Children and Armed Conflict: What Existing Data Can Tell Us

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Executive summary

Since the mid-1990s, the issue of war’s impact on children has been high on the international agenda. Reacting to the terrible civil wars that were devastating countries like Sierra Leone and Liberia during the 1990s, Graça Machel authored a seminal report in 1996 on *The Impact of Armed Conflict on Children*. The report highlighted the many and terrible ways in which armed conflict negatively affects young people through forced migration, child soldiering, sexual violence and exploitation, the proliferation of weapons such as small arms and landmines, and reduced mental and physical health. Importantly, the report institutionalized the international community’s focus on war’s impact on children through the creation of the Special Representative of the United Nations Secretary-General for Children and Armed Conflict. Since its establishment, the Special Representative and the Secretary-General have released yearly reports and dozens of publications on the subject of war’s impact on children, and numerous other international agencies and organizations have also taken up focus on the issue through programmatic and advocacy work on education, refugees, health, and other areas important to conflict-affected children.

Despite the large amount of attention and resources that have been committed to addressing war’s impact on children, over twenty years after the release of the Machel report there is still a lack of high-quality, reliable data documenting this impact. It is difficult to answer with much certainty key questions about the exact nature, scope, and scale of war’s impact on children, and the spatial and temporal variation of that impact. We still do not know how many children are, and have been, killed in conflict globally, how many children are recruited as child soldiers, or how many children are sexually abused in relation to armed conflict. Nor do we have a comprehensive understanding of the many ways in which conflict indirectly impacts children through, for example, malnutrition, disease, reduced educational opportunities, and heightened poverty. This is highly problematic given that war continues to negatively impact on children – perhaps even more so today with the ongoing, very violent conflicts in countries such as Syria, Yemen, and Somalia.

This report presents trends and patterns in the best available data that do exist for four core indicators of children’s well-being during conflict: the numbers of children living in conflict-affected areas; trends in child soldiering; trends in sexual exploitation; and trends in infant mortality. We find that:
• In 2016, 1.35 billion children under the age of 18 were living in a conflict-ridden country. That is, more than one in every two children.
• In 2016, almost 357 million children were living in a conflict zone (i.e. within a distance of 50km from where the actual fighting was occurring).
• The number of children living in conflict zones has been quite steadily increasing since year 2000 (when approximately 250 million children lived in conflict zones).
• Roughly 80% of all civil wars included at least one armed group that used child soldiers in the 1989–2010 period.
• More than one third of civil conflicts between 1989 and 2009 involved reported sexual violence against children. The largest share of these conflicts was located in Asia and Africa, where sexual violence against children has been reported in 50% and 46% of all conflicts, respectively.
• The risk that an infant dies before the age of 1 year increases if s/he is born in a conflict zone. (In Colombia, for example, the risk more than doubles).

We further find that three factors raise the risk of children being negatively affected by armed conflict: conflict intensity, conflict duration, and the organizational dynamics of fighting groups. First, more intense conflicts in terms of levels of fighting with more actors are more likely to increase the risk of children being harmed, either in general or because they are victims of child soldiering or sexual violence. Second, the number of children affected will depend on the geographical spread of the conflict, which is a function of the physical terrain, the distribution of population centers, the (lack of) local state-capacity, the escalation of violence, and the presence (or non-presence) of peace-keepers (including UN personnel) throughout the country. Third, to predict whether groups will use sexual violence and/or child soldiers, we need to focus on the organizational dynamics of the groups themselves. Groups that recruit by force are particularly at risk of using both child soldiers and sexual violence, while groups that face greater costs of being punished for these tactics will use them less frequently. This leads directly to a discussion of policy implications.

Based on our findings, we make the following main recommendations to the actors actively working to address and reduce the impact of war on children:
1) Generate more systematic knowledge on the various ways in which children are affected by armed conflict, both directly – through killing and maiming, child soldier recruitment, and sexual exploitation, and indirectly – through adverse health effects. More resources should be invested in generating and managing data related to children and armed conflict across time and space.

2) Support peacekeeping operations in conflict-affected areas.

3) Design and uphold credible sanctions against armed groups in conflicts to prevent child soldiering and the use of sexual violence against children.

4) Increase aid to conflict-ridden countries in order to rebuild infrastructure and health systems.
1 Introduction

Children are the most vulnerable members of society. As such, they are particularly susceptible to conflicts, crisis situations, and natural disasters. Images and reports from the ongoing conflicts in Syria, Nigeria, Yemen, Somalia, and other places emphasize that it is children who often suffer the most during conflict. In addition to being victims of the direct consequences of conflict, such as killing and maiming, unlawful child soldier recruitment, and sexual and gender-based violence, children also suffer the indirect consequences of war. Children living in conflict-affected settings are less likely to be in school or have access to basic sanitation and clean water, and they suffer from early mortality due to diseases and under-nutrition or the lack of medical assistance, including vaccines (e.g. Kotsadam et al., 2017).

This report reviews the available evidence base about the direct and indirect effects of war on children and shows the ways in which conflict impacts young people. There is a lack of high-quality, systematic evidence regarding the nature, scope, and scale over time and space of the direct and indirect effects of war on children. However, there are several indicators that can provide at least a partial answer to the question of how war impacts children: (i) the number of children that are living in conflict zones; (ii) trends in the recruitment and use of child soldiers; (iii) trends in sexual violence against children, and (iv) the relationship between conflict and child health outcomes, such as infant mortality.

The bulk of this report consists of a descriptive review of the best available data sources for these indicators with a global coverage, covering the time period of 1989–2016. In the final sections of the report, we summarize the various indicators and examine the current state of the world’s children in conflict, and provide a ranking of the worst countries to be a child in conflict in 2016. We also show more detailed developments in the four indicators in five countries that are heavily affected by armed conflict: Afghanistan, Colombia, Democratic Republic of the Congo (DRC), Nigeria, and Yemen.

Before we move on to describe the trends and patterns of children in conflict we briefly discuss the existing knowledge gap, provide some core definitions, give a brief overview of our main data sources and summarize the main findings from the report.

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1 Some of the data sources start in 1989, others in 1990, hence the start year of the various graphs and figures varies.
1.1 The knowledge gap

The topic of how children are affected by armed conflict has not been well addressed in the systematic research on armed conflict. There are some exceptions, however. A quite large literature assesses the detrimental psychological impacts of conflict on children (see e.g., Betancourt and Kahn, 2008; Peltonen and Pulamäki, 2010). Research on the developmental consequences of conflict has examined the impact on infant- and child-mortality (see Gates et al., 2012), and on education systems (see Shemyakina, 2011; Lai and Thyne, 2007). There is also an extensive literature on child soldiers, documenting soldiering’s detrimental impacts (such as psychosocial trauma) (see Derluyn et al., 2004; Blattman and Anan, 2010), as well as the determinants of their use (see e.g. Gates and Reich, 2010). However, these works do not provide a comprehensive picture of the impact of war on children over time and space.

Ideally, we would have systematic data with global coverage over time for the specific numbers of children that are killed as a direct result of armed conflict. However, to date, such data does not exist. Authoritative sources of conflict and fatality data, such as the Uppsala Conflict Data program (UCPD)$^2$ and the Armed Conflict and Events Data project (ACLED)$^3$ do not provide any information on the age-distribution of those killed in conflict. However, The United Nations and Secretary-General provide yearly reports on the impact of conflict on children since 1996, including reports of killing and maiming of children, as well as five other ‘grave violations’ against children (recruitment or use of child soldiers, attacks against schools or hospitals, rape and other grave sexual violence against children, abduction, and denial of humanitarian access) (see e.g. UNSG, 2017). However, not all conflict-affected countries are included every year, and the information available is patchy and varies greatly in terms of precision level. Hence, the impact of conflict on children remains difficult to fully ascertain. Despite this, we include these data$^4$ in our report as there is at the time of writing no better data on these indicators for the most recent years.

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$^2$ http://ucdp.uu.se/.

$^3$ https://www.acleddata.com/.

$^4$ I.e. we use the coding of annual reports of the UN Secretary-General on Children and Armed Conflict from 2005-2016 conducted by Save the Children in November 2017.
Although we cannot estimate exact global numbers of children killed by the direct or indirect effects of war, we can compile and examine various indicators from the best data available to get closer to understanding war's negative effects on children. In this report we do so by examining four fundamental indicators of children’s well-being: their proximity to areas experiencing conflict; whether they are used as combatants; whether they experience sexual violence; and their ability to survive the first year of life. We provide a descriptive analysis of the trends in these indicators over time and space.

1.2 Core definitions

Some core concepts that are used in this report deserve special mention. As for armed conflict, we rely on the Uppsala Conflict Data Program (UCDP)’s definition, when armed force is used by an organized actor against another organized actor, or against civilians, resulting in at least 25 battle-related deaths in one calendar year (Croicu and Sundberg, 2017). Furthermore, the Uppsala Conflict Data Program’s Georeferenced Event Dataset (hereafter, UCDP GED) distinguishes between three types of organized violence: State-based conflict takes place between two states (inter-state conflict), or between one state and one or more rebel groups (civil conflict). One example of an inter-state conflict is the armed conflict between India and Pakistan in the Kashmir region. Examples of the more common intra-state conflicts, or ‘civil wars’, are the conflicts between the Nigerian state and Boko Haram and the ongoing civil war in Syria between the government and multiple rebel groups. Non-state conflict is fought between two organized, armed actors, of which neither is the government of a state. These are typically pastoral conflicts, or regional, ethnic, or religious identity conflicts. One example is the conflict between the Kalenjin and Kikuyu ethnic groups in Kenya, which has erupted in electoral violence on several occasions. Another example is the criminal cartels fighting each other in Mexico. Finally, one-sided violence is perpetrated by an organized armed group, either a state’s military forces or a rebel group, against civilians (this includes both genocide and terrorism). Examples of the latter include the Janjaweed militia in Sudan’s attacks on civilians in Darfur from 2003 and onwards, and the violence perpetrated by the Islamic State rebel group against the Yazidi minority in Iraq. In this report, we use the concept armed conflict for all these types of violence, unless otherwise stated.
Furthermore, conflicts usually consist of several conflict events that are individual incidents of lethal violence occurring at a given time and place. We use these events to create what we refer to as conflict zones. To do so, for each event we fit a circle (buffer) with a radius of 50km around it, which allows us to define areas within which people live at a distance of 50km or less from where the fighting actual takes place in a given year. We then also combine all these buffers to create one conflict zone for each conflict-ridden country. The term battle-related deaths (or ‘battle deaths’) refers to deaths directly resulting from the use of armed force between warring parties in a conflict. We use the term to include both combatant and civilian deaths, unless otherwise specified.

When it comes to what we mean by children, we follow the 1990 Convention on the Rights of the Child, which defines children as ‘individuals under the age of eighteen years’. Finally, we use the terms children living in conflict-affected areas and conflict-affected children interchangeably to denote the children that reside within conflict zones (i.e. within a distance of 50km or less from where the fighting is occurring).

1.3 Main data sources on children in conflict

In this report, we rely on a number of different datasets to map the state of children in armed conflict. Our four main criteria for including datasets in our analysis is that they must a) adhere to systematic coding and sample selection rules that make them amenable to scientific analysis, b) have a global coverage, c) have a temporal dimension that allows us to gauge trends over time, and d) have been scrutinized by academic peer-review. We make one exception using a coded dataset based on the yearly reports from the United Nations Secretary-General (e.g. UNSG, 2017) for the years 2006-2016.

The core dataset we use to map conflict patterns in this report is the Uppsala Conflict Data Program’s Georeferenced Event Dataset (UCDP GED) (Croicu and Sundberg, 2017; Sundberg and Melander, 2013). Armed conflicts consist of individual events or incidences of violence. The UCDP dataset provides the geographical location, timing, and intensity (measured as number of fatalities) of each such event for the whole

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5 For further description, see the Technical Appendix, Section 1.2.
world, covering the years 1989-2016. This gives us a fine-grained picture of conflict patterns ‘on the ground’.  

To estimate the number of children living in conflict areas, and populations more generally, we combine the conflict data with population data from Gridded Population of the World (GPW) v3 (CIESIN, 2005) and from the UN (2017)

Data on child soldiers comes from the dataset compiled by Roos van der Haer (Haer and Böhmelt, 2016). This dataset registers the use of child soldiers among all armed groups fighting in UCDP conflicts between 1989 and 2011.

When it comes to sexual violence against children we rely on the Sexual Violence in Armed Conflict (SVAC) Dataset (Nordås and Cohen, 2014). This dataset includes information on conflict actors that have used sexual violence against children, covering all state-based conflicts in the world in the period 1989–2009.

Finally, in order to look at the impact of conflict on infant mortality, we combine the UCDP GED conflict data with country-level data on from the World Development Indicators (World Bank, 2017) as well as micro-level data from the Demographic and Health Surveys (DHS) (www.measuredhs.com). This allows us to create a picture of the association between child mortality and conflict exposure.

As mentioned earlier, some of the above data sources do not cover the most recent years. We thus use a compilation of data from the United Nations Secretary-General’s yearly reports on the impact of conflict on children (e.g. UNSG, 2017) to assess the situation for children in more previous years for selected countries when it comes to killing and maiming of children, child soldier recruitment and sexual violence against children. However, it should be highlighted that the UNSG data are only indicative of the global situation and should be interpreted with caution. There are many challenges with these data. Crucially, they do not adhere to a systematic set of coding rules and sample-selection criteria that make it supportive of generalizations (for example, to all armed conflicts at present), and

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6 Since the UCDP GED dataset includes estimates of battle-related deaths, we will primarily rely on this dataset to estimate casualty counts. However, in some instances, we fill in missing values with aggregate information from the UCDP battle-related deaths dataset (Allanson and Croicu, 2017) which provides country-level estimates. That is, when location-specific information about casualties for a conflict event is not recorded, we instead rely on country-level information about deaths in a given year.

7 This calculation is discussed in detail in the Technical Appendix, Section 1.2.
they do not cover all conflict-countries. However, at this point in time this is the best (and only) available data speaking to the most direct consequences of conflict for children, and we will proceed to use them with the noted caveats.

