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COUNTING CASUALTIES

Operationalizing SDG Indicator 16.1.2 in Libya

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Credits and contributors

About the author

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Front cover photo

Women in front of a 'martyrs' wall' commemorating fallen fighters, Benghazi, Libya.
Source: Nicole Tung, Benghazi, Libya 2011

Overview

In Libya, many actors have been involved in measuring casualties caused by armed violence since the 2011 revolution, often using different approaches, definitions, and criteria for inclusion and exclusion. These differences have resulted in varied death estimates and a lack of consistent reporting. This Briefing Paper investigates the various challenges to measuring casualties in Libya in the context of gathering data for Indicator 16.1.2 of the Sustainable Development Goals (SDGs), which calls for states to report on 'conflict-related deaths per 100,000 population, by sex, age and cause'. In assessing the efforts of the organizations and entities that have measured casualties in Libya, the aim of the Briefing Paper is to support discussions on developing a standardized methodology and mechanism for meeting Indicator 16.1.2 from the perspective of an ongoing conflict.

Key findings

- Estimates of conflict-related casualties in Libya vary widely due both to the approach used by organizations with different mandates and capacities, and to different definitions and inconsistent inclusion or exclusion criteria.

- In Libya, it is difficult to distinguish between conflict-related deaths and deaths arising from generalized violence. This has an impact on casualty figures, and presents a clear challenge to the SDG 16.1 indicator framework, which assumes that homicides and conflict-related deaths can be accounted for separately.

- In Libya, the small pool of credible sources in the ongoing conflict could lead to selection bias. Estimation approaches could be used either to complement or to validate recording approaches.

- Given the methodological, practical, and political limitations to measuring conflict-related deaths in Libya, there is a need for a multiple-source and multiple-actor approach that is underpinned by a common methodology.

Introduction

Casualty figures from the Libyan revolution and its aftermath vary widely. These figures were central to discussions in the media and at the United Nations (UN) preceding the March 2011 North Atlantic Treaty Organization (NATO) military intervention. UN Security Council Resolution 1973, authorizing the NATO air campaign in Libya, expressed 'grave concern . . . at the heavy civilian casualties' and encouraged member states to take 'all necessary measures . . . to protect civilians and civilian populated areas under threat of attack in the Libyan Arab Jamahiriya' (UNSC 2011). After Operation 'Unified Protector', NATO initially claimed 'zero civilian casualties', thereby meeting the UN's stated goal (Beswick and Minor, 2013, p. 65). Several human rights-focused non-governmental organizations (NGOs) later refuted that claim, however, re-igniting the debate on conflict-related casualties in Libya that continues to this day (HRW, 2012).

At a time when international policies and interventions are ostensibly evidence-based, the importance of obtaining casualty data in conflict-affected countries remains paramount, even in the face of challenging circumstances. Obtaining reliable data on conflict-related deaths in Libya continues to be contentious and presents numerous challenges. The current conflict in Libya is characterized by myriad armed groups and actors divided along ideological, national, regional, ethnic, and tribal lines (Arraf, 2017, p. 23). Libya is not experiencing just one armed conflict, but many overlapping conflicts being fought between two rival parliaments and three competing governments, with support from foreign allies (Hall, 2016). The situation is compounded by the fact that Libya's central authority has effectively collapsed, along with key institutions—notably law enforcement and the judiciary—in many parts of the country (HRW, 2017b).

Goal 16 of the UN Sustainable Development Goals (SDGs) commits countries, among other measurable commitments, to '[p]romote peaceful and inclusive and just societies for sustainable development, provide access to justice for all, and build effective, accountable and inclusive institutions at all levels' (UNGA, 2015, p. 14). The Goal calls for a significant reduction of 'all forms of violence and related death rates everywhere' (UNGA, 2015, p.25).

There are two indicators for SDG 16 to measure the reduction in violence-related mortality rates. Indicator 16.1.1 will measure 'number of victims of intentional homicide per 100 000 population

> ❝Measuring conflict-related deaths is complicated by several factors, as it always starts with the potentially controversial definition of what constitutes an 'armed conflict'.❞

by sex and by age', and 16.1.2 will measure 'conflict-related deaths per 100 000 disaggregated by sex and age' (IAEG-SDGs, 2017, p. 26). The Inter-Agency and Expert Group on SDG Indicators (IAEG-SDGs, 2017, p. 26) has classified 16.1.1 as a Tier 1 indicator, meaning that it is conceptually clear and has an internationally established methodology, and that data is available for 'at least 50 per cent of countries and of the population in every region where the indicator is relevant' (IAEG-SDGs, 2017, p. 3), while 16.1.2 is classified as a Tier 3 indicator, which means that the IAEG-SDGs considers that it lacks an established methodology and standards (IAEG-SDGs, 2017, p. 3).

The UN Statistical Commission established the Praia Group on Governance Statistics in March 2015, in order to assist countries to produce data to measure progress towards reaching SDG 16, based on sound and documented methodologies. This group brings together national statistical offices of member states and relevant UN agencies, as well as academic institutions, NGOs, and civil society organizations (CSOs), to provide a platform to discuss 'best practices . . . and demand for these statistics by user constituencies'. The methodological development of 16.1.2 is currently being led by the Office of the United Nations High Commissioner for Human Rights (OHCHR) (IAEG-SDGs, 2017, p. 26; Pereira and Mendes, 2017).

This Briefing Paper aims to support the discussion on developing a standardized methodology for Indicator 16.1.2, using the case of the conflict in Libya to highlight various methodological, practical, and political challenges. Although the paper focuses on specific issues relating to the measurement of *conflict*-related deaths, in many contexts—including in Libya—the lines between conflict-related,

and political, economic, and criminal violence are increasingly blurred (Geneva Declaration Secretariat, 2011, p. 43). For these reasons, in relation to measurement, applying separate indicators to homicides and conflict-related deaths, with the implication that statistics will be collected by different actors, can be problematic, as will be illustrated in the case of Libya.

The Briefing Paper begins by discussing the different approaches to measuring conflict-related deaths; in particular, casualty recording as an overarching approach within which multiple models have emerged. It then provides an overview of the main actors in Libya that have measured conflict-related deaths since 2011. The second section presents the main methodological issues in measuring conflict-related deaths, as well as the practical and political challenges of the current conflict in Libya. It concludes with a discussion of these various issues and challenges in relation to consolidating an approach to Indicator 16.1.2. The paper is based on a review of relevant literature and a number of key informant interviews with individuals from a wide range of organizations who are currently recording casualties or conducting similar documentation work in Libya.[1]

Measuring direct deaths in conflict: diverse approaches

In non-conflict situations, data on violent deaths is usually captured by the criminal justice system or the public health system (UNODC, 2011, pp. 83–85). These state institutions typically record and investigate deaths due to violent and external causes in order to preserve public health and safety (UNODC, 2013, p. 99). In conflict situations,[2] however, these and other institutions are often weakened or collapse completely, rendering the state unable to carry out this function. The lack of official data, which is common in conflict-affected countries, presents one of the biggest challenges to meeting Indicator 16.1.2. In fact, at present, only the Colombian National Statistical Office is a source of data on conflict-related deaths (Pavesi, 2017, p. 3). In addition to capacity, states—particularly if they are involved in hostilities—

Box 1 Five basic models of casualty recording

Every Casualty's seminal study, *Good Practice in Casualty Recording: Testimony, Detailed Analysis and Recommendations from a Study of 40 Casualty Recorders* (2012), identified five basic models of casualty recording:

1. Document-based recording: Recording that relies solely on documentary evidence produced by a secondary source, such as the social and traditional media, NGO and civil society reports, official government or military documents, and other types of documents accessed publicly or privately.

