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Global Violent Deaths Scenarios, 2019–30

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Credits and contributors

About the authors

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Acknowledgements

Overview

This Briefing Paper provides an updated trend analysis of global violent deaths based on 2018 data, on the basis of which it develops global-level scenarios for the years leading to 2030. The paper includes a separate analysis of trends in Northern Africa and the five nations of the G5 Sahel region.[1]

The year 2018 was characterized by a decrease in lethal violence in several of the world's hotspots, primarily due to a significant de-escalation of the armed conflicts in Iraq, Myanmar, South Sudan, and Syria. While nominally 2018 saw more homicides than 2017, population growth outpaced this increase, thus the homicide rate has also decreased marginally.[2] These two trends jointly resulted in a favourable modest change in the rate of violent deaths globally in 2018 compared to 2017.

The scenarios presented in the paper reflect possible trends in violent deaths globally and in the Northern Africa and G5 Sahel regions in the period leading up to 2030.[3] These are: (1) a 'business-as-usual' scenario, which assumes that no meaningful changes are made in international efforts to reduce lethal violence; (2) a positive scenario, where increased and concerted efforts would lead to reductions in global violent death rates; and (3) a negative scenario, where lethal violence rates are assumed to escalate due to reduced or deteriorating violence reduction efforts. These scenarios, derived from longer-term trends, provide a useful basis for policymakers to assess trends and progress in efforts to achieve Sustainable Development Goal (SDG) Target 16.1 ('Significantly reduce all forms of violence and related death rates everywhere').

Key findings

- The approximately 596,000 people who lost their lives violently in 2018—including 93,700 women and girls—represent a modest decrease from 2017 (when approximately 612,000 people suffered violent deaths, based on current, adjusted global violent deaths fatality counts). The 7.80 violent death rate per 100,000 population for 2018 is the lowest since 2012.

- A significant de-escalation of the conflicts in Iraq, Myanmar, South Sudan, and Syria was largely responsible for the decrease observed in lethal violence in 2018. In non-conflict settings, while the number of violent deaths was nominally higher than in 2017, a significant growth in the population resulted in the homicide rate also marginally decreasing.

- Data disaggregated simultaneously by sex and lethal instrument has become more widely available and is now integrated into the Global Violent Deaths (GVD) database, further increasing its gender relevance. Men continue to be much likelier to become victims of lethal violence (84 per cent of all victims were boys and men in 2018) and to be killed by firearm (globally, 92 per cent

of the victims of firearm killings were males). The rate for female victims (2.48 per 100,000 women) is the second-lowest registered since 2004.

- In 2018 the global rate of firearm killings was 2.93 per 100,000 population, remaining stable when compared to those of previous years. Firearms were used in approximately 38 per cent of killings worldwide, most frequently in the Americas. While the rate of 0.59 per 100,000 female population was stable, the actual number of women killed by firearm in 2018 (17,200 globally) is by a small margin the highest in the period 2004–18.

- Despite the decrease observed in 2018, the scenarios looking at 2019–30 trends in violent deaths indicate that a business-as-usual approach would still result in a slight but steady increase in the number of violent deaths. In contrast, a positive scenario characterized by concerted conflict and violence reduction efforts would lead to as many as 1.43 million lives being saved. More than 336,000 of these deaths could be prevented in direct conflict and 1,093,000 prevented from other violent causes.

Introduction

This year's update of the GVD database shows an overall decline in deaths due to a sharp decline in conflict-related deaths—about 19,000 fewer compared to 2017—paired with relatively stable non-conflict death rates, which resulted in the lowest rate of violent deaths since 2012.[4] The 2018 data reflects the sharp decrease of violent mortality in some of the most intense conflicts of the decade (see also Figure 1).

Armed conflicts (their onset, escalation, and then de-escalation) have been responsible for most of the volatility of global lethal violence rates, with conflict-related deaths determining previous peaks in the numbers of global violent deaths (Hideg and Alvazzi del Frate, 2019). In 2018 the de-escalation of certain conflicts (in Iraq, Libya, Myanmar, South Sudan, and Syria) outweighed increases in other conflicts (in Afghanistan, Nigeria, the Sahel, and Yemen) and drove the global violent deaths count down.

Remarkably, the number of intentional homicides recorded globally in 2018 reached an all-time high (409,000). But due to sustained population growth the 2018 global rate was slightly lower than that of 2017.[5] Overall, of the 222 countries and territories included in this analysis, a larger number of countries (99) display a worsening trend in terms of the absolute number of their homicide victims than those displaying an improving trend (68 countries) compared to 2015, the baseline year of the UN's Agenda 2030 (UNGA, 2015, p. 31).[6]

The analysis of trends and patterns in violent deaths supports concrete efforts to reduce conflict and violence, and thus allow for a focus on development. SDG Target 16.1 commits states to 'Significantly reduce all forms of violence and related death rates everywhere' (UNGA, 2015, p. 25). The global monitoring process for this target is based on four indicators of progress, of which one focused on intentional homicides and another on conflict-related deaths.[7] While the database connected to the official UN process is still incomplete and its updating would also require a strong capacity-building component to assist in the production and analysis of relevant statistics,[8] the GVD database uses a comprehensive multisource approach that can greatly facilitate the work of policymakers and researchers. By focusing on both conflict and non-conflict settings, the GVD database reveals that most violent deaths occur outside the context of armed conflicts,[9] thus stressing the need for the adoption of effective policies to prevent crime-related violent deaths as a key requirement for the achievement of a global reduction in the numbers of such deaths. On the other hand, the evident volatility of conflict violence and conflict deaths makes the global 'management' of fatal violence through systematic national public policies very difficult and any advances elusive, on account of the flaring up of old or new armed conflicts.

Recent studies suggest that, despite the push for better data for the SDG Indicators, the data infrastructure in most world regions that could support the tracking of the numbers of global violent deaths and produce estimates of the relative effectiveness of policies to reduce violence is still poor.[10] The database containing initial data for SDG Indicator 16.1.1 also shows that data limitations require the parallel production of metadata and estimates to support and complement the scattered information that is officially available (UNSD, n.d.a). The Survey continues to collect information from national and international sources to produce the most comprehensive account of fatalities caused by violence globally. The data- and scenario-based analysis presented in this Briefing Paper can contribute to both these goals.

Violent deaths in 2018

On average, the year 2018 represented a somewhat calmer period compared to the preceding year. There was a decrease in violent deaths[11] from 2017 (612,000) to 2018 (596,000).[12] The 7.80 violent death rate per 100,000 population in 2018 is lower than any of the years in the period 2012–17 (see Figure 1).

In 2018 some 409,000 people were the victims of intentional homicides, while 105,000 were direct conflict casualties.[13] The estimated remainder died violently in unintentional homicides or legal interventions.[14]

Figure 1 Global annual rates of violent deaths, homicides, and direct conflict deaths, 2004–18
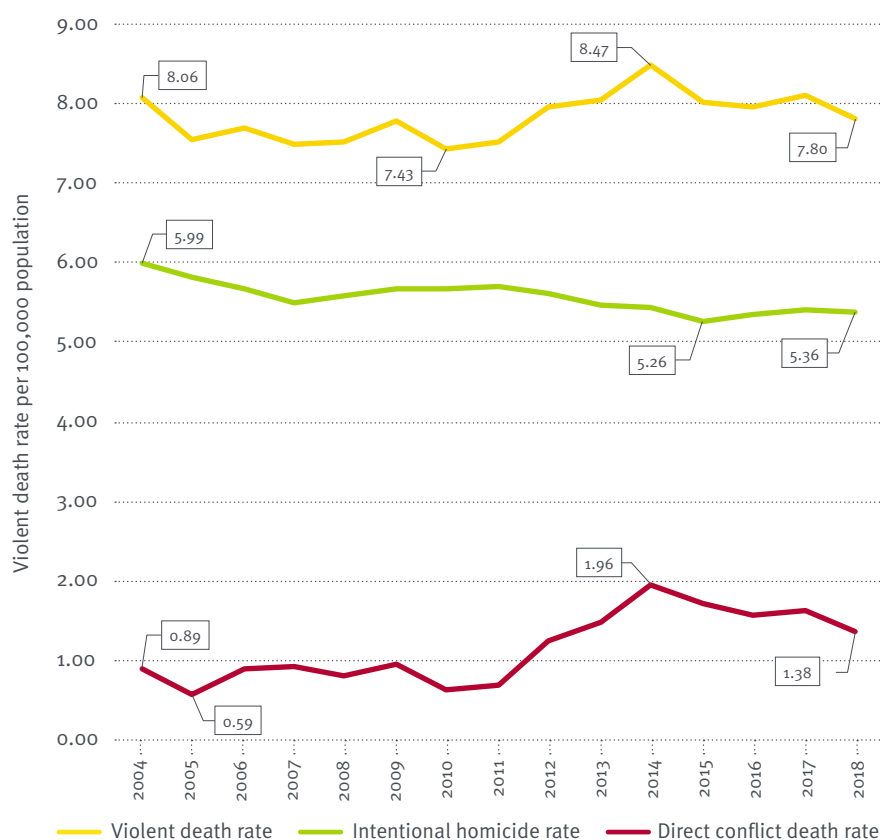
Source: Small Arms Survey (n.d.b)