1.4 Key findings
Below we summarize the key findings and messages highlighted in the report:

Children in conflict-affected areas:

- In 2016, 1.35 billion children under the age of 18 were living in a conflict-ridden country.
- **In 2016, almost 357 million children were living in a conflict zone** (i.e. within a distance of 50km from where actual fighting occurred).
- The number of children living in conflict zones has been quite steadily increasing since year 2000 (when approximately 250 million children were living in conflict zones).
- **Asia** is the world region with the highest total number of children living in conflict zones (that is close to where the fighting occurs).
- **Middle East** is the world region where the chance of living in conflict zone for a child is the highest. In 2016 about 2 in 5 children in this region were living in a conflict zone.
- According to data from the UN that cover a select number of countries, more than 10,000 children were killed or maimed in conflict in 2016. More than 1/3 of these incidents were in Afghanistan.

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8 More specifically, the list of countries is not defined by criteria that would support generalizations to other conflict-affected countries. Another issue is that child soldier usage, for example, is sometimes coded with reference to the number of reported ‘incidents’ or ‘cases’ and in other cases with reference to the specific numbers of child soldiers.
Child soldiers:

- Roughly 80% of all civil wars in the 1989–2010 period included at least one armed group that used child soldiers.
- The share of armed conflicts using child soldiers was quite stable in the period 1989–2010.
- According to data from the UN that cover a select number of countries, there were reports of almost 8,000 cases of child soldiers in 2016. Nigeria topped the list of reported cases of child soldiers in 2016, with more than 2,000 reported child soldiers.

Sexual violence against children in conflict:

- More than one third of civil conflicts between 1989 and 2009 involved reported sexual violence against children. The largest share of these conflicts was located in Asia and Africa, where sexual violence against children has been reported in 50 and 46% of all conflicts respectively.
- According to data from the UN covering a select number of countries, 856 cases of conflict-related sexual violence against children were reported in 2016. More than 1/3 of these cases were reported in Somalia. However, it is important to keep in mind that the data gathered on sexual violence against children in armed conflict most likely only represent the tip of the iceberg.

Armed conflict and infant mortality:

- Armed conflict increases infant mortality. For example, in Colombia, the risk that an infant dies before his/her 1st birthday more than doubles if s/he is born in a conflict zone.

Worst countries for children in conflict:

- Based on the joint analysis of various indicators in this report we conclude that the following five countries were the worst for children in conflict in 2016, in descending order:
  1. Syria
  2. Afghanistan
3. Nigeria
4. Somalia
5. Yemen
2 Global trends in armed conflict: A brief overview

The issue of children in armed conflict must be seen as part of the larger context of armed conflict in the world. In this section, we provide a brief overview of the trends in armed conflict since the end of the Cold War. 1989 is a relevant historical starting point, and it is also the year in which coverage of the conflict data begins.

Figure 1 charts the number of conflict-ridden countries as well as the number of conflicts by type for each year in the period 1989–2016. The graph shows a downward trend in the number of countries affected by armed conflict since the end of the Cold War (as indicated by the purple line), followed by an increase after 2011. In 2016, 42 countries had at least one armed conflict that resulted in at least 25 battle-related deaths on its territory. When it comes to the number of conflicts we see a somewhat similar trend, with the number decreasing after 2003 and then increasing again after 2010.

The total number of conflicts with at least 25 battle-related deaths in 2016 amounted to 130 conflicts, that took place in 41 countries. Figure 1 furthermore shows that these 130 conflicts included 49 state-based conflicts (blue shade), 60 non-state conflicts (red shade), and 21 instances of one-sided violence against civilians (green shade). Many countries suffer from several conflicts at the same time. In Nigeria in 2016, for example, there were three state-based conflicts (including IS and Boko Haram against the Nigerian government and IS against the Cameroonian government), seven non-state conflicts between non-state actors, as well as three instances of one-sided violence against civilians where both the Nigerian government, Boko Haram and IS have attacked civilians.

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9 Conflict type here refers to the three types state-based, non-state and one-sided conflict. For each type, we here use the threshold of at least 25 deaths in a given year.

10 If we disregard the threshold of 25 battle-related deaths and rather count the number of conflicts which had at least one lethal event in 2016, the numbers increase to 214 conflicts (68 state-based, 92 non-state, and 54 one-sided), unfolding in 50 countries. When we move to looking at conflict zones and affected children in Section 2 we depart from the 25 battle-related deaths criterion.

11 Fourteen if we disregard the 25 battle-related deaths and count all non-state conflicts with at least one fatality.
Figure 1: Number of armed conflicts and conflict-affected countries by year, 1989–2016

Data source: UCDP GED dataset (Sundberg and Melander, 2013; Croicu and Sundberg, 2017). The stacked graph and left axis shows the numbers of state-based, non-state- and one-sided conflicts for each year (with a minimum of 25 deaths in a given year). The yellow line and right axis shows the number of conflicts with at least one ongoing conflict of either type.

One question is how many conflicts occur. Another question is how intense these conflicts are, and where the most intense conflicts are located. Although the most common conflict type is non-state conflict, the bulk (approximately 85%) of all fatalities during conflict in 2016 resulted from state-based conflicts. Furthermore, the most intense state-based conflicts are found in a few countries. In fact, **80% of all battle-related deaths in 2016 were concentrated in three countries**: Figure 2 summarizes the geographical distribution of the approximately 87,000 people killed in armed conflict in 2016. The graph shows that **Syria, Afghanistan, and Iraq** alone account for 80% off all the battle-related deaths in 2016. Syria is the deadliest war since the end of the Cold War. Since 2012, about half of all war casualties around the world have occurred in this country.
Figure 2: Countries contributing to battle-related deaths, 2016

Data source: UCDP-battle deaths dataset (Allanson and Croicu, 2017). Figure shows deaths resulting from state-based conflicts.

About 1/5 of all known battle-related deaths in 2016 were civilian deaths: An important question is who are killed in armed conflict. Figure 3 breaks down the conflict-related fatalities by type of victims: civilian deaths, combatant deaths (i.e. government
troops or non-state actors), as well as un-known\textsuperscript{12} deaths. The most striking feature in this graph is the peak for civilian deaths in 1994, which accounts for the Rwandan Genocide. The second largest peak in civilian killings is in 1996, which represents the war in DRC, where almost 33,000 civilians were killed. As an overall trend, there are more combatant deaths than civilian deaths. The overall global trend is that the share of civilian deaths has been fairly stable since 1989 with the exceptions of Rwanda (1994) and DRC (1996). These examples underscore that when the trend departs from the normal it is due to special circumstances.

Since 2012, a large share of the battle-related deaths is classified as ‘unknown’ (as marked by the green area), i.e. it is impossible to categorize whether they are combatant- or civilian deaths (this is particularly the case for the ongoing Syrian war, but also for the Ethiopian and Eritrean wars in 1999 and 2000). For this reason, we cannot really say whether the share of civilian deaths has gone up or down in the most recent years. However, if we disregard the unknown deaths, we can say that if anything, the share of civilian deaths has gone down the last five years.

\textsuperscript{12} Unknown deaths mean that it is not possible to distinguish from news reports whether these deaths were civilian or combatant deaths.
Conflicts are usually concentrated in limited areas: Armed conflict is more prevalent in some clusters of countries within world regions than in others. Figure 4 shows a world map indicating the countries that had at least one active armed conflict in 2016. At first glance, it seems as if a very large surface of the earth is affected by armed conflict. In fact, conflict-ridden countries cover approximately 43% of the world surface (and 50% of the world population). However, this does not imply that 1 out of 2 people in the world were affected by armed conflict in 2016. In fact, armed conflict very rarely engulfs an entire country. Most often the actual fighting is confined to smaller areas.
Figure 4: Countries with ongoing conflict in 2016

The map was created by authors based on the UCDP GED dataset (Sundberg and Melander, 2013; Croicu and Sundberg, 2017). Red color indicates that at least one conflict was going on in the country that resulted in at least one lethal conflict event.

So, then, what areas within countries are affected by conflict? The UCDP provides detailed information on the location of each separate conflict event (or incidence of organized violence), including the geographical coordinates for each event. For each of these event locations, we draw circles, or ‘buffer zones’ with a 50km radius around each conflict event. The rationale for this is that this is arguably a reasonable distance within which conflict events could be expected to impact people’s daily lives.\(^\text{13}\) If two or more such conflict areas overlap, we treat them as one conflict zone.

The map in Figure 5 overlays the red conflict-affected countries with blue conflict zones that show where the actual fighting was going on in 2016. As shown in the map, with few exceptions, the conflicts are usually concentrated in limited areas.

\(^{13}\) It is important to note that the choice of a 50km buffer is not self-evident, and has large consequences on the estimated number of children living in conflict areas. We have selected this distance by following the convention in the literature that examines the local impacts of conflict (see e.g., Kotsadam et al., 2017). However, we could, of course, have defined a conflict zone as larger (100 km) or smaller (25 km) than the standard that we use. The estimates for affected people would go up and down accordingly. A figure showing the different estimates of affected children conditional on 25, 50, and 100km definitions of conflict zones is shown in the Descriptive Appendix, Section 1.3 (Figure 7).
If we want to say something about the number of people affected by conflict, we do not only need to know where and when conflict takes place, but we also need information about approximately how many people live in these affected areas. Population density varies considerably both between and within countries. The map in Figure 6 shows population density overlaid by conflict zones. The more intensely red the color, the higher the population density. From the map, we see that a conflict zone in populous India is likely to affect many more people than a conflict zone of equal size in many African countries. This is simply due to the fact of the very high population in India.

Combining these data sources, we can say that about 840 million people, or 12% of the world population, lived in conflict zones in 2016. In Section 3.1, we focus on the population aged under 18, mapping the numbers and shares of children living in conflict zones. 14

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14 We discuss this procedure at greater length in the Technical Appendix, Section 1.2. Here, we also perform a validation exercise to see how it affects our estimates that we use national-level age shares rather than local-level age-shares. This is done using local-level data on age-shares from 1990 (see appendix for details).
Conflict is contagious. The maps above show conflict zones for the last year, 2016. However, research and conflict data reveal that violence often behaves like an epidemic, sharing the same characteristics of clustering, spread, and transmission (e.g. Slutkin, 2015; Buhaug and Gleditsch, 2008). If we map conflict over time for the entire period 1989-2016 we see that much larger areas have been affected by conflict events at some point in time. The map in Figure 7 shows past and more recent conflict zones in Africa and the Middle East. Conflict zones in 2016 are marked in red color and conflict zones in previous years (1989-2015) are marked in grey color. If we consider the entire period since the end of the Cold War, many countries, such as Nigeria, have seen conflict at most of its territory at least once.
Figure 7: Conflict zones in Africa and the Middle East, 1989-2016

The map was created by authors based on the UCDP GED dataset (Sundberg and Melander, 2013; Croicu and Sundberg, 2017).

The average conflict duration has decreased since 2010. Figure 8 shows the number of new state-based conflicts (red bars) as well as the average duration of conflicts (blue line) for each year since 1950. Between 1950 and 1990, the number of new conflicts per year hovered around five, while the number of conflicts that ended was smaller. New conflicts were more likely to end, and the joint effect of these factors was that the average duration of ongoing conflicts increased steadily up to the end of the Cold War.

With the end of the Cold war came an explosion of new conflicts, but also the end of some very durable wars, such as Ethiopia, Angola, and Mozambique. The average duration of ongoing conflict dropped by more than 50% within a few years. Active peace efforts and a united Security Council contributed to a significant drop in the number of active conflicts, with many of the most durable proving to be the worst to solve. Various independence claims in Myanmar and the conflict between Israel and the Palestinians are prominent examples. Combined with a low number of new conflicts, this led to an increasing average duration, almost back to the 1989 level in 2010.
The Arab spring and its consequences has again turned the situation around. 2014 and 2015 saw a massive spike in the number of new conflicts, which has set the average duration of ongoing conflicts below 10 years again.

In 2016, two new conflicts appeared, seven old conflicts reappeared, and one conflict was transformed from one type to another. On the other hand, 13 conflicts disappeared, including the one that was transformed. These 13 were mostly rather new conflicts, such as the failed coup in Turkey, the uprisings in Mali and several conflicts with local IS-affiliated organizations. Hence, the 49 active state-based conflicts in 2016 were on average ‘older’ than the 52 conflicts present in 2015, but this difference is not very large.

**Figure 8: Number of new conflicts and average conflict duration by year, 1950–2016**

The UCDP GED dataset is updated every year and at the time of writing the dataset stops in 2016. To get a snapshot of the how the conflict landscape looks in 2017 we use a different dataset, the Armed Conflict Location & Event Data Project (ACLED). The advantage with this data is that it has real-time coding, allowing us to present conflict events

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15 GED conflict events 1989-2016 is shown in the Technical Appendix, Figure 1.

16 https://www.acleddata.com/
for January to October 2017 for all of Africa and for selected Asian countries from January to August 2017. The disadvantage is that it does not have global coverage like the UCDP GED, and furthermore, the quality of the GED data coding is arguably superior to ACLED.\footnote{In order to be able to compare the ACLED and UCDP GED data we made some restrictions on the ACLED data. This is further described in the Appendix, where in addition we also present maps with UCDP GED conflict events and a restricted ACLED sample for 2016 for comparison purposes.} Figures 9 and 10 display the most recent ACLED data on conflict events in Africa and Asia. These maps can only give us an indication of what 2017 looks like in terms of conflict, but as they do not have global coverage for 2017 or include the same time period for Africa and Asia we do not use them in our analysis hereafter. Interpretations of these maps (and especially comparisons with these and the other maps for 1989-2016) must be made with caution, and with the caveats described in the Appendix.

Figure 9: ACLED conflict events and conflict-affected countries in Africa 2017 (Jan–Oct)

Map created by authors based on the ACLED-dataset \url{https://www.acleddata.com/}. (Raleigh et al., 2010).

The number of conflict-affected countries has gone down compared to the 2016 ACLED map\footnote{See the Technical Appendix, Section 1.6.}, mostly due to the decline of conflict in Tunisia and Uganda. However, this situation
could, of course, change by the end of the year. Also, a country that is not recorded as having conflict in the UCDP GED is Madagascar.\textsuperscript{19} Despite this, the conflict patterns in Africa from 2016 to 2017 seem thus far to be fairly stable. Figure 10 indicates conflict events in selected Asian countries. When we compare this with UCDP GED from 2016 (Figure 5) we see that the patterns for these countries are also quite similar.