2. Network-based recording: Recording that uses one or several on-the-ground networks of investigators or informants as its primary source of information. Networks may consist of civil society organizations (CSOs), such as religious groups or NGOs, that are in contact with witnesses, families, and other primary sources such as hospitals and morgues. These can be paid staff or volunteers recording in different areas of a country.

3. Combination: Recording using a combination of documentary sources with limited use of an on-the-ground network in areas that are difficult to access or for further verification.

4. Multiple-source investigation: Recording that combines documentary sources with an on-the-ground network of investigators. All documentary sources and information are collected in this approach.

5. Unknown victim identification: Recording that uses forensic techniques to confirm the identities of the dead.

Source: Minor, et al, 2012.

may find it politically sensitive to publish or even collect data on conflict-related deaths.

Measuring conflict-related deaths is complicated by several factors, as it always starts with the potentially controversial definition of what constitutes an 'armed conflict'. Beyond that, the diversity of actors, the range of motivations and mandates of those measuring conflict-related deaths, and the various ways in which those deaths can be measured further complicate the issues. The latter problem alone implies methodological approaches that may differ in definitions, categorizations, inclusion or exclusion criteria, disaggregation levels, and verification procedures. Although there is a generally understood definition of homicide,[3] there is less consensus on what constitutes a conflict-related death.

Conflict-related deaths could be due to both *direct* causes—such as being caused by a weapon or an act of aggression—and *indirect* causes—such as famine or outbreaks of disease caused by the destruction of vital health and sanitation infrastructure or disruption to food supplies (Geneva Declaration Secretariat, 2008, p. 31). In fact, there is no consensus among practitioners on the distinction between direct and indirect causes of deaths, which different organizations may not interpret in the same way (Sloboda and Minor, 2012, pp. 7–11). There are also multiple categories of 'direct deaths', the most common defined as deaths of combatants and civilians caused by clashes between warring parties. Other types of direct death can include one-sided violence, such as mass atrocities or war crimes committed by government actors, as well as extrajudicial killings and potentially others (Uppsala Conflict Data Program, 2017).

For the purpose of conceptual clarity, this paper focuses only on the approaches and issues relating to measuring *direct* deaths, which include battle-related deaths and one-sided violence. This focus does not detract from the importance of measuring indirect deaths, which some studies suggest could be up to 15 times higher than direct deaths in a conflict (Geneva Declaration Secretariat, 2008, p. 4) and can further our understanding of the full burden of armed conflict. Along with data on direct deaths, data on indirect deaths is crucial to enable a better understanding of patterns and trends in conflict, which would support humanitarian practitioners not only in designing responses during the conflict (as in the case of Libya) but also in promoting meaningful strategies for reconciliation and post-conflict transitional justice.[4]

Casualty recording

Historically, measuring direct deaths in armed conflicts involved simply listing the names of casualties and their demographic information (Jewell et al., forthcoming, p. 11). A formidable example of this is the Kosovo Memory Book (KMB), which lists the names of all known deaths during the 1998–2000 war in Kosovo, and goes beyond demographic detail to include the victims' stories (Kosovo Humanitarian Law Centre, 2000).

Deaths can also be grouped by violent events. Such incident-based reporting consists of tabulating and triangulating incidents of killings of combatants and civilians. The sources of information about incidents include the media, eyewitness accounts, military records, hospitals, and morgues (Sloboda and Minor, 2012, p. 3–17). Lists of individuals can also be derived from incident-based reporting, depending on the level of detail collected. The Uppsala Conflict Data Program's (UCDP) Geo-Referenced Event Dataset is an example of incident-based reporting that has covered conflicts worldwide since the 1970s, based mostly on media reports (UCDP, 2017). The Iraq Body Count (IBC) is the most frequently quoted example of incident-based reporting at a national level, and also collects individual-level information. The organization has been recording incidents since the 2003 military intervention in Iraq. Its primary source is news reports about the conflict, but it also integrates lists from other sources, such as military war logs (IBC, 2010).

Individual- and incident-level reporting and their combination can broadly be referred to as casualty recording. Every Casualty Worldwide is a non-profit organization that advocates for recording every individual killed in armed violence and promotes best practices. It defines casualty recording as: 'The process of systematically and continuously attempting to document and record incident or individual level information about direct violent deaths from armed violence' (Every Casualty, 2016, p. 61).

Every Casualty hosts a network of 51 organizations that are recording casualties in a wide range of countries, regions, or specific demographic sub-groups experiencing conflicts or armed violence (Every Casualty, 2017). The growth in the number of organizations doing such work[5] can be partly attributed to the spread of technologies that enable citizens to report on violence as it happens, and platforms that enable crowdsourcing.

In this context, crowdsourcing is the practice of collecting information on violent incidents from the affected population via text messages, email, Twitter, and other social media. It uses advanced technology to filter, process, and geo-reference the information received, and can represent it on a map almost instantaneously (Jewell et al., forthcoming, p. 16). Ushahidi is one such technological platform that supports a wide range of crowdsourcing projects, including the Office for the Coordination of Humanitarian Affairs (OCHA) Libya Crisis Map, which reported violent incidents during the conflict as well as other information relevant to the humanitarian response (see Table 1). Ushahidi's platform has also been used to monitor election violence during the 2008 elections in Kenya and for humanitarian crisis-mapping following the earthquake in Haiti (Ushahidi, 2016).

Estimation

Statistical approaches are used to estimate both direct and indirect conflict-related deaths. Population-based surveys[6] and multiple systems estimation (MSE) are the two most common methods used by the academic community, and increasingly by NGOs and other organizations, to estimate direct deaths[7] in conflict. Population-based surveys are grounded in the premise that it is possible to estimate the number of conflict-related casualties based on a random representative sample of the population (Jewell et al., forthcoming, p. 14). A violence cluster survey is a type of population-based survey that is predicated on the assumption that violence is not spread equally across a whole country or sub-region, but rather in clusters in particular geographic locations. In cluster surveys, researchers first need to determine which areas of the country experience high levels of violence, based on media reports and other sources, and administer the surveys in those areas. Estimates are then extrapolated to the affected population, rather than to the entire population of the country (Small Arms Survey, 2005, pp. 240–24).

