DEMOGRAPHIC AND HEALTH CONSEQUENCES OF CIVIL CONFLICT[*]

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Abstract

After a steady decline since the end of the Cold War, the number of ongoing civil conflicts in poor countries increased for the first time, to 30, in 2007, according to the Uppsala Conflict Data Programme (UCDP) (Gleditsch *et al.*, 2002). Within countries, the scale and the intensity of civil conflict differ, together with the needs of the affected population. These conflicts subject the civilian population, including women and children, to arbitrary violence and to systematic and long-term deprivations of food and public health services, except as provided by humanitarian organisations. The size and profile of this population is not well known, and neither are essential characteristics-such as demographic data, and health and nutritional status-that help set priorities for interventions both during and after the conflict. The main premise of this paper is that the well-being of individuals and families in conflict and post-conflict situations is a key condition for sustainable peace and long-term development. Factors such as infant health, maternal care, food and nutrition, and basic sanitation are among the top priorities of the affected people. Development programming for post-conflict countries should be firmly rooted in an accurate and timely evidence base to justify the priorities selected.

It is not the peace that brings the food, it is the food that brings the peace

Introduction

Communities amid civil wars often exist in extreme destitution, as public services are rarely effective or even functional. Refugees and displaced populations may also be excluded from available services in the host community. Persistent and widespread insecurity inevitably results in a breakdown of health services ultimately leading to the degradation of the health status of affected populations. In many cases, government disinterest in the welfare of these populations further aggravates the decline of their condition.

Definitions of civil war vary widely, differing among international law, political science, international relations and economics, each overlapping but not necessarily comparable. Epidemiologists, who have recently taken on the challenge of measuring the human impact of conflicts, define the phenomenon strictly according to its effects on non-combatant or civilian populations. A recent quote from New York Times describes a situation that a public health community would consider a situation of civil conflict.

"You need to let the world know there's a civil war here in Iraq," said Adel Ibrahim, 44, a sheik in the Subiah tribe. "It's a crushing civil war. Mortars kill children in our neighborhoods. We're afraid to travel anywhere because we'll be killed in buses. We don't know who our enemy is and who our friend is." (Edward Wong, "A Matter of Definition: What Makes a Civil War, and Who Declares It So?", The New York Times, 26 November 2006.)

Apart from the political, economic, or human characteristics that define the type and extent of their impacts, civil conflicts are also unique because of their spatial and temporal characteristics. In some cases, such as Somalia, entire countries are engulfed by civil conflict. In others, violent conflict can rage in selected areas while the rest of the country carries on in relative stability (as in Kenya). Many conflicts have carried on for years or even decades with sporadic and violent outbursts, creat-

ing a new order of society into which generations are born and bred in "normalised" conditions. Sustainable peaceful settlements and resumption of normal development are rare in these circumstances (Collier *et al.*, 2003; Collier, 2007).

This paper is built on the premise that the health and well-being of a community is a key precondition for sustainable peace and long-term development. Unless the resident population sees it as in their interest to withdraw support from guerilla or rebel fighters or resist hostilities, stability of any sort will be short-lived. Peace must bring tangible and visible dividends. Also, in post-conflict or unstable countries where major demographic and socio-economic changes have occurred, decisions need a strong evidence base to justify selection of programme priorities. The costs of failure are high and the opportunities for redress are low. Such evidence will require objective and timely data for the post-conflict development policies to be relevant and effective. In these fragile situations, policies that rely on standard development models risk missing the target and failing to maintain peace.

This paper examines actionable demographic and health factors that drive social stability at community levels. Other factors such as socio-economic, political, or cultural changes in conflict settings are beyond the scope of this paper.

The first chapter presents the available data on the demographic consequences of conflict. In this chapter, we examine the recent research on conflict-related deaths, including the methodological debates on direct mortality through violence and trauma, and on indirect mortality as a result of infrastructure breakdown and the collapse of primary health care. We also discuss changes in fertility behaviors, both as a means to enable generational survival and as a result of high child mortality.

The second chapter covers the impact of conflicts on the health status of affected populations as a key factor that jeopardises sustainable peace and development, as well as the risk factors that define vulnerability.

The third chapter addresses data challenges and the monitoring of Millennium Development Goals (MDGs) in conflict-affected countries. Chapter four concludes and presents policy recommendations.

Chapter 1

Demographic consequences of conflict

In 2003, the International Union for the Scientific Study of Population (IUSSP) organised a working group on the demography of conflict and violence. It was an early look by demographers, political scientists, and other academics at how and why people die in conflicts (Brunborg and Urdal, 2005; Brunborg and Tabeau, 2005). Since then, many studies have documented both the demographic causes-ethnic fractionalisation, social inequalities, youth bulges, migration-and consequences of conflict-forced migration and changes in fertility behaviors and mortality (Homer-Dixon, 1991; Urdal, 2004; Neupert and Prum, 2006; de Walque, 2005; Heuveline, 1998; Verwimp and Bavel, 2005). More recently, epidemiologists have taken an active interest in conflict-related mortality, especially in relation to causes of death.

In this chapter, we summarise the discussion on the consequences of conflict from an epidemiologic perspective through two main demographic pathways: mortality and fertility. Migration will be studied in the section discussing forced displacement.

1.1 Mortality in conflict: a demographic phenomena

The ultimate human consequence of conflict is death, or, on a population level, mortality. This may be further distinguished between direct combat deaths and indirect deaths caused by the consequent disease, hunger, or lack of care. These are commonly referred to as excess deaths, that is, those deaths that would not have

occurred had there not been a conflict[1]. Indirect deaths are of course difficult to estimate, leading to intense debate around the approximation of death tolls due to conflicts in Iraq, the Democratic Republic of Congo, Darfur, Bosnia, or Cambodia (Heuveline, 1998; Degomme and Guha-Sapir, 2010; Coghlan *et al.*, 2006; Tabeau and Bijak, 2005; Burnham *et al.*, 2006; Lambert and Lohlé-Tart, 2008). Indeed, estimating excess mortality will remain a controversial and sensitive exercise, not only because of the variety of data sources and methodologies[2] used but also due to the major advocacy or legal implications of the death estimates. Prosecutions in international courts of justice or release of humanitarian funds may depend on studies that count up or estimate how many non-combatants have died due to a civil war. Although precise point estimates of the number of dead will inevitably generate debate, few will disagree that armed conflict leaves behind significant demographic shifts and gaps among combat-age men or across the entire population. Patterns of death at community levels are discussed further in section 2.1.

The genocides in Rwanda and Cambodia are good examples of the highly visible demographic deficit of combat-aged men after civil war. The shape of the Cambodian pyramid clearly shows that in 1979 most of the deaths were concentrated in people ages 20 to 40, indicating violence as the main cause of mortality (Figure 1.1(a)). This deficit has led to "missing males" moving up the age ladder of the population distribution as years pass.

Figure 1.1(b) plots the masculinity ratio by age group for Cambodia (1998 census). When compared to a counterfactual from 1965, a significant deficit among the males in the 20- to 40-year-old age group is evident in 1979, at the end of the Khmer Rouge period.

A closer look at the patterns of mortality in Cambodia provides lessons for the study of more recent conflicts. Heuveline (1998) estimated that there were 2.52 million deaths from 1970 to 1979, ranging from a low estimate of 1.17 million to a high estimate of 3.42 million. The main uncertainty in his estimate was related to migration, as data on population movements were not available. Mortality increased from 1974 until the early 1980s, a period characterised by intense violence and regime

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[1]The excess deaths are given by the difference between an observed mortality rate and a baseline mortality rate (expected in a non-crisis situation) multiplied by the population at risk and the time period.

[2]Many data sources and methods exist that are aimed at estimating mortality in crises: population projections from censuses, retrospective surveys, prospective surveillance, forensic investigation, multiple systems estimation, and media reports (Ratnayake *et al.*, 2009).

Figure 1.1: Male deficit following the Khmer Rouge Genocide in Cambodia
(1975-1979)
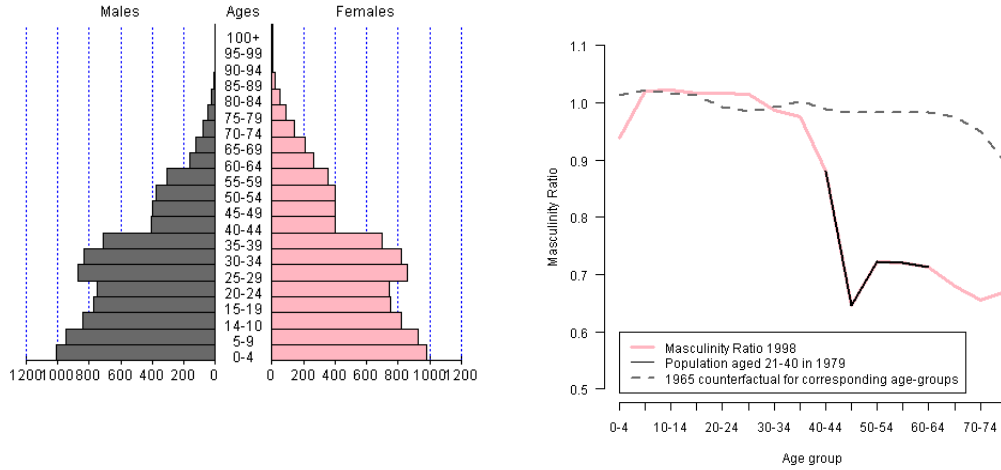
(a) Projected Population Pyramid, Cambodia, 2010 (b) Masculinity Ratio, Cambodia, 1998 (in thousands)

Source: IDB (2010)

shift (de Walque, 2005). The generations that bore the brunt of the mortality were those born between 1940 and 1959, who would have been between 20 to 40 years of age. Both Heuveline (1998) and de Walque (2005) agree that the probability of dying was significantly higher among men at those ages. The mortality differential resulted in important discontinuities in the population distribution of Cambodia, which are still visible today in the country's population pyramid (Figure 1.1(a)).