**Figure 10: ACLED conflict events and conflict-affected countries in Asia in 2017 (Jan–Aug)**

Map created by authors based on the ACLED-dataset: [https://www.acleddata.com/](https://www.acleddata.com/). (Raleigh et al., 2010).

\textsuperscript{19} The ACLED events in Madagascar are mostly related to banditry and scattered events relating to organized crime (see e.g., [http://www.crisis.acleddata.com/madagascar-march-2017-update/](http://www.crisis.acleddata.com/madagascar-march-2017-update/)). These are not classified as armed conflict by the UCDP-GED dataset.
3 Children in armed conflict: Indicators

In this section, we review the current knowledge and data pertaining to four main indicators of children’s wellbeing in conflict: children living in conflict-affected areas, the use of child soldiers, sexual violence against children, and the consequences of armed conflict for infant mortality.

3.1 Children living in conflict-affected areas

As stated in the introduction, we do not have systematic and detailed information on the numbers of children that are killed in armed conflict. However, we can say something more certain about how many children actually live in conflict areas, or what we label ‘conflict zones’. This is an important measure because children living in conflict zones often lack access to school, health facilities and are more exposed to violence. We can calculate the number of children that live in near proximity to violent conflict by combining our conflict zone information with data on local population levels (CIESIN, 2005) and (national-level) age-distributions (UN, 2017). We first estimate the current numbers of children living in proximity to conflict-affected areas for the year 2016, and then look at trends over time.

Figure 1 below shows the numbers and shares of children living in conflict-ridden countries and conflict zones in 2016. The figure symbolizes all children in the world with the lightest color indicating children living in peaceful countries. The darker red color indicates children living in a country with at least one on-going conflict (albeit not in the actual conflict zone). The darkest red color indicates the children that live in conflict zones within countries, that is, where the actual fighting is taking place. According to our estimates, about 942 million children were living in peaceful countries in 2016, whereas the rest – 1.35 billion children (i.e. 59% of all the world’s children) – were living in conflict-affected countries. As can be seen from the figure, most of these children did not live in the actual conflict zones. If we focus exclusively on the latter, we see that 357
28 million children (that is, 16%, or about 1 in every 6 children) were living in conflict zones.\textsuperscript{20}

**Figure 11: Children affected by conflict as % of total child population and in millions, 2016**

![Figure 11: Children affected by conflict as % of total child population and in millions, 2016](image)

Figure created based on the UCDP GED dataset (Sundberg and Melander, 2013; Croicu and Sundberg, 2017) Gridded Population of the World (GPW) v3 (CIESIN, 2005) and World Population Prospects (UN, 2017).

The share of the world’s children living in conflict zones (16%) is higher than the share of adults living in conflict zones (12%). This is mainly due to the fact that most of the armed conflicts in the world tend to occur in poor countries with large child populations.

3.1.1 Regional differences

So, where are the 357 million conflict-affected children located? Most of the world’s conflict-affected children live in Asia. As shown in Figure 12 (A) below, the region with the most conflict-affected children is Asia. **In Asia alone, some 166 million children live in**

\textsuperscript{20} This estimation is based on the definition that the affected children live 50km or less away from a violent conflict event. If we increase this distance to 100km, we can say that 25% of the world’s children lived in a conflict zone in 2016. Conversely, if we operate with the stricter 25km distance, ‘only’ 8.6% of the world’s children lived in a conflict zone in 2016. This is illustrated in Figure 7 of the Descriptive Appendix.
conflict zones, which is almost half of all conflict-affected children globally. Africa comes in as second in this unpleasant ranking, with almost 121 million children living in conflict zones. The corresponding numbers for Middle East, the Americas and Europe respectively are 42, 18, and 9 million. Although Asia is the world region with the highest number of children living in conflict zones this does not mean that the conflict risk for children is highest in Asia. These numbers must be considered relative to the overall population regional size.

Figure 12 (B) shows the share of children in each world region that live in a conflict zone in 2016. As the figure shows, although Asia has the largest number of children living in a conflict zone, the relative share of children living in conflict zones vis-à-vis children in peaceful areas is higher in both the Middle East and Africa. The figure shows that the Middle East is the region where the share of conflict-affected children is the highest relative to the overall population size at approximately 39%. In other words, in the Middle East, almost 2 out of every 5 children were living in a conflict zone in 2016. For Africa, 21%, or more than 1 in every 5 children, were living in a conflict zone. For Asia, Europe, and the Americas, the corresponding shares were 14%, 7%, and 6% respectively.

Figure 12: Numbers and shares of children living in conflict zones 2016, by world region

<table>
<thead>
<tr>
<th>A) Children affected by conflict (absolute numbers)</th>
<th>B) Share of children affected by conflict</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Graph showing absolute numbers of children affected by conflict by world region" /></td>
<td><img src="image" alt="Graph showing share of children affected by conflict by world region" /></td>
</tr>
</tbody>
</table>

Figures 13–15 below provide some more nuances showing the distribution between children living in peaceful countries, conflict-ridden countries and conflict zone in each world region. The colors represent the share of children in living in conflict zones (red), conflict-affected countries (dark pink), and in peaceful countries (light pink). These maps demonstrate even more the stark inter-regional inequalities in terms of where children are at risk.

**Figure 13: Children exposed to conflict in Africa, 2016**

Figure created by authors. Source data: UCDP GED dataset (Sundberg and Melander, 2013; Croicu and Sundberg, 2017) Gridded Population of the World (GPW) v3 (CIESIN, 2005) and World Population Prospects (UN, 2017).
Figure 14: Children exposed to conflict in the Middle East and Asia, 2016

Figure created by authors. Source data: UCDP GED dataset (Sundberg and Melander, 2013; Croicu and Sundberg, 2017) Gridded Population of the World (GPW) v3 (CIESIN, 2005) and World Population Prospects (UN, 2017).

Figure 15: Children exposed to conflict in the Americas and Europe, 2016

Figure created by authors. Source data: UCDP GED dataset (Sundberg and Melander, 2013; Croicu and Sundberg, 2017) Gridded Population of the World (GPW) v3 (CIESIN, 2005) and World Population Prospects (UN, 2017).
3.1.2 Country-level differences

So far, we have looked at variation across regions in terms of the number of children that are affected by conflict. However, there are also large variations within world regions. In this section, we take a brief look at the cross-country variation and highlight the worst-performing countries in terms of children in conflict-affected areas.

There are three factors that affect how many children are exposed to conflict in a given country: i) the population density/size, ii) the size of the conflict zone(s) (i.e. how much of the country is covered by conflict), and iii) the share of the under-18 population. We find that it is the extent/spread of conflict and overall population density rather than the children-to-adult ratio that drives the number of conflict-affected children.

Figure 16 indicates which countries have the highest absolute number of children living in conflict zones. Not surprisingly, these are also the countries with the highest overall population. We see that most of these countries are situated in Asia. India has the highest number with more than 50 million children living in conflict zones, followed by Nigeria, Pakistan, Bangladesh and the Philippines. Together, these five countries are home to more than half (57%) of all the children that lived in conflict zones in 2016.

**Figure 16: Estimated number of children living in conflict zones, 2016**

![Map of children affected by conflict](image)

- **India**: 50 million
- **Pakistan**: 40 million
- **Nigeria**: 44 million
- **Bangladesh**: 37 million
- **Philippines**: 20 million

Figure created by authors. Source data: UCDP GED dataset (Sundberg and Melander, 2013; Croicu and Sundberg, 2017) Gridded Population of the World (GPW) v3 (CIESIN, 2005) and World Population Prospects (UN, 2017).
However, this is not the full story. While these five countries have the highest numbers of children living in conflict areas, the majority of children in the same countries live in relatively peaceful areas. For India, for example, the 50 million children living in conflict zones constitute ‘only’ 34% of all children in India.

So, in what countries was the risk of living in a conflict zone in 2016 the highest? The map in Figure 17 indicates the share of children out of the total child-aged population in each country living in conflict zones. We see that this is a very different set of countries from that of the previous map, and that there are relatively more children are living in conflict zones in the Middle East than any other region. In Afghanistan, almost every child (97%) lived in a conflict zone in 2016, with nearly as high percentages in Yemen, Syria, Lebanon and Somalia. This indicates that these countries have conflict zones covering large parts of the country, resulting in the fact that most children will be affected.

**Figure 17: Children living in conflict as percent of all children in country, 2016**

Finally, a third way to assess the number of children living in conflict zones is to look at the share of the total population living in conflict zones that are children. This

![Map showing children living in conflict zones as percent of all children in country, 2016.](image-url)
calculation is dominated by countries that have a large under-18 population, meaning that in such countries, children will be more exposed than adults to the effects of conflict. Not surprisingly, many African countries are represented here; more than half the population in a good number of African countries is under 18 years of age.

While alarming in themselves, the numbers and shares of children living in conflict zones do not provide the full picture of the extent to which children are affected by conflict. As mentioned earlier in this report, the level of intensity varies a great deal between and across conflict zones. Figure 18 lists all the countries with on-going conflict in 2016 and report both the percentage of children that were living in the conflict zones (orange bars) and the conflict intensity, measured as number of battle-related deaths (blue bars) in 2016.
Figure 18: Percent of children living in conflict zone and battle-deaths by country, 2016

It is not necessarily the case that the countries with the largest share of children living in a conflict zone also have the most intense conflicts or vice versa. For example, in Burundi, about 70% of the children in the country (3.7 million children) were living in a conflict zone in 2016 (i.e. within a distance of 50km or less from where fighting was occurring). However, ‘only’ 13 battle-related deaths were recorded in total for Burundi in 2016 according to the UCDP GED data. In Iraq, also approximately 70% of children were living in close proximity to violent conflict events. However, in Iraq, the conflict was much more intense than in Burundi. As many as 11,128 battle-related deaths were recorded for 2016 there. Also, in Iraq the number of affected children is much higher (approximately 12.2 million children). Two other countries that stand out in Figure 18 are Afghanistan and Syria, both of which had very high percentages of children living in conflict zones (97% and 83% respectively) and very intense conflicts (with approximately 18,700 and 40,600 battle-deaths) in 2016.

What is the overall situation for the 357 million children worldwide that live in conflict-affected areas with regard to conflict intensity? Figure 19 illustrates all 357 million children that were living in conflict-affected areas in 2016. The different shades of red indicate different levels of conflict intensity: Light red indicates children that were living in low intensity conflict zones in 2016 (defined as less than 25 battle-related deaths), darker red indicates children living in medium intensity conflict zones (with 25-999 battle-related deaths), and the darkest red indicates the children living in the high-intensity conflict zones (with 1,000 or more battle-related deaths).
The figure shows that approximately 46% of all children living in conflict zones live in high-intensity conflicts, constituting approximately 165 million children. About half of the children live in medium-intensity conflicts (app. 182 million children), while less than 3% live in low-intensity conflict areas (app. 10 million children).

### 3.1.3 Time trends for affected children

In addition to estimating the situation in 2016, we have also calculated a time trend for how the number of children living in conflict-affected areas has developed between 1990 and 2016. This is shown in Figure 20. The left-side axis shows the absolute number of children living in conflict zones (blue line), while on the right side we indicate the number of countries that have at least had one on-going conflict in that particular year (bars).\(^{21}\)

\(^{21}\) The Descriptive Appendix provides additional figures, for example showing this number as the share rather than the absolute number. These are presented in Section 1.3
Figure 20: Children living in 50km conflict zones number of countries in conflict, 1990–2016


The figure shows that the number of children living in conflict zones has increased over time. While the number was at its lowest in the early- and mid-1990s at around 200 million, it is now at a high of more than 300 million, which suggests an increase of more than 50% from the 1990s. The average number of children living in a conflict zone in any given year (throughout the period) is 275 million. This is a very high figure, considering that we are only looking at children living close to (within 50 kilometers of) a conflict event.

To look at regional differences over time, we have broken down the number of children living in conflict zones by world regions in Figure 21. The figure shows that the large increase in conflict-affected children after 2000 is mainly found in Asia. From 2000 to 2010, the number of children affected by conflict in here almost doubled, then decreased to approximately 166 million in 2016. However, this decrease in Asia in the last five years is counter-balanced by an increase in Africa and the Middle East.
Figure 21: The number of children living in conflict zones by world region, 1990–2016


When we look further into the data for the period between 2000 and 2005, we see that many of the countries with expanded conflict zones during this period are also countries with large populations, such as Afghanistan, Bangladesh, India, Pakistan and the Philippines. Thus, the increase in numbers of affected children is a combination of both a geographical extension of conflict zones as well as the fact that this increase reflects the population size, in that it occurs in some of the most populous countries.²²

How and why conflicts spread or diffuse often depends on the type of conflict. In civil conflicts, conflict expansion is often related to control over areas, either as an expansion of the already existing area of control, or by relocation and trying to expand to new areas (Schutte and Weidmann 2011). Non-state conflicts are often specifically tied to one region, for example because they are conflicts between herders and nomads over

²² Figure 11 in section 1.3 of the Descriptive Appendix shows the share of the world’s surface area that is covered by conflict zones, and how this has evolved in the 1990-2016 period.
grasslands. These conflicts do not necessarily spread much in space. In contrast, other types of non-state groups such as Boko Haram and IS use violence towards the civilian population in areas which are not necessarily in proximity to their own strong-holds, and thus the conflict will diffuse to areas further away. Additionally, refugee flows as a result of conflict can create tension and possibly escalation of old conflicts or they can ignite new ones in receiving areas. This is relevant both internally as well as across borders (Salehyan 2008).

What is the implication of this? When considering children or other sub-groups affected by conflict, we should look at not only the number of conflicts in the world, but also how these conflicts behave in terms of intensity of fighting and their distribution across space. Even if it is difficult to end conflicts, it is important to constantly work within conflict-affected countries to lower the intensity and hinder the further spread of conflict, which should, by extension, improve the overall situation for children living in conflict-affected countries.