According to the Human Rights Data Analysis Group, the principal proponent of MSE, it comprises 'a family of techniques for *statistical inference*. MSE uses the overlaps between several incomplete lists of human rights violations (or casualties) to determine the total number of violations' (HRDAG, 2016). MSE was used in the Truth Commission for the Guatemalan Commission for Historical Clarification in 1999, and the International Criminal Tribunal for the former Yugoslavia (ICTY), among other conflicts (HRDAG, 2016). Many believe that MSE is

Table 1 Summary of actors that published casualty figures in Libya 2011–2017[8]

	Entity	Purpose/ mandate	Approach	Definitions used	Exclusions	Sources	Time period
Governmental	Libyan Ministry for the Affairs of the Families of Martyrs and Missing People[9]	Search for missing people and compensate victims of the conflict and their families	Unknown	Armed conflict and definitions based on local understanding of the conflict	All civilians and combatants loyal to Qaddafi forces	Unknown	2011
	General National Council[10]	Tripoli-based government mandated to oversee Libya's security and justice institutions	Unknown	Criminal violence	Unknown	Unknown	2013
International organizations	OCHA Libya Crisis Map[11]	Monitor violent trends for humanitarian response planning	Casualty recording (crowdsourcing)	Armed conflict and associated definitions under IHL and customary international law	Combatants	Social media, mainstream media, and citizen reports	March–June 2011
	United Nations Support Mission in Libya (UNSMIL)[12]	Monitor civilian deaths and injuries under protection of civilian mandate	Casualty recording (combination)	Armed conflict and associated definitions under IHL and customary international law	Combatants and non-battle-related deaths	Documentary evidence from hospitals, morgues, witness statements, media, and social media	January 2016– present
NGOs	Libya Body Count[13]	Monitor violent incidents	Casualty recording (documentary or media-based)	Armed violence/ criminal violence	None	National and international media	January 2014– December 2016
Academic institutions	Faculty of Medicine, University of Tripoli[14]	Estimate mortality, injury, and displacement during the 2011 conflict	Estimation (population-based survey)	Armed conflict	Children, certain geographical sites	Survey	February 2011– February 2012

one of the better approaches to measuring direct deaths in conflict, especially because it has the potential to provide disaggregated trends in some categories (Jewell et al., forthcoming, p. 18). MSE can be used only if there are at least two theoretically independent sources of data, often casualty recording data, with properly matched names, the independence of which is often questioned in reality (Alda and McEvoy, 2017, pp. 9–10).

Background

Nature of the conflict[15]

Since the end of the Qaddafi regime, Libya has experienced high levels of political unrest and associated armed violence. At the national level, various competing governments have sought and largely failed to form a viable state. At the regional and local levels, a seemingly ever-changing cast of different armed groups—many allied with the competing governments—seek control of territory and the country's oil wealth. The result is a quilt, often chaotic, of overlapping powers, competing agendas, and general uncertainty.

To further complicate matters, there has been external intervention in the Libyan conflict. Airstrikes, both acknowledged[16] and unacknowledged,[17] have caused casualties in the country. One of the interviewees identified the frequency of undeclared strikes in Libya as a major concern. Unlike in other conflicts (such as Syria), where all belligerents declare their presence, the source noted that the lack of such declaration in Libya makes it difficult to track the parties involved and the weapons they use. Even where the source of an attack is known, it is often difficult to obtain accurate information on its consequences. For example, although the US Africa Command (US AFRICOM) has issued reports on targeting and alleged combatant deaths for US airstrikes in Libya, it has never released any information on civilian casualties (Airwars, 2017).

While these dynamics create problems in obtaining accurate data in the north of the country, in the remote southern regions of Libya, the problems are even more acute. For example, in May 2017, forces aligned with the UN-backed Government of National Accord (GNA) attacked a military base allegedly held by the Libyan National Army (LNA) near Brak El-Shati, allegedly executing at least 30 captured soldiers (HRW, 2017a). While casualty figures varied, some sources reported that as many as 141 people died in the attack, including civilians (al-Warfalli, 2017). Many of the organizations interviewed said that events in the south, such as this one, are even harder to document given the remote location, and the lack of eyewitnesses and credible reports coming from the area.

Implications of the conflict for security institutions

Rival governments with competing legislative, administrative, and state security institutions present many challenges in measuring conflict-related deaths. The casualty-recording actors interviewed for this Briefing Paper report that none of the current Libyan governments has adequate capacity to carry out effective casualty recording. According to these sources, even the data that is released is likely to be less reliable: it may contain double counts, be incomplete, or fail to specify the period which the information covers.

Part of the 'quilt' mentioned above can be found in the hybrid nature of its functional (and functioning) security institutions. These hybrid institutions blend formal and informal elements, allowing competing interests and loyalties to flourish. This results in quickly evolving institutions with no static character or mandate (Lacher and Cole, 2014, p. 15). Hybrid institutions also tend to blur the distinction between civilians and combatants, as their members can, in some senses, always be considered both. Given this, casualty recorders trying to determine the combat status of a victim related to a hybrid institution are confronted with determining who or which 'side' was responsible, which is exceedingly difficult and may also change. Members of these institutions also have less incentive to provide accurate information, as their own interests may change or be compromised by providing it.

Security situation

The uncertain security situation has complicated accurate data collection. First, many international organizations and NGOs, including the United Nations Support Mission in Libya (UNSMIL), International Committee of the Red Cross (ICRC), and Human Rights Watch, have evacuated their staff from Tripoli. Many have relocated to Tunis and have limited opportunities to re-enter Libya. As a result, casualty recording and other documentation work in Libya is currently being done remotely. Such organizations are unable to investigate on the ground and verify all the information they receive. Although this alone is not an obstacle for good casualty recording, interviewees reported that an over-reliance on secondary sources—particularly the local media—results in less specific data. Another common problem arising in the uncertain security atmosphere is that the pool of primary sources (information gatherers, informants, and witnesses) tends to shrink. Sources often flee, become victims of the violence, or no longer feel safe to share information with outsiders for fear of reprisals. Even when organizations are able to enter the country to conduct investigations and speak with primary sources, they may be hindered by one of the competing authorities in Libya.[18]

Methodological challenges to measuring conflict-related deaths in Libya

Casualty recording

Definitions and inclusion/exclusion criteria

The National Transitional Government used the term *shuhada* (martyrs; see Box 2) when publicly referring to those who died in the 2011 conflict. Many Libyans saw this conflict as a revolution that ended the decades-long dictatorship of Col. Muammar Qaddafi. By the end of the revolution, which ended with the fall of Qaddafi and his regime, the National Transitional Council (NTC),

Figure 1 Published casualty figures for Libya 2011–17 by actor
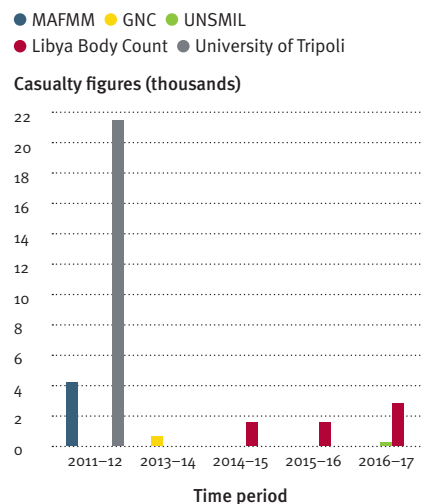
Note: No data is available for 2012–13.