Conflict-related deaths

Armed conflicts resulted in 105,000 fatalities in 2018, about 19,000 fewer compared to 2017. The monitoring of conflict-related deaths is still hampered by the lack of common definitions and gaps in the standardization of data collection and the verification and disaggregation of data (Pavesi, 2017, p. 8). The improvement for 2018 in the recorded numbers of deaths from lethal violence is due to the de-escalation of some of the bloodiest armed conflicts of the decade: those in Iraq, Myanmar, South Sudan, and Syria.[15] In total these conflicts saw a reduction of combined fatalities from nearly 60,000 to about 25,000. The decrease in the number of deaths in these particular conflicts did not mark a uniform trend: several conflict zones saw similar or even increased fatality numbers. For example, the number of victims of the war in Yemen doubled between 2017 and 2018,[16] and the situation in Afghanistan also deteriorated severely, with 2018 registering the highest number of fatalities there in the past 15 years.[17] Direct conflict deaths increased substantially in Nigeria (to about 6,300—a 27 per cent increase), as well as in the other countries involved in the intensifying conflicts in the G5 Sahel region (Burkina Faso, Chad, Mali, and Niger), resulting in a combined total of 2,900 fatalities, a 76 per cent increase when compared to 2017.[18]

Box 1 Retrospective updating of the GVD database

The GVD database provides a valuable tool for assessing progress in implementing SDG Target 16.1, which commits all states to 'Significantly reduce all forms of violence and related death rates everywhere'. The database contains data starting from 2004 and includes datasets on direct conflict deaths (those directly caused by war-related injuries), homicides, violent deaths by firearm—including the prevalence of firearm-related killings of women, as well as figures for female victims of lethal violence more generally. In line with the approach taken by the set of indicators to measure SDG Target 16.1, the GVD database focuses on interpersonal violence, while suicide is excluded. The database uses indicators to track changes in lethal violence in 222 countries or territories worldwide.[19]

The GVD database is a living tool, which means that the annual update not only adds more recent data, but fills gaps and revises information according to the latest (and often more accurate) available data. There are a number of reasons why changes to country-level data are made retrospectively, which most prominently include: (1) retrospective changes made in the data sources used previously; (2) replacing a source with a more reliable one;[20] and (3) making changes in the selection of the sources used to estimate direct conflict deaths in a particular country or territory. As Table 1 shows, in 2018 there was a slightly higher number of intentional homicides from sources or data points that had become available since the previous update.

This year's retrospective update, however, determined a significant upward shift in direct conflict death estimates, especially for the years 2016 and 2017. This change is predominantly a result of three systematic changes in the estimation method: (1) the sources that provided very low (less than 20 per cent of the median) estimates were excluded from any annual estimation of the casualties of any conflict; (2) the figures that the Armed Conflict Location & Event Data Project (ACLED) provided become available for more conflicts; and (3) the addition of Burkina Faso and Niger to the list of conflict-affected countries also added some casualties to the total count. Due to its broader concept of 'events' and the scope of its research, ACLED typically documents a higher number of fatalities than the Uppsala Conflict Data Program (UCDP)—the other source that the GVD database uses for data on direct conflict deaths—and this led to an increase in the overall figures. The combination of these changes resulted in a 4 per cent increase in the global estimate of the number of violent deaths that occurred in 2017.

Table 1 Retrospective corrections to the GVD database, 2014–18

Year	Victims of intentional homicide			Direct conflict deaths			Violent deaths total (incl. estimated levels of unintentional homicides and killings during legal interventions)		
	Current edition*	2019 edition	Diff.	Current edition	2019 edition	Diff.	Current edition	2019 edition	Diff.
2014	396,000	378,000	+5%	143,000	139,000	+3%	618,000	592,000	+4%
2015	388,000	378,000	+3%	127,000	116,000	+9%	592,000	569,000	+4%
2016	399,000	385,000	+4%	117,000	104,000	+13%	595,000	565,000	+5%
2017	407,000	403,000	+1%	124,000	106,000	+17%	612,000	589,000	+4%
2018	409,000	—	—	105,000	—	—	596,000	—	—

* This table uses the term 'current edition' to reflect both the 'new' data for 2018 (collected in 2019 and analysed in 2020) and the newly available data for other years.

Source: Small Arms Survey (n.d.b)[21]

Intentional homicides

In contrast to conflict-related deaths, the number of intentional homicides did not decrease in absolute terms. The estimate of 409,000 homicides worldwide is the highest number recorded in the GVD database since 2004. Nevertheless, the increase from 2017 was minimal (+2,000 globally), and was surpassed by the growth of the global population. Thus, the 2018 homicide *rate* is marginally lower than that of 2017: 5.36 per 100,000 population compared to 5.40 in 2017. This confirms the previously hypothesized trend change: while homicide rates have steadily decreased from 2004 to 2015, this trend reversed in 2016, and homicide rates have stagnated or increased since then, depending on the year (see Figure 1).

Looking back at trends since 2015, to match the period covered by Agenda 2030 (which was adopted in 2015), a number of countries and territories that are unaffected by conflict seem to be on the right track towards reducing the absolute number of deaths from lethal violence. In 2018 several countries were experiencing considerably lower levels of violence than in 2015, including El Salvador (3,300 fewer homicides in 2018 compared to 2015), the Russian Federation (3,200 fewer homicides), Bangladesh (1,800 fewer homicides), and Honduras (1,400 fewer homicides).

In contrast, the situation deteriorated sharply in several other countries. Despite fluctuations, countries such as Nigeria (1,300 more homicides in 2018 compared to 2015), South Africa (2,300 more homicides), Venezuela (5,300 more homicides), Brazil (6,600 more homicides), and Mexico (15,200 more homicides) were much worse off in 2018 than in 2015. In the case of Mexico, if the country had kept its homicide rate stable from 2015 to 2018, this would have been sufficient to extend the global homicide rate decrease to include 2018. Mexico thus illustrates the importance of national policies for the global prevention and reduction of crime and violence: the deterioration of security in only one country may undermine regional security, shifting the trend from decrease to stagnation or from stagnation to increase.

Figure 1 shows the evolution of the global violent death rate and its main components. The relatively flat trend line for intentional homicides indicates that Agenda 2030's ambitious goals of significantly reducing violence and all related deaths by 2030 will clearly not be reached if trends continue in a business-as-usual way. The relatively flat trend line for homicides is in contrast to a much more volatile trend for conflict deaths, which continue their decline since the 2014 peak. The volatility in the numbers of conflict deaths contributes disproportionately to the yearly changes in overall lethal violence levels, but intentional homicides dominate the statistical landscape. Therefore, a decrease in the number of intentional homicides could only result in the sustained 'significant' reduction of violence and related fatalities in the longer term—assuming also that the trend for conflict deaths will not always be as favourable as in the period 2015–18.