To provide a more nuanced overview of the geographical spread of conflict-affected children over time, we have created an interactive map that shows the number of children living in ‘conflict zones’ in each country, for each year between 1990 and 2016. Figure 22 shows a snapshot of these data for the year 2016. An electronic version of the full interactive map can be found at this link: https://goo.gl/4Jhx9Q
Figure 22: Number of children living in conflict zones by country, 2016


Finally, we can look at the share of children living in conflict-zones according to the intensity of conflict over time. Figure 23 below shows numbers of children living in conflict zones by the total intensity level of the conflict in the country. Although the number of children living in conflict zones has increased steadily from 1990 to 2005, the share between the three intensity-levels did not changed dramatically in the same period.
Figure 23: Children living in conflict-affected zones, by conflict intensity, 1990–2016


3.1.4 Reported cases of killing and maiming of children

Up to this point we have focused on data on the number of children living in conflict-affected areas and the overall conflict intensity within the conflict ones. It is of course dangerous to live in a conflict zone, but these data do not provide us with information on how many children are actually killed in conflict. As indicated in the introduction of this report, we do not have systematic data on battle-related deaths broken down by age-groups. However, since 1996, the United Nations Special Representative for Children in Armed Conflict has provided yearly reports on the impact of conflict on children since 1996, including the killing and maiming of children.

The UNSG reports recorded more than 73,000 cases of killing and maiming of children in 25 countries for the period 2006–2016. The victimization of children in war follows a pattern that is quite in line with the global intensity of war statistics. According to the UNSG data, the number of children physically affected by conflict was relatively low
until 2010. From 2011 and onwards, there has been a steady increase in the numbers, as shown in Figure 24.

The figure also distinguishes by new (blue) and old (red) conflicts, where new conflicts are defined as conflicts that have lasted for less than 2 years, whereas old conflicts are defined as conflicts that have lasted 2 years or more. The disturbing trend in killing and maiming of children in this select number of countries is mainly caused by existing conflicts getting worse, rather than new conflicts erupting as major catastrophes. In fact, even the worst conflicts of the period, such as the civil war in Syria, did not contribute very much to this statistic before the fourth year of the conflict.

**Figure 24: Reported cases of killing and maiming of children in 25 countries, 2008–2016**

Which countries have the highest reported numbers of killing and maiming? This is shown in Figure 25, which lists all the countries included in the UN reports. The blue bars show the number of children killed/maimed reported by country for the entire period 2006–
2016, whereas the orange bars indicate the same for year 2016 only. **Afghanistan is the country with the highest number of reported killing and maiming of children** – both for the entire data period 2006–2016 (16,635 reported cases), and for the year 2016 (3,512 reported cases).

**Figure 25: Reported killing and maiming of children, selected countries**

The figure is based on the coding of annual reports of the UN Secretary-General on Children and Armed Conflict from 2005-2016 conducted by Save the Children in November 2017.
3.2 Child soldiers

Children are not only on the receiving end of violence in conflict settings. They are also in many cases used actively in combat as soldiers, or ‘child soldiers’. This item has been high on the agenda of the international community for decades. In 2015, the UN launched the campaign ‘Children, not soldiers’ to ‘end and prevent the recruitment and use of children by government security forces by the end of 2016’ (United Nations, 2015; 409). In this section, we will present some trends using the best available data that links to the UCDP list of state-based conflicts. These data are collected by Haer and Böhmelt (2016). We adhere to the definition of a child soldier put forward by the Paris Principles and Guidelines on Children Associated with Armed Forces or Armed Groups 2007 as being:

‘any person below 18 years of age who is, or who has been, recruited or used by an armed force or armed group in any capacity, including but not limited to children, boys and girls, used as fighters, cooks, porters, messengers, spies or for sexual purposes. It does not only refer to a child who is taking or has taken a direct part in hostilities.’

The use of child soldiers can take different forms. In some conflicts (such as the civil war in Sierra Leone), children are used extensively through direct involvement in fighting on the front lines. In other conflicts, child soldiers are used by armed groups for purposes such as intelligence gathering, courier activity, cooking and domestic labor, and so on (for an overview see Gates and Reich, 2009). In many conflicts, children are involved on the government side, where the age for enlistment in the military may be below 18 years.

While much work has been devoted to determining the reasons why some groups use child soldiers and the consequences of doing this, we know little about the worldwide extent of child soldiers in armed conflicts. It is very hard to state precise estimates of the number of children used as child soldiers since this is not reported systematically. Furthermore, since the data rely on active reporting (rather than checking for reports in a pre-defined list of cases) it is hard to assess whether the resulting data reflects trends in reporting, or actual trends in the use of child soldiers.

To gauge trends in child soldier usage in a way that is attentive to these issues of data collection and measurement, we investigate newly compiled data from Haer and Böhmelt (2016), which describe the use of child soldiers among rebel groups between 1960
and 2010. Each conflict actor is coded as to whether there were reports that they used ‘some’ child soldiers or ‘many’ child soldiers (where ‘many’ means that more than 50% of the groups’ soldiers were indeed child soldiers). To minimize measurement error, we aggregate reported incidents to the level of conflicts.\footnote{While we find it likely that a non-report for a given rebel group might be a miscoding of ‘no child soldiers’, we find it much less likely that a non-report for a given conflict (particularly one with many rebel groups) will be a miscoding.}

The pie diagram in Figure 26 below shows the share of conflicts that involve no, some, or many child soldiers in the period between 1989 and 2010. First, it shows that in a very substantial number of conflicts, child soldiers are used by rebel groups. Only 22% of conflicts do not involve any child soldiers, while approximately 60% percent involve ‘some’, and 18% involve ‘many’ child soldiers. This means that a substantial majority of rebel groups in armed conflicts use child soldiers.

\textbf{Figure 26: Use of child soldiers by conflict, 1989–2010}

\begin{center}
\includegraphics[width=0.5\textwidth]{pie_chart.png}
\end{center}

Source data: Haer and Böhmelt (2016). N=129.

Figure 27 shows the trend in the share of conflicts where armed actors used child soldiers in the 1989–2010 period. The light blue line shows the share of conflicts where the use of ‘some’ child soldiers were reported, while the dark blue line shows the share of conflicts where ‘many’ child soldiers were reported. The overall extent of child-soldier use
at the conflict level was quite stable in the period 1989-2010. More than 60% of conflicts on average throughout the twenty post-Cold War years involved actors using child soldiers in some capacity, and this number increased in the latest year with data (2010). While rebel groups using ‘many’ child soldiers were somewhat more widespread in the late 1990s to mid-2000s, this has now declined to the level immediately after the Cold War to roughly 20%. At the same time, by 2010, the share of conflicts where actors used ‘a few’ child soldiers had gone up somewhat since the early 2000s, to a little over 80%, despite the decline in the number of conflicts. An example of a group that used ‘many’ child soldiers was Sierra Leone’s Revolutionary United Front, which employed child soldiers on a very large scale. An example of a group that used ‘some’ child soldiers was the EZLN rebel group in Mexico, which used some child soldiers in supportive roles.

Figure 27: Share and incidence of child soldiers in armed conflicts, 1989–2010

Data source: Haer and Böhmelt (2016), and UCDP GED dataset (Sundberg and Melander, 2013; Croicu and Sundberg, 2017).

Is child soldier usage specific to one or more world regions? Figure 28 shows a map of countries where child soldiers are used (indicated in red) and where there has been
conflict but no reported use of child soldiers (indicated in green). The map shows that a preponderant number of the conflicts that have occurred in the 1989 to 2010 period involved child soldiers, and a strikingly high number of conflicts have (at some point) involved the use of ‘many’ child soldiers. We compare this map with a similar map in Figure 29 showing the state of the world in the latest year with available data on child soldiers (2010). This shows that almost all of the conflicts that were ongoing in 2010 involved child soldiers, with most of these conflicts occurring in Africa.

Figure 28: Conflict-affected countries where child soldiers are used, 1989–2010

![Map of conflict-affected countries with child soldiers](image)

Data source: Haer and Böhmel (2016).
Figure 29: Conflict-affected countries where child soldiers are used, 2010

Figure 30 shows a regional breakdown of the share of conflicts involving child soldiers by world region. For each region, the figure calculates the share of that region’s conflicts involving child soldiers. It shows that child-soldier use has been quite evenly distributed across regions, with no clear region sticking out as more problematic than others. We note that Oceania has a share of 1 because of the one conflict in the region (Papua New Guinea) where child soldiers were used. Asia, Africa and the Middle East have very similar proportions of child soldier use (around 80%), while Americas (66%) and Europe (53%) have lower shares.
Figure 30: Regional breakdown of share of conflicts where child soldiers were used, 1989–2010

Data source: Haer and Böhmelt (2016). Number of conflicts with child soldier-use in parenthesis.

3.2.1 Reported cases of child recruitment

The Haer and Böhmelt (2016) data series unfortunately end in 2010. However, as stated above, since 1996, the United Nations Special Representative for Children in Armed Conflict has provided yearly reports on the impact of conflict on children, including recruitment or use of child soldiers (e.g. UNSG, 2017). Despite the fact that not all conflict-affected countries are included in these reports, and their varying quality and specificity, these reports constitute the best available updated data on child soldier recruitment. Since the structure and the sources used do not correspond to the Haer and Böhmelt (2016) data, and since the UN reports do not include all countries with ongoing conflict²⁴, we cannot combine the two sources in the same trend analysis. However, below we provide a short analysis based on the UN reports. The below graphs are based on a systematic coding of the all the Reports since 2006.

The number of reported cases of child soldiers more than doubled from 2013 to 2016. The recent patterns in the conflicts selected by the UN reports offers a somewhat

²⁴ The UN report for 2016 covered 19 countries, whereas according to the UCDP conflict data, conflicts were ongoing in 49 countries in 2016.
divergent picture over time. The graph in Figure 31 shows the trend for child soldiers from 2008 to 2016. The number of child soldiers that was reported declined from 2008 to 2011, after which the numbers increase to the maximum level in 2016 (with 7,734 reported incidents), slightly beyond the 2008 levels. We must keep in mind that the years 2008—2011 were also among the most peaceful in human history, and that this trend was broken starting in 2012 with the onset of a new wave of armed conflicts.

**Figure 31: Reported cases of recruitment of child soldiers in 25 countries, 2008–2016**

Furthermore, the bars in Figure 31 are separated between new and old conflicts, where new conflicts are those included in the reports for the first or second time. These are colored in blue. The red conflicts are those that have been included in the report for more than two years. As shown by the graph, the new (blue) conflicts are, from 2010 and onwards, hardly represented in the child soldiers statistics. The vast majority of reported child soldiers are found in the more protracted (red) conflicts.
Another argument against the conclusion reached above is that the protracted conflicts outnumber new conflicts to such an extent that the graph above simply reflects this difference. The best way to counter this argument is to look at relative growth from one year to the next.

**Child soldiers seem mainly to be problematic in the protracted conflicts**

According to our analysis, the number of child soldiers does not seem to change very much for the first four years of a given conflict. After that, there are some years with a tendency towards growth in numbers. As we can see, this variation is very large, and we should not jump to any firm conclusions. Yet, there are some interesting suggestions in these data. The data material from the UN reports is limited to a small number of conflicts, and a short time period. But, if there is a pattern, this pattern is that the number of child soldiers is likely to rise as a conflict becomes protracted.25

Another interesting thing the UN reports can give an indication of is the countries that top the statistics on child soldier recruitment (see Figure 32). If we look at the total figures for the period 2006-2016, Somalia had by far the largest share of the reported cases of child soldiers, covering almost 28% of all the child soldiers (with 13,872 cases out of the 49,623 cases in total for the entire time-period. Countries like DRC, South Sudan follow as the second and third ranking country on this list.

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25 This analysis is further presented and discussed in section 1.1. of the Technical Appendix.
Figure 32: Reported cases of child soldier recruitment 2006–2016

![Chart showing reported cases of child soldier recruitment 2006–2016.]

The figure is based on the coding of annual reports of the UN Secretary-General on Children and Armed Conflict from 2005-2016 conducted by Save the Children in November 2017.

However, if we focus on the year 2016, the picture changes somewhat, as shown in Figure 33. In 2016, Nigeria was the country with the highest number of reported child soldiers (2,122 reported cases) followed by Somalia, South Sudan, Syria, Yemen, and DRC.

Figure 33: Reported cases of child soldier recruitment 2016

![Chart showing reported cases of child soldier recruitment 2016.]

The figure is based on the coding of annual reports of the UN Secretary-General on Children and Armed Conflict from 2005-2016 conducted by Save the Children in November 2017.
The main perpetrators of child soldiers in Nigeria in 2016 were Boko Haram (1,947) and the Civilian Joint Task Force (175): 4 boys and 26 girls were used by Boko Haram to carry out suicide attacks in Nigeria (19) and in Cameroon, Chad and the Niger (11). Children associated with the Civilian Joint Task Force were mostly used in support functions (UNSG, 2017: 30). Furthermore, the recruitment and use of children documented in Somalia and the Syrian Arab Republic in 2016 more than doubled compared with 2015 (ibid: 1).

3.3 Sexual violence against children

Despite this being a prioritized topic, the extent of sexual violence against girls and boys in armed conflict has not been studied systematically. We follow the definition of sexual violence advanced by the Sexual Violence in Armed Conflict (SVAC) database, which includes rape, sexual slavery, forced prostitution, forced pregnancy, forced sterilization/abortion, sexual mutilation, and sexual torture. The SVAC database is the only source for systematic peer-reviewed data on sexual violence against children that allows for (modest) comparisons across conflicts, countries, and time periods.26 The data covers all state-based conflicts in the world for the period 1989 to 2009.

Figure 34 shows the share of state-based conflicts in this time period where sexual violence against children was reported, distinguishing between reports of ‘some/many’ incidents, and ‘significant’ incidence, where the latter category indicates the most widespread occurrence. In fact, a large proportion of conflicts (roughly 35%) involved some sexual violence against children. Most conflicts involving sexual violence also involve sexual violence against children, with only 20% of conflicts involving sexual violence exclusively aimed at adults. Reports of ‘significant’ sexual violence against children (where sexual violence is reported to be widespread) are rare; this is reported for only around 3% of conflicts.

26 While the data in the UN reports is impressive and informative in a number of ways, as is the data it reports on child soldiers, it does not adhere to a systematic set of coding rules and sample-selection criteria that make it supportive of generalizations. Also, the reports specifically mention that conflict-related sexual violence is likely to be under-reported.
Figure 34: Reported conflict-related sexual violence against children, by conflict, 1989-2009

Data source: SVAC dataset (Nordás and Cohen, 2014).

