as a result of explosive violence, the reverberating effects of attacks may have an impact on infrastructure and civilians' daily lives and survival.
- States and users of explosive weapons should work towards the full realisation of the rights of victims, including those killed and injured, their families, and affected communities. They should strive to ensure the timely and adequate provision of needed services for the recovery, rehabilitation, and inclusion of victims of explosive violence, without discrimination.
- Recognising the large number of civilian casualties caused by IEDs, all parties should work on measures which address the high level of humanitarian harm caused by these weapons.
- AOV has demonstrated over almost a decade the importance of systematic and continuous monitoring of explosive violence and its impacts in populated areas. This monitoring must continue in order to assess whether recommendations are put into effect.
- More research is needed to better understand the long-term harm from explosive weapons, including the impact of these weapons on vital infrastructure and services, public health, and environmental contamination. More funding support for NGOs working on data collection, investigations and victim assistance is necessary to advance collective understanding of the impacts of explosive weapons in populated areas.

Methodology

AOAV uses a methodology adapted from an incident-based methodology used by Landmine Action and Medact in 2009 which in turn was based on the Robin Coupland and Nathan Taback model.⁴⁰

Data on explosive violence incidents is gathered from English-language media reports on the following factors: the date, time, and location of the incident; the number and circumstances of people killed and injured; the weapon type; the reported user and target; the detonation method and whether displacement or damage to the location was reported. AOV does not attempt to comprehensively capture all incidents of explosive violence around the world but to serve as a useful indicator of the scale and pattern of harm.

No claims are made that this data captures every incident or casualty of explosive violence in 2019.

SELECTING INCIDENTS

An RSS reader is used to scan Google News for key terms which relate to explosive weapon use: air strike* artillery* bomb* bombing* cluster bomb* cluster munitions* explosion* explosive* grenade* IED* mine* missile* mortar* rocket* shell.*

At least one casualty from an explosive weapon must be reported in order for an incident to be recorded. Incidents with no clear date or which merely give a location as a country are excluded, as are incidents which occur over a period of more than 24 hours (e.g. 150 people killed by shelling over the last week). Casualty numbers must be clearly stated; reports which only describe 'several' or 'numerous' cannot be recorded. When there are multiple sources for the same incident, those which provide the most detail or most recent casualty information are selected.

SOURCES

AOAV uses a wide range of English-language news sources, many of which are translated by the publisher. The most commonly-used sources are AP, AFP and Reuters. We also use the most credible data cited (i.e. the lower limit of civilian harm) from organisations such as Airwars.

RECORDING GUIDELINES

Civilian/armed actor or security personnel:

All casualties are assumed to be civilians unless otherwise stated.⁴¹ Casualties are recorded as 'armed actors' if they are reported as being members of the military,



Bombed buildings in eastern Ukraine.

members of non-state armed groups, or security personnel who are likely to be armed, for example; police, security guards, intelligence officers, and paramilitary forces.

Intended target:

The target for an attack is only recorded if one of the three conditions below are met:

- The target is declared by the user.
- It is clearly reported in the source.
- The specific contextual conditions of use clearly indicate a target (e.g. if an IED is attached to the car of a police officer or soldier, 'State armed' is recorded as the target).

Populated area:

Incidents are designated as occurring in populated areas likely to contain concentrations of civilians if: a) It is stated in the source (e.g. a busy street, a crowded market); b) If an incident occurs in or near a pre-defined location which is likely to contain concentrations of civilians e.g. commercial premises, entertainment venues, hospitals, hotels, encampments (containing IDPs, refugees, nomads), markets, places of worship, public gatherings, public buildings, public transport, schools, town centres, urban residential neighbourhoods, villages/ compounds.

This definition of a populated area is based on Protocol III of the 1980 Convention on Certain Conventional Weapons (CCW) which defines concentrations of civilians as: *"any concentrations of civilians, be it permanent or temporary, such as in inhabited parts of cities, or inhabited towns or villages, or as in camps or columns of refugees or evacuees, or groups of nomads."*⁴²

User status:

Responsibility for the use of explosive weapons is assigned where any of the following conditions are met:

- The group or actor responsible has claimed responsibility.
- The user of the explosive weapon is clearly stated in the report.
- If the user of the explosive weapon has employed technology clearly associated only with that user in the context in question.

If none of these conditions are met then the user is recorded as unknown. Users are recorded as 'state and non-state' when both users are identified but it is not possible to establish which one was responsible for the particular incident.