Regional trends

Lethal violence is not evenly distributed across the world. In fact, the standardized rate of violent deaths per 100,000 population in the most-affected world region, Southern Africa (41.47), is more than 50 times the level detected in Eastern Asia (0.78), where lethal violence is the most contained (Table 2). Hosting

Table 2 Violent deaths in the world's regions

Region	Population ('000)	Share of global population	Violent deaths count	Violent death rate	Share of global violent deaths	Odds of dying of violence compared to global average
Southern Africa	65,739	0.9%	27,300	41.47	4.6%	5.31
Central America	175,472	2.3%	58,200	33.14	9.8%	4.25
South America	423,578	5.6%	133,200	31.44	22.4%	4.03
Western Asia	271,032	3.6%	60,600	22.34	10.2%	2.86
Caribbean	43,049	0.6%	7,000	16.28	1.2%	2.09
Middle Africa	169,122	2.2%	23,700	14.02	4.0%	1.80
Western Africa	381,196	5.0%	45,900	12.05	7.7%	1.54
Melanesia*	11,804	0.2%	1,400	11.55	0.2%	1.48
G5 Sahel**	81,153	1.1%	9,300	11.42	1.6%	1.46
Eastern Africa	422,563	5.5%	42,200	9.98	7.1%	1.28
Eastern Europe	293,790	3.8%	21,700	7.39	3.6%	0.95
Northern America	364,296	4.8%	20,200	5.55	3.4%	0.71
Southern Asia	1,895,814	24.8%	100,400	5.30	16.9%	0.68
Northern Africa	236,726	3.1%	11,400	4.81	1.9%	0.62
South-Eastern Asia	655,298	8.6%	21,200	3.24	3.6%	0.41
Central Asia	72,052	0.9%	2,300	3.13	0.4%	0.40
Northern Europe	104,200	1.4%	1,600	1.54	0.3%	0.20
Western Europe	194,755	2.6%	2,600	1.33	0.4%	0.17
Australia and NZ	29,641	0.4%	300	1.04	0.1%	0.13
Southern Europe	154,411	2.0%	1,500	0.96	0.2%	0.12
Eastern Asia	1,666,471	21.8%	13,000	0.78	2.2%	0.10

*   Also including Micronesia and Polynesia.

** The G5 Sahel region overlaps with other UN-designated regions and includes one country from Middle Africa (Chad) and four from Western Africa (Burkina Faso, Mali, Mauritania, and Niger).

Source: Small Arms Survey (n.d.b)

some of the world's most violent countries, Central and South America are the other two regions with disproportionately high levels of lethal violence: in both regions an individual has about four times the chance of being killed compared to the global average. Conversely, in the regions where people are the safest from lethal violence, the chance of dying of violence is less than 15 per cent compared to the global average (Australia and New Zealand, Southern Europe, and the previously mentioned Eastern Asia).

Short-term trends from 2017 to 2018 differed by region in terms of both conflict- and homicide-related deaths (see Figure 2). One-year changes may also be determined by local microtrends or fluctuations. For example, violent deaths decreased significantly in South America, almost solely through the reduction in the intentional homicide rate recorded in Venezuela since the previous year (over 3,500 cases less after a steep increase over the previous two years). In North America, and to a lesser extent in the Caribbean, there was also a reduction of homicides. Conversely, a substantial decrease of conflict deaths in Western Asia, South-Eastern Asia, Eastern Africa, and Northern Africa drove the violent death rate down in these regions.

Other regions saw increases in conflict-related or intentional homicides. Southern Asia saw one of the sharpest increases, driven by the increased conflict death toll in Afghanistan. In Central America the homicide rate in Mexico

Figure 2 Changes in absolute numbers of homicides, direct conflict deaths, and violent deaths between 2017 and 2018, by region
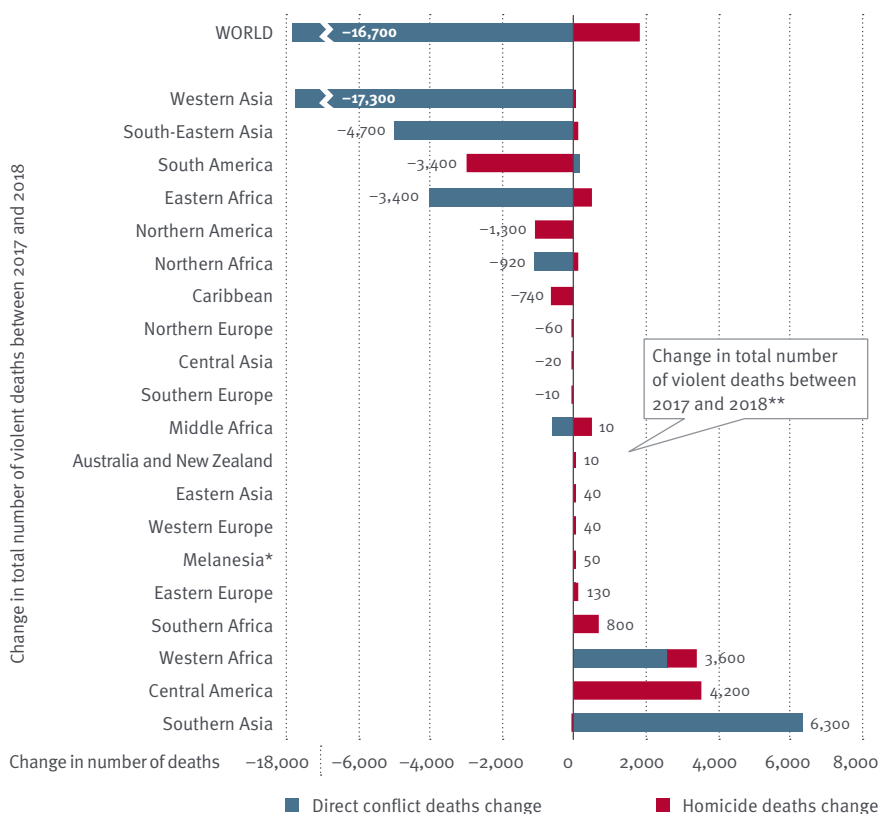
Notes: * Also including Micronesia and Polynesia.
** Violent deaths include direct conflict deaths, intentional homicides, unintentional homicides, and deaths due to legal interventions.

Source: Small Arms Survey (n.d.b)

drove an increase. Western Africa also saw an increase, attributable primarily to increased conflict fatalities in Nigeria. And the G5 Sahel (including countries forming part of both the Western and Middle Africa regions; see note to Table 2)

saw about 1,400 more violent deaths, including 1,200 conflict fatalities. In all other regions the number of homicides did not decrease significantly, or even increased over this one-year period.

Box 2 Lethal violence in Northern Africa and the G5 Sahel

The past

None of the countries of either Northern Africa or the G5 Sahel makes data on lethal violence consistently available for public access, for example through government services and websites. Some countries (Algeria, Burkina Faso, Egypt until 2012, Morocco, and Tunisia) have reported data on homicides to the UN—through the annual Crime Trend Survey of the UN Office on Drugs and Crime—but only Algeria and Morocco (and Egypt, until it was no longer providing data) offered any data disaggregated by sex or the instrument with which lethal violence was inflicted. Violent mortality data by either sex or lethal instrument is missing for all countries and years.[22] This again underscores the importance of third-party and high-quality 'non-official' data providers: if such

systems existed for registering violent deaths outside of conflict contexts, we would have much more clarity about the true extent of violent deaths in the Northern Africa and G5 Sahel regions (and for other notoriously under-reported global regions). In the absence of official or non-official data, however, analysis for these regions relies heavily on model-based estimates provided by public-health data sources.[23]

Northern Africa and the G5 Sahel countries are jointly the home of about 320 million people, or about 4.2 per cent of the global populace. As Figure 3 shows, the countries of these two regions jointly experienced an estimated 20,600 violent deaths as of 2018, which is about 3.5 per cent of the global toll.

Violent death rates are below the global average in Northern Africa (with a likelihood that someone falls victim to lethal violence being about 62 per cent of the global average; that is, an odds ratio[24] of encountering lethal violence of 0.62), but markedly higher in the G5 Sahel, with a similar odds ratio of 1.46, or 46 per cent *above* the global average. In 2018 Northern Africa accounted for 11,400 fatalities of violence, about 3,300 of which were conflict-related—fewer than in previous years (the totals were 16,200 in 2016 and 12,300 in 2017). In the G5 Sahel countries the opposite applied: lethal violence increased in 2016 (6,800 deaths) and 2017 (7,800), to reach 9,300 deaths in 2018, including 2,900 conflict fatalities.

Figure 3 shows violent death trends since 1990, disaggregated by individual countries in the two regions. Northern Africa was severely affected in the aftermath of the post-2010 Arab uprisings, after which lethal violence has spread significantly in Egypt and Libya, while Sudan (including after the secession of South Sudan in 2011) has been volatile and has seen relatively high levels of violent deaths essentially from 1990, but especially when the civil war intensified after the Darfur conflict.