through the Ministry for the Affairs of the Families of Martyrs and Missing People (MAFMM), estimated that 25,000 people had died in the conflict. One year later, in January 2013, MAFMM significantly revised these numbers, and the deputy minister, Miftah Duwadi, stated that the total number of 'martyrs' in the revolution was closer to 4,700[19] (Black, 2013) (see Figure 1). In Libya, the term 'martyr' was applied to those who died at the hands of the 'regime', that is anti-Qaddafi fighters who died during the uprising (see Box 2). In fact, Libya's Transitional Justice Law was not impartial and the MAFMM was reported to be inherently biased towards 'martyrs' or those who died at the hands of the Qaddafi regime[20] (Lamont, 2016, pp. 391–92). Those determined to be families of martyrs obtained preferential support, easier access to compensation, and public acknowledgement of the death of their kin (Lamont, 2016, pp. 392–93). The MAFMM gave no public estimates of civilian casualties, and in the case of the NATO campaign, the MAFMM even refused to acknowledge any civilian fatalities from the NATO airstrikes in their immediate aftermath (Fetouri, 2014).[21]

As noted in Table 1, the definitions international organizations use to record deaths in Libya are based on international humanitarian law (IHL) and human rights law, as well as customary international law. The Libya Crisis Map also included certain categories and definitions taken from UN Security Council Resolutions 1970 and 1973, which authorized the NATO intervention in Libya (SBTF, 2011). Although these definitions are internationally accepted, their application is

Box 2 The use of the terms *shuhada* or *martyrs*

In English, the Arabic term *shuhada* literally means 'witnesses', but when used to refer to a victim of a violent death, it is understood to mean 'martyrs'. The term features heavily in the Arab discourses on conflicts in the region, both in the news media and in the general public. Who is perceived to be a 'martyr' depends on which side of the conflict you are on, making it a highly subjective and inherently political term (Geneva Declaration Secretariat, 2015, p. 63). Although the term is likely to be used for combatants, it can also be used to describe civilians who died at the hands of the 'opposing' side—such as when used by the NTC in Libya to described victims of the NATO bombings (HRW, 2012). The term 'martyr' is problematic because it is politically loaded. For the purposes of measuring conflict-related deaths, it is a contested category that is not properly defined, making estimates difficult to integrate with other casualty counts.

In Zawiya, Libya, as in a number of cities in Libya, the memorialisation of fighters killed in the revolution was an important social activity. Memorialisation of non-combatant deaths was less prevalent.
Source: Richard Moyes, October 2011

The Libyan situation clearly presents a challenge to the underlying assumption made by the SDG indicator framework that homicides and conflict-related deaths can be accounted for separately by separate bodies."

rarely clear-cut. In relation to the crucial area of distinguishing between civilians and combatants, for example, this can be difficult due to the informal nature of some of the warring parties in Libya, who make use of volunteers who are not members of any formal armed group but engage in the conflict on occasion. Although they would be considered belligerents under Additional Protocols I and II of the 1949 Geneva Conventions, this nuance of IHL may not be fully understood by the general public, especially when relying on eyewitness accounts or crowdsourcing.[22]

In terms of exclusion criteria, as noted above, both international organizations recording deaths in Libya clearly excluded combatants in their counts. The UN Support Mission in Libya (UNSMIL) began recording conflict-related casualties in January 2016, under its 'protection of civilians' mandate (UNSC, 2011). As such UNSMIL's civilian casualty recording is limited to: 'Civilians who are killed or injured in the course of hostilities and who were not directly participating in the hostilities. The figures do not include those casualties that are not a direct result of hostilities for example executions after capture, torture or abductions' (UNSMIL, 2017). This criterion for civilian deaths may be too narrow to reflect the actual level of violence in Libya. This is clearly reflected in Figure 1, which reveals a large discrepancy between UNSMIL's casualties recorded in 2016–17 and those recorded by LBC for the same period.

While these exclusions present a limitation to measuring *all* conflict-related deaths, as suggested by Indicator 16.1.2, civilian deaths remain an important measure of lethal violence. Further, the fact

that these organizations use a transparent methodology and explicit exclusion criteria means that their data can be easily understood and even integrated with other sources' data from the conflict.

Following the 2011 conflict in Libya, armed violence continued until the second wave of full-blown armed conflict in 2014, when armed clashes escalated between the groups supporting the outgoing General National Congress (GNC) and the House of Representatives. In between the two phases of armed conflict, the boundaries between politically motivated violence, conflict, and criminal violence were increasingly difficult to distinguish. For example, Human Rights Watch documented a wave of politically motivated assassinations in eastern Libya in 2013. Armed groups and criminal groups were taking advantage of the authorities' apparent refusal to investigate these killings, or even produce official figures. These deaths were difficult to qualify as they occurred in the context of a disintegrating security situation (HRW, 2013). At this stage, the GNC, which was at the time the Tripoli-based government, released a report that stated that there were a total of 643 violent deaths in Libya in 2013 (AFP, 2014). The report stated that 'crime has become a profession and a source of income in the absence of an effective police force, despite there being 250,000 policemen' (AFP, 2014). It is unclear whether this included politically motivated assassinations or other incidents caused by armed groups. Qualifying a situation as 'armed conflict' or 'criminal violence' has a significant impact on casualty figures, because it determines which deaths will be included in or excluded from the count. The Libya

Body Count (LBC), which began recording in 2014, claimed that it made no distinction between victims and that 'all deaths were counted' (LBC, 2016), suggesting a wide inclusion criterion that would include deaths as a result of criminal as well as conflict-related violence.

Libya is currently facing a similar situation as in 2013 where conflict and criminality co-exist. Distinguishing between the two is considered to be one of the main difficulties in recording casualties in Libya, according to all organizations interviewed. The Libyan situation clearly presents a challenge to the underlying assumption made by the SDG indicator framework that homicides and conflict-related deaths can be accounted for separately by separate bodies.