These early studies of the demographic impact of conflict revealed patterns that have since been observed elsewhere. A demographic deficit of men is also observed in Darfur; its population pyramids can be created from the 2005 World Health Organization (WHO) survey (Figure 1.2). The survey was conducted in the three Darfur states, dividing the population in three groups according to their location type and population status: Internally Displaced Persons (IDPs) living inside camps, IDPs living outside camps, and the resident population. The population pyramids in all three Darfur states show significant deficits of males in the 15-49 age group (WHO, 2005).

The missing males in these populations are only partly attributable to excess deaths. Mass migration for employment-even as mercenaries-is also likely to be a

Figure 1.2: Age, sex disparities among populations exposed to conflict in Darfur (2005)


(a) Greater Darfur

(b) West Darfur

(c) South Darfur

(d) North Darfur
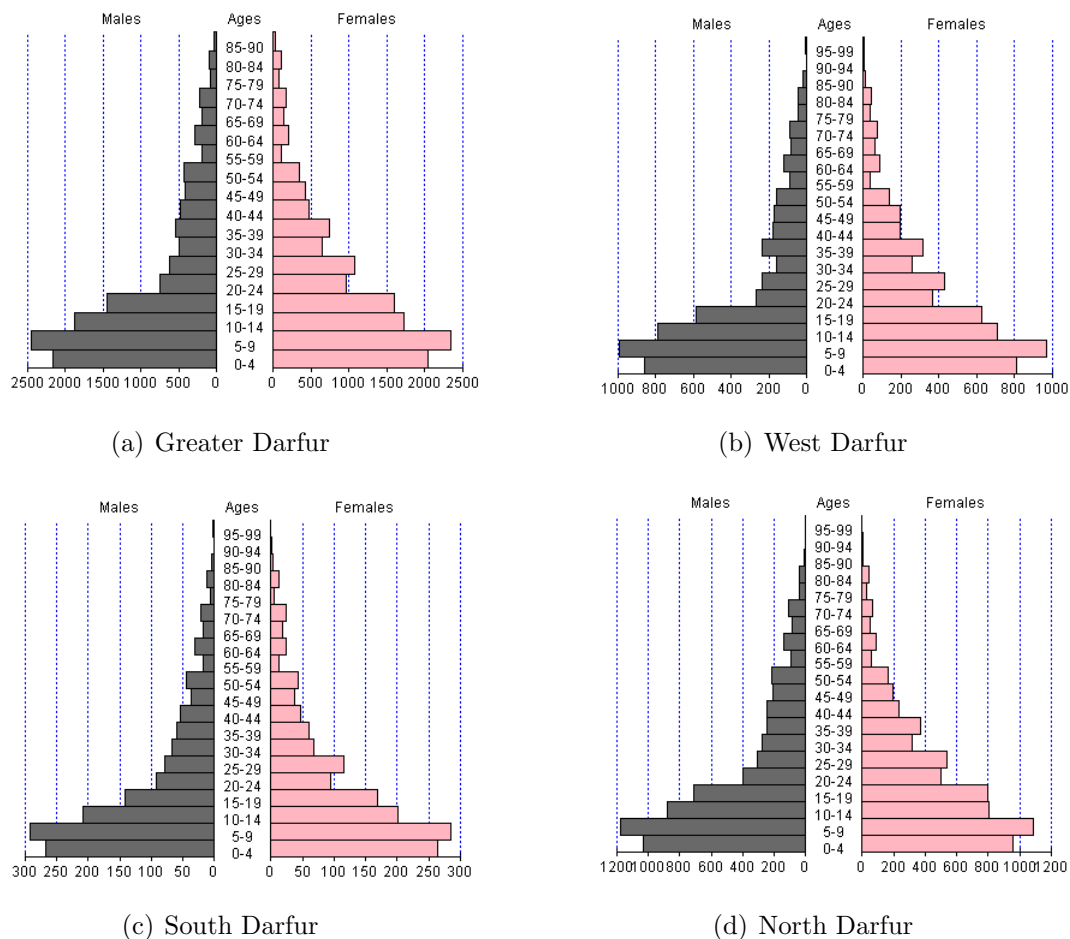
Source: WHO (2005)

significant contributor to this gap. In the case of Darfur, the data from a previous Multiple Indicator Cluster Survey (MICS) in 2000 indicate that there was already a deficit of men before the onset of the conflict, probably due to emigration further aggravated by the breakout of hostilities.

Finally, in contrast to the examples above, the Democratic Republic of Congo's population pyramid (Figure 1.3) presents an evenly dispersed profile: high mortality among the conflict-affected population was mainly due to extremely poor living conditions and high morbidity which caused excess deaths in all age and sex groups. Targeted violence against men was less common and everyone faced higher risks of mortality. The situation in the Democratic Republic of Congo is also controversial as the conditions leading to excess deaths in that country can be attributed both to

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the current conflict and to the past Mobutu regime, where desperate living conditions were the main cause of excess mortality at all ages.

Figure 1.3: Normal population pyramid due to equal distribution of excess mortality in DR Congo (2010)
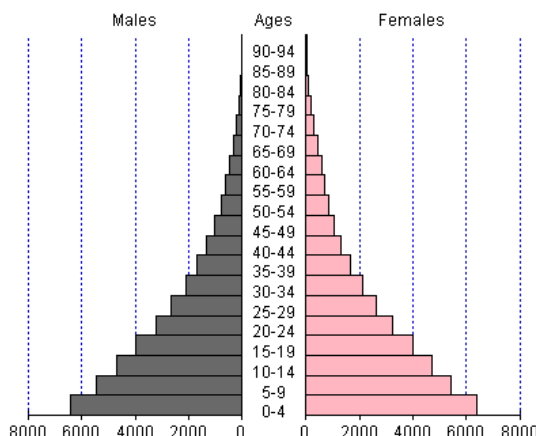
Source: IDB (2010)

Identification and causes of unusual deficits in specific age-sex groups are important pieces of information for policy and programme development. In the first instance, it is important to establish if there is an age-sex deficit. In the examples cited above, the deficits are often among combat-aged men and whether the deficit of males is due to death or migration, the consequence to families is important. Deficits may result in an increase in women- or child-headed households (Bruck and Schindler, 2009). Family revenues decline in exiguous circumstances as sons and husbands die or leave, and households that were faring well in the last census or survey may have slipped to the margins after the war. In exceptionally fragile situations, these households-often hard to identify-require targeted action.

In the second instance, the cause of the deficit can be important for policy making. Interventions in the case of mass migration are different from those if the deficit is due to mass deaths. In poor but peaceful settings, remittances can offset the revenue loss from migration; in conflict-affected regions, remittance channels may not be functional. If most of the loss is due to deaths, then social problems related to inheritances and the place of widows can develop. Moreover, labour force availability or the establishment of electoral lists are often demographic projections based on mortality estimates.

Information on the cause of gaps in population pyramids is therefore key for providing services that are appropriate for that community, given its history.

1.2   Fertility

The previous section reviewed the impact of war on mortality, which in many circumstances changes the population pyramid significantly from its normal distribution. Fertility differs in its dynamics from mortality as it is partly determined by individual choices. The implications of changed fertility patterns for post-conflict development policies are important for assessing the health of the population but critical for short-term social stabilisation.

Many of the poorest countries have high fertility rates but the highest are consistently among the conflict countries in Sub-Saharan Africa, where neither fertility behaviour has not changed significantly since 2000. On a longer term, the conflict and fragile state countries do not share the drop in fertility experienced in most countries in the last fifty years (Figure 1.4).

Plotting death rates against birth rates for all countries illustrates that conflict-affected countries are outliers among all developing countries even by these crude indicators (Figure 1.5).

Studies on fertility among conflict-affected populations by and large emphasise the complexity of reproductive responses and behaviours to violence and adversity, including both biological and socio-economic factors. They show that fertility patterns are not stable through protracted conflicts and change significantly during the course of the war.

On the one hand, fertility rates have been observed to decrease due to conflict-related insecurity: the general increase in violence, psychological stress, wealth uncertainty, and poor health. These factors determine age at marriage, the frequency of sexual intercourse, and labor migration, all of which can change fertility to reduce the number of children per woman (Lindstrom and Berhanu, 1999; Agadjanian and Prata, 2002; Blanc, 2004).

On the other hand, conflicts and ensuing massacres can also boost fertility,

Figure 1.4: High fertility in conflict-affected countries and fragile states
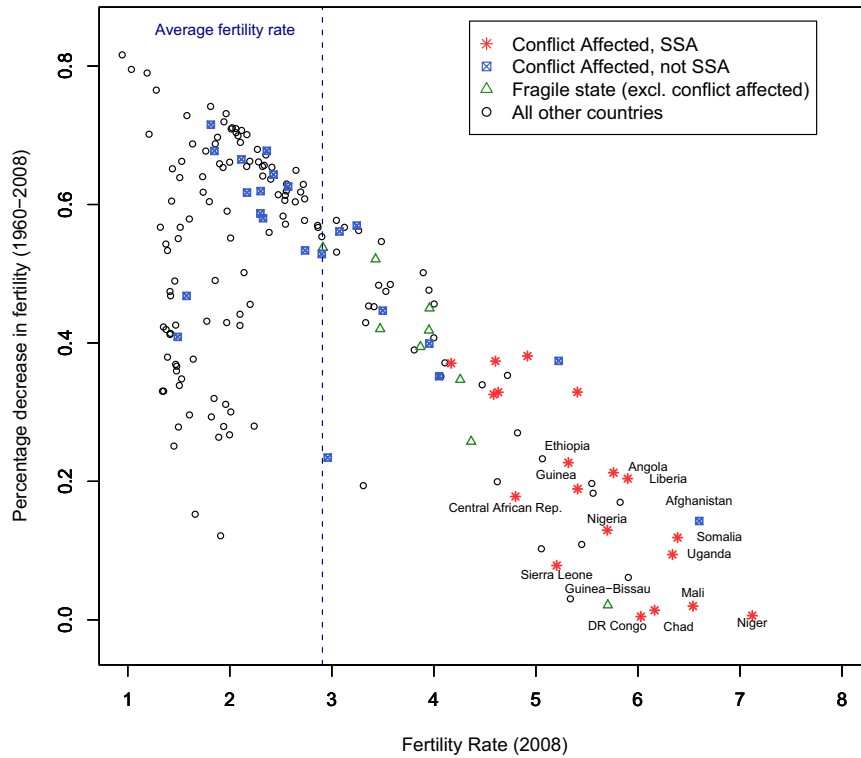
Note: Timor Leste is not represented in this chart as it is the only country for which fertility has increased compared to 1960 (2%).