LIMITATIONS

This methodology is subject to a number of limitations and biases, many relating to the nature of the source material on which it is dependent and the lack of a mechanism to follow up reports with in-depth investigation. It is recognised that there are very different levels of reporting across regions and countries so that under-reporting is likely in some contexts. In addition, only English-language media reports are used, which does not provide a comprehensive picture of definitive explosive weapon use around the world.

The methodology is designed to capture distinct incidents of explosive violence with a clear date and location. In some contexts of explosive violence, particularly during intense armed conflict, casualties cannot be assigned to specific incidents but a total number is reported as the result of a period of days. These casualties cannot be included in the dataset.

As the methodology relies on reports which are filed shortly after an incident took place, there is no mechanism for assessing whether people reported as wounded in the immediate aftermath of an incident subsequently died from their injuries. This is another factor that should be assessed when considering the likelihood that the actual numbers of fatalities of explosive violence are higher than the numbers recorded by AOA. There is no systematic base-line for determining what constitutes an injury, and AOA is therefore subject to the assessment of the news source.

On a number of occasions firearms were also reported as having been used alongside explosive weapons. While AOA always tries to determine the casualties specifically caused by explosive weapons, in these incidents new sources are not always able to clarify which casualties were caused by which weapon type, particularly in incidents that involved large numbers of casualties. It is therefore possible that some casualties in these incidents may not have been caused by explosive weapons.⁴³

AOAV is focused on capturing the harm caused by explosive weapons at the time of use. Accidental detonations are recorded but not included in the overall figures. Last year, AOA recorded 82 incidents of accidental detonation resulting in 426 deaths and injuries, 227 of whom were civilians.

Explosive weapons that fail to explode as intended can linger in the form of explosive remnants of war (ERW) for years, if not decades, to come. In 2019, AOA recorded 126 incidents involving unexploded ordnance causing 324 civilian deaths and injuries. The actual number of casualties from ERW is far higher.⁴⁴

Poorly secured or stockpiled explosive weapons can also cause unintended harm to civilians. AOA recorded eight stockpile explosion in 2019.

Media reports used by AOA are a valuable resource for better understanding the scale and pattern of explosive violence use. However, these reports are less helpful for capturing other types of harm known to be characteristic of explosive weapons in populated areas. Damage to infrastructure, the risk of ERW, long-term health effects, and displacement are all aspects of the pattern of harm caused by explosive weapons which are not fully represented in the data set. However, reporting on these effects is often limited, with news sources focusing on the immediate aftermath of an incident. For instance, only 197 incidents out of 3,816 reported damage to a location. Effects which are the result of cumulative levels of explosive violence, for instance communities displaced by heavy shelling or continued insecurity, cannot be fully represented by this research.



Refugee tents in Bekaa Valley.