On the other hand, while the G5 Sahel had always experienced some level of conflict, fatality rates were relatively stable in the period 1990–2010, with numbers essentially growing parallel to the population growth. The only notable exception was the Chad–Sudan proxy war in Chad that started in 2005. Fighting claimed the most lives in 2006, illustrated by a 'peak' in Figure 3. This has

Figure 3 Evolution of the number of violent deaths in Northern Africa and the G5 Sahel, by country, 1990–2018
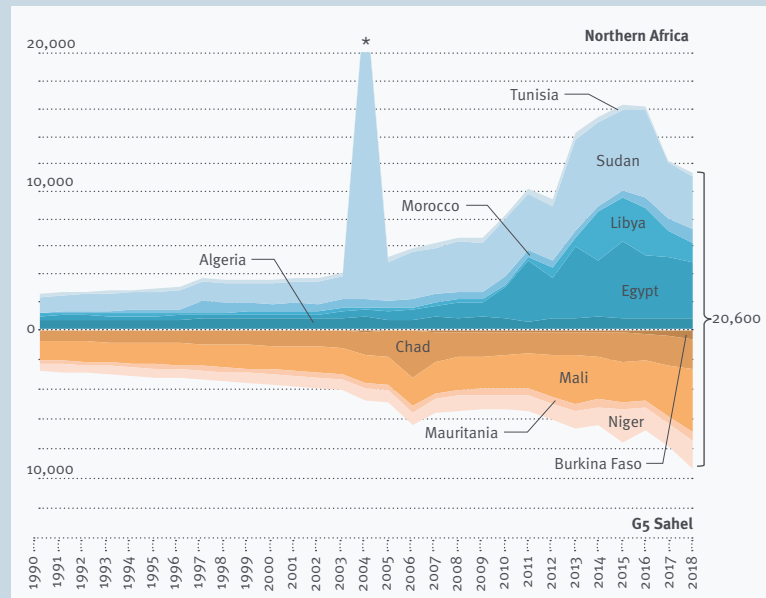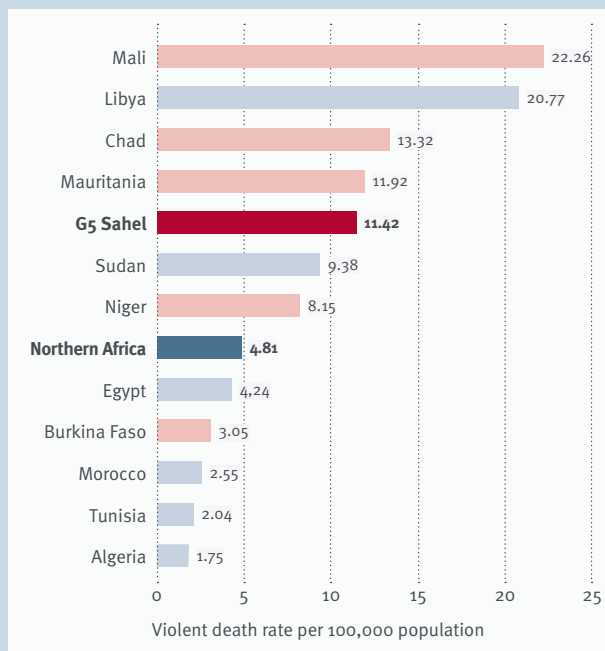

* The Small Arms Survey estimates the number of violent deaths in Sudan in 2004 resulting from the Darfur conflict at 20,500. Other estimates vary widely.

Source: Small Arms Survey (n.d.b)

changed from 2011 onwards, when the drying up of Lake Chad and the desertification of the whole area resulted in severe famines and increasing intercommunal conflicts. This situation was exacerbated by the increased activity of Islamist militant groups primarily in Mali at that time (al-Qaeda in the Islamic Maghreb and Ansar Dine, joined later by Boko Haram and several other groups). These conflicts have been intensifying ever since: 2015 saw a peak in fatalities in Niger, while 2017 and 2018 brought more lethal violence to Mali and Burkina Faso.[25]

Despite the positive trends observed over the past three years, in absolute numbers Northern Africa still records more fatalities than the G5 Sahel. But once adjusted for population, data shows that the G5 Sahel region experiences more than twice as high a rate of lethal violence (11.42) as that for Northern Africa (4.81) (Figure 4). Northern Africa's violent death rate in 2018 was in fact well below the global average of 7.80, but about five times higher than that of Southern Europe (Table 2). While violence levels are fairly low in several Northern African countries (in Algeria and Tunisia, and to a lesser extent in Morocco), rates in Mali and Libya are very high— well over 20 violent deaths per 100,000 population.

The future

The ongoing conflict in Libya and a simmering peace across the rest of Northern Africa combine to place the region on a trajectory that projects violent death rates in 2030 as being very similar to those detected in 2018. Using the same methods with which we project possible scenarios for global violent deaths,[26] we estimated a possible trajectory of the violent death rate in Northern Africa and the G5 Sahel countries. A model using a business-as-usual scenario for both criminal and conflict-related lethal violence

Figure 4 Violent death rates in Northern Africa and the G5 Sahel, 2018, per 100,000 population

Source: Small Arms Survey (n.d.b)

(Figure 5) puts Northern Africa's 2030 violent death rate at 5.02, slightly above the current 4.81 level. Because the population in the region is expected to increase by 22 per cent over the same period (2019–30), even an increase of approximately 3,000 in the fatality count would maintain a relatively stable violent death rate.

By contrast, if current trends continue in the G5 Sahel, the fatality rate could significantly increase to about 15.00 per 100,000 population. Because the population of the region is projected to grow by 44 per cent of the 2018 headcount by 2030, the resulting number of violent deaths is expected to surpass that for Northern Africa. Of the projected 17,500 violent deaths in the G5 Sahel by 2030 (almost twice the 2018 count of 9,300), about 8,900 could be related to armed conflict(s) across the region (more than three times the 2018 count of 2,900).

Figure 5 Violent death rates (2004–18) and business-as-usual projections (2019–30) for Northern Africa and the G5 Sahel
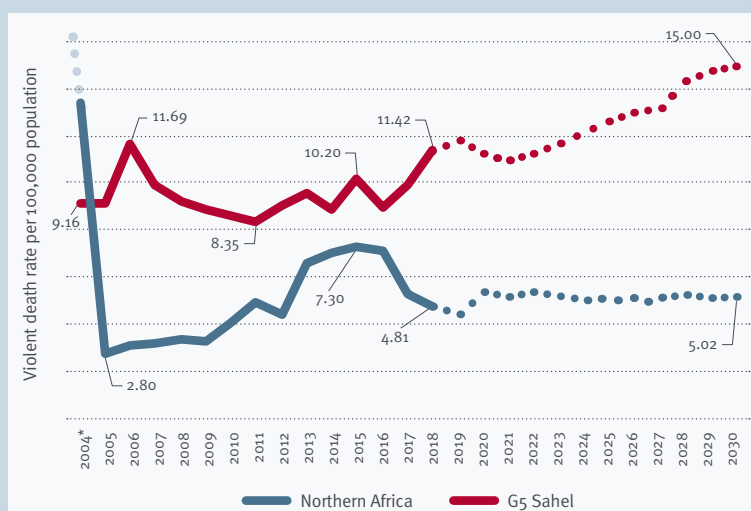
* The Darfur conflict in Sudan produces an outlier in the violent death rate for Northern Africa in 2004 (see Figure 3).
Source: Small Arms Survey (n.d.b)

Firearm killings

Only a minority of violent deaths can be attributed to firearms: overall, about four in ten violent deaths (38 per cent) are inflicted by firearms globally. While information on the various types of weapons used in homicides is becoming increasingly available, it is still scarce for conflict-related deaths, thus making it necessary to rely on estimations.[27] In 2018 about 223,000 violent deaths were attributable to firearm-induced injuries, or about 2.93 firearm-related deaths per 100,000 population (see Figure 6). This rate is the lowest since 2011.

The role of firearms in lethal violence varies greatly across the world's regions. More than half of violent deaths in the Americas are perpetrated by firearms; in the rest of the world firearms are responsible for only a minority of violent deaths (see Figure 7). Firearms have an above-average role in the lethal violence in the G5 Sahel and Western Africa regions (40 and 39 per cent of the violent deaths are attributed to firearms, respectively). The role of firearms appears less prominent in Northern Africa, where it is estimated that the vast majority (approximately 70 per cent) of violent deaths are not directly firearm-related.

Gender

Despite a substantial moderation of the global violent death count in 2018 compared to that for 2017, the number of women killed did not decrease at the same pace. In 2018 we estimate that 93,700 women and girls lost their lives to violence, nearly as many as in 2017, which was the highest number recorded since 2005. The slightly decreased number of fatalities in 2018, together with the increase in population, resulted in one of the lowest female violent death *rates* (2.48) since 2004.