Source: World Development Indicators (2009)

through what is sometimes called an "insurance effect". As uncertainty about the future increases, having more children secures the preservation of a minimum level of income. It acts as a coping strategy against shocks and ensures financial support in old age (Verwimp and Bavel, 2005; Agadjanian and Prata, 2002). As fertility transition is generally explained, high fertility compensates for the increased probability of losing a child in protracted conflict conditions where child mortality is high (Kalemli-Ozcan, 2002).

Although hunger and malnutrition are inescapable conditions of living in conflict settings, these do not necessarily lead to lowered fertility. Indeed, malnutrition is observed to have a minor effect, if any, on fecundity (reproductive capacity) and fertility (actual reproduction) of women. Reproductive capacity can actually increase as sexual receptivity increases in females with chronic, moderate malnutrition. Studies of starvation during the Dutch famines of World War II and in other famine-like conditions have shown increased fertility among underfed females in order to re-

Figure 1.5: Highest birth and death rates in conflict-affected countries
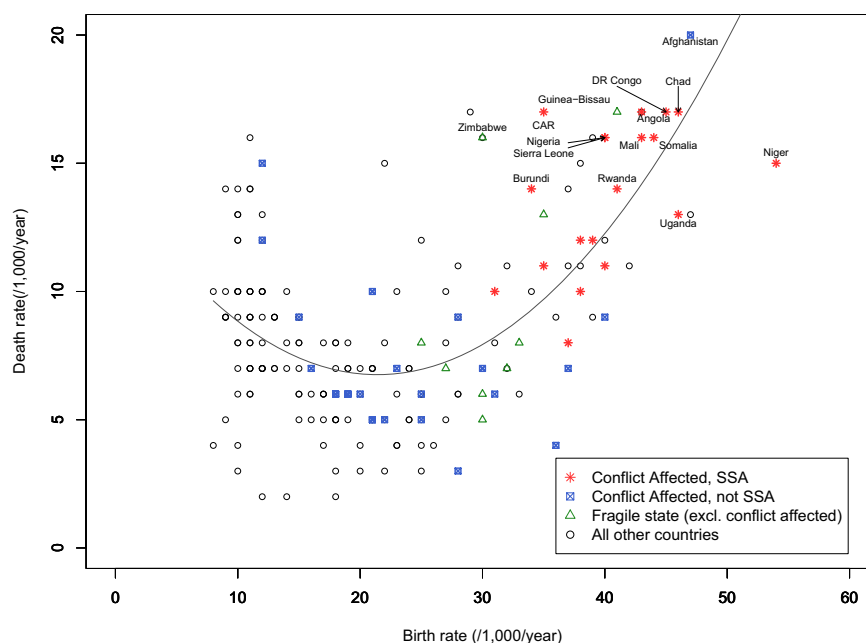
Source: World Development Indicators (2009)

plenish the group before death. However, increases in fertility linked to decreased nutritional status have limits: if nutritional status falls below a critical level, fertility will decline (Bongaarts, 1980). There are not many studies exploring fertility responses in situations of genocides, massacres, or conflicts. But, a population-based study among women refugees who escaped the Rwandan genocide showed higher fertility rates than their non-refugee counterparts (Verwimp and Bavel, 2005). More studies should be done to establish these fertility responses to conflicts and insecurity.
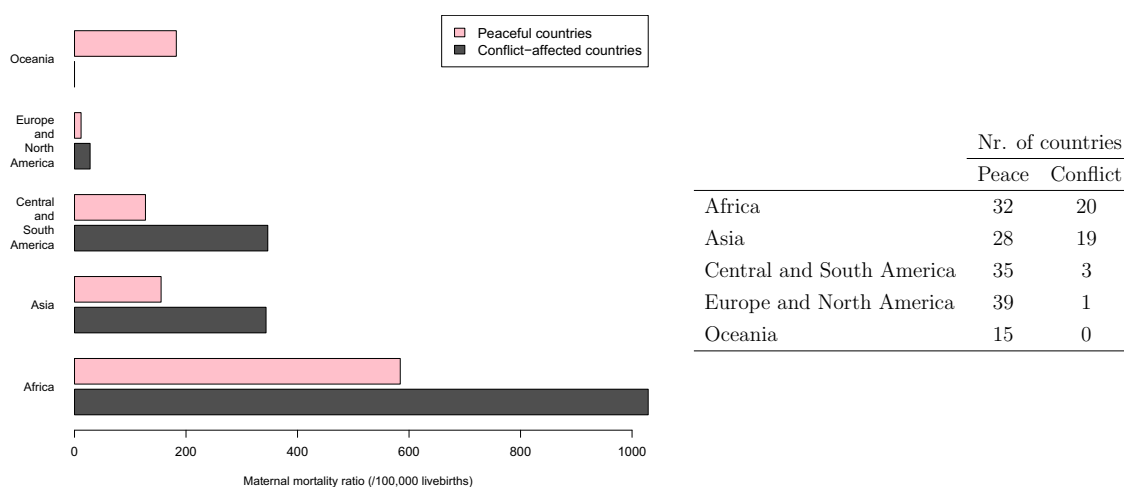
Changes in fertility patterns also occur for structural reasons. Reduced or absence of emergency reproductive health services, minimum pediatric care or access to family planning also influences fertility behaviour.

The absence of such services increases maternal mortality in conflict settings (Figure 1.6), which in turn engenders higher mortality among young children. Fertility also increases as a measure of replacement when lack of pediatric services such as immunisation or supplementary feeding leads to high neonatal mortality. Although detailed studies on these have not been undertaken yet, we observe from the WHO statistics, all but one of the 15 countries worldwide with the highest neonatal mortality have recently experienced, or are in the midst of, a civil conflict. The

worst cases in this category are Liberia, Cote d'Ivoire, Iraq, and Afghanistan with neonatal mortality rates above 60 deaths per 1,000 live births in 2005.

The classic demographic cycle of the 18th century, where lack of health services led to high child mortality which in turn led to high birth rates, once again becomes the reality in conflict settings.

Figure 1.6: Maternal Mortality: comparative ratios across regions and between conflict and non conflict-affected countries

	Nr. of countries	
	Peace	Conflict
Africa	32	20
Asia	28	19
Central and South America	35	3
Europe and North America	39	1
Oceania	15	0

Source: World Development Indicators (2009)

In general, understanding fertility shifts among a conflict-affected population provides key information for reproductive health needs. For example, breakdown in even minimal reproductive services severely affect women's ability to cope with daily challenges, and should be a programme priority in conflict settings. High fertility rates lead to a very rapid increase in the youngest age groups, requiring clear targeting of development programmes. A case in point is expected schooling needs, which depend on accurate estimations of future age distributions. Along with mortality patterns, accuracy of electoral lists also relies on an understanding of current and future fertility rates.

Peaks and troughs in fertility patterns, common in conflict-affected populations, have wide ranging policy implications for long-term stability. Accurate understanding of fertility behaviour allows policies to be targeted toward the right age groups and their needs. It should therefore be a key consideration in planning development programmes for populations who have been exposed to protracted hostilities.

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Chapter 2

Profiling the vulnerable: identification of risk factors

Armed conflict directly affects the health and nutritional status of individuals in ways that eventually lead to death and disability. Civil wars are often defined on the basis of combat or violent deaths; excess or indirect deaths remain uncounted. Methodological challenges of assessing the indirect impact of conflict on populations-such as increased morbidity, mortality, or exceptional drops in nutritional status-are more likely the obstacles to such assessments than conceptual disagreements. Figure 2.1 sketches the main pathways by which conflict can affect the lives and health of civilians and highlights the areas that are discussed in this chapter.

Recently there has been lively debate among epidemiologists on the appropriateness of existing techniques to attribute mortality to conflicts and therefore to identify risks and vulnerabilities. The conflicts in Darfur, Iraq, and the Democratic Republic of Congo are the focus of some of the better-known debates on how to assess mortality in these circumstances (Human Security Report, 2010; Degomme and Guha-Sapir, 2010; Coghlan *et al.*, 2006; Burnham *et al.*, 2006).

This recent preoccupation with better data and statistics from conflict-affected populations stems from the priority given to developing policy based on evidence rather than on assumptions. In the case of conflict-affected countries, post-conflict policies can draw only partially from models or assumptions from other non-conflict but economically similar countries.

As vital registration or other systematic reporting systems are dysfunctional in conflict areas, these regions are black holes of statistics where there is little or no

knowledge of most human development indicators. Sample surveys provide the only source of information. The most widely known of these are the nationwide Demographic and Health Surveys [1] (DHS), the Multiple Indicator Cluster Surveys[2] (MICS-UNICEF) and the Living Standards Measurement Study Surveys[3] (LSMS) rich sources of information and baseline statistics for many countries where data reporting is poor. As data sources for conflict countries, DHS or MICS can be problematic for two reasons. First, nationwide surveys often drop the insecure areas, mentioning that particular provinces were not included due to insecurity. Second, most do not include displaced persons or refugees in their surveys.