Notes

- 1 *United Nations*, 'Secretary-General's remarks to the Security Council on the protection of civilians in armed conflict', 27 May 2020. <https://www.un.org/sg/en/content/sg/statement/2020-05-27/secretary-generals-remarks-the-security-council-open-debate-the-protection-of-civilians-armed-conflict-delivered> (accessed 28 May. 20).
- 2 AOA, 2016, "Wide Area Impact: Investigating the wide area effect of explosive weapons", <https://aoav.org.uk/wp-content/uploads/2016/03/Wide-Area-Impact-explosive-weapons-in-populated-areas.pdf> (Accessed 28 May. 20).
- 3 Article 36 and PAX, 2016, "Areas of harm: Understanding explosive weapons with wide area effects", <http://www.article36.org/wp-content/uploads/2016/10/PAX-A36-Areas-of-Harm.pdf> (Accessed 28 May. 20).
- 4 The definition of a populated area used by AOA is based on Protocol III of the 1980 Convention on Certain Conventional Weapons (CCW) which defines concentrations of civilians as: "any concentrations of civilians, be it permanent or temporary, such as in inhabited parts of cities, or inhabited towns or villages, or as in camps or columns of refugees or evacuees, or group of nomads." The full definition is available at: "Protocol on Prohibitions or Restrictions on the Use of Incendiary Weapons (Protocol III)," ICRC, Geneva, 10 October 1980, posted by U.S. Department of State, www.state.gov/documents/organization/190579.pdf (accessed 08 Jul. 20). AOA's guidelines for recording an area as populated are included in the Methodology.
- 5 Iain Overton et al, 'Wide-Area Impact: Investigating the wide-area effect of explosive weapons', (AOAV 2015) <https://aoav.org.uk/wp-content/uploads/2016/03/Wide-Area-Impact-explosive-weapons-in-populated-areas.pdf> (accessed 08 Jul. 20).
- 6 The category of 'mines' includes both antipersonnel landmines and antivehicle mines. In many incidents, news sources often report what were likely actually victim-activated IEDs as 'mines' or in ambiguous language and it is not clear in many instances whether these incidents involve manufactured or improvised explosive weapons.
- 7 Attacks described as air strikes can combine the firing of explosive missiles, the dropping of aerial bombs, and/or strafing using automatic weapons. There is often a lack of detail in media and official statements as to which specific weapons were used. On this basis incidents reported as air strikes were recorded as the use of an explosive weapon unless it is clear that only non-explosive weapons were used.
- 8 Missiles are defined as "an armament store designed to be released from an aircraft or discharged from a gun or launcher towards a selected point usually to cause damage at that point." International Ammunition Technical Guideline, "Glossary of terms, definitions and abbreviations," United Nations Office for Disarmament Affairs, IATG 01.40:2015(E) 2nd Edition (2015-02-01) <https://unoda-web.s3-accelerate.amazonaws.com/wp-content/uploads/assets/convarms/Ammunition/IATG/docs/IATG01.40.pdf> (accessed 08 Jul.20).
- 9 Rockets, both air and ground-launched, are defined as "munitions consisting of a rocket motor and a payload, which may be an explosive warhead or other device. The term often includes both guided and unguided missiles, although it traditionally referred to unguided missiles." International Ammunition Technical Guideline, "Glossary of terms, definitions and abbreviations," United Nations Office for Disarmament Affairs, IATG 01.40:2015(E) 2nd Edition (2015-02-01) <https://unoda-web.s3-accelerate.amazonaws.com/wp-content/uploads/assets/convarms/Ammunition/IATG/docs/IATG01.40.pdf> (accessed 08 Jul. 20).
- 10 Mortars are generally indirect-fire weapons which fire projectiles over a high-trajectory and do not depend on a line-of-sight. Erich G. Berman, Pierre Gobinet and Jonah Leff, "Mortars," Small Arms Survey, Research Notes - Number 2, February 2011, www.smallarmssurvey.org/fileadmin/docs/H-Research_Notes/SAS-Research-Note-2.pdf (accessed 08 Jul. 20).
- 11 A populated area is one that is likely to contain concentrations of civilians. It is based on Protocol III of the 1980 Convention on Certain Conventional Weapons (CCW). The full definition and guidelines for recording an area as being populated is detailed on pages 35.
- 12 Safi, M, 'Death toll in Sri Lanka bombings revised down to 253', *Guardian*, 25 Apr 19, <https://www.theguardian.com/world/2019/apr/25/death-toll-in-sri-lanka-bombings-revised-down-to-253> (accessed 23 Jun. 20).