In 2018 the overall proportion of female victims of lethal violence remained at 16 per cent globally, while 8 per cent of firearm-related homicide victims were women or girls. As of 2018, the proportion of women and girls among all victims of lethal violence is estimated at 14 per cent in Northern Africa and 18 per cent in the G5 Sahel.[28]

The reason why the substantial reduction in lethal violence from 2017 to 2018 did not translate into a substantially decreased number of female victims is due to the fact that most of the reduction came from the de-escalation of armed

Figure 6 Global rate and number of violent deaths by firearm, 2004–18
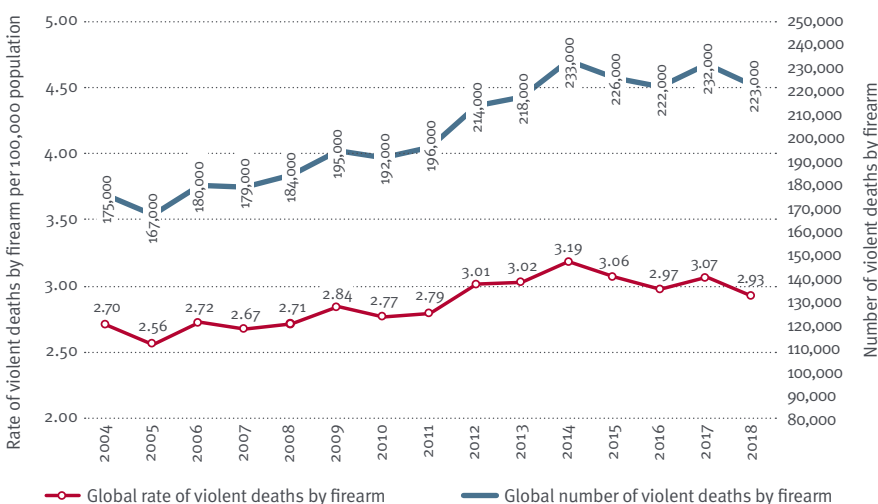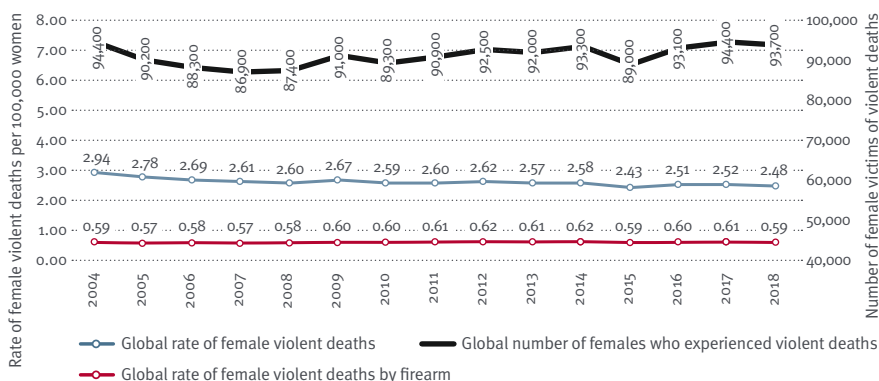

Source: Small Arms Survey (n.d.b)

Figure 7 Percentage of violent deaths by firearm in selected regions, 2018*

Percentage of violent deaths by firearm
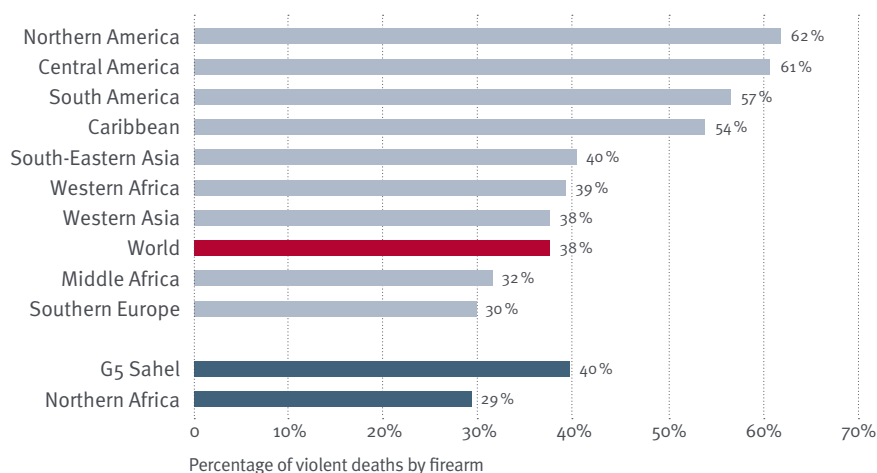
* The regions selected here are those in which firearms play the most prominent role in lethal violence. The percentages reflect the proportion of the total number of violent deaths for these regions that were inflicted by firearms.

Source: Small Arms Survey (n.d.b)

Figure 8 Global evolution of violent deaths with female victims, 2004–18

Source: Small Arms Survey (n.d.b)

conflicts. Most of those dying directly from conflict-related violence are men, thus most of the 2018 reduction in the number of violent deaths decreased the number of males dying of violence. Nevertheless, men continue to be much likelier to become victims of lethal violence (84 per cent of all victims were boys or men in 2018) and to be killed by firearm (globally, 92 per cent of the victims of firearm-related violence were males).[29]

For the first time the GVD database now permits the analysis of disaggregated data for female victims of firearm killings for the period 2004–18 (Figure 8). This is an important contribution to the database's ability to support monitoring and advocacy initiatives to increase the gender-relevance of data on firearm killings (Alvazzi del Frate, Hideg, and LeBrun, 2020). While the rate observed in 2018—0.59 per 100,000 female population—is

in line with the general level estimated for the whole period, the actual number of women killed by firearm in 2018 (17,200 globally) is, by a small margin, the highest in the period. Globally, 41 per cent of male and 18 per cent of female victims of violence were killed with a firearm.[30]

Projections for global violent death rates, 2019–30

Scenarios for global violent death rates, 2019–30

Since 2017 the Small Arms Survey has developed plausible scenarios for the future of lethal violence (Mc Evoy and Hideg, 2017, pp. 33–46; Hideg and Alvazzi del Frate, 2019, pp. 5–10). How

many people will die violently if current trends continue until 2030? And how many lives could be saved by effective policies and action to reduce and prevent violence? The type of action that policy-makers take to reduce and prevent violence is a key factor that will determine how the various scenarios play out until 2030. The scenarios presented below use the same methodology adopted by the Small Arms Survey in previous analyses, updated with the 2018 lethal violence data (see Table 3).[31] The scenarios are derived from an analysis of data on violent deaths from 222 countries and territories. Estimates and projections are calculated using the latest available data in national and cross-national specialized datasets. This approach to measuring violent deaths is broadly consistent with the SDGs framework for monitoring lethal violence trends by using global indicators.

For each scenario the global number of violent deaths is broken down into four categories:
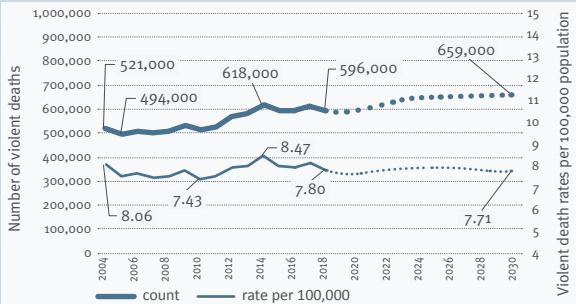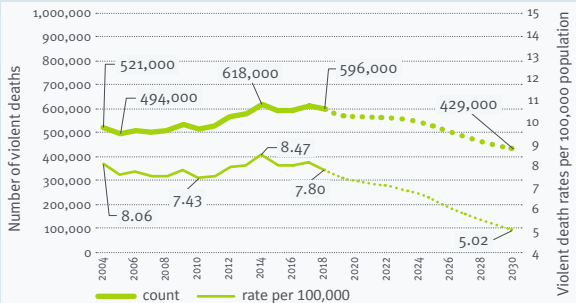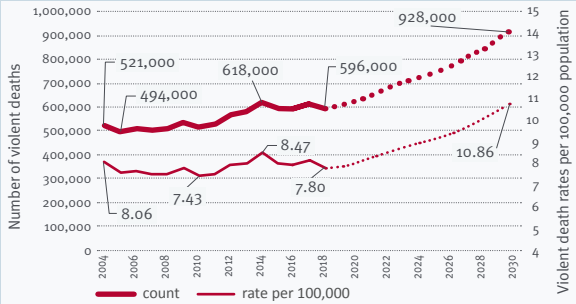
- the projected annual number of intentional homicides, which form the largest single portion of the total;

- the projected annual number of direct conflict deaths;

- the annual number of unintentional homicides, estimated at about 15 per cent of the projected intentional homicides total; and

- the annual number of deaths due to legal interventions,[32] estimated at about 5 per cent of the projected intentional homicides total.[33]

Three scenarios are presented for the period 2019–30:

- *the 'business-as-usual' scenario:* nothing changes in terms of existing policies and programmes to reduce or prevent violent deaths;

- *the 'positive' scenario:* states take effective action to reduce and prevent violence; and

- *the 'negative' scenario:* efforts to control global crime and violence are insufficient or prove to be significantly less effective than expected.