Smaller-scale surveys done by operational agencies, on the other hand, are a fertile source of data that are seriously underused by development programmers (Setel *et al.*, 2007). These surveys produce increasingly better quality data on the health, nutrition, and mortality status of conflict-affected populations. Use of standard methods and definitions are used widely, including the one proposed by the Standard Monitoring and Assessment in Relief and Transition (SMART) initiative (SMART, 2010). Field organisation are also systematically reporting methodological details of their surveys which allow global repositories like the Complex Emergency database[4] to validate data and assess survey quality. They can provide invaluable evidence for policy making (Degomme and Guha-Sapir, 2007). Typically, they focus on mortality, morbidity, and nutrition, and more occasionally on livelihood issues. These surveys provide insights into the reality of the direct impact of the conflict on affected populations.

In this chapter, we will use data from the CE-DAT Database to examine the impact of conflicts on the health and well-being of communities.
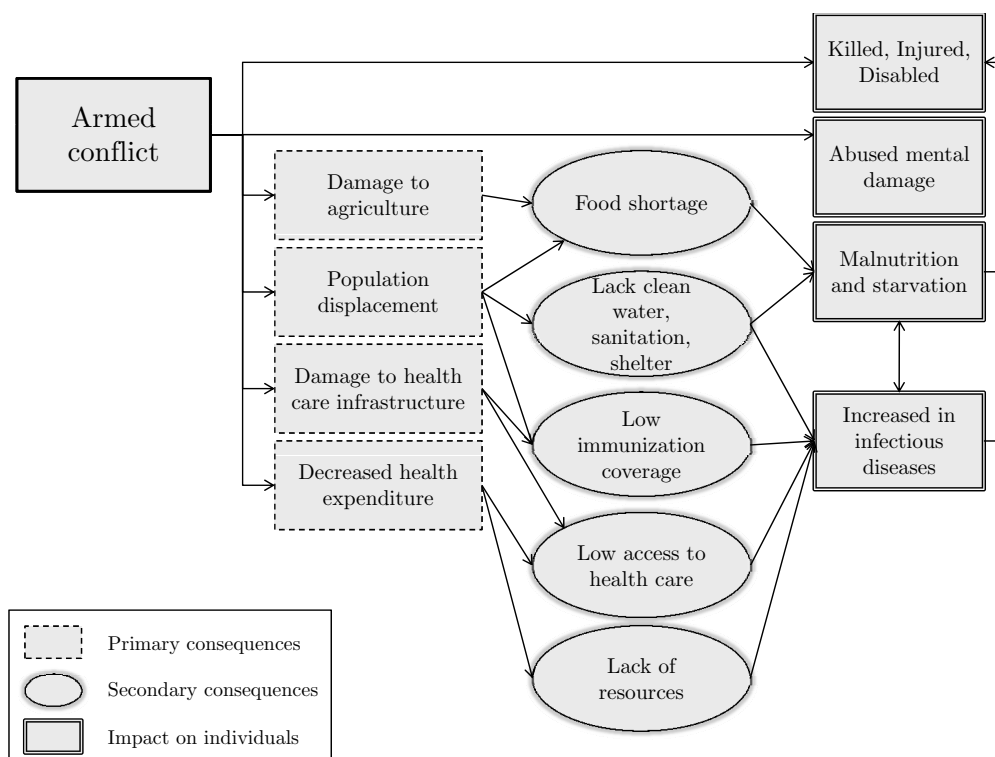
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[1]See http://www.measuredhs.com/ for country survey reports and datasets.

[2]See http://www.childinfo.org/mics.html

[3]See http://www.worldbank.org/lsms/

[4]The Complex Emergency Database (CE-DAT), developed and run by the Centre of Research on the Epidemiology of Disasters (CRED), is an international initiative to monitor and evaluate the health status of populations affected by complex emergencies. The aim was to develop a database of mortality and acute malnutrition rates, the most commonly used public health indicators of the severity of a humanitarian crisis. CE-DAT currently compiles more than 2,500 epidemiological surveys from 51 countries. Field agencies use mortality and nutrition indicators to identify and measure the severity of needs in order to prioritize human and financial resources. These indicators have been shown to be useful in monitoring the extent to which the relief system is meeting the needs of vulnerable populations and thus the overall impact and effectiveness of the relief system.

Figure 2.1: Conceptual framework on the impact of armed conflict on health

2.1 Who dies from what?

We examined the evidence on the impact of mortality during conflict on demographic processes in the previous chapter. Here we explore causes of deaths in populations at closer quarters using small, population-based surveys.

The changing profile of modern conflict has shifted the burden of losses from combatants to civilian populations, the main target of hostilities. Mortality rates have increased up to ten-fold in the overall population during civil war (Guha-Sapir and van Panhuis, 2003; Roberts *et al.*, 2004). Death due to different forms of violence is the most specific characteristic of armed warfare. Battle-related deaths, mass killings, and atrocities are often used as an indication of the severity of the conflict. In fact, violent deaths are a small fraction of the total deaths due to the conflict, but because these are more tangible signs of conflict, they are more visible

to media and policy makers alike.

In armed civil war, violent deaths tend to be elevated at the start of the conflict during the intense fighting phase, and then quickly decrease, giving way to disease and malnutrition related deaths. (Table 2.1, Figure 2.2).

Table 2.1: Violence as a minor cause of mortality

| Conflict theatre	Violent deaths as percentage of total excess deaths (%)
Northern Uganda, 2005	15
Democratic Republic of Congo, 1998-2002	< 10
Congo-Brazzaville, Pool Region, 2003	17
Burundi, 2002-2003	22
Sierra Leone, 1991-2002	6
Darfur, Sudan, 2003-2005	30
South Sudan, 1999-2005	< 10
Angola, 1975-2002	11
East Timor, 1974-1999	18
Iraq, 1991 War	32-37

Source: Geneva Declaration (2008)

In Darfur, Degomme and Guha-Sapir (2010) estimated that, although violence was a much cited cause of death in 2004, 80% of the 298,271 estimated deaths (95% CI 178,258-461,520) were due to disease during the period 2004-2008.

By far, children experience more of the burden of conflict-related deaths. Diarrhoeal diseases and acute respiratory infections are the main causes of death among children in conflicts, just as they are in peaceful poor communities. On many occasions, nonviolent deaths may also consist of other infectious diseases, linked to epidemics that often remain unidentified until too late. Civil conflict leads to breakdowns in vaccination programs, which plays havoc among children as a lack of minimal vaccination coverage for herd immunity[5] aggravates death tolls. The frequent incidences of measles outbreaks in refugee camps and among IDP populations are often a result of measles vaccination coverage below the minimum 80% required for

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[5]Herd immunity describes a type of immunity that occurs when the vaccination of a portion of the population (or herd) provides protection to unprotected individuals.

Figure 2.2: Violent vs disease-related mortality in Darfur, Sudan
(Sept. 2003 - Dec. 2008)
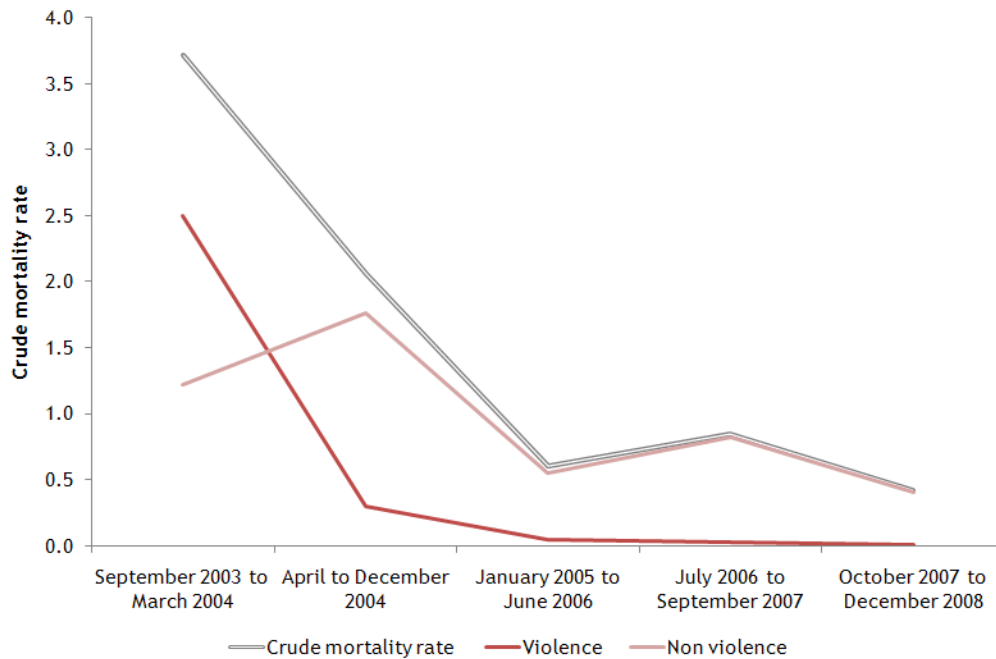
Source: Degomme and Guha-Sapir (2010)

outbreak protection.

In addition, food system collapse severely affects maternal health leading to undernutrition during pregnancy and lactation and, as a consequence, increased neonatal deaths. The lack of government interest in conflict-affected regions leads to a breakdown of the health infrastructure, which quickly loses key equipment and supplies. Qualified personnel also leave the region creating a human resource challenge for service provision. In Iraq, for example, of the 34,000 registered doctors in 1990, 20,000 doctors have left since 2003. About 2,500 doctors and nurse were killed and some kidnapped in this period[6] (ICRC, 2008).

Nonviolent mortality, especially among children, is a very sensitive indicator of the overall well-being of the community and is therefore chosen as an MDG indicator. Child mortality is also commonly used in situations of high insecurity to maintain a pulse on community welfare. Primary material to calculate mortality rates[7] is often

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[6]Unfortunately, lack of data impedes our ability to compare this loss to a measure of the number of international doctors that have been sent to Iraq to fill the vacuum.