Disaggregation

Although Indicator 16.1.2 suggests that conflict-related deaths should be disaggregated by sex, age, and cause, a higher level of disaggregation, particularly by location and weapon type, is widely seen as a critical aspect of measuring progress towards SDG 16. For example, the Community of Democracies has presented a number of voluntary global supplementary indicators for SDG 16, including firearm-related injuries per 100,000 population, which would further assist states to measure progress at the national level (Community of Democracies, 2017, pp. 6–13). According the coordinators of the Libya Crisis Map, the analysis it produced, which was derived from disaggregated and geo-located data, including casualty data, was crucial to humanitarian coordination and decision-making. The data also served the dual purpose of fulfilling the monitoring requirements in United Nations Security Council Resolutions 1612, 1820, 1970, and 1973, which include requirements to monitor civilian casualties, as well as violence against women and children (IRIN, 2011). According to the coordinators, these requirements are rarely fulfilled even by UN missions.[23] UNSMIL, which currently publishes as much disaggregated data as possible—including demographic information, date and location of incidents, and type of weapons—noted that beyond fulfilling monitoring requirements of various UN resolutions, the disaggregated data provides a good evidence base for dialogues on protection with different interlocutors in the Libyan conflict.[24] This kind of dialogue, based on civilian casualty data collected by the United Nations Assistance Mission in Afghanistan (UNAMA), helped influence conflicting parties to

change their behaviour, and to reduce civilian deaths and injuries caused by certain military tactics. By recording disaggregated information on location, date, time, and type of weapons used, UNAMA was able to identify patterns of harm in relation to particular tactics adopted by certain armed groups, which allowed UNAMA to conduct evidence-based advocacy to reduce civilian casualties (Beswick and Minor, 2014).

LBC also provided some level of disaggregation in its casualty figures, but because its main source of information is media reporting, it had only limited ability to disaggregate by demographic categories such as sex or age (LBC, 2016). Conversely, government sources have not released any disaggregated information to accompany their estimates of casualties.

The ability to disaggregate data is not only directly related to the sources of data available in a conflict but also to what information points will be gathered in the collection phase. According to almost all of the organizations interviewed, the practical challenges and available sources may make it impossible to record all the information on demography, location, and circumstances of death.

Verification

Of the entities reviewed, only the Libya Crisis Map and UNSMIL made their detailed methodology publicly available and provided further details about their methodology in an interview. LBC gave only a cursory description of its methodology and did not respond to requests for interviews. The MAFMM and GNC never made their methodology public, which along with the fact that they produced no disaggregated data, makes it impossible to assess the credibility of the data.

The methodologies detailed by UNSMIL and the Libya Crisis Map usually required multiple independent sources to corroborate events and also preferred physical or documentary evidence, such as photographs and official hospital or morgue documents. UNSMIL noted that verification approaches were flexible and that sometimes deaths will be included even with only a few sources to corroborate them, if the sources are known to be trustworthy, since these are classified in order of reliability.[25] LBC had virtually no verification process, stating that 'in most cases only a single news source is used', citing as its reason the relatively nascent status of the Libyan news media (LBC, 2016). Because of this lack of verification, some of those interviewed for this

Briefing Paper did not regard LBC as a credible source of casualty information in Libya.

In addition, casualty recording that relies on a small pool of secondary sources, such as media reports, NGO reports, and social media, is likely to be characterized by 'event size bias' (Jewell et al., forthcoming, p. 12). In this context, event size bias or selection bias is owing to the fact that the media tends to report incidents with a large number of deaths, paying less attention to incidents resulting in a smaller number of casualties, and may only be present in certain areas (Ball and Price, 2015, p. 264). This means that the likelihood that organizations such as LBC will fail to record a large number of deaths because of uneven or biased media coverage is even more pronounced in view of the quality of the media in Libya, detailed in the next section. Similarly, crowdsourcing efforts, such as the Libya Crisis Map, can also suffer from selection bias. Bigger and more violent events tend to be more visible and are witnessed and reported by a greater number of people. In addition, some parts of the country may have different levels of coverage according to connectivity or even the uptake or knowledge of the technologies available for reporting incidents (Jewell et al., p. 17). It is difficult to overcome selection bias with these approaches to casualty recording. In some cases, statistical estimation such as MSE can account for selection bias and be used to complete the casualty recording data.

Estimation

As noted in Table 1, only one population-based survey was found at the time of writing—a survey estimating mortality, injury, and population displacement in Libya between February 2011 and February 2012. This survey, which was conducted by academics at the University of Tripoli, covered over 14 provinces in six Libyan regions, representing the primary sites of armed conflict at that time. The survey estimated that a total of 21,490 persons were killed over that period (Daw et al., 2015, p. 101).

In general, survey results are dependent on a number of factors, including questionnaire design and sampling methods. The questionnaire for the Libya survey was not included as part of the published methodology, but was said to collect demographic and epidemiological data on all adult citizens who had been killed. The authors did acknowledge the

common limitation of such surveys, which is related to the perception of interviewees, who may misremember details regarding events, or mirror personal bias in answering the survey questions. In the methodology section the authors state: 'Face to face interviews were carried out with at least one member of each affected family listed in the registry of the Ministry of Housing and Planning' and that 'the data were obtained via official request to access the civil registers at each regional office of the Ministry of Housing and Planning' (Daw et al., 2015, pp. 102–103), but gave no further details on the sampling method. Based on this information, it is difficult to assess whether this was indeed statistical estimation or an enumeration of all conflict-related deaths based on a government registry, which had previously identified 'families' who were 'affected' by the conflict.[26]

The authors of the survey acknowledge uncertainties about the pre-conflict baseline data in Libya, which is common for surveys conducted in conflict-affected countries. There are also various practical issues in administering a survey during a conflict, which this one claims to have done, such as survey design and the security risk to field workers (Small Arms Survey, 2005, p. 24). In addition, some experts believe that although most population surveys might have a sample size that is enough to give reasonable estimates, the sample is rarely sufficient to provide disaggregated estimates for demographic sub-groups (Jewell et al., p. 15). The Libya survey, however, did provide disaggregated data for several sub-groups, including sex and age.

Other challenges to measuring conflict-related deaths in Libya

Media

Libya's media environment has changed significantly since the Qaddafi regime. No longer exclusively state-controlled and regulated, there has been a boom of unregulated private media outlets and newspapers. These changes have not necessarily been synonymous with independent reporting (Fanack Chronicle, 2017). Private media outlets in Libya are divided along partisan lines—controlled by or affiliated with the government in the east, the Tripoli government (GNA), or the Islamist groups (Toustrup, 2015). Also, due to the factional political environment,

> "In Libya, multiple actors have been involved in measuring both conflict-related deaths and deaths caused by generalized armed violence, using different methodologies and for different purposes."

media outlets are effectively controlled by the dominant militia groups operating in their region of circulation and key power brokers, including prominent businessmen (Abou-Khalil and Hargreaves, 2015, pp. 1–2). These parties use the media to assert their legitimacy and therefore many of the casualty recorders interviewed see them as neither independent nor trustworthy. Many of the organizations interviewed believe that there are no fully independent news outlets in Libya and therefore use only local media to identify violent incidents that they may have missed, although they would not confirm an incident based only on local media reports.[27]

Despite the lack of regulation or official government intervention, the media environment remains highly dangerous and repressive. Reporters Without Borders, which documents attacks against journalists, recorded three journalists killed in Libya of the 62 worldwide in 2016, and four of the 73 worldwide in 2014 (RWB, n.d.). The attacks are often carried out by armed groups affiliated with local militias to silence media criticism, leading many journalists to practise self-censorship or refrain from sending reports to international news agencies (HRW, 2015). There has been little change in Libya's media environment since, and in 2017 the World Press Freedom Index, an initiative of Reporters Without Borders, ranked Libya 163 out of 180 countries.