The business-as-usual model was derived from recently recorded trends in violent death rates and thus reflects the possible effects of current policies and programmes

Table 3 Overview of the three scenarios

Scenario and research question	Assumptions	Notes
Business-as-usual scenario *What happens if current trends continue unchanged?* **Figure 9** Business-as-usual scenario: global violent deaths trends and projections, 2004–30	**Homicides:** Current trends continue, as reflected by regional averages.	Homicide projections are derived from current trends using regression analysis.[a] Most regions display logarithmic trends,[b] which are projected to continue until 2030.[c] For regions that exhibit exponential trends, extrapolations were made more cautiously, to avoid a rapid inflation or deflation of rates.
	Direct conflict deaths: Stabilization at a rate slightly above the current one is foreseen.	While current trends reflect a general decrease in conflict deaths since 2014, this scenario anticipates a logarithmic curve that starts in 2005 and projects about 113,000–115,000 direct conflict deaths for most of the third decade of the 21st century up to 2030.
Positive scenario *How many lives could be saved if states increased their efforts to achieve SDG Target 16.1?* **Figure 10** Positive scenario: global violent deaths trends and projections, 2004–30	**Homicides:** Countries start to progress towards and eventually reach the average homicide rate changes recorded by the top-performing states in their respective world regions.	This scenario assumes that countries will gradually be able to replicate the performance of states in their respective world regions that exhibited the greatest annual rates of decrease (or, in the absence of a decrease, the lowest rates of increase) in homicides in the period 2009–18 (based on up to three top performers, depending on the number of countries in a particular region). It is anticipated that immediate policy action could bring countries close to this level of performance over a period of about eight years, and that from 2026 onwards each country would improve its homicide rate annually at the rate seen in the period 2009–18 among the top-performing countries in their respective world regions.
	Direct conflict deaths: Global conflict deaths gradually drop to levels slightly above those recorded prior to the conflicts of the second decade of the 21st century.	This scenario presumes a gradual phasing out of ongoing major armed conflicts, such as those in Afghanistan, Iraq, Syria, and Yemen, and assumes that no new conflicts will erupt to 'take the place' of the phased-out major conflicts. Thus, by the end of the projection period direct conflict deaths will decrease substantially.
Negative scenario *What happens if the situation deteriorates?* **Figure 11** Negative scenario: global violent deaths trends and projections, 2004–30	**Homicides:** Countries' homicide rates start to regress towards those of the worst-performing states in their respective world regions.	This scenario assumes that countries will regress towards the average annual growth rate in homicides of the worst-performing states in their respective world regions in the period 2009–18 (based on up to three worst rates, depending on the number of countries in the particular region). It is anticipated that countries will generally not replicate the worst rates, but will gradually deteriorate towards levels that are similar to these rates.
	Direct conflict deaths: Conflict deaths continue to rise, yet not exponentially (as in the period 2004–18, when an exponential trend line provides the best fit), but rather in a linear fashion. This scenario foresees a slight rise in the number of armed conflicts, possibly in addition to a higher number of fatalities in ongoing or future conflicts.	It is impossible to anticipate the number, duration, or intensity of conflicts that could potentially erupt or continue in the period 2019–30. This scenario presumes that by 2030 the number of direct conflict deaths will be approximately 40 per cent higher than levels predicted by the business-as-usual model.

Notes: [a] The analysis is based on the most recent consistent regional trends that have spanned at least four years since 2004 and are still ongoing. If a world region experienced an increase in homicide rates between 2004 and 2010, but a decrease between 2011 and 2018, trends were calculated on the basis of the data points for the period 2011–18. Reference periods thus vary across world regions, but always span at least four years.

[b] A logarithmic trend is indicative of a decelerating pattern of change.

[c] Trends to date show a non-linear pattern. For most world regions projected change is represented by a logarithmic curve, with an ever-decreasing rate of change over time. Other regions exhibit an exponential trend, meaning that change there is projected to accelerate to some extent.
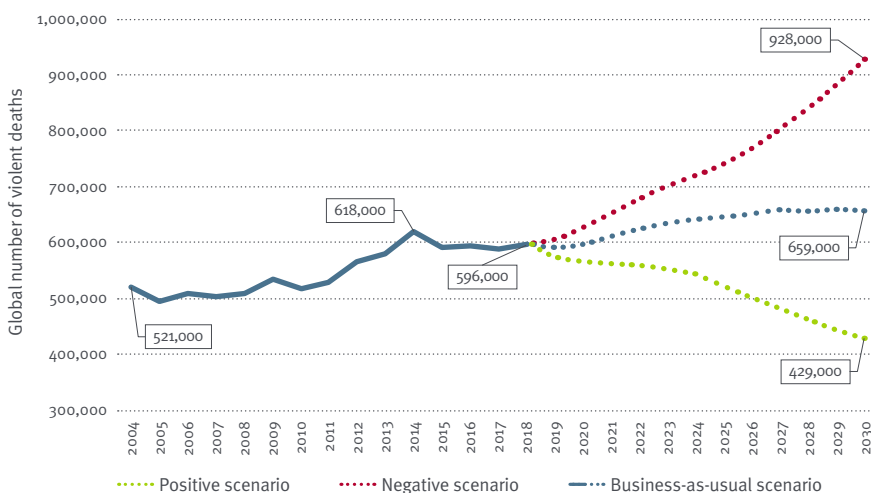
Source: Small Arms Survey (n.d.b)

to reduce and prevent violence. Plausible positive and negative scenarios were then derived by projecting how rates of lethal violence might change if concerted national and international action is taken to reduce lethal violence, or if there is a lack of such action.

The projections resulting from these scenarios provide a useful and comparative basis to gauge the relative effectiveness of current efforts to reduce lethal violence. For example, if current trends continue, the business-as-usual scenario indicates an expected violent deaths count of 659,000 by 2030 (see Figure 12). If states were able to further intensify their efforts to achieve SDG Target 16.1 in the same way that best-performing countries already have—thus shifting to the positive scenario—the annual number of violent deaths could drop to 429,000 by 2030. The difference between concerted action and a business-as-usual approach can be measured by the approximately 1.43 million lives that could be saved between 2019 and 2030 by the implementation of more proactive policies to reduce and prevent violence.[34] In contrast, the negative scenario indicates that the number of violent deaths could rise to 928,000 annually by 2030. Remarkably, while the business-as-usual projection remained essentially intact and the optimistic scenario somewhat more positive compared to the similar projections developed on the basis of 2017 data,[35] the negative scenario has become markedly less pessimistic, with 132,000 fewer violent deaths expected by 2030. This number could be significantly underestimated, however, given that it is impossible to predict the possibility of a widespread global or regional armed conflict that could vastly increase the number of conflict-related deaths. Other factors, including the COVID-19 global pandemic, may affect global security, resulting in potentially significant effects on longer-term trends.

The usefulness of modelling scenarios for efforts to reduce violence depends on the credibility of the methodology applied and the quality of the data used. The Small Arms Survey's methodology is based on a unified approach to lethal violence[36] and the conviction that the prevention of all forms of violence and violent deaths is necessary to achieve 'peaceful and inclusive societies', as envisaged in Agenda 2030.

Figure 12 Global violent deaths trends (2004–18) and projections (2019–30)

Source: Small Arms Survey (n.d.b)

Table 3 summarizes the statistical approach used in developing the business-as-usual, positive, and negative scenarios for violent deaths in the period 2019–30, with a focus on intentional homicides and direct conflict deaths.

Analysis of the scenarios for the period 2019–30

The analysis presented below relies on the latest data from the GVD database, including data from both conflict and non-conflict settings, and for homicides and direct conflict deaths, as well as estimates of the potential numbers of violent deaths that are not usually adequately recorded; that is, unintentional homicides and deaths due to legal interventions.