[7]A mortality rate is the number of deaths in a given time period divided by the amount of

provided by small surveys done on populations living in conflict, about whom little is known. These rates allow for appropriate comparisons (see for example Figure 2.3), monitoring trends in the populations and assessing whether the population is faring better or worse compared to a previous period or to neighbouring regions. These rates will reveal the severity of the situation, assess the impact of ongoing programmes, or provide baselines against which to measure performance.

Figure 2.3: Disparity of mortality rates across regions within conflict settings
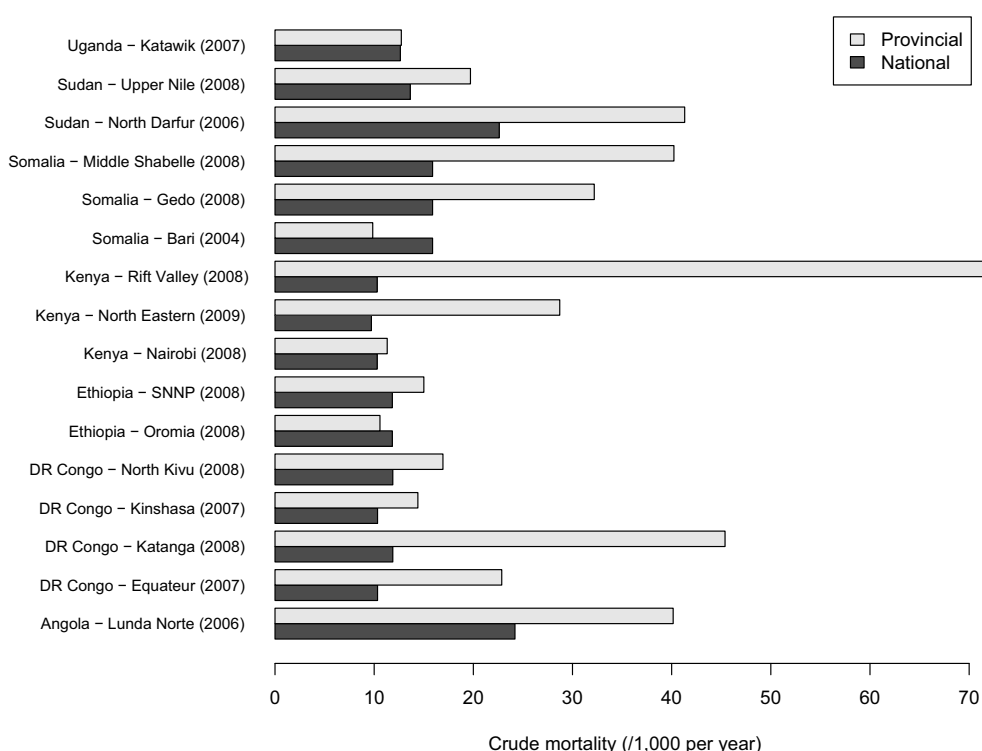
National mortality rates are national estimates provided by the World Development Indicators. Provincial mortality rates are average mortality rates by province and year, as reported in the Complex Emergency Database.

Source: CE-DAT (2010); World Development Indicators (2009)

There are two important caveats in the use of mortality rates. First of all, mortality is a late indicator: by the time the mortality rates spike, the conditions are likely to be serious and redress can be difficult or impossible. As mortality and hunger rises, internal displacement will begin, accompanied by renewed turbulence.

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time the population is exposed to the risk during the time period. Two main indicators, generally expressed in deaths/10,000/day over a specific recall period in emergency situations, are the under-5 mortality rate (U5MR), assessing the number of deaths among children under age five and the crude mortality rate (CMR), assessing the number of deaths in the entire population.

Secondly, surveys may suffer from a 'survivor bias' and produce encouragingly low mortality rates that are, in reality, due to high rates in the previous months, culling the weak members of the community. But if used with information on causes of death, risk factors can be correctly identified and resources targeted appropriately (Degomme and Guha-Sapir, 2010; de Walque, 2005; de Walque and Verwimp, 2009).

Despite these caveats, survey data is invaluable for displaying differences between population groups within conflict-affected areas. Flagrant differences in the health and nutritional conditions between groups are a source of social tension, especially in post-conflict conditions where political stability is fragile.

Peace accords are a political tool and may not necessarily entail better conditions for the population. On the other hand, the lack of real or even perceived improvements in living conditions will jeopardise the sustainability of any peace agreement. In Angola, survey data of mortality showed no improvement for at least one year after the peace accords were signed. Figure 2.4 shows mortality rates in Sudan, the Democratic Republic of Congo, Ethiopia, and Somalia along with political events, illustrating the long-term adverse health impacts of conflict, which last long after peace agreements.

Mortality rates also indicate the severity of a crisis and are therefore useful as advocacy tools. In recent years, mortality estimations in Darfur, Iraq, and the Democratic Republic of Congo have spurred debate, both in academia and in the media, largely due to the political context of these wars. Issues related to biases that over and under estimate deaths have been widely discussed particularly in the epidemiological literature (Checchi and Roberts, 2007). But as death rates are a lagging indicator of crisis severity, the efforts should focus on early indicators for which effective action can be taken: vaccination coverage and causes of death and malnutrition. The impacts of these actions are not only critical to bring down population death rates but sow the seeds of a healthy population for the evolving peace and development process.

2.2 Protecting children against diseases

The spread of disease, especially infectious disease, and vaccination coverage are good indicators of how resilient the population is to degradation of the local system. In this section, we briefly explore the available vaccination data from conflict-affected
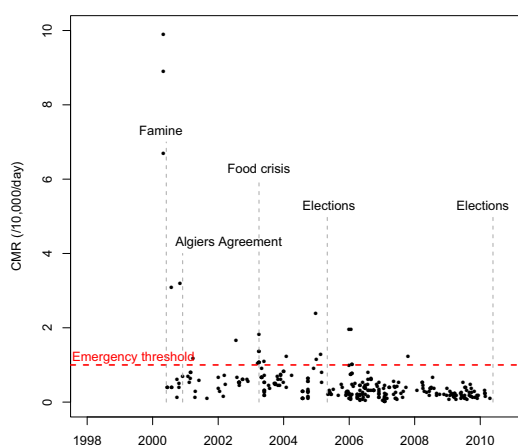
Figure 2.4: Mortality rates and political events across time in Sudan, DR Congo, Ethiopia and Somalia
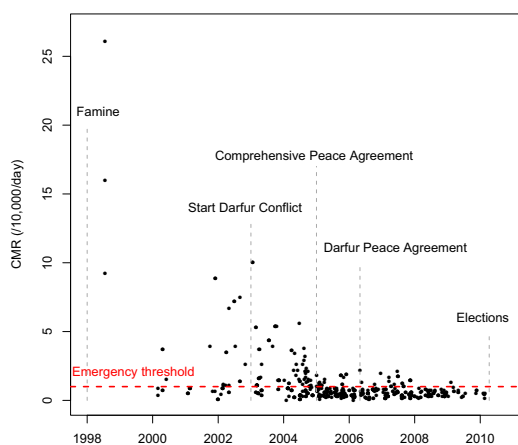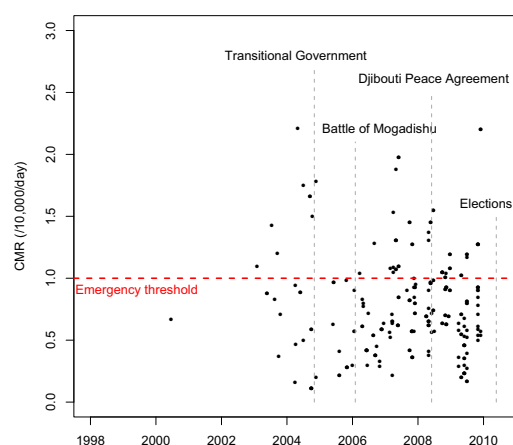

(a) Sudan (nr. surveys = 305)
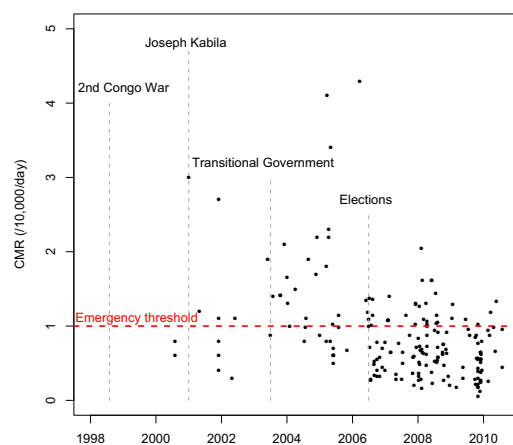
(b) DR Congo (nr. surveys = 186)

(c) Ethiopia (nr. surveys = 251)

(d) Somalia (nr. surveys = 152)

Those crude mortality rates apply to a recall period (the interval of time to which the mortality rate in the surveyed population refers) up to one year.

Source: CE-DAT (2010)

children and barriers to vaccination.

In recent years, vaccination indicators are commonly collected in surveys done by service providers (typically humanitarian NGOs). In addition, they also report on the prevalence of diarrhoea and acute respiratory infections during the two weeks

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before the survey and provide a morbidity profile of the surveyed population.

In normal settings, vaccinations are often delivered in routine clinic visits as part of primary health care. In emergencies, they are usually provided through campaigns that aim to rapidly provide maximum protection to a population. An exception is in established camps where service delivery is organised for routine care. The vaccine-preventable disease of greatest concern is measles, especially among displaced populations who live in dense settlements where transmission can be quite high. Such outbreaks can have a case-fatality rate[8]as high as 10 to 20% among malnourished children. These high rates are not only individually tragic, but they have a significant collective impact on social morale and hopes for the future. To avoid these alarming mortality rates, efforts strive to reach and maintain herd immunity at the WHO recommended 80% coverage or at the 95% threshold recommended by SPHERE[9] for conflict situations.