Figure 35 shows the trend in both the proportion and the absolute number of conflicts that involved sexual violence against children on a yearly basis. Sexual violence against children in conflict has become significantly more frequent since 1989, reaching a peak in the mid-2000s and declining thereafter. It is difficult to say what is driving this trend, but it seems to follow the number of conflicts quite closely. The numbers could also simply reflect an increase in reporting of sexual violence, due to increased focus by policymakers and media on the phenomenon. However, this risk is minimized by focusing on the indicator that considers whether sexual violence is at all reported in the conflict (as noted in the case of child soldiers).

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27 This figure does not distinguish between ‘some’ and ‘many’ categories, since there are relatively few cases in the ‘many’ category.
Figure 35: Percent of state-based conflicts involving sexual violence against children

Source data: SVAC dataset (Nordás and Cohen, 2014).

Figure 36 shows the proportion of conflict-years that involve actors reported to have used sexual violence against children, broken down by world regions. It shows that Asia and Africa are the regions with the highest occurrence of conflict-years involving sexual violence against children in conflict, at 50% and 46%, respectively. The Middle East follows with 38% of conflicts, while the Americas (35%) and Europe (13%) are least prone. This indicates a similar pattern as that for child soldiers: the world’s most conflict-stricken regions are also more likely to have a large share of conflicts involving these types of grave violations against children. However, we cannot say anything about the magnitude of the problem (i.e. the numbers of children that are victims of conflict-related sexual violence) based on the SVAC data. Trends in sexual violence against children in the five focus countries are described and mapped below in a later section of this report with descriptions for each country.
Figure 36: Percent of conflicts involving sexual violence against children, by region

![Bar chart showing the percentage of conflicts involving sexual violence against children by region.](chart)

Source data: SVAC dataset (Nordås and Cohen, 2014) Number of state-based conflicts involving sexual violence against children in parentheses.

The map in Figure 37 juxtaposes the countries in the world that have experienced a conflict without sexual violence, with sexual violence only aimed at adults (i.e. for which we have no reports of sexual violence against children), against the countries with sexual violence against children in the 1989 to 2009 period. It shows that most regions of the world have at some point experienced conflicts that involve sexual violence against children. It again flags Africa, Asia, and the Middle East as clear problem regions for this violation.
Figure 37: Sexual violence by conflict-affected countries, 1989-2009

A geocoding of the SVAC-data (Bahgat, Nordås, and Østby, 2017) enables us to provide an even more nuanced mapping to indicate what conflict events in the period 1989-2009 were parts of a conflict that included at least one conflict actor that was reported to have committed sexual violence against children. As shown in the map in Figure 38, there is some variation within countries in terms of whether conflict events involved armed actors reported to have committed sexual violence against children.

Source data: SVAC dataset (Nordås and Cohen, 2014).
3.3.1 Reported cases of sexual violence against children

Sexual violence against children in conflict is a topic that has received much attention in the international community. The SVAC dataset unfortunately stops in 2009. However, as for child soldier recruitment, sexual violence is one of the ‘six grave violations’ identified in the annual UN reports *Impact of Armed Conflict on Children* (e.g. UNSG, 2017). For the period 2006–2016, the report identified 17,515 incidents of sexual violence against children, in a sample of conflict-affected countries, with 856 cases reported in 2016. Figure 39 shows the trend in reported cases of sexual violence against children for the period 2008–2016. The numbers for sexual violence stand out in stark contrast to the overall conflict trends in this period. Whereas the number of people killed in conflict increased fivefold in the period 2010 to 2015, the data on sexual violence in conflict reported here show the opposite tendency. The main reason for this is the conflict in DRC,

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28 These include Afghanistan, Burundi, CAR, Chad, Colombia, Cote d'Ivoire, DRC, Yemen, Syria, Iraq, Israel, Lebanon, Libya, Mali, Myanmar, Nepal, Nigeria, Occupied Palestinian Territories & Gaza, Pakistan, Philippines, Somalia, South Sudan, Sri Lanka, Sudan, and Uganda.
which is reported to have had 3,928 victims in 2008 and 2,360 victims in 2009. Also, as stated above, it is likely that there is a high level of under-reporting of sexual violence.

Even when we keep in mind the massive influence of DRC on this statistic, we still see that sexual violence against children seems to be most common among the more protracted conflicts. With the exception of 2012, when a new conflict in Mali saw large-scale sexual violence perpetrated against children, the new conflicts contributed very little to the overall statistic.

The skewed nature of this statistic makes it rather difficult to interpret. In total, there are 96 annual country reports on sexual violence. The five worst yearly observations include more assaults than the other 91 combined. The ten worst account for 2/3 of all assaults.

Figure 39: Reported cases of sexual violence against children, 2008-2016

The figure is based on the coding of annual reports of the UN Secretary-General on Children and Armed Conflict from 2005-2016 conducted by Save the Children in November 2017.
Another interesting thing the UNSG reports can give an indication of is the countries that top the statistics on child soldier recruitment. This is provided in Figure 40. If we look at the total numbers for the period 2006-2016, more than half (52%) of all the reported incidents of sexual violence against children stem from Democratic Republic of the Congo (with 9,151 reported cases out of the 17,515 cases in total for all the countries for the entire time-period). Chad and Somalia follow as the second and third ranking country on this list with 2,973 and 2,046 cases respectively.

**Figure 40: Reported sexual violence against children, 2006-2016**

The figure is based on the coding of annual reports of the UN Secretary-General on Children and Armed Conflict from 2005-2016 conducted by Save the Children in November 2017.

If we focus on the year 2016 (see Figure 41) Somalia was the country with the highest number of reported cases of sexual violence against children.
In sum, according to the UN Special Reports on Children and Armed Conflict (UNSG, 2017), about 30% of the annual country reports included special mention of sexual violence against boys.
3.4 Armed conflict and infant mortality

Since 2000, impressive advancements have been made on many health fronts. However, to meet the Sustainable Development Goals health targets by 2030, progress must be accelerated. The infant mortality rate for children under 1 year of age globally was 24 deaths per 1,000 live births in 2016. That rate represents a more than 60 percent reduction since 2000. Infant mortality remains high, for example in sub-Saharan Africa, with a current rate of 54 deaths per 1,000 live births. In a region where the majority of countries have experienced armed conflict since the end of the Cold War, the poor performance may in part be due to detrimental effects of armed conflicts on infant survival.

There are many ways in which conflicts are likely to have a negative impact of infant and child survival. Conflict destroys institutions and vital infrastructure that provide healthcare to mothers and children, especially in poorer areas. Furthermore, conflicts disturb and change population movement patterns (including causing refugee movements), and they undermine economies – both locally and nationally, which in turn increases hunger and malnutrition. Conflicts also directly impact the psychological and physical health of adult caregivers, which in turn hurts children. We provide a tentative study of the link between health outcomes and armed conflict, focusing on the perhaps most crucial indicator of children’s health: infant mortality.

In this section, we first review the existing evidence on the general relationship between armed conflict and infant mortality and take a closer look at local patterns in five selected countries: Afghanistan, Colombia, DRC, Nigeria, and Yemen.

3.4.1 Global relationship

In a study of the development consequences of armed conflict, Gates et al. (2012) examine the impact of state-based internal armed conflicts on infant mortality rates (IMR). They find that a medium-sized conflict (measured as at least 2,500 battle deaths) yields an increase in infant mortality of 1 per 1000 children, using IMR rates from the World Development Indicators for the period 1980 to 2008 (see e.g. World Bank, 2016). We ran a similar analysis, with updated IMR data, using all conflict types (state-based, non-state, and one-sided) from the UCDP GED data and find an even stronger increase: A medium-sized UCDP GED conflict increases infant mortality by 3 per 1,000 children. In other words, for a given year
with a medium-sized conflict in a country with 1 million infants, 300 additional infants die every year due to the conflict. This means that in a country such as Kenya, with an Infant Mortality Rate in 2015 of 35.5 per 1000 live births, this would rise to 38.5 if the country suffered 2,500 battle-deaths, all else equal. In concrete terms, this means that Kenya would suffer an additional approximately 4,700 infant deaths if the country experienced an increase of 2,500 battle-deaths in a year, using the most recent birth-rate and population estimates from the World Bank.

That conflict-affected countries often have higher levels of infant mortality can also be grasped from a simple visualization of global patterns. The map in Figure 42 below shows infant mortality rates per 100,000 live births and conflict fatalities in 2015, with each of our five focus countries, Afghanistan, Colombia, DRC, Nigeria, and Yemen, highlighted. Conflict fatalities are highlighted by blue dots (larger dots equal greater fatalities) and darker shades of red indicate higher levels of infant mortality. The map clearly shows that countries with higher infant mortality rates also tend to experience more intense armed conflict.

Figure 42: Infant mortality and conflict fatalities, 2015

Source data: UCDP GED dataset (Sundberg and Melander, 2013; Croicu and Sundberg, 2017) and World Development Indicators (World Bank, 2016).

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29 This analysis is presented in greater detail in the technical appendix, section 2.4.
3.4.2 Sub-national (local) relationships

While conflict seems to be associated with increases in infant mortality at the country level, this does not prove that conflict causes infant mortality. For example, since poverty also causes conflict (for an overview, see Blattman and Miguel, 2010), we cannot precisely determine whether conflict is the culprit or whether it is actually poverty or some other unmeasured factor that causes both. Furthermore, while these studies show that conflict-affected countries also see increases in infant mortality, this does not mean that it is the conflict-stricken areas within a country that suffer the most negative health effects. Both conflict intensity and infant mortality can vary greatly within countries. Hence, to understand the on-the-ground impact of conflict, we need to assess whether conflict increases infant mortality in the regions where it strikes.

We therefore investigate the potential local-level impact of armed conflict on infant mortality in Afghanistan, Colombia, DRC, Nigeria, and Yemen. To measure this, we combine survey data from the Demographic and health Surveys (DHS) with detailed data on when and where within these countries conflict happens. The DHS surveys include information collected from mothers on birthdates of their children, their months of death, the mothers’ socio-economic characteristics, place of residence, and so on. We create a dataset that registers children born in each month in the period where we have survey information at a high level of geographic resolution. We ask: What is the risk that an infant will die before his/her first birthday if s/he resides in a conflict-affected region? We measure the intensity of conflict exposure as the number of deaths by sub-national region.

We also consider whether there was conflict in the period six months prior to the birth of the child, that is, during the mother’s pregnancy. If conflict triggers stressors or health deficiencies in the mother while the child is in the womb, this can affect the health status of the child after birth. We compile these data for our five focus countries: Afghanistan, Colombia, the DRC, Nigeria, and Yemen, and analyze them here separately. The combined dataset totals about eight million child-months that we can analyze, and over 600,000 children.

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30 See [http://dhsprogram.com](http://dhsprogram.com)

31 See Technical Appendix, Section 1.3 for more details.
The maps below in Figure 43 shows the regional variation in infant mortality (shades of red) and conflict intensity (blue circles of varying size).\textsuperscript{32} In some cases, such as in the DRC, we see a clear pattern where infant mortality seems to be higher in the regions with higher conflict intensity. In the other countries, the pattern from the maps is less clear. However, also remember that these maps are still quite crude displaying infant mortality for 5-year periods. Hence, they do not distinguish between children born before and after conflict events. In other words, although it is not very clear from the maps, it could still be the case that conflict impacts infant mortality. In order to gauge this, we conduct a fine-grained analysis measuring the conflict exposure at specific points in time for infants born at different times during the most recent 5-year periods with available data.

\textsuperscript{32} See Technical Appendix, Section 2.3 for more details on the construction of the data and estimated models.
Figure 43: Infant mortality and conflict intensity in five countries, various years.

Afghanistan (2011-2015)

Colombia (2011-2015)

DRC (2009-2013)

Nigeria (2009-2013)

Yemen (2011-2015)

Data sources: UCDP GED (Sundberg and Melander, 2013; Croicu and Sundberg, 2017) and Demographic and Health Surveys (www.measuredhs.com).
We proceed to estimate the individual-level risk of dying before 1 year of age for individual children, running separate analyses for each of our focus countries. In each statistical analysis, we make sure that we look at children in comparable environments but with different levels of conflict exposure (before and after birth). For a given child, the statistical model considers each month of that child’s life until it dies or reaches 1 year of age (where it is no longer considered to be ‘at risk’ of infant mortality, by definition).

First, we run an analysis investigating whether conflict exposure as such (that is, the presence of absence of conflict) is associated with the risk of dying, for each of the five countries separately. What we are estimating in this analysis is essentially the following: for a given child in a given country, what is the risk of dying in a month, given that there is conflict in the child’s home region, both in the given month (post-birth conflict) and in the six months prior to that child’s birth (post-birth conflict).

This analysis of conflict’s presence or absence after birth reveals that there is no strong relationship across the five cases, indicating that post-birth conflict exposure is not related to an increased risk of dying. Only in Afghanistan do we find an increased risk of death from conflict exposure (measured in terms of presence or absence in a given life-month), while in the remaining four countries, we find no such relationship. However, in three of the five countries (Colombia, Nigeria and Afghanistan) we find that pre-birth conflict exposure is associated with increased risk of dying. This suggests that conflict before a child is born seems to have a detrimental impact, at least in these three countries.

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33 The analysis is run with and without a set of statistical controls, included to ensure that we are comparing children in similar situations but with different levels of conflict exposure. The controls include the education level of the mother and the wealth level of the household, to make sure that we are not only capturing the socioeconomic differences between exposed areas. Furthermore, we hold constant the administrative region, age of the child (in months), and the year in which the child is measured. This means that, for each country, we compare children living in the same regions, of the same age, and in the same year, but with differing levels of conflict exposure (pre- and post-birth). For example, we can compare two children of similar socioeconomic status, living in the same region of Colombia in 1992, and of the same age (in months), but with different levels of conflict exposure due to their being born at different times in the year. What varies in this setup is the month of birth for the different children, and the conflict events before and after birth.
3.4.3 Conflict intensity and infant mortality

The sharp distinction between conflict’s presence versus absence might mask important variation within the category of regions that are counted as being ‘in conflict’. Crucially, it does not distinguish between areas with high conflict intensity and areas with very low conflict intensity. This could mask important variation in terms of infant-mortality outcomes. For example, while it could very well be that conflict areas with low-level conflict see an infusion of government resources, aid, and health personnel that in turn mediate infant mortality (or at least provide a counterweight to the negative effects of the conflict), the more conflict-intense areas – with heavy fighting – might not experience this beneficial effect.