Business-as-usual scenario

The business-as-usual scenario assumes that the currently observed lethal violence trends continue until 2030, with the global homicide rate stabilizing at around 5.31 per 100,000 population, slightly below the current level of 5.36 (Table 4). However, due to the population growth expected for the period 2019–30 the actual number of homicides would need to grow from the current 409,000 to about 454,000. Assuming a somewhat higher number of conflict deaths by the end of the period, the overall number of violent deaths is also expected to surpass the current number by about 11 per cent, reaching approximately 659,000 by 2030. Nonetheless, the violent death rate is

currently projected to remain slightly below the current levels: around 7.71 per 100,000 population in 2030. Due to the decrease in violent deaths in 2018 and the shorter projection period, the currently predicted violent death rate by 2030 is lower compared to the figure of 7.77 published previously based on the 2017 update (Hideg and Alvazzi del Frate, 2019).

The global toll of lethal violence could be significantly reduced by 2030 if concrete action is taken to curb rates of both direct conflict deaths and homicides. This means that armed conflicts would need to decrease in both number and lethality, and states, especially those where the situation has clearly deteriorated—notably Mexico and to a lesser extent Brazil—would need to achieve significant reductions in homicide rates that reverse current trends.

Positive scenario

Homicide projections in the positive scenario are based on the following assumptions: (1) countries and territories in all the world's regions are able to access and implement effective policies and transfer knowledge that results in increased safety for their citizens overall,[37] on the one hand, and strengthen their focus on the prevention of violent crime at the national level, on the other hand, to curb homicide rates at a pace similar to that of the best-performing countries in their respective regions; and (2) the positive impact of violence reduction policies or strategies will become apparent over time, and all countries and terri-

tories in every region will reach optimal performance rates over a span of approximately eight years—from 2019 to 2026.

This positive scenario foresees a potential reduction of annual global violent deaths to about 429,000 by 2030, substantially down from approximately 596,000 in 2018. The scenario illustrates that, assuming states manifest the necessary political will and implement successful, coordinated, and integrated interventions, significant reductions in the absolute number of violent deaths could be achieved. The positive scenario is based on actual regional best performances observed in the period 2004–18,[38] and projects a global violent death rate of 5.02 per 100,000 population by 2030, which is significantly lower than the prediction for the business-as-usual scenario for the same year (7.71).

Compared to the business-as-usual scenario, the 1.43 million lives that could be saved between 2019 and 2030 can be broken down into more than 336,000 deaths prevented in direct conflict and 1,093,000 deaths prevented from other violent causes. South and Central America would stand to gain the most from such action, and could save as many as 507,000 lives from 2019 to 2030 (more than half of the global gain in terms of homicide deaths), followed by Western and Eastern Africa (127,000 and 117,000 lives, respectively)—two of the three regions with the highest population growth projected for the period 2019–30. With a projection of 70,000 lives that could be saved, Southern Africa is also one of the regions with the most lives at stake if more progressive and effective violence prevention policies are adopted and properly implemented. Jointly, these five regions account for 87 per cent of all potential reductions in homicides globally, according to the positive scenario.

Negative scenario

In a negative scenario characterized by escalating violence, the number of annual violent deaths could nearly double to reach 928,000 by 2030 (see Table 3). All forms of violence combined would claim approximately 1.32 million more lives in the period 2019–30 than in the business-as-usual scenario,[39] and about 269,000 more lives in 2030 alone. Such an upsurge in lethal violence could plausibly stem from a variety of factors, including new armed conflicts or the in-

Table 4 Global annual rates and counts of violent deaths, homicides, and direct conflict deaths for 2018, and projected for 2030 according to the three scenarios

Business-as-usual scenario	Indicator	2018		2030	
		n	Rate/100,000	n	Rate/100,000
	Violent deaths	596,000	7.80	659,000	7.71
	Homicides	409,000	5.36	454,000	5.31
	Direct conflict deaths	105,000	1.38	115,000	1.35
Positive scenario	Indicator	2018		2030	
		n	Rate/100,000	n	Rate/100,000
	Violent deaths	596,000	7.80	429,000	5.02
	Homicides	409,000	5.36	303,000	3.55
	Direct conflict deaths	105,000	1.38	65,000	0.77
Negative scenario	Indicator	2018		2030	
		n	Rate/100,000	n	Rate/100,000
	Violent deaths	596,000	7.80	928,000	10.86
	Homicides	409,000	5.36	637,000	7.45
	Direct conflict deaths	105,000	1.38	165,000	1.93

Source: Small Arms Survey (n.d.b)

tensification of existing ones, an increase in other types of lethal violence due to serious shortages of food or water on a regional scale, mass displacement or migration, or a global resurgence of organized crime, and including potentially adverse economic consequences resulting from the COVID-19 pandemic or other pandemics. The failure to address inequality could also exacerbate the drivers of lethal violence, especially when it is combined with human rights abuses and discrimination resulting from social, political, and economic exclusion, all of which are drivers of violent extremism.

In this scenario, annual homicide deaths around the world would potentially exceed 637,000 by 2030, corresponding to a homicide rate of about 7.45 per 100,000 population, up from 5.36 in 2018. The negative scenario projects changes in all countries in a given region based on the annual changes in homicide rates observed in the worst-performing countries in that region.[40] Unlike in the positive scenario, the trend anticipates a slower regression *towards* these rates.[41]

In this scenario we anticipate a slow linear rise in conflict deaths, gradually reaching levels some 43 per cent higher than those predicted in the business-as-usual scenario. The year 2030 could see some 165,000 battlefield deaths—approx-

imately 57 per cent more than in 2018. The total violent death rate (combining homicides and conflict deaths, with an estimated number of other violent deaths) would thus reach more than 10 per 100,000 population by 2030 (10.86), 39 per cent up from the 2018 level (7.80).

Conclusion: the need for concerted action to prevent violence

A comparison of these three scenarios shows how decisive policy action and the implementation of best practices will be in determining the future course of global lethal violence (Figure 12). If more states are able to replicate past best performances in their respective regions, some 1.43 million lives could be saved between 2019 and 2030. Half of the lives lost in non-conflict settings could be saved in South and Central America and the Caribbean.

Ultimately, these scenarios demonstrate the need to deepen our understanding of 'what works' in countries that have been able to achieve significant reductions in rates of violent deaths, as well as the usefulness of data-driven analysis for better policymaking. Besides a clear

need to stop ongoing armed conflicts in order to save lives, when they look at the worst-affected regions such as South and Central America, policymakers require a better explanation of how top performers were able to reduce lethal violence while neighbours in the same region saw dramatic increases in violent deaths; for example in Mexico, where the homicide rate has soared. Identifying the good practices adopted by regional best-performing countries offers a promising starting point for this kind of analysis and a realistic and workable way to achieve progress towards implementing Agenda 2030 and Target 16.1 of the SDGs.[42] The COVID-19 pandemic that has devastated much of the world in 2020 may markedly affect these scenarios. On the one hand, 'business as usual' may not be the same, because people and communities have had to change their lifestyles, a major crisis caused by the pandemic has adversely affected the global economy, and public spending allocations have shifted and may continue to do so. The pandemic is already having impacts on conflicts and peace processes, with a significant deterioration of some conflicts despite the calls for ceasefires issued by the UN Secretary-General and other major public figures. As a result, the projection for the negative scenario could be significantly underestimated, given the general uncertainty of predicting the future simply from the trends of the past, especially in the current pandemic-affected environment.

List of abbreviations and acronyms

ACLED Armed Conflict Location & Event Data Project
Agenda 2030 Transforming Our World: The 2030 Agenda for Sustainable Development
GVD database Global Violent Deaths database
SDG Sustainable Development Goal
UCDP Uppsala Conflict Data Program
WHO World Health Organization

Notes

1 The Global Violent Deaths (GVD) database adopts the UN M49 Standard country or area codes for statistical use (UNSD, n.d.b). For the analysis in the present Briefing Paper, the Northern Africa region includes Algeria, Egypt, Libya, Morocco, Sudan, and Tunisia, and the G5 Sahel region includes Burkina Faso, Chad, Mali, Mauritania, and Niger.

2 Population rates are drawn from the UN's *World Population Prospects 2019* (UNDESA, 2019). The present paper presents analysis of the GVD database as of 30 November 2019.