Available data on measles vaccination coverage from communities living in conflict areas is not encouraging. Of the 135 surveys undertaken and validated by the CE-DAT project in 2009, only eight surveys reported measles vaccination coverage above 95% and only 53% reported coverage above the WHO recommended threshold of 80%.

In most conflict-affected countries, significant disparities in vaccination coverage exist between different regions. These differences depend on many factors, such as concentrated humanitarian aid attention or government-favoured regions. Chad, Ethiopia, and Sudan illustrate such variations (Figure 2.5). The effectiveness of health policies during or after conflicts will depend on an in-depth understanding of the factors that determine these disparities.

2.3   Fighting hunger

Closely related to the incidence of disease is the nutritional status of a population. In times of conflict, nutritional status and hunger are not only influenced by the standard channels in any poor setting but also aggravated by additional factors. Broadly speaking, there are two ways through which food is available to people: local production and imported food. In conflicts, systematic destruction of crops

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[8]Defined as the percentage of persons diagnosed as having a specified disease who die as a result of that illness within a given period.

[9]Providing humanitarian charter and minimum standards in disaster response.

Figure 2.5: Inequity in Measles Vaccination Coverage (MCV) among residents across conflict areas (2009)
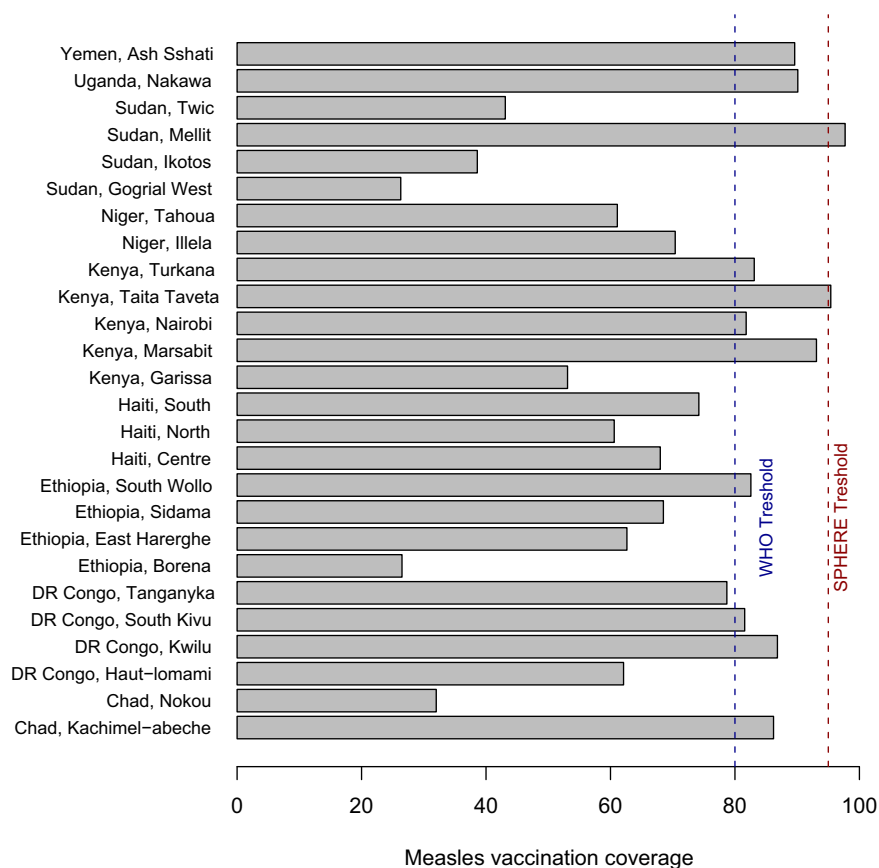
The chart present average measles vaccination coverage for 2009 in selected locations from the CE-DAT database.

Source: CE-DAT (2010)

and killing of livestock decimates local production and can effectively starve whole communities or push them to move towards urban centres in hopes of food. The interlinked effects of governance failure and insecurity leads to a collapse of trade, affecting food importation and its distribution. This scenario is further aggravated by a crowding-out of public and private investments in the region. More specifically, in conflict, food stocks are often seized or destroyed on purpose, while agricultural land is mined and food supplies cut off. Besides reduced food availability, lack of access to the little food that there is, remains a major factor influencing the emergence of malnutrition.

In emergencies, malnutrition among children from 6 to 59 months is used as a proxy indicator for the general health and welfare of a community. Different in-

dices of malnutrition exist. While undertaking a survey, humanitarian NGOs record age, weight, height, and the presence of edema. In conflict settings, the indicator used to evaluate the crisis is Global Acute Malnutrition (GAM). This indicator is a short-term indicator, capturing punctual nutritional stress due to sporadic episodes of violence or natural disasters events such as drought or floods. Another indicator is chronic malnutrition, also called stunting, which is due to long-term food deprivation and which can be seen as a structural problem. Most international agencies also monitor the percentage of underweight children, notably for tracking the Millennium Development Goals, measuring a combination of chronic and acute malnutrition. While humanitarian needs should be assessed by acute malnutrition levels, child undernutrition can be seen as a major challenge for human development (SMART, 2010).

In many of the Sub-Saharan countries affected by conflicts, the causes are a mix of man-made actions and frequent droughts and floods. In Somalia, about 1.5 million people are conflict- and drought-displaced and 3.25 million are entirely dependent on food aid (IDMC, 2009). The critical levels of malnutrition in Somalia are a direct consequence not only of the conflict but also of failing harvests.

In the last ten years, acute malnutrition has been spreading in subnational regions of the Horn of Africa and in neighboring countries (Table 2.2). The surveys report high levels of malnutrition in regions of countries, often contradicting nationally aggregated statistics on nutritional status. As national statistics represent only those populations in secure areas where statistical reporting systems function, the indicators are usually better than those obtained from population sample surveys. For example about 25% of the surveys in Kenya and Sudan report both child mortality and acute malnutrition at levels well above emergency thresholds, suggesting a precarious health situation and high burden of disease.

The map presented in Figure 2.6 shows the distribution of GAM below and above the emergency threshold over the last ten years in the Democratic Republic of Congo, Somalia, Ethiopia, and Sudan. The red clusters, reporting GAM above 10%, are located in Darfur, South Sudan, Southern Somalia, and Eastern Ethiopia. A closer look at Somalian crude mortality rates allows us to see corridors of stress. Mortality profiles are very different across livelihood groups; the non-uniform strips that cross provincial borders represent vulnerability differences among those groups (Figure 2.7).

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Table 2.2: Percentage of surveys reporting critical U5MR and/or GAM (1998-2009)

|	DRC	Uganda	Ethiopia	Kenya	Somalia	Sudan
GAM > 10%	0.34	0.04	0.54	0.9	0.88	0.89
nr. surveys	170	57	244	84	164	440
U5MR > 2/10,000/day	0.36	0.43	0.17	0.24	0.31	0.28
nr. surveys	247	51	207	55	116	311
GAM, U5MR > threshold	0.11	0.04	0.14	0.24	0.27	0.25
nr. surveys	152	57	214	55	122	316

Source: CE-DAT (2010)

It is commonly assumed that political events, such as elections or peace agreements reduce insecurity and lead to better living conditions. These events are therefore expected to improve basic livelihood indicators such as malnutrition. Alhough political events are unquestionnably building blocks toward stability, the available evidence does not indicate a clear association between these milestones and improvement in nutritional status. This can be partially explained by the fact the political events do not reduce insecurity in any substantial ways and hence does not lead to an improvement in the availability and access to food. Figure 2.8 presents data from nutritional surveys in four countries along with important events over the last decade. None of these countries indicate significant positive trends in nutritional levels. Although the data from surveys undetaken in Ethiopia show a decrease over time, the peaks of the early 2000 can mostly be attributed to IDPs in the Gode area (Somali Region). Since then, GAM remained around the 10% alert level. This line of thinking clearly requires more investigation on the basis of a stronger conceptual framework and robust trend analyses.

Malnutrition is an early indicator of stress in poor communities and especially in populations dealing with conflict. Fortunately, methods for measuring nutritional status - at least for monitoring and operational purposes - are well developed and adapted specifically for insecure conditions. Moreover, malnourished small children respond quickly to food intake and therefore present an intervention that has both real and perceived benefits. There are, of course, many contextual complexities in providing food to undernourished children, but in an immediate post-conflict situation, this probably presents the most practical intervention for which there exists a wealth of experiences of best practices.
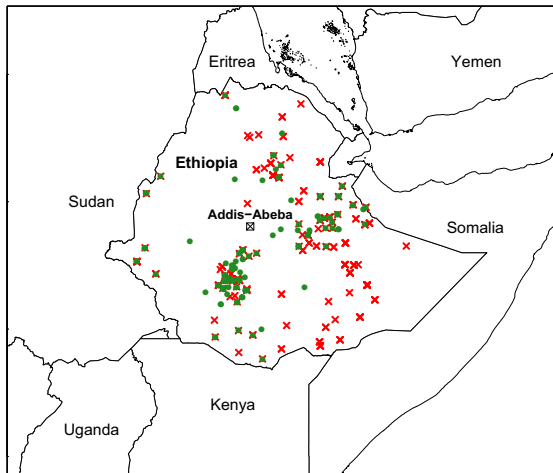
Figure 2.6: Severity and distribution of malnutrition in four African countries
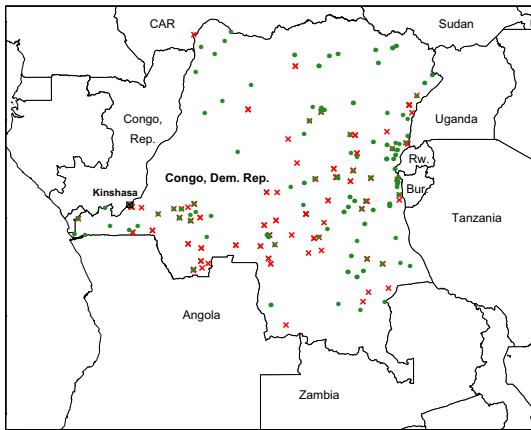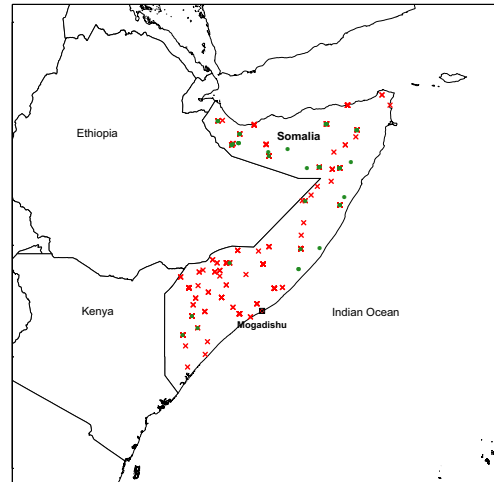