- 13 Doubek, J. 'Suicide bomber kills 63, injures 182 at wedding reception in Kabul', *NPR*, 18 Aug 19, <https://www.npr.org/2019/08/18/752124196/suicide-bomber-kills-63-injures-182-at-wedding-reception-in-kabul?t=1566230934381&t=1592923349649> (accessed 23 Jun. 20).
- 14 *Xinhua*, 'Somali capital bomb attack kills 79, injures 149', 29 Dec 19, <https://www.globaltimes.cn/content/1175093.shtml> (accessed 23 Jun. 20).
- 15 *Al Jazeera*, 'Afghanistan: Several killed in Taliban car bomb attack in Ghazni', 07 Jul 19, <https://www.aljazeera.com/news/2019/07/afghanistan-killed-taliban-car-bomb-attack-ghazni-190707060218685.html> (accessed 23 Jun. 20).
- 16 *AP*, 'Yemeni medics: 135 bodies found after Saudi-led airstrike', 11 Sep 19, <https://apnews.com/2b9af42e6c4e4b07b9f15af3535b5df8> (accessed 23 Jun. 20).
- 17 *BBC*, 'Libya migrants: UN says attack could be a war crime', 04 Jul 19, <https://www.bbc.co.uk/news/world-africa-48854420> (accessed 23 Jun. 20).
- 18 Abed, F. et al. 'Violence in Afghanistan Worsens as U.S.-Taliban Peace Talks Plod On', *New York Times*, 07 Aug 19, <https://www.nytimes.com/2019/08/07/world/asia/kabul-afghanistan-bombing-taliban.html> (accessed 23 Jun. 20).
- 19 *Syrian Observatory for Human Rights*, '101 were killed yesterday including 8 members of the regime forces and militiamen loyal to them and 93 other people', 23 Jul 19, <https://www.syriahr.com/en/135616/> (accessed 23 Jun. 20)
- 20 *TLO*, 'Taliban truck bomb attack in Kabul kills 16', 03 Sep 19, <https://tolonews.com/afghanistan/taliban-truck-bomb-attack-kabul-kills-16> (accessed 23 Jun. 20).
- 21 *Al Jazeera*, 'Afghanistan hospital attack death toll soars to 39', 20 Sep 19, <https://www.aljazeera.com/news/2019/09/killed-car-bomb-attack-afghan-province-zabul-190919042138106.html> (accessed 23 Jun. 20).
- 22 In alphabetical order the 60 countries are: Afghanistan, Albania, Armenia, Azerbaijan, Bangladesh, Brazil, Burkina Faso, Burundi, Cameroon, Chad, Chile, China, Colombia, Denmark, DRC, Egypt, El Salvador, Ethiopia, France, Gaza, Georgia, Greece, Guatemala, India, Indonesia, Iran, Iraq, Israel, Italy, Jordan, Kenya, Lebanon, Libya, Mali, Mexico, Myanmar, Nepal, Niger, Nigeria, Pakistan, Philippines, Russia, Rwanda, Saudi Arabia, Somalia, South Africa, Sri Lanka, Sudan, Sweden, Syria, Taiwan, Thailand, Tunisia, Turkey, UK, Ukraine, USA, West Bank, Yemen, Zimbabwe.
- 23 These only include casualties from an explosive weapon at its time of use. AOA also recorded impacts of unexploded ordnance (UXO) and abandoned ordnance (AXO), and from unattended or mismanaged stockpiles. These casualties are excluded from the primary analysis in this report, but are documented on pages 36.
- 24 In alphabetical order these were: Chad, Chile, Democratic Republic of the Congo, Denmark, El Salvador, France, Georgia, Guatemala, Rwanda, South Africa, Taiwan, United Kingdom, West Bank.
- 25 Handunnetti, D. 'A day after Sri Lanka bombings, Colombo resembles a ghost city', *Al Jazeera*, 22 Apr 2019, <https://www.aljazeera.com/news/2019/04/day-sri-lanka-bombings-colombo-resembles-ghost-city-190422112111125.html> (accessed 07 Jul. 20).
- 26 ADF (DRC), Afrin Liberation Forces (Syria), Al Shabaab (Kenya and Somalia), Al-Umar Mujahideen (India), AQAP (Yemen), Arakan Army (Myanmar), Baloch Raji Ajoji Sangar (Pakistan), BIFF (Philippines), Boko Haram (Nigeria, Niger, Chad, Cameroon), CPI (naxals) (India), ELN (Colombia), Former FARC (Colombia), Hamas (Israel), Hashid Shaabi (Iraq), Hasm (Egypt), Hayyaat Tahrir al-Sham (Syria), Hizbul Ahrar (Pakistan), Houthi rebels (Yemen, Saudi Arabia), Individualists Tending to the Wild (Chile), Islamic State (Afghanistan, Bangladesh, Egypt, France, Indonesia, Iraq, Lebanon, Libya, Mali, Niger, Philippines, Sri Lanka, Syria, Tunisia, Yemen), Jaish al Adl (Iran), Jaish-e-Mohammed (India), Jamaat ul Ahrar (Pakistan), JNIM (Mali), Kachin Independence Army (Myanmar), Kurdish forces (Syria), Haftar forces (Libya), MS-13 (gang) (El Salvador), NDF (Syria), Northern Alliance (Myanmar), NPA (Philippines), Okba Ibn Nafaa (AQIM affiliate) (Tunisia), Oromo Liberation Front (Ethiopia), Pakistan Taliban (Pakistan), PKK (Iraq, Syria, Turkey), Pro-Saudi militia (Yemen), SDF (Syria), Syrian rebels (Syria), Taliban (Afghanistan), TNLA (Myanmar), Turkish-loyal factions (Syria), Ukrainian separatists (Ukraine), ULFA (India), Wrath of Olives (Syria), YPG (Syria, Turkey). There were also various other actors identified only as individuals, gangs, or rebels.