3 Since data is only available up to the end of 2018, the scenarios developed in this paper cover the period 2019–30.

4 For previous publications on the GVD database and its annual updates, see, for example, Geneva Declaration Secretariat (2008; 2011; 2015), Widmer and Pavesi (2016), Mc Evoy and Hideg (2017), and Hideg and Alvazzi del Frate (2019).

5 Unless stated otherwise, the term 'homicide' refers to 'intentional homicide', defined as 'unlawful death inflicted upon a person with the intent to cause death or serious injury' (UNODC, 2015, p. 17). As mentioned in note 2 (above), this paper draws all population rates from UNDESA (2019). For more information on the methodology and analysis used to measure violent deaths, see Small Arms Survey (n.d.a).

6 A year-to-year change of approximately 5 per cent or less was not considered a change.

7 Indicator 16.1.1 refers to the 'Number of victims of intentional homicide per 100,000 population, by sex and age', while indicator 16.1.2 refers to the 'Conflict-related deaths per 100,000 population, by sex, age and cause' (UNGA, 2017, pp. 20–21). The Inter-agency and Expert Group on SDG Indicators developed the global indicators as 'a practical starting point' for measuring progress against the SDGs' targets (IAEG, 2017, p. 2).

8 See UNSD (n.d.a).

9 The percentage of violent deaths due to conflict (18 per cent) may be a small proportion of all global violent deaths, but has a significant impact on trends.

10 See, for example, UNODC (2019) and Hideg and Alvazzi del Frate (2020).

11 As in previous publications, this total figure is generated by aggregating direct conflict deaths and intentional homicides, supplemented with an estimate for unintentional homicides and deaths during legal interventions. This methodology uses estimates to fill the gaps of unavailable data on unintentional homicides and killings during legal interventions, because most countries fail to collect this data or make it available.

12 Because of statistical revisions, figures for 2017 may differ from those previously published. For example, the total number of violent deaths for 2017, which is now estimated at 612,000, was previously estimated at 589,000 (Hideg and Alvazzi del Frate, 2019). See Box 1 for more details.

13 The GVD database refers only to direct (as opposed to indirect) conflict deaths, in line with the type of data collected by databases such as UCDP and ACLED. Considering that for SDG Indicator 16.1.2 '"*Conflict-related deaths*" refers to direct and indirect deaths associated to armed conflict' (UNSD, n.d.c), in future it may be necessary to develop specific methodologies to estimate indirect conflict deaths (see Alda and Mc Evoy, 2017).

14 The monitoring and reporting of deaths due to legal interventions are very uneven, and available figures are probably underestimates. Sometimes the boundaries between legal intervention fatalities and extrajudicial killings by security forces are also blurred, further complicating these estimations. Trends in unintentional homicides depend largely on legal definitions and the codification of relevant indicators, which vary widely across states (Widmer and Pavesi, 2016, p. 8). See note 32 for a definition of 'death due to legal intervention'.

15 Between 2017 and 2018 violent deaths decreased by 66 per cent in Iraq, 95 per cent in Myanmar, 65 per cent in South Sudan, and 47 per cent in Syria (Small Arms Survey, n.d.b).

16 The aggregated number of fatalities among the conflicting parties in Yemen increased from about 12,400 to 23,000.

17 The aggregated number of fatalities compared to 2017 increased by 36 per cent to 26,400.

18 The available data (as of 30 November 2019) suggests that Libya saw about 500 fewer conflict deaths in 2018, a reduction of 29 per cent compared to 2017. The GVD database draws its Libya fatality counts from various sources, including Ploughshares (available for 2011–17), Libya Body Count (available for 2014–16), International Institute for Strategic Studies (available for 2011–17), UCDP (available for 2011–12 and 2014 onwards), Huna Libya (2016 onwards), the United Nations Support Mission in Libya (2016 onwards), and ACLED (1997 onwards).

19 The GVD database is accessible online in Excel format and via a dynamic map. See Small Arms Survey (n.d.b).

20 Typically by replacing model-based public-health estimates with country-specific data from criminal justice statistical systems as it becomes available.

21 This reference is specific to data present in the GVD database as of 30 November 2019, as described in Box 1.

22 With the exception of Libya (Salama, 2018).

23 Sources of public-health data include the World Health Organization (WHO) and Institute for Health Metrics and Evaluation in particular, and projections of data for any gaps that remained, after pooling all potential sources. Data gaps are filled by projecting the last known rate for the particular indicator for the population size of the year estimated, in line with default practice in the GDV database. Conflict data from ACLED (for the whole region) and UCDP (for all conflict-affected countries) largely depends on the definitions of conflict used by these organizations and may over- or underestimate statistics for any given year in the period of our analysis. For a fuller discussion of model-based estimations, see Hideg and Alvazzi del Frate (2020).

24 'Odds ratio' refers to the relative strength of association between two distinct events compared to each other, with 1 representing 'no association'. Here, the odds ratio

refers to the odds of encountering violence globally compared to the odds of encountering violence in Northern Africa and in the countries of the G5 Sahel. Ratios below 1 represent risk lower than the global average, while ratios above 1 represent a higher risk.

25 For a discussion on intercommunal violence in the G5 Sahel region, see Tubiana and Gramizzi (2017; 2018) with regard to Chad, Libya, and Sudan; de Tessières (2018) with regard to Niger; and Lochhead (forthcoming) with regard to Mali.

26 For an explanation of the methodology used to develop these projections, please see Hideg and Alvazzi del Frate (2019, pp. 6–10).

27 For a thorough assessment of the GVD database's sources and gaps, see Hideg and Alvazzi del Frate (2020).

28 Note that these estimates are based on significant levels of missing data.

29 The percentages of males killed by firearm were slightly less in Northern Africa (90 per cent) and the G5 Sahel (84 per cent).

30 Based on the scarce data available, the proportion of female victims of violence who were killed by firearm was higher than the global average in both Northern Africa (22 per cent) and the G5 Sahel (37 per cent).

31 Work on the three scenarios for the period 2019–30 was undertaken in early 2020.

32 Legal intervention killings are defined as the 'killing of civilians by law enforcement officials, or killings of law enforcement officials on duty' (Carapic and De Martino, 2015, p. 1).

33 The estimated proportions of legal intervention killings and unintentional homicides in this Briefing Paper are based on data samples from countries for which this information is available.

34 Unfortunately, no recipe is available for what constitutes a successful, proactive policy. According to the WHO Violence Prevention Alliance, short-term reductions in violence 'lie in interventions that successfully reduce immediate causes [of violence] such as alcohol misuse, carrying of guns and knives in public, and retaliatory violence'. Longer-term reductions 'require interventions that reach down to the root causes of violence within society, communities, and families' (Carnochan et al., 2015, p. 1). Thus, 'proactive policies' can be described as policies that meet one or both of these two sets of criteria.

35 Previously, the data in the GVD database projected the positive scenario to predict 439,000 fatalities from acts of violence by 2030 (Hideg and Alvazzi del Frate, 2019), but as the projection timeframe shrinks, both the positive and negative projections will become less and less extreme.

36 See Geneva Declaration Secretariat (2011, p. 11).

37 Policies and initiatives addressing health, employment, housing, education, and fundamental rights such as gender equality and access to justice are likely to result in safer communities. Improving the quality of services, infrastructure, and public transport would also contribute to this outcome.

38 Admittedly, the restriction of 'best practice' examples to be within the same world region makes our best-case scenario conservative. Conceivably countries could perform as well as other well-performing countries that are not in their region. At the same time, limiting the best (or worst) performances to within a state's region increases the plausibility of our estimates by not using possibly unrealistic examples from regions with very different socio-economic development and violence levels.

39 This calculation is based on an aggregation of all annual gains and losses for the entire period.

40 The benchmarks used were the annualized homicide rate changes for the period 2009–18.

41 This approach also allows for anticipating a possible *decrease* of homicide rates in some regions, because some of the worst-performing countries may in fact *decrease* their homicide rates, although not as much as other countries in their respective regions.

42 Mexico is one of the 38 countries participating in the Pathfinders for Peaceful, Just and Inclusive Societies multistakeholder partnership, which is committed 'to accelerate action to implement the SDG targets for peace, justice, and inclusion (SDG16+)' (CIC, n.d.).

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About the
SANA project

The **Security Assessment in North Africa** is a project of the Small Arms Survey to support those engaged in building a more secure environment in North Africa and the Sahel-Sahara region. The project produces timely, evidence-based research and analysis on the availability and circulation of small arms, the dynamics of emerging armed groups, and related insecurity. The research stresses the effects of armed conflicts in the region on community safety.

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