(a) DR Congo, 2000-2009 (no. surveys = 218)
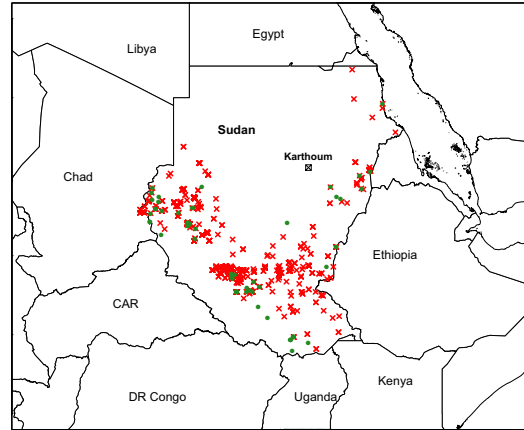
(b) Sudan, 1998-2009 (no. surveys = 441)

(c) Ethiopia, 2000-2008 (no. surveys = 271)

(d) Somalia, 1999-2008 (no. surveys = 226)

Red crosses represent GAM above the 10% emergency treshold. Green diamond represents GAM below threshold. These four countries are presented here as they have the largest number of surveys available. There are regions from which no surveys are reported to CE-DAT, and therefore the nutritional status of populations living in those areas is unknown. For example, populations at the Ethiopian border with Somalia and Sudan are likely to be food insecure. Efforts should be made to undertake surveys in this statistical blackholes.

Sources: CE-DAT (2010)

Figure 2.7: Geographical distribution of mortality in Somalia
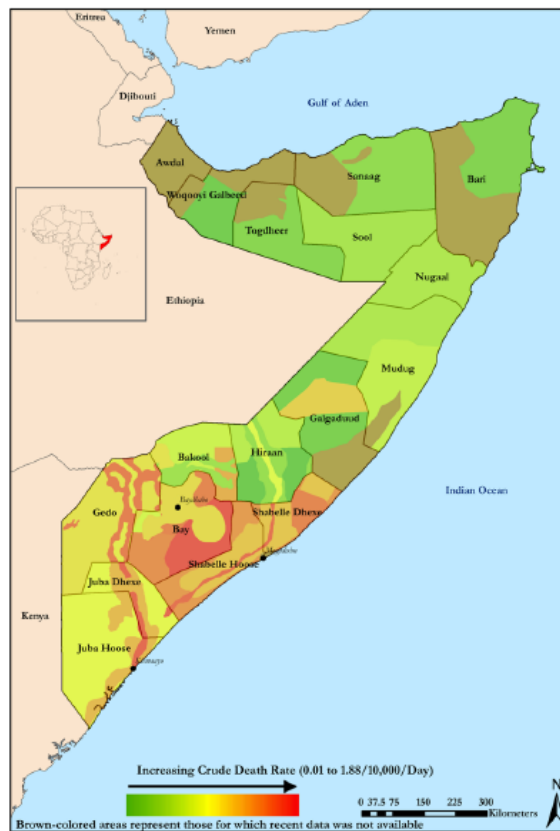
Sources: CE-DAT (2010), Guha-Sapir and Ratnayake (2009)

2.4 Refugees, residents, and IDPs: who is most at risk?

Millions are living in hostilities and wars. Of these, most cannot leave and so remain tied to an uncertain life, some leave the area to make a living in another region of the country, and yet others leave the country altogether.

Before 1990 and the end of the Cold War, the largest share of conflict-affected populations left the country and became refugees. At that time, they numbered around 40 to 50 million; and some had a right to UNHCR protection. At that time, the international community did not look very closely at situations inside sovereign countries, however bad the conditions were. Today, the number of refugees has declined to a quarter of the number during the Cold War. By and large, the conditions of refugees are not only satisfactory, they are often better than the host country's populations. Of course, that in itself is occasionally a source of local tensions.

Figure 2.8: Trends in malnutrition and political events in Sudan, DR Congo, Ethiopia and Somalia
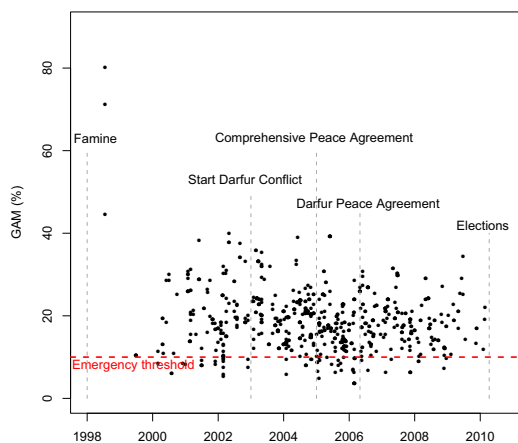
(a) Sudan (no. surveys = 441)
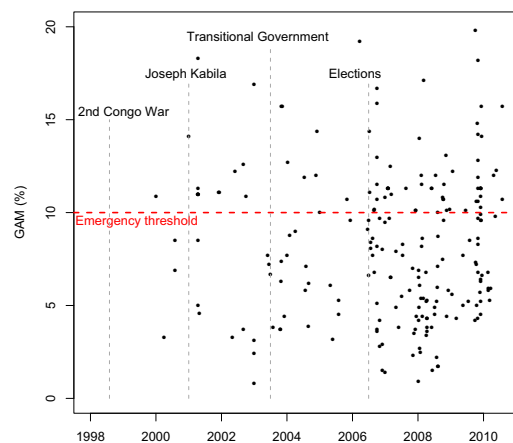
(b) DR Congo (no. surveys = 218)
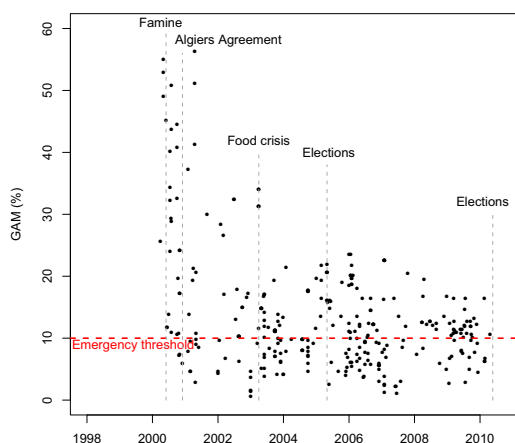
(c) Ethiopia (no. surveys = 271)
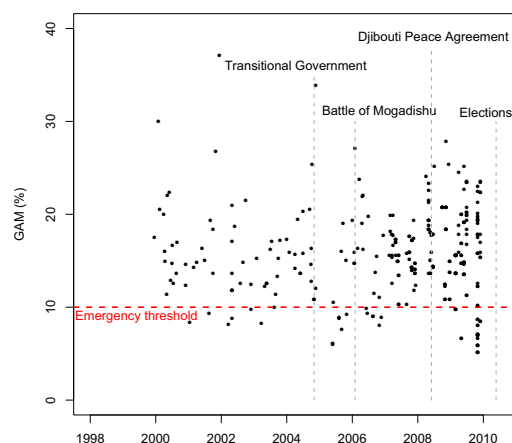
(d) Somalia (no. surveys = 226)

Sources: CE-DAT (2010)

Those who are unable to cross the border frequently settle in inhospitable conditions within their own country; they are known as the internally displaced (IDPs). IDPs, not having crossed a state border, remain at the mercy of host villages and the generosity of local administrations. They continue to live amid hostilities or move out of their villages, often en masse, to seek refuge further away from conflict-

affected areas while remaining within national borders. Access to these populations is often compromised as most do not live in camps, and are located closer to the conflict areas or are dispersed over large regions. This impedes their access to health services, including vaccination coverage and food distribution, and makes them more vulnerable to diseases.

Those who were unable to leave, live on as residents, and represent the biggest share of the total victims of conflict. At this time, no estimates exist regarding how many people currently live in areas affected by conflict. Methodological problems in making such estimations are undoubtedly daunting, but this lack excludes these communities from adequate consideration in regular development programming[10]. Residents present the very worst condition of nutrition and health, rivaling or surpassing those in the poorest areas of their own country.

In fragile post-conflict conditions, the needs of specific sub-groups such as returnees or the displaced should be adequately addressed to avoid creating pockets of exclusion. These target groups should be identified based on disaggregated data from the region and not on hearsay or the judgment of the local administration. The latter may be upward or downward biased according to political agenda, and therefore not reflecting the reality and associated needs.

This is illustrated in Figure 2.9. During the conflict and transition period (between 1999 and November 2002), 74% (95% among IDPs) of surveys undertaken in Angola showed rates above emergency thresholds. The mortality in Angola worsened significantly after the peace agreement was signed, especially among the IDPs in camps and transit centers. Surveys reported rates of 7.2 (CI 95% 5.3-9.1) deaths per 10,000 per day in Luena among IDPs in the Muacanhica and Muahimbo camps and in transit centres, which exceed by sevenfold the emergency threshold. The likely explanation for these high rates is that peace agreements allowed humanitarian organisations access to affected populations who had not benefit from relief aid before. Once humanitarian aid flowed into the country, the proportion of surveys reporting critical mortality rates decreased from 74 to 33%, showing a net improvement in the situation (Guha-Sapir and Teran Gomez, 2006).