To account for such potential differences, we consider the intensity of the conflict by looking at the estimated impact of increases in battle-related casualties rather than at the presence or absence of conflict. Three countries show an increased risk of dying as conflict intensity increases: Colombia, Afghanistan, and the DRC. However, this effect is only present for conflict exposure prior to birth, meaning that increased levels of conflict intensity in a child’s home region prior to birth increases the risk of dying before 1 year of age.

How big is the substantive increase in risk when pre-birth combat intensity increases? To gauge this, we perform simulations based on our statistical models. For each country where we find a relationship with conflict intensity (Colombia, Afghanistan, and DRC), we simulate a scenario where we consider a hypothetical child living in an ‘average’ region of the country (with average values on factors such as the mother’s education and wealth), and increase battle deaths from the minimum (0) to 5000, which represents a large internal conflict in a given year. These results are provided in Figure 44. In each graph, we plot the average risk of dying before 1 year of age (black line) for different levels of battle-deaths prior to birth. For each average predicted value, we also plot the statistical ‘uncertainty’ that surrounds the average estimate (orange confidence bands).

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34 This corresponds to heavy fighting in a civil war, and we chose this number to keep it constant across the conflicts, for comparison purposes.

35 The logic of this uncertainty is that we can exclude with 95% probability that the actual value will be outside of the orange bands.
For Afghanistan, an increase in battle-deaths of the noted magnitude almost doubles the risk of dying, from 1.5 to around 3 percent. For Colombia, the effect is stronger. Here, a child in a region with around 5,000 battle deaths prior to birth experiences a greatly increased risk, from 1% on average to around 30% on average. While this increase is certainly very high, it must be taken with the caveat that the uncertainty around the increase for the higher levels of battle-deaths is quite high. There are simply not many occurrences of battle-deaths in the range between 2000 and 5000 in Colombia (163 instances in the period). Rather, the increase we can be most certain of occurs in the range between 0 and 2000 battle-deaths, where the uncertainty around the estimation is the lowest.

Finally, we consider the DRC. The graph shows a weak and perhaps even negligible effect. In fact, a difference between 0 and 5000 battle deaths does not yield a distinct difference in the risk of dying before turning 1 year old. This means that the effect for DRC only becomes visible at the extreme ends of the violence scale. Since we have quite a lot of data for DRC, this does probably not reflect a lack of data from the country. Therefore, it rather means that there is very large variation in child-health outcomes for different levels of conflict. This should make us question whether there is any association at all in DRC.
Figure 44: Pre-birth conflict-exposure and risk of dying before the age of 1

Afghanistan

The horizontal axis in each figure represents the number of battle-deaths that a given child is exposed to in a 6 month period prior to birth. The diagonal axis represents the average risk of death in a given month, with 95% confidence intervals (orange bands).
In short, the analysis of all five focus countries shows that the presence of conflict, and in particular more intense conflicts, yields an increased infant mortality risk. Furthermore, this risk is primarily driven by conflict exposure prior to birth. Could this be explained by children dying at birth? When excluding children that die before they are 1 month old, and re-running the analysis for Colombia and Afghanistan, the effect of pre-birth conflict is significantly weakened, but remains statistically relevant. This means that the most high-risk cases are (probably) associated with deaths during birth. However, since the effect remains for children surviving past 1 month, this suggests that there are more long-term effects of conflict exposure prior to birth. This will be an important question for further research.

Our initial analysis of armed conflict and infant mortality at the local level resonates well with more rigorous research on the link between armed conflict and the access to maternal health care. One study (Østby et al., 2017) addresses how local exposure to organized violence impacts whether women give birth in a health facility in a detailed sub-national study of 31 Sub-Saharan countries. They combine geo-coded data on violent events from the Uppsala Conflict Data Program with geo-referenced survey data on the use of maternal health care services from the Demographic and Health Surveys and estimate that organized violence resulting from armed conflict in Sub-Saharan Africa causes around 47,000 children to be born outside health facilities every year. As we know, the conditions under which a mother gives birth greatly affect the health risk of her child. This strengthens the assumption that local exposure to armed conflict creates a clear additional risk of infant mortality, independent of all other factors that we know negatively impact child health, such as poverty.
4  Summarizing the situation for children in conflict

The previous sections in this report have described trends in different aspects relating to children in conflict since the end of the Cold War. In this section, we build on these combined insights to provide a snapshot of the situation in 2016.

4.1 Hotspots: Worst countries for children in conflict in 2016

What were the worst countries for children in conflict in 2016? Table 1 provides and overview on how a number of conflict-affected countries scored on six various indicators in 2016: (a) killing and maiming of children; (b) sexual violence against children; (c) child soldier recruitment; (d) overall conflict intensity (battle-related deaths); (e) share of a country’s population living in a conflict zone; and (f) total number of children in a country living in a conflict zone. These 18 countries were all included in the Special Representative of the United Nations Secretary-General’s Report on Children and Armed Conflict 2016 (UN, 2017), and they have conflict data from the UCDP. For each of these indicators we ranked the various countries so that 1 indicates the worst performing country by indicator. We then calculated an overall weighted ranking based on all the six indicators, as shown in the last column in Table 1.

Syria ranks as the worst country for children in conflict in 2016. This ranking is, of course, not perfect, but we believe it provides quite a reasonable picture of the countries where children were likely to suffer the most from conflict in 2016. Not surprisingly Syria ranks number 1, followed by Afghanistan (2), Nigeria (3), Somalia (4), Yemen (5), Iraq (6), South Sudan (7), DRC (8), the Philippines (9), and Pakistan (10).
Table 1. Ranking of the worst countries for children in conflict, 2016

<table>
<thead>
<tr>
<th>Country</th>
<th>Reported cases of killing and maiming of children</th>
<th>Rank</th>
<th>Reported cases of sexual violence against children</th>
<th>Rank</th>
<th>Reported cases of child recruitment</th>
<th>Rank</th>
<th>Conflict intensity / Battle-related deaths</th>
<th>Rank</th>
<th>Share of child population in conflict zone</th>
<th>Rank</th>
<th>Total child population in conflict zone (in thousands)</th>
<th>Rank</th>
<th>Avg rank</th>
<th>Total rank</th>
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<td>7</td>
<td>851</td>
<td>4</td>
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<td>1</td>
<td>0.83</td>
<td>3</td>
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<td>7</td>
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<td>2</td>
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<td>3,810</td>
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<td>1</td>
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<td>3</td>
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Note: This list represents the countries that are included in the Special Representative of the United Nations Secretary-General’s Report on Children and Armed Conflict 2016 (coded by Save the Children in November 2017) and have conflict data from UCDP. Hence, The Occupied Palestinian Territories & Gaza are not included here, as this is not listed among the UCDP countries. On the other hand, several countries with recorded conflict from UCDP GED in 2016 were not included in the UNSG reports. Numbers for a, b, and c stem from (UNSG, 2017) Numbers for d stem from UCDP GED. Numbers for e are generated by the authors and are based on the UCDP GED as well as population data from the Gridded Population of the World (GPW) v3 (CIESIN, 2005) and World Population Prospects (UN, 2017). The total rank is the weighted ranking based on all the indicators.

The map in Figure 45 displays the ten worst performing countries on a map. The darker the shade the higher the ranking on the list.
Interestingly, the worst conflict countries for children are quite evenly distributed between the three world regions of Africa (Nigeria, Somalia, South Sudan and Nigeria); The Middle East (Syria, Yemen, and Iraq), and Asia (Afghanistan, Pakistan, and The Philippines). The top three countries on the list (Syria, Afghanistan, and Nigeria) are also distributed evenly between these three world regions.

4.2 A closer look at children in conflict in five countries

In this section, we monitor the trends in three of the children-in-conflict-indicators for our five focus countries (Afghanistan, Colombia, DRC, Nigeria, and Yemen): the use of child soldiers, sexual violence against children, and the number of children estimated to be living in conflict zones. The five countries are all conflict-affected with varying levels of conflict intensity, and -duration. They are also countries with many different types of conflict, both involving state-based, non-state, and one-sided violence against civilians.
4.2.1 Afghanistan

Afghanistan has been in conflict since the late 1970s. In the early 1990s, it was dominated by a civil war between the government and the rebel Taleban, which in turn controlled the government between 1996 and 2001. In the 1996-2001 period, the Taleban fought rebel groups, such as the Northern Alliance, and after 2001, the foreign-installed government fought the Taleban along with US-led coalition forces. These prolonged spells of fighting have created a large conflict zone in Afghanistan, with a very high share of children living in conflict-affected areas. Figure 46 shows the conflict zones in 2016 (marked in red) and previous years since 1989 (marked in grey). It clearly demonstrates that hardly any part of the country has escaped armed violence. Indeed, virtually the bulk of Afghanistan was one major conflict zone in 2016 alone.

Figure 46: Conflict zones in Afghanistan

![Conflict zones in Afghanistan](image)

Data source: UCDP GED dataset (Sundberg and Melander, 2013; Croicu and Sundberg, 2017).

Children living in conflict zones: Figure 47 shows the number of children living in a conflict zone in Afghanistan in the 1989-2016 period, as well as the number of conflict events occurring during this period. It shows a steady increase in numbers of conflict events and children living in conflict areas, dating to before the invasion of 2001. The number
ranges from 5 to a roughly 13 million children, which is the approximate estimate today and constitutes a large share of Afghan children. In 2016, more than 90% of Afghan children lived in conflict zones, and the number is now at its peak. Barring a significant decline in hostilities, the number will remain very high for years to come. As was discussed earlier in the report, Afghanistan is the country in 2016 with the largest share of its child-aged population residing in conflict-affected areas.

**Figure 47: Children in conflict zones and number of violent events in Afghanistan, 1989–2016**


**Sexual violence** has been used frequently in the various Afghan conflicts, and it is often used against children, including boys. The SVAC data reports that the government, the Taleban, and various other rebel groups (such as Hizb-e-Wahdat) have used sexual violence against children. The map in Figure 48 shows the distribution of areas where actors

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36 According to the UNSG (2017), the practice of *bachab-bazi* (‘dancing boys’) the use of boys as sex slaves by men in position of power, remained a concern in 2016.
engaging in such acts have been located in the country. It shows that a large number of the relevant conflict zones have been frequented by actors using sexual violence against children, suggesting that the practice is widespread.

**Figure 48: Sexual violence in Afghanistan by conflict zones**

Data source: SVAC dataset (Nordås and Cohen, 2014) & GEO-SVAC dataset (Bahgat, Nordås and Østby, 2017). Pink color indicates that the conflict area included conflict actors associated with reports of sexual violence (without any particular mention of child victims). Red color indicates that the conflict area had one or more conflict actors that were reported to perpetrate sexual violence, including against children.

However, it should be noted that the SVAC data only note whether particular conflict actors have used sexual violence (and in some cases against children) – not where the atrocities happened. What we do know, however, is the location of conflict events and what conflict actors participated in these. Hence, we can assume that sexual violence (against children) is at least not unlikely to have occurred in conflict locations where we know a certain actor has been involved in the fighting. Furthermore, as discussed above, the SVAC data are too crude to tell us whether the actual numbers of children that are victims of sexual violence have gone up or down. Furthermore, the SVAC data only cover the 1989-
2009 period. However, we can use the data from the UNSG reports described above (UN, 2017) to fill in the picture for Afghanistan. However, as discussed earlier, the UN data should only be considered as indicative, they allow for cautious descriptions that do not rely on strong assumptions about their level of precision and generality. As shown in Figure 49, for Afghanistan a total of 96 cases of sexual violence against children were reported for the 2011–2016 period (in each of these years there was special mention of the sexual violence also perpetrated against boys). The highest number of reports (30) was in 2013 and the lowest (7) in 2016. It should be stressed that there are likely to be a high level of under-reporting of sexual violence. Also, the data here are too limited to draw any firm conclusion on trends.

**Figure 49: Reported cases of sexual violence against children in Afghanistan, 2011-2016.**

![Bar chart showing reported cases of sexual violence against children in Afghanistan from 2011 to 2016.](image)

The figure is based on the coding of annual reports of the UN Secretary-General on Children and Armed Conflict from 2005-2016 conducted by Save the Children in November 2017.

**Child soldiers** have been used frequently by both the government and rebel groups. Indeed, according to the Roos and Böhmelt (2016) data, children have been used as fighters by almost all rebel actors (including the Taliban) and the government. Figure 50 shows the number of reported recruitment of child soldiers from the UNSG reports. This shows that child soldiers were used as late as 2016, with almost 100 (96) reported cases. However, 2011 was the year with the highest number of reported cases (316).
Figure 50: Reported cases of child soldier recruitment in Afghanistan, 2007–2016.

The figure is based on the coding of annual reports of the UN Secretary-General on Children and Armed Conflict from 2005-2016 conducted by Save the Children in November 2017.

Infant mortality: As shown in Section 3.4, Afghanistan is one of the countries where we find a local-level link between conflict and infant mortality. This does not, however, mean that infant mortality in Afghanistan has increased along with the conflict. The trend in infant mortality, as can be seen in Figure 51, has been on a steady downward path since 1960 (we here go back to 1960 rather than 1990, to show how stark and robust the trend is over time). However, the decline is likely to have been steeper had it not been for the armed conflict(s) in the country.

Figure 51: Infant mortality in Afghanistan, 1960-2016

Data source: World Development Indicators 2016 (World Bank 2016).
4.2.2 Colombia

Colombia has had an ongoing armed conflict since the mid-1960s, fought primarily between the FARC rebel group and the Colombian government. Several additional left-wing armed groups (such as M-19, EPL and ELN) have also taken up arms against the government. Many of these groups have engaged in illicit activities, such as kidnappings and drug trade, and targeted violence against civilians.