Most organizations measuring conflict-related deaths in Libya cite under-reporting as an obstacle to their work. Several mentioned that they could not record casualties in Sirte and other cities when the Islamic State in Libya controlled these areas.

Social media

Social media is extensively used by all state and non-state actors in Libya, as it provides a straightforward and immediate means to publish content. The Freedom House initiative observed that 'Facebook is often the platform of choice for city and even government officials to publish updates and official communication' (Freedom House, 2015). Militia groups use Facebook as their primary means to disseminate information, as do the eastern-based government and the GNA. Islamist groups also use social media, particularly the telegram platform, to declare when fighters or civilians have died on their side. Often the two rival governments use social media accounts with the same name.[28] One organization cited this as problematic when trying to identify which government is publishing the information. Nearly all organizations interviewed have used social media as a source, sometimes even as a primary source if the social media user or netizen[29] has been proven to provide reliable information.

As noted in Table 1, the Libya Crisis Map, which was operational for a brief period at the beginning of the Libyan revolution, used social media as its main source. The challenge with this, as reported by its coordinators, was that social media users, citizen journalists, and netizens are not necessarily documentation experts and would therefore often report fragmented information. This improved over time, and they became better at reporting violent incidents and details such as weapon types. Another problem was related to coverage, which depended on the location of those reporting and the

telecommunications network, which was non-existent in some areas of Libya,[30] and there is less access to the internet in Libya than in its regional neighbours (Freedom House, 2015). However, OCHA maintained that this kind of reporting was useful for capturing information as events were happening and to provide some level of analysis of the overall violence trends in the country (IRIN, 2011).

Capacity

All organizations interviewed in Libya reported that capacity was the principal issue that prevented them from doing more or better casualty recording. They cited the need for more resources, particularly personnel, to provide fuller coverage of casualties in Libya by actively scanning social media and local media as well as analysing and cross-checking information. One respondent noted the need for staff to be fluent in Arabic in order to record casualties in Libya.

Conclusion

This paper has highlighted some key methodological, practical, and political issues that have arisen in Libya in relation to measuring conflict-related deaths, some of which are applicable to other conflicts.

First, estimates of casualties in Libya vary widely, both because of the approach used (estimation or casualty recording) and within an approach because of the different definitions and inclusion/exclusion criteria used. It is increasingly difficult to distinguish between conflict-related deaths and deaths as a result of generalized violence in Libya, which therefore affects casualty figures. The current situation in Libya presents a clear challenge to the SDG 16.1 Indicator framework, which assumes that homicides and conflict-related deaths can be accounted for separately.

When relying on casualty recording to measure conflict-related deaths, disaggregation is a function of a minimum data standard, which means that consistent disaggregation is possible only for data points that are consistently recorded. Based on the experience of Libya, it is not always possible to meet this minimum standard because of the nature and intensity of the conflict and sources available (see Box 3), although some organizations have managed to go beyond the level of disaggregation suggested by Indicator 16.1.2, which illustrates the diverse uses of casualty data.

At the beginning of the conflict, casualty data, along with other information, was used to inform humanitarian responses and planning, and to monitor the overall trends of the conflict. Intergovernmental organizations and civil society also used such information to highlight human rights abuses committed by the various parties in the conflict, and to advocate on behalf of civilians. To a limited extent, casualty data in Libya has also been used to engage with conflict parties on compliance with international law. These uses may fall outside the strict purpose of the indicator, which is to measure the rise or fall of conflict-related deaths over time, although the Praia Group on Governance Statistics has recognized that various actors demand the data produced by the SDG process.

Verification standards are also dependent on the number of credible sources available in conflict, and in Libya this pool is small and shrinking, which inevitably leads to selection bias. Estimation approaches, such as MSE, tend to account for biases in events and selection and could be used to complement or validate recording approaches.

As noted in the introduction, progress in reducing violent deaths will be measured by two indicators, one on homicides and the other on conflict-related deaths.

In Libya, multiple actors have been involved in measuring both conflict-related deaths and deaths caused by generalized armed violence, using different methodologies and for different purposes.

Despite this, there is no single 'go-to entity' for data on direct conflict-related deaths in Libya. Although national ownership will be key for reporting on SDG indicators, in armed-conflict, recording from non-governmental organizations, CSOs, and inter-governmental agencies becomes crucial especially where the state's capacity, motives, and willingness to collect data on direct conflict-related deaths are compromised (OHCHR, 2017, p. 3). In Libya, a multiple-source and multiple-actor approach, which would include international organizations, civil society, and local authorities, would be the best way to record conflict-related deaths. Such a system needs to be tied to common definitions, classifications, data standards, and verification procedures and could be complemented by estimation approaches for validation. This kind of coordination mechanism needs to be supported by a clear mandate and adequate capacity to conduct the work. As such, the role of the state, and particularly its cooperation, remains important.

By adopting the SDG framework all states have committed to reduce violence

and related deaths. Central to this will be the state's ability to implement policies and measures to reduce the specific type and level of violence, relevant to their situation, as well as the political, technical, and financial support from the international community, especially in conflict-affected countries. Improving the quality of data and enhancing monitoring mechanisms to allow for disaggregation of data by sex, age, means of violence, and other relevant indicators will be essential in understanding patterns of violence and addressing them. (Widmer and Pavesi, 2016, p. 7). '[The] indicator framework will turn the SDGs and their targets into a management tool to help countries develop implementation strategies and allocate resources accordingly, as well as a report card to measure progress towards sustainable development' (LCSDSN, 2015, p. 2). This further highlights the significance of capturing the full impact of conflict, including direct and indirect deaths, using defensible methodologies and standards. ●

Notes

1   This includes local and international NGOs that are documenting human rights abuses.
2   In many cases, even states which are not experiencing an armed conflict can fail to register violent deaths due to their lack of capacity (UNODC, 2013, p. 100).
3   Although there are some discrepancies between countries on the inclusions of intentional homicides (UNODC, 2013, pp. 101–103), the International Classification of Crime for Statistical Purposes has established a classification of criminal offences, including different types of homicides, which is based on internationally agreed concepts, definitions, and principles (UNODC, 2015, p 7).
4   Measuring indirect deaths, which sometimes occur after a conflict has ended, is also complicated by the lack of an agreed methodology. For a more detailed discussion of accounting for indirect deaths in the context of SDG Indicator 16.1.2, see Alda and McEvoy, 2017.
5   In 2012, Every Casualty's network comprised fewer than 20 organizations, which had reached some 50 by 2016.
6   Population-based surveys include household surveys and victimization surveys.
7   Household surveys can also estimate both direct and indirect deaths.
8   Not included in Table 1 is the ICRC's protection monitoring database, which gathers information on conflict-related deaths from media sources but is used only internally for situational awareness of the ICRC;

Box 3 Minimum standard of data

In 2016, Every Casualty Worldwide launched the international *Standards for Casualty Recording*, which aim to standardize and establish a baseline for the practice regardless of the type or size of the organization carrying out the recording (Every Casualty Worldwide, 2016, pp. 3–4). The *Standards for Casualty Recording* (2016) established the following essential information points to be part of a casualty record:

Minimum
● Location of incident
● Date or time of incident
● Source
● Number of people killed in the incident

Additional
● Demographic information on the individual victims
● Name
● Age
● Sex/gender
● Combat status

Additional demographic data if available such as
● Profession
● Nationality
● Religion
● Type of death/weapon type
● Involved actors/perpetrators

and the General Prosecutor's office in Libya, which tracks killings that are notified to his office. These killings could include a small number of conflict-related deaths.