- 27 *AFP*, 'Taliban suicide attacks in Afghanistan leave dozens dead', *The Guardian*, 17 Sep 2019, <https://www.theguardian.com/world/2019/sep/17/taliban-suicide-attacks-in-afghanistan-leave-dozens-dead> (accessed 07. Jul 20).
- 28 Constable, P. and S Hassan, 'Islamic State claims suicide attack on Kabul wedding that killed 63', *Washington Post*, 18 Aug 2019, https://www.washingtonpost.com/world/asia_pacific/bloody-suicide-attack-on-kabul-wedding-kills-at-least-63/2019/08/18/ace5f0d4-c17d-11e9-a5c6-1e74f7e-c4a93_story.html (accessed 07 Jul. 20).
- 29 Barrel bombs, which are improvised makeshift weapons that comprise fuel, explosive content and often metal fragments, are included under the air-dropped bomb recording type. It is often unclear in media reporting whether descriptions of 'barrel' bombs in fact designate improvised weapons or conventional aircraft bombs with similar wide-area effects.
- 30 The category of 'mines' includes both antipersonnel landmines and antivehicle mines. In many incidents, news sources often report what were likely actually victim-activated IEDs as 'mines' or in ambiguous language and it is not clear in many incidents whether these incidents involve manufactured or improvised explosive weapons. For detailed information on the incidents of antipersonnel and other types of mine use around the world see International Campaign to Ban Landmines, 'Landmine Monitor 2019', November 2019, <http://www.the-monitor.org/media/3074086/Landmine-Monitor-2019-Report-Final.pdf> (accessed 05 Jun. 20)
- 31 *BBC*, 'Yemen war: Eight killed in air strike near Kitaf hospital', 27 Mar 2019, <https://www.bbc.co.uk/news/world-middle-east-47711413> (accessed 07. Jul 2020)
- 32 *Radio Free Asia*, 'Seven Villagers Killed by Heavy Artillery in Myanmar's Rakhine State', 22 Mar 2019, <https://www.rfa.org/english/news/myanmar/seven-killed-in-si-taung-gyi-03222019163833.html> (accessed 07 Jul. 2020).
- 33 *Defense Post*, 'Somalia: More than a dozen killed in Mogadishu car bomb explosion', 22 Jul 2019, <https://www.thedefensepost.com/2019/07/22/somalia-mogadishu-car-bomb/> (accessed 07 Jul. 2020).³⁴ Car bomb' is taken as shorthand for vehicle-borne IEDs or VBIEDs, including explosives concealed in or built into vehicles of all kinds. Thus some car bombs may in fact be bike bombs or truck bombs.
- 35 24 percent of IED attacks with a reported mode of detonation in 2019 were triggered by victim-activation.
- 36 Though some IEDs may be designed to only be triggered by a vehicle. For instances of this please see: CAR, 'Dispatch from the Field: Mines and IEDs Employed by Houthi Forces on Yemen's West Coast', September 2018. Anti-vehicle mines are not covered by the Mine Ban Treaty.
- 37 Convention on the Prohibition of the Use, Stockpiling, Production and Transfer of Anti-Personnel Mines and on their destruction, 18 September 1997, https://treaties.un.org/doc/Treaties/1997/09/19970918%2007-53%20AM/Ch_XXVI_05p.pdf (accessed 07 Jul.20).
- 38 In 2018 AOA recorded 5,513 civilian deaths and injuries as a result of suicide bombings.
- 39 Robert Perkins, "Air Power in Afghanistan, How NATO changed the rules, 2008-2015," Action on Armed Violence (AOAV), December 2015, <https://aoav.org.uk/wp-content/uploads/2015/03/AOAV-Air-Power-in-Afghanistan.pdf> (accessed 07 Jul. 20); Robert Perkins, "Under Fire, Israel's artillery policies scrutinised," Action on Armed Violence (AOAV), December 2015, <https://aoav.org.uk/wp-content/uploads/2015/03/AOAV-Under-Fire-Israels-artillery-policies-scrutinised.pdf> (accessed 07 Jul. 20).
- 40 For more information see www.insecurityinsight.org (accessed 07 Jul. 20).
- 41 In a minority of cases, there is a possibility that armed actors were among those killed and injured by explosive weapons, but the exact details of the number of armed actors killed or injured was not recorded. Incidents which meet this profile are coded as 'yes' in a column titled 'Could armed actors be included among the dead and injured?' incidents coded in this manner represented just 1% of all incidents recorded by AOA in 2019.
- 42 Protocol on Prohibitions or Restrictions on the Use of Incendiary Weapons (Protocol III), to the UN Convention on Certain Conventional Weapons, Geneva, 10 October 1980, www.icrc.org/ihi.nsf/FULL/515 (accessed 07 Jul. 20).
- 43 AOA recorded 70 such incidents in 2019.
- 44 International Campaign to Ban Landmines, 'Landmine Monitor 2019', November 2019, <http://www.the-monitor.org/media/3074086/Landmine-Monitor-2019-Report-Final.pdf> (accessed 07 Jul. 20).

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