Children living in conflict zones: Figure 52 shows the conflict zones in Colombia in 2016 (marked in red) as well as the areas that experienced conflict between 1989 and 2015 (marked in grey). It shows that the country’s conflict is, at least most recently, concentrated in the northeast of the country, in the most jungle-dense regions. We also see that a very large part of the country’s surface has been affected by conflict during this period. This suggests that a large number of children have (at some point) resided in a conflict-stricken area. To assess this assumption, we consider our ‘children affected by conflict’ indicator in Colombia for the period in which data are available (1989-2016). The results of this analysis can be seen in Figure 53, which shows the number of affected children as well as the number of conflict events in each year. As expected, the number of conflict-affected children has been quite high, ranging from roughly 1 to 10 million. The number reached a peak around 2004, when more than 14 million children lived in a conflict zone, constituting over 90% of Colombia’s children. That year also represents the peak in the number of conflict events. In recent years, the number of affected children has declined dramatically, standing at 2.7 million in 2016 or just above 15% of the child-aged population of the country. The number is expected to be even lower for the year 2017, after the implementation of the peace accord.
Figure 52: Conflict zones in Colombia

Data source: UCDP GED dataset (Sundberg and Melander, 2013; Croicu and Sundberg, 2017).

Figure 53: Number of children in conflict zones and conflict events in Colombia, 1990-2016

**Sexual violence:** In Colombia, the SVAC data show that both the FARC and government have committed sexual violence against girls and boys at different points during the conflict. The map in Figure 54 shows the locations of conflict events related to groups that have reportedly used sexual violence against children (marked in red), showing that these groups are to be found in most of the conflict-affected regions described above.

**Figure 54: Sexual violence in Colombia by conflict zones**

![Map showing sexual violence in Colombia by conflict zones](image)

Data source: SVAC dataset (Nordås and Cohen, 2014) & GEO-SVAC dataset (Bahgat, Nordås and Østby, 2017). Pink color indicates that the conflict area included conflict actors associated with reports of sexual violence (without any particular mention of child victims). Red color indicates that the conflict area had one or more conflict actors that were reported to perpetrate sexual violence, including against children.
Again, we turn to the UNSG reports for data on sexual violence against children for the more recent years, as shown in Figure 55.

**Figure 55: Reported cases of sexual violence against children in Colombia, 2007–2016.**

![Bar chart showing reported cases of sexual violence against children in Colombia, 2007–2016.]

The figure is based on the coding of annual reports of the UN Secretary-General on Children and Armed Conflict from 2005-2016 conducted by Save the Children in November 2017.

Here, we see that the highest number of reported cases of sexual violence against children was the 23 cases in 2013. However, here it must be noted that the 2011 UNSG report stated that according to the Inter-institutional Committee for Justice and Peace, 677 cases were documented between 2006 and 2010.

**Child soldiers:** During the Colombian conflict, child soldiers were also reportedly used by the FARC, ELN, and EPL rebel groups. Since the data on child soldiers ends in 2010, it is also hard to assess more recent developments in this indicator, including what groups are using child soldiers or have been recently using child soldiers. However, when drawing on the UN data on reported cases, we find that child soldiers are reported to have been used in the Colombian conflict as late as 2016 (230 cases), also including recruitment of girls. The year with the highest number of reported cases was 2008, with more than 1,000 reported cases (again, including reported cases of recruitment of girls) (See Figure 56).
Infant mortality: In the analysis in section 3.4., we found that conflict-related violence seems to increase infant mortality in Colombia. Can this detrimental effect be gauged at the national level? Figure 57 shows the trend in infant mortality (IMR) in Colombia over the period 1960 to 2016, using the World Development Indicators. It shows a steady and quite steep decline in infant mortality, even after the end of the Cold War, which we presume happened in spite of the ongoing conflict. It is likely that, had it not been for the armed conflict in Colombia, this decline would have been even steeper.

Figure 57: Infant mortality rates in Colombia

4.2.3 Democratic Republic of the Congo (DRC)

The Democratic Republic of the Congo (DRC) has had a high level of violence since independence from Belgium in 1960, and has experienced conflict events throughout the 1989-2016 period. Starting in 1997, the country went through an intense conflict period, pitting different rebel groups supported by outside actors (such as Rwanda) against government forces. The next phase of the conflict started after the presidential election in 2006 and continued for over 10 years, with a decrease in hostilities since 2012-2013. These two conflict periods engulfed large parts of the country in conflict activity, which is visible in Figure 58 showing the map of conflict events in DRC between 1989-2015 (grey) and in 2016 (red). It shows that large swathes of the country have at some point experienced conflict-related violence.

Figure 58: Conflict zones in DRC

Data source: UCDP GED dataset (Sundberg and Melander, 2013; Croicu and Sundberg, 2017).

Children living in conflict zones: The wide coverage of the conflict is also visible in the number of children living in conflict-affected areas. Figure 59 shows the estimated number of children living in conflict zones in DRC. It clearly shows the two conflict periods, between 1997 and 2000, and between 2006 and 2012. The number of children
affected reaches a peak in 2011 when it is approximately 13 million. It has since declined substantially, and is now estimated at roughly 6 million.

**Figure 59: Children living in conflict zones and conflict events in DRC, 1990-2016**


**Sexual violence** has been rife in the different conflicts in DRC, and both the government and a large number of the rebel factions are registered in the SVAC data, including foreign actors like Rwanda. Figure 60 shows the places where groups perpetrating sexual violence against children have operated, indicating that these groups are present in large parts of the country, based on the SVAC data (covering the 1989-2009 period).
Figure 60: Sexual violence in DRC by conflict zones

Data source: SVAC dataset (Nordås and Cohen, 2014) & GEO-SVAC dataset (Bahgat, Nordås and Østby, 2017). Pink color indicates that the conflict area included conflict actors associated with reports of sexual violence (without any particular mention of child victims). Red color indicates that the conflict area had one or more conflict actors that were reported to perpetrate sexual violence, including against children.

In the UNSG reports, we find a significant number of reported cases of sexual violence against children and evidence that this practice seems to continue, as shown in Figure 61. DRC has by far the highest number of reported cases of sexual violence against children of all the countries in the UNSG reports, with a total of 9,151 reported cases for
the period 2006-2016, which is more than the number of reports for all the other countries put together. 2008 was the peak year, with almost 4,000 reported cases.

**Figure 61: Reported cases of sexual violence against children in DRC, 2006–2016.**

![Graph showing reported cases of sexual violence against children in DRC, 2006–2016.](image)

The figure is based on the coding of annual reports of the UN Secretary-General on Children and Armed Conflict from 2005-2016 conducted by Save the Children in November 2017.

**Child soldiers:** The use of child soldiers has also been very widespread in DRC. The Congolese government and all rebel groups are recorded as having employed child soldiers in the Haer and Böhmelt data. According to the UN reports, child soldier usage is still quite widespread (see Figure 62), with reported cases in all the years, including a significant number (492 in 2016).
**Figure 62: Reported cases of child soldier recruitment in DRC, 2007–2016.**

The figure is based on the coding of annual reports of the UN Secretary-General on Children and Armed Conflict from 2005-2016 conducted by Save the Children in November 2017.

**Infant mortality:** As discussed in the analysis looking at the impact of conflict on infant mortality, we find some evidence that conflict affects infant mortality in DRC, but the substantive effect is quite weak. This suggests that there might be a high level of variation within the country regarding the impact of conflict on infant mortality. Figure 63 shows the trend in infant mortality in DRC between 1960 and 2016. This shows the same striking pattern as for the previous four focus countries: Infant mortality is on a strong downward trend, apparently unperturbed by the waxing and waning of conflict in the country.
4.2.4 Nigeria

Nigeria has had numerous conflicts of different types every year throughout the period 1989-2016. For example, the Niger Delta has seen a dispute over self-determination since 2004, with the Niger Delta’s People’s Volunteer Force on one side, and the government on the other. In recent years, the northern parts of the country have been ravaged by a conflict between the government and the Islamist rebel group Boko Haram.

These various conflicts have covered large parts of the country. Figure 64 shows the conflict zones in Nigeria in 2016 (red), as well as the conflict zones between 1989-2015 (grey). It shows that the most recent conflict occurred in a southern and a northern geographical cluster (in which the conflict with Boko Haram played a large role). It also shows that most parts of the country have, at some point, been affected by conflict events. This suggests that a quite large number of children will at some point have lived in a conflict zone.
Figure 64: Conflict zones in Nigeria

Data source: UCDP GED dataset (Sundberg and Melander, 2013; Croicu and Sundberg, 2017).

**Children living in conflict zones:** Figure 65 shows the absolute number of children living in conflict zones throughout the 1989-2016 period, as well as the number of conflict events each year. We can see that the trend in children living in conflict zones is clearly associated with the intensity of the violence (as measured by the number of conflict events). The number of children living in conflict zones in Nigeria ranges from 1 million (in 2004) to around 50 million (in 2011), with the latter constituting about 66% of the country’s child population at the time. This number declined slightly in 2016 to 45 million, but is still very high (around 55% of the child population). The recent 5-year increase in the children living in conflict zones is in large part due to the conflict with Boko Haram, which is still very active in the northern parts of the country.
Sexual violence: What can we say about sexual violence in the Nigerian conflict(s)? According to SVAC, there are reports that the government has engaged in sexual violence against children, but this was not reported as of 2009 for any rebel actor. As the map in Figure 66 makes clear, even the conflict in the north has been spared sexual violence against children in the data that spans the 1989-2009 period. However, numerous reports of sexual violence have been made since 2009, particularly concerning the Boko Haram rebel group.\(^{37}\)

The UNSG reports show a significant number of cases of sexual violence against children, including 51 cases reported in 2016 (there are no specified numbers for previous years).

**Child soldiers** have been used in the Nigerian conflict. Crucially, both of the groups referenced above (Boko Haram and the NDPVF) are reported to have used child soldiers per the data from Roos and Böhmelt (2016). The government has not been reported to use...
child soldiers in these data. Since these data stop in 2010, we use the UNSG reports to assess whether there have been reports of more recent use of child soldiers. Specific numbers were recorded for 205 (278 cases) and 2016 (2122 cases). In fact, Nigeria was the country with the highest number of reported cases of child soldier recruitment of all the countries in the UNSG reports in 2016.

As described in Section 3.4, we find some evidence for a detrimental impact of conflict on infant mortality in Nigeria, but do not find strong evidence that this depends on the intensity of the conflict. To contextualize this finding, we present the trend in infant mortality in Nigeria from 1960 to 2016 in Figure 67. There is a steady decline in infant mortality throughout the period, with a slight plateauing (and moderate increase) between 1980 and 1990. As can be seen from the figure on children in conflict, the early 1990s were not a particularly volatile period in terms of conflict events in Nigeria. It is therefore hard to attribute this exception to the downward trend to armed conflict.

**Figure 67: Infant mortality in Nigeria**

![Infant mortality in Nigeria graph](image)

4.2.5 Yemen

Conflict in Yemen has raged since the late 2000s between the government and Al Qaeda in the Arab Peninsula (AQAP). In 2015, the Iran-backed Houthi militia Ansarallah ousted the government, leading to an increase in hostilities and broadening the conflict. The conflict in Yemen has mostly been concentrated in the east of the country, where both the Ansarallah group and AQAP have their bases of operation. This can be seen in the map of conflict activity in Figure 68.

Figure 68: Conflict zones in Yemen

Data source: UCDP GED dataset (Sundberg and Melander, 2013; Croicu and Sundberg, 2017).

Children living in conflict zones: The noted recent increase in conflict intensity can be grasped from looking at Figure 69, which depicts a stark increase in the number of children living in conflict zones. The figure shows a drastic increase in children living in conflict zones since 2010, with the current number at around 12 million children.
Figure 69: Children living in conflict zones and conflict events in Yemen, 1990-2016


**Sexual violence:** Sexual violence against children has not been reported in Yemen in the SVAC data, spanning the 1989-2009 period. However, according to the UNSG reports, 10 cases were reported in 2012 and one in 2015. Hence, the current data at hand do not indicate widespread sexual violence against children in Yemen. However, it is likely that here, as in many other countries, most cases of sexual violence are heavily under-reported.

**Child soldiers:** Child soldiers have been used in the Yemeni civil conflict, on both the government side and by rebel groups such as AQAP. Whether this is also the case for the Ansarallah rebel group is not identified in the Roos and Böhmelt (2016) data, which only covers the period until 2010. However, according to the UNSG reports, child soldier recruitment has been reported in most years, with high numbers in 2015 (762 reported cases) and 2016 (517 reported cases), as shown in Figure 70.
Figure 70: Reported cases of child soldier recruitment in Yemen, 2009–2016.

The analysis of conflict’s effect on infant mortality in Yemen does not reveal any indicative pattern. We are not able to conclude that there is no relationship since we are not certain if this finding is due to a lack of data or the influence of some other confounding factor that is unmeasured in our analysis. However, it is quite clear from Figure 71 that infant mortality has strongly decreased in the country over time, as for all the other countries. Nonetheless, recent news reports from Yemen, indicate that war, hunger, and a deadly cholera outbreak combined to create one of the largest humanitarian crises in the world in 2017. The cholera cases are expected to reach 600,000 by the end of 2017 (The Guardian, 2017). Hence, it is likely that the conflict in Yemen will lead to a significant number of indirect deaths of infants and children, due to both malnourishment and cholera.
Figure 71: Infant mortality in Yemen

Data source: World Development Indicators 2016 (World Bank 2016).
5 Risk factors

5.1 Basic analysis of conflict profiles

This section analyzes the determinants of the number of affected children in conflict, sexual violence against children, and recruitment of child soldiers. For each conflict, we ask: What are the conflict-specific factors that predict these outcomes? We consider the following predictors:

- The duration of the conflict
- The number of conflict actors
- The intensity of the conflict (in terms of battle-related deaths)

We also analyze how these factors affect the average number of affected children in a given conflict. Our expectation is that conflicts that last longer, involve more actors and are more intense should more often include both child soldiers and sexual violence against children, and affect more children. This is partly because longer and more intense conflicts, with more actors, often involve more extreme behaviors. This is also due to the fact that the level of competition between conflict actors is higher, leading to a ‘race to the bottom’ where all sides engage in unconventional actions, but also partly because longer conflicts with more actors should have a higher probability that someone will engage in these tactics. Conflicts that are more intense, longer, and with more actors should also lead to the brutalization of conflict actors, where the threshold for what is considered ‘appropriate’ conflict behavior is lowered. Furthermore, we expect child soldiers and sexual violence against children to coincide, indicating an underlying conflict pattern where children are more likely to be victimized.