9 Based on Black (2013).

10 Based on AFP (2014).

11 Based on Meier (2011); Ungerleider (2011); IRIN (2011); and Verity (2011).

12 Based on the author's Skype interview with Matilda Bogner, Senior Human Rights Officer, UNSMIL, 15 March 2017.

13 Based on LBC (2017).

14 Based on Daw et al. (2015).

15 Much has been written about the elements competing for political and military power in Libya since the fall of the Qaddafi regime. The UN Panel of Experts on Libya (established in 2011, pursuant to Resolution 1973) has provided significant background on the situation in Libya since its inception. In addition, the author has relied on CFR (2017), Lacher and Cole (2014), and RULAC (2017).

16 For example, US AFRICOM acknowledged US airstrikes in Sirte and Sabratha in 2016, targeting IS elements (Airwars, 2017).

17 In August 2014, residents of Tripoli reported two airstrikes by unidentified planes targeting sites controlled by Islamist groups. No country or group claimed responsibility for the strikes, though rumours linked them to countries known to support the Libyan National Army (LNA), such as Egypt and the United Arab Emirates (Al Jazeera, 2014). In February 2016, Human Rights Watch reported on an airstrike on a hospital compound in Derna, which killed two civilians and caused extensive damage. No party, either within or outside Libya, claimed responsibility for the attack (HRW, 2016).

18 For example, in their monthly report on civilian casualties UNSMIL notes that '[d]ue to the security situation, UNSMIL has not been able to carry out direct site visits to all relevant locations in Libya to obtain information. Fear of reprisals against sources further hamper information gathering.' (UNSMIL, 2017).

19 The casualty figures were revised after research undertaken by the MAFMM, but there is no information about how this research was conducted, and the figure did not include final fatalities on the Qaddafi side (Black, 2013).

20 Author's Skype interview with Hanan Salah, Libya Researcher, Human Rights Watch, 15 March 2017.

21 According to Human Rights Watch's investigation of eight NATO bombing sites in Libya, 72 civilians were killed as a result of NATO's airstrikes, including 20 women and 24 children (HRW, 2012). In addition, in late January 2012, the NTC visited two of the NATO bombing sites and allegedly expressed its condolences and called the victims 'martyrs' (HRW, 2012).

22 Author's interview with Hanan Salah, Libya Researcher, Human Rights Watch, 15 March 2017.

23 Based on interview transcript of 24 May 2011 with Jeffrey Villaveces, Alain Lemaire, and Amaury Prieto of UN OCHA/Libya Crisis Map.

24 Based on the author's Skype interview with Matilda Bogner, Senior Human Rights Officer, UNSMIL, 15 March 2017.

25 Based on the author's Skype interview with Matilda Bogner, Senior Human Rights Officer, UNSMIL, 15 March 2017.

26 In a blog post, Spagat provides a preliminary discussion about methodological and practical issues raised from the unclear description of the survey's methodology section (Spagat, 2017). An email was sent to the authors of the survey to clarify these questions, but no reply has been received to date.

27 Based on the author's Skype interview with Matilda Bogner, Senior Human Rights Officer, UNSMIL, 15 March 2017; and with Hanan Salah, Libya Researcher, Human Rights Watch, 15 March 2017.

28 Author's interview with Hanan Salah, Libya Researcher, Human Rights Watch, 15 March 2017.

29 A netizen is a citizen who uses the internet as a means of political participation.

30 Based on interview transcript of 24 May 2011 with Jeffrey Villaveces, Alain Lemaire, and Amaury Prieto of the UN OCHA/Libya Crisis Map.

Bibliography

Abou-Khalil, Naji and Laurence Hargreaves. 2015. *The Role of Media in Shaping Libya's Security Sector Narratives*. United States Institute of Peace: Special Report. 30 April.

AFP (Agence France-Presse). 2014. 'Libya violence kills 643 people in 2013: parliament.' The Daily Star Lebanon. 23 January.

Airwars. 2017. 'Libya: international airstrikes and alleged civilian casualties.' Accessed 28 August 2017

Al Jazeera. 2014. 'Unidentified jets attack targets in Tripoli'. 24 August.

Alda, Erik and Claire Mc Evoy. 2017. 'Beyond the Battlefield: Towards A Better Assessment of the Human Cost of Armed Conflict'. Briefing Paper. Geneva: Small Arms Survey. September.

Alvazzi Del Frate, Anna and Luigi De Martino. 2016. *A New Development Agenda: Bridging the Development–Security Divide*. Research Notes No. 58. Geneva: Small Arms Survey. June.

Al-Warfalli, Ayman. 2017. 'Death toll rises in southern Libya attack, defense minister suspended.' Reuters. 21 May.

Arraf, Sari. 2017. 'Libya: A Short Guide to the Conflict.' *The War Report 2017*. Geneva: Geneva Academy. June.

Ball, Patrick and Megan Price. 2015. 'Selection bias and the statistical patterns of mortality in conflict.' *Statistical Journal of the IAOS*, Vol. 31, pp. 263–72.

Beswick, Jacob and Elizabeth Minor. 2013. 'Casualty Recording as an Evaluative Capability: Libya and the Protection of Civilians'. In Micheal Aronson et al., eds. *Hitting the Target? How New Capabilities are Shaping International Intervention*. RUSI Whitehall Reports. pp. 65–78.

__. 2014. *The UN and Casualty Recording: Good Practice and the Need for Action*. London: Oxford Research Group. April.

Black, Ian. 2013. 'Libyan revolution casualties lower than expected, says new government.' *The Guardian*. 8 January.

CFR (Council on Foreign Relations). 2017. 'Global Conflict Tracker: Civil War in Libya.' Updated 1 May. Accessed May 2017.

Community of Democracies. 2017. *Framework of voluntary supplemental indicators for Goal 16 on inclusive, just and peaceful institutions*. September.

Daw, Mohammed, Abdallah El Bouzidi, and Aghnaya A. Dau. 2015. 'Libyan armed conflict 2011: Mortality, injury and population displacement.' *African Journal of Emergency Medicine*, Vol. 5, No. 3. September 2015, pp. 101–107.

Dardagan, Hamit and Hana Salama. 2013. *Stolen Futures: The Hidden Death Toll of Child Casualties in Syria.* London: Oxford Research Group. November.