The number of affected children:

We first investigate the risk profile for conflicts that affect more children, measured in terms of the number of children living in conflict areas (as defined previously). We do this by estimating the number of affected children, using the conflict-characteristics noted above.
(with the exception of sexual violence and child soldiers) as predictors. This analysis yields a similar risk profile as that identified above: Conflicts with more actors and higher death-tolls are more likely to impact greater numbers of children, measured in terms of the average number of affected children over the span of the conflict.

In summary, we find evidence that children are particularly likely to be affected by conflicts that are more intense, involve more actors, and last longer. We also find that the phenomena of child-soldier usage and sexual violence against children trend together. Conflicts with this type of profile should be considered ‘red flag’ conflicts. While we do not know how long current conflicts will last, many prominent contemporary conflicts fit this bill. Afghanistan and Syria, for example, have both had many actors involved, reports of sexual violence against children and child soldier use, and large death tolls.

**Child soldiers and sexual violence:**

Next, we describe the risk that a conflict will involve a) child soldiers, and b) sexual violence against children for different levels of conflict intensity, numbers of actors, and duration. For each indicator, we consider if it is statistically relevant as a predictor of these two outcomes, meaning that it has detectable association in the data.

First, we consider rates of sexual violence against children. Here, we find that three indicators are relevant: The number of conflict actors, the duration of the conflict, and the use of child soldiers. This means that longer conflicts with more actors, some of which use child soldiers, are more likely to see sexual violence against children.

Second, we assess the risk that a conflict involves child soldiers, with the same set of predictors. We find that two conflict characteristics in particular predict the use of child soldiers in a given conflict: The number of battle-related deaths, and sexual violence against children. This means that more violent conflicts where some actors use sexual violence against children are more likely to also see the use of child soldiers. Finding

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38 Since the ‘affected children’ data is based on all conflicts in the UCDP GED, and the sexual violence and child soldier data are only based on a particular subset of these, we cannot combine the child soldier and sexual violence data with the affected children data.

39 The risk analysis, and results, is presented in greater detail in the Technical Appendix, section 1.5.
that the number of battle-deaths in particular increases the risk of child soldier usage makes sense, since child soldiers are often used as replacements for adult soldiers when rebel groups face dwindling numbers (see Gates and Reich, 2010).

5.2 Risk factors identified in existing research

While the above analysis presents a general risk profile of the conflicts that are more likely to have detrimental impacts on children, this does not address the more detailed causes of child-victimization in conflict. Fortunately, there is a substantial body of research that addresses this question either directly or indirectly. We will here provide a brief review of what the literature says about risk factors in greater detail, with an emphasis on factors that can serve as early warning signals for the outcomes of interest, and that (in some cases) can be affected by policymakers and other stakeholders.

5.2.1 Affected children

No research directly tackles the question of what causes the number of children affected by conflict in their vicinity to increase or decrease. However, since this is in large part driven by how large conflict zones are (that is, conflicts that cover more territory will often result in more affected children), we can draw on the research on the geographic spread of conflict to say something about drivers.

Generally, the location and extent of fighting in conflicts depend on the strategic calculations of the actors fighting the conflict, the geographic terrain, physical infrastructure, as well as the intensity of violence in itself (escalations of violence often result in the diffusion of conflict to new areas). One factor that is known to condition conflict location is inaccessible terrain. It is easier for armed groups to operate in areas that are hard to access for government forces, such as mountainous or thickly forested regions in peripheral areas (see e.g., Tollefsen and Buhaug, 2015). We also know that fighting is more likely in populated areas, as armed actors can easily gain supporters and recruits in such areas, hide from the government among the population, and to control important human capital and appropriable resources (Raleigh and Hegre, 2009; Hegre et al., 2009, Sundberg and Melander, 2013). Hence, the combination of high population concentration
in inaccessible regions will often lead to expanded conflict zones and result in the increased exposure of children to conflict. It should be noted here that populated areas will often also be centrally located (e.g. the capital city), this means that not all populated areas will be at higher risk of conflict: Only the populated areas that are in the peripheral regions. These risk factors relate to physical aspects of a country, and as such are difficult for policymakers to address. However, they are important to consider since they can signal which conflicts will affect children in the future, and are thus relevant as early warning tools.

Another factor that leads to expanded conflict zones is weak state capacity. Wig and Tollefsen (2016) find that areas with poor-local governance (as measured by, for instance, the presence of corrupt local politicians and police) are more likely to see conflict. This characterizes many of the large (and underdeveloped) nations that have high numbers of children in conflict-affected areas, such as Nigeria, Afghanistan and Bangladesh. Hence, building strong local institutions should be an important priority for those wanting to prevent large numbers of children being affected by armed conflict.

The diffusion of conflict is also a product of the intensity of violence. Civil wars with strong escalation dynamics (i.e., rapid increases in fighting intensity in a given location) are likely to spread to more areas in a country (Schutte and Weidmann, 2011). Hence, a crucial objective to contain the number of children affected by conflict is to pre-empt the escalation of violence (even if the violence is currently circumscribed to a specific region). One policy tool that can be used by outside actors to prevent expansion of the conflict zone is peacekeeping operations. A strong finding in the literature is that peacekeeping operations (such as those administered by the UN) significantly reduce violence in armed conflicts (see e.g., Hultmann et al., 2014). Peacekeeping can reduce overall levels of violence by, for example, making disarmament less risky for warring parties, since peacekeeping operations can guarantee the future security of an armed actor if it chooses to disarm. They also make violence more difficult to engage in when compared to other forms of conflict resolution (such as peaceful bargaining) (Hultmann et al., 2014). Peacekeeping can also directly prevent conflicts from spreading in space. Peacekeeping operations do this by decreasing the mobility of armed actors, either through direct blocking of movements or by indirectly making troop movements more difficult (such as through monitoring, which removes the strategic advantage of surprise movements) (Beardsley and Gleditsch, 2015). Systematic studies of the effects of peacekeepers find that they reduce the overall levels of violence in
civil war (Hultman et al. 2013, 2014), and prevent conflict from spreading to more locations (Beardsley and Gleditsch, 2015). Hence, an additional risk factor that can increase the number of children affected by conflict is the absence of peacekeeping operations.

5.2.2 Sexual violence against children
There is little cross-national research directly studying the issue of sexual violence against children in conflict. However, since sexual violence against children very often accompanies sexual violence as such (as described above), it is safe to assume that the risk factors determining sexual violence as such also affect sexual violence against children. A key finding from the academic literature is that the practice of sexual violence varies among different armed groups. Some groups never engage in this practice, while others use it frequently. Since sexual violence is often targeted against women, an often-proposed explanation for sexual violence in conflict is the presence of gender-unequal patriarchal cultures that promote ideals of ‘militarized masculinity’ where sexual violence is condoned (e.g. Morris, 1996). On this account, military and masculine culture is a risk factor for sexual violence. However, as Wood (2014) notes, this does not explain the variation among armed groups in their use of sexual violence. Even some actors that are very violent against civilians do not engage in sexual violence. Hence, most recent research on sexual violence in conflict focuses on characteristics of the armed groups that engage in it rather than society at large.

One risk factor that has been proposed as a determinant of sexual violence is the form of recruitment that armed organizations rely on. Cohen (2013) argues that armed actors that recruit soldiers by force are more likely to use sexual violence as a tool to socialize combatants; she highlights the prevalence of gang-rape by armed groups using sexual violence. Cohen further finds that groups that rely on abduction, and states that rely on press-ganging, are more likely to engage in wartime sexual violence. This is also consistent with the finding that recruitment of child soldiers trends together with sexual violence against children, since groups that rely on forced recruitment seem to use sexual violence (at least partly) for socialization purposes (see also Cohen and Nordås, 2015).

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40 Cohen (2010) finds no link between gender-unequal institutions and wartime rape in a cross-national study.
Cohen (2013) further finds that actors that are less reliant on popular support, such as armed groups that profit from contraband and other illicit activities, are more likely to engage in wartime rape. Hence, an early warning signal for sexual violence against children are the recruitment methods used by armed groups.

5.2.3 Child soldiers

The factors that predict the use of child soldiers by rebel groups are often framed in terms of the demand for, and supply of, child soldiers. Demand-side factors relate to the need for rebel groups to use child soldiers, while supply-side factors refer to the supply of children that are easy to recruit. One supply side factor that is likely to affect the recruitment of child soldiers relates to the labor market. In poorer countries, child labor will be more common, and being paid to join rebel groups will be more attractive for otherwise impoverished youth (see e.g. Gates and Reich, 2010). Another factor that relates to supply is the presence of refugee camps. Refugee camps often house large numbers of children, where the costs of abducting children (for armed groups) are relatively low. Accordingly, Achvarina and Reich (2010) find that easy access to refugee camps is associated with higher child-soldier rates in conflict-affected countries.

Why do groups have a demand for child soldiers? Beber and Blattman (2010) argue that using child soldiers is an attractive strategy when the potential punishments from governments and the international community are low. First, children are easy recruits, in the sense that they are easier than adults to intimidate, indoctrinate, and manipulate to serve the biddings of the rebel group. Crucially, they are easy to deter from leaving the group once recruited. In a study of child-soldier recruits in Uganda, Beber and Blattmann (2013) find evidence for this. If the groups use child soldiers when it is to their benefit, then their use will depend on the punishments that such groups face when using child soldiers. If groups can use child soldiers without suffering sanctions from the government and/or the international community, then child soldier recruitment is a more attractive option. In a study of 35 rebel groups, Beber and Blattman (2013) find evidence in favor of this, by, for example, showing that groups who are supported by a foreign government (and are thus less likely to face sanctions because of child soldier use) are more likely to use child soldiers.
5.2.4 Summary

To summarize, we draw the following main lessons from this risk analysis and the review of the previous literature. First, more intense conflicts with more actors are more likely to increase the risk of children being harmed, either because they are used as child soldiers, become the victim of sexual violence, or are generally negatively impacted. The scope and intensity of the conflict thus puts children at risk in armed conflict. Second, the number of children affected by conflict will depend on the geographical spread of the conflict, which is a function of the physical terrain, the distribution of population centers, the (lack of) local state-capacity, the escalation of violence, and the presence (or non-presence) of peacekeepers throughout the country. Third, to predict whether groups will use sexual violence against children and/or child soldiers, we need to focus on the organizational dynamics of the groups themselves. Groups that recruit by force are particularly at risk of using both child soldiers and sexual violence, while groups that face greater costs of being punished for these tactics will use them less frequently.
6 Recommendations for policy and future research

Several implications for policy and research follow from this report. First, we want to highlight what we think is the most pressing concern at present: The lack of data on children in armed conflict. While we have presented information from a range of sources above that can be used (often indirectly) to assess certain aspects of the topic, the current state of data is far too precarious to draw decisive conclusions about the state of children in armed conflict. For example, the lack of data on child victimization, and the lack of detail in existing sources (such as the SVAC and the child-soldier data), makes it hard to answer important questions such as: Are there more or fewer children victims of sexual violence in armed conflict today than in previous years? Are more or fewer children recruited as child soldiers now than earlier? Are more or fewer children killed as a direct result of armed conflict?

These questions cannot be addressed properly with the present data at hand. For example, while we have estimates of the number of civilians killed in armed conflicts, these do not distinguish between children and adult civilians. Furthermore, while we have existing data on sexual violence against children in armed conflicts, it is hard to assess time trends (for example, do the numbers of child victims from sexual violence increase or decrease over time?) due to data coarseness and potential problems relating to under- and over-reporting. Reporting bias is particularly salient as an issue since the attention devoted to children in armed conflict varies over time with changing policy agendas. A reported increase in violence against children could reflect a genuine increase in violence, or simply an increase in reports of violence, which is partly driven by attention from the international community. Hence, we call for a systematic effort to collect data on the roles of children in armed conflict, using stringent criteria, and being attentive to these data-collection challenges, in order to diagnose the problem of children in armed conflict in greater detail and depth. The United Nations’ Special Representative for Children in Armed Conflict’s yearly reports on the impact of conflict on children since 1996, including reports of killing and maiming of children, as well as five other ‘grave violations’ against children (recruitment or use of child soldiers, attacks against schools or hospitals, rape and other grave sexual violence against children, abduction, and denial of humanitarian access) (see e.g. UNSG, 2017), represent a clear step in the right direction. However, the numbers provided in these
reports are often patchy, they vary in terms of precision of the reporting, and they do not cover all conflict countries for all years. Hence, investigating more resources in systematic data gathering on children’s well-being in conflict is the most direct and pressing policy implication of the present report.

A second policy implication is that the number of children affected by conflict must be seen as partly integral to the question of how intense and geographically encompassing a conflict is and will become. The levers that stakeholders have to reduce the magnitude of a conflict will thus also have a direct effect on the number of children affected. A crucial tool in this regard is the deployment of peacekeeping operations. Using peacekeeping operations to stop the geographic spread of a conflict as well to bring down the intensity of fighting is a clear policy implication in this context – of course with the caveat that such operations do not themselves victimize children through, for instance, sexual violence.

A third set of policy implications starts from the observation that groups use sexual violence (against children) and child soldiers for strategic purposes. As research on sexual violence demonstrates, this is often used as a tactic to socialize forcibly recruited combatants. This is one explanation why it often trends together with incidences of child soldier use. The strategic use of child soldiers is a strategy employed when child soldiers are easy to recruit, and sanctions are less costly. Hence, we urge policymakers to be vigilant when observing forced recruitment, which creates the conditions for a high potential supply of child soldiers. Since groups use these tactics strategically, they are also likely to respond to increased sanctions by governments and other actors. Therefore, a clear policy implication is to design and uphold credible sanction regimes against groups that use (or are expected to use) child soldiers and sexual violence against children. Where such practices go unpunished, children are likely to fall victim to predatory armed groups.

Finally, even in absence of high-quality data on the killing of children in war, it seems quite clear that the large majority of children that die during conflict die from indirect causes, such as poverty, malnutrition and lack of appropriate health services. Furthermore, children drop out of school as a result of conflict, which have negative effects not only for the children themselves, but also for the lives of their children again, and for society at large. Previous research from Nigeria, for example, has shown that aid helps to reduce infant mortality (Kotsadam et al., 2017). Hence, the final policy implication coming out of this
report is that humanitarian- and development aid to provide better schooling and health facilities in conflict- and post-conflict settings should be scaled up.
7 References

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