Every Casualty Worldwide. 2016. *Standards for Casualty Recording*. November.

__. 2017. Casualty recording network. Accessed September 2017.

Fanack Chronicle. 2017. 'Libya's Media Landscape: An Overview.' 21 March.

Fetouri, Mustafa. 2014. 'Libya's forgotten war victims.' *Al-Monitor*. 4 February.

Freedom House. 2015. *Freedom on the Net Report 2015: Libya*. October.

Geneva Declaration Secretariat. 2008. *Global Burden of Armed Violence.* Geneva: Geneva Declaration Secretariat.

__. 2011. *Global Burden of Armed Violence 2011: Lethal Encounters*. Geneva: Geneva Declaration Secretariat.

__. 2015. *Global Burden of Armed Violence 2015: Every Body Counts*. Geneva: Geneva Declaration Secretariat.

Hall, Richard. 2016. 'Libya now has three governments, none of which can actually govern.' PRI. 31 March 2016.

HRW (Human Rights Watch). 2012. 'Unacknowledged Deaths: Civilian Casualties in NATO's Air Campaign in Libya.' 13 May.

__. 2013. 'Libya: Wave of Political Assassinations.' 8 August.

__. 2015. 'War on the Media: Journalists Under Attack.' 9 February.

__. 2016. 'Libya: Derna Air Strikes Hit Hospital.' 17 February.

__. 2017a. 'Libya: Mass Executions Alleged at Military Base.' 21 May.

__. 2017b. 'Libya: Activists Being Silenced.' 27 July.

HRDAG (Human Rights Data Analysis Group). 2016. 'Core Concepts.' Accessed April 2017.

IBC (Iraq Body Count). 2010. 'Iraq War Logs: Technical appendix to IBC analysis.' October.

IAEG-SDGs (Inter-agency Expert Group on Sustainable Development Goals). 2016. Work Plans for Tier III Indicators. 11 November.

__. 2017. 'Tier Classification for Global SDG Indicators.' April.

IRIN. 2011. 'How online mapping helped crisis response.' IRINnews.org. 12 May.

Jewell, Nicholas P, Michael Spagat, and Britta Jewell. Forthcoming. 'Accounting for Civilian Casualties: From the Past to the Future.' *Social Science History.*

Kosovo Humanitarian Law Centre. 2000. 'Kosovo Memory Book 1998–2000.' Accessed April 2017.

Lacher, Wolfram and Peter Cole. 2014. *Politics by Other Means: Conflicting Interests in Libya's Security Sector.* SANA Working Paper No. 20. Geneva: Small Arms Survey. October.

Lamont, Christopher. 2016. 'Contested Governance: Understanding Justice Interventions in Post-Qadhafi Libya.' *Journal of Intervention and Statebuilding,* Vol. 10, No. 3, pp. 382–99.

LBC (Libya Body Count). n.d. 'About.' Accessed March 2017.

LCSDSN (Leadership Council of the Sustainable Development Solutions Network). 2015. *Indicators and a Monitoring Framework for the Sustainable Development Goals: Launching a Data Revolution.* New York: SDSN. 12 June.

Meier, Patrick. 2011. 'Crisis Mapping Libya: This is No Haiti (Updated).' iRevolutions blog. 4 March.

Minor, Elizabeth, John Sloboda, and Hamit Dardagan, eds. 2012. *Good Practice in Conflict Casualty Recording: Testimony, Detailed Analysis and Recommendations from a Study of 40 Casualty Recorders.* London: Oxford Research Group. October.

OHCHR (Office of the High Commissioner on Human Rights) 2017. 'Counting Conflict-related Deaths: Background Note on a Proposed Methodological Approach for Discussion'. Paper presented at the multi-stakeholder consultation on human rights indicators for the SDGs, Geneva, 5–6 September.

Pavesi, Irene. 2017. *Tracking Conflict-related Deaths: A preliminary Overview of Monitoring Systems.* Research paper. Geneva: Small Arms Survey. March.

Pereira, Clodomir and Carlos Mendes. 2017. 'Activities of the Praia Group in regards to producing data for measuring the progress of Goal 16.' Praia Group. 15–18 January.

__. 2016. 'Violation of Press Freedom Barometer.' Accessed April 2017.

RULAC (Rule of Law in Armed Conflict). 2017. 'Non-international armed conflicts in Libya.' RULAC project. Geneva Academy. February. Accessed April 2017

RWB (Reporters Without Borders). n.d. 'Violation of Press Freedom Barometer.' Accessed April 2017.

SBTF (Standby Task Force). 2011. *Libya Crisis Map Deployment 2011 Report—Standby Volunteer Task Force & UN OCHA (March–April 2011).* Unpublished. March–April.

Sloboda, John and Elizabeth Minor. 2012. *Paper 3: The Range of Sources in Casualty Recording.* London: Oxford Research Group. October.

Small Arms Survey. 2005. *Small Arms Survey 2005: Weapons at War.* Oxford: Oxford University Press.

Spagat, Michael. 2017. 'How Many People were Killed in the Libyan Conflict–Some field work that raises more questions than it answers.' War, Numbers and Human Losses blog. 21 June.

Toustrup, Morten. 2015. 'Polarisation and revolutionary faultlines in Libya.' 20 November.

UCDP (Uppsala Conflict Data Program) UCDP Database. Accessed April 2017

Ungerleider, Neil. 2011. 'Here is a Map of the Humanitarian Crisis Hotspots in Libya: Don't Tell Ghaddafi.' *Fast Company.* 3 March.

UNGA (United Nations General Assembly). 2015. Resolution 70/1. Transforming Our World: The 2030 Agenda for Sustainable Development. Adopted 25 September. A/RES/70/1 of 21 October 2015.

UNODC (United Nations Office on Drugs and Crime). 2011. *Global Study on Homicide.*

__. 2013. *Global Study on Homicide.*

__. 2015. 'International Classification of Crime for Statistical Purposes, Version 1.0.' March.

UNSC (United Nations Security Council). 2011. Resolution 1973 (2011), adopted 17 March 2011. S/RES/1973 (2011).

__. 2017. *Report of the Secretary-General on the United Nations Support Mission in Libya.* 22 August. S/2017/283.

UNSMIL (United Nations Support Mission in Libya). 2017. 'Libya Human rights Report on Civilian Casualties July 2017.' Tunis. 1 August.

Ushahidi. 2012. 'The [unexpected] Impact of the Libya Crisis Map and the Standby Volunteer Task Force.' Ushahidi.com. 9 January.

__. 2016. 'About Ushahidi.' Accessed April 2017.

Verity, Andrej. 2011. 'The [unexpected] Impact of the Libya Crisis Map and the Standby Volunteer Task Force.' Standby Task Force blog. 19 December.

Widmer, Mireille and Irene Pavesi. 2016. *Monitoring Trends in Violent Deaths.* Research Note No. 59. Geneva: Small Arms Survey. September.

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