Camp settings are often characterised by a very high population density, bolster-

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[10] An attempt at such estimation is available as a working document by Guha-Sapir and D'Aoust (2009)

Figure 2.9: Decrease of crude mortality rates in Angola, 2000-2008
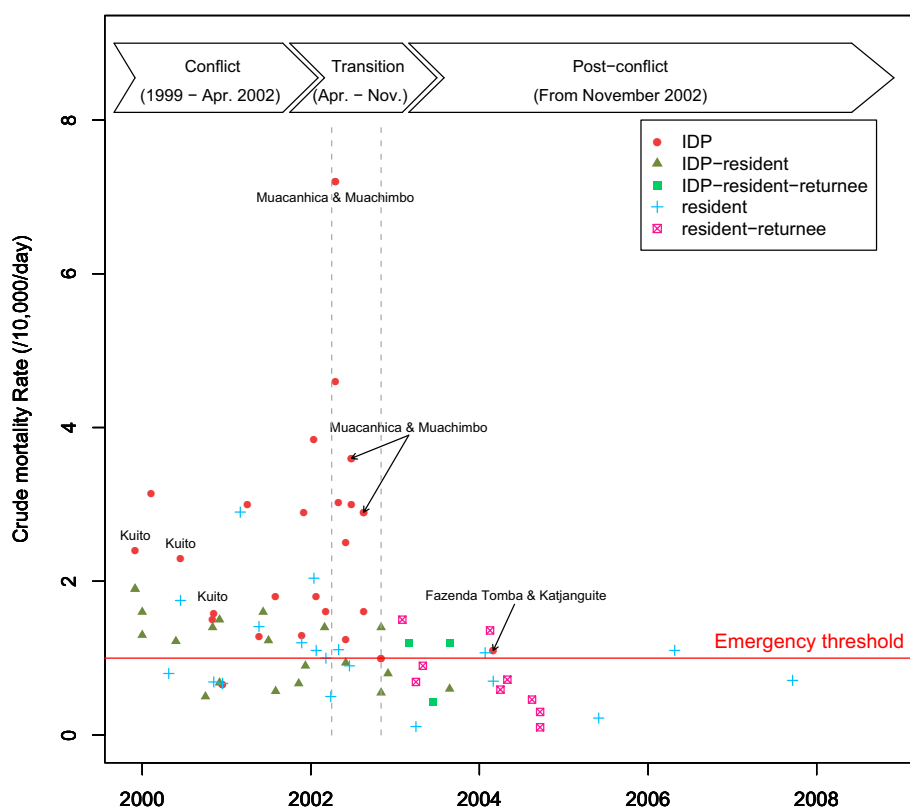
Those crude mortality rates apply to a recall period from 2 to 6 months. The labels corresponds to surveys undertaken in IDP camps.

Source: CE-DAT (2010)

ing the transmission of diseases and leading to a higher risk of diarrhoea one of the major causes of child morbidity and mortality in complex emergencies and other infectious diseases. Moreover, the often precarious conditions in camps-e.g. the lack of appropriate shelter, clean water, and hygiene-are also factors leading to an increased morbidity. In Kenya, the refugee population from Dadaab camp had exceeded its capacity by 270% in early 2009. In order to prevent epidemics, camps often provide services to support the living conditions of the displaced, such as health facilities, vaccinations, food distributions, shelter, access to safe water, sanitation, education etc. If these services are continuously provided, refugees tend to be better off than the displaced population outside camps. Figure 2.10 plots average mortality rates among children under the age of five from surveys in conflict countries. While mortality has decreased among IDPs and residents, all three populations are, on average, converging towards mortality rates under the emergency threshold of 2 deaths per 10,000 per day.

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Figure 2.10: Children under the age of five: mortality rates by population status
(no. surveys = 1,477)
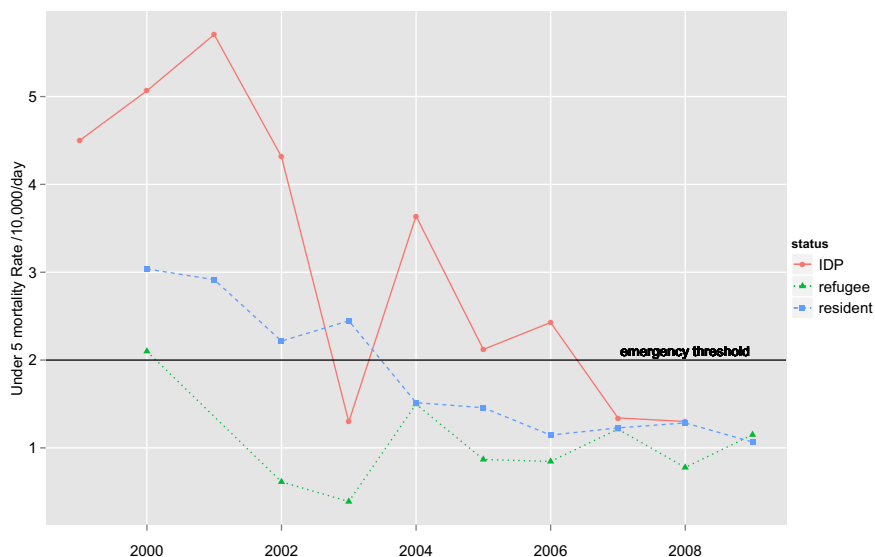
Source: CE-DAT (2010); DCD-DAC (2009)

The better condition of residents compared to the internally displaced can further be seen in Figure 2.11. This chart shows the average percentage of children who are acutely malnourished during the conflict, transition, and the post-conflict period in Angola. The proportion of malnourished children was 14.9% on average during the conflict and the transition period, exceeding the 10% emergency threshold and indicating a serious situation. It reached 46% in Cuemba camp (Bi province) in April 2001; among surveys undertaken in Angola before November 2002, 38.5% showed malnutrition above the level of 15%, well over the emergency threshold of 10%.

Inequities between population subgroups can be a persistent problem that should not be ignored. A simple example can be drawn from the use of medical consultation rates as a sensitive indicator of service effectiveness in two refugee camps in Gambela, Ethiopia. The service providers were alerted to potential problems in Fugnido camp where consultation rates were a quarter of those in Bonga. Persistent underuse of available medical services alerted the authorities to problems of erratic food and medical supplies, inappropriate living arrangements, and disregard for an unusual demographic imbalance (a large proportion of adolescents). Standardised rates of

Figure 2.11: Global Acute Malnutrition by status and period, Angola

| Average Global Acute Malnutrition (GAM) among 6-59 children | % of surveys above emergency threshold |

IDPs — 14.47% — 42% (n = 26)
6.30% — 0% (n = 4)

IDPs & Residents — 6.74% — 10% (n = 20)
5.89% — 0% (n = 5)

Residents — 7.65% — 22.2% (n = 18)
6.47% — 0% (n = 9)

■ Conflict and transition period
■ Post-conflict period
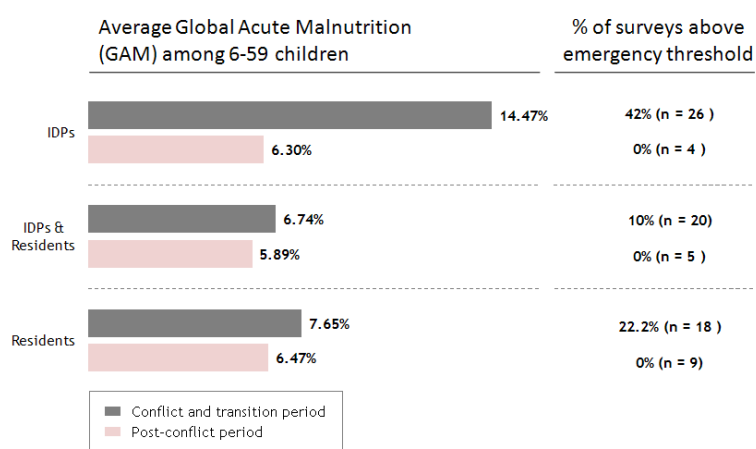
Source: CE-DAT (2010)

consultations in the camp health centre remained the one easy-to-monitor indicator to compare performance between camps and over time as well as monitoring how well infants fared in each camp.

Today, refugees and IDPs, when they are taken under the care of UNHCR, fare better than all residents in conflict-affected populations. Overall, the worst off are the IDPs outside camps, who globally outnumber the refugees by far and face the worst challenges among all those who are exposed to conflict. By moving out, they lose their support from local networks or family structures but do not receive the protection of UNHCR. The local community, whose resources do not extend to covering the needs of the newcomers, often resents them. Displacement also exposes them to new pathogens that were not present in their area of origin and for which they have not developed immunity. High malaria-related deaths among refugees in Ethiopia have been associated with migrations from highlands with low malaria endemicity to lowlands where malaria was endemic (Toole, 1995). On the other hand, studies have shown that displaced persons carry pathogens that are unknown to host populations and accelerate the spread of diseases (Connolly *et al.*, 2004).

Policies in conflict-affected countries must account for the needs of the displaced and those who have been long-term residents in areas of armed violence. The basic needs of these groups can be different from most other poor communities and the provision of services should be given as high a priority as political negotiations or retribution at distant courts.

Chapter 3

Global challenges for better health data

Approximately half a billion people live in precarious conditions created by civil conflict (Guha-Sapir and D'Aoust, 2009). Among these, a majority is internally displaced or resides in insecure regions where they are deprived of schooling, health services, or basic means of livelihood. Most of these conflict-affected countries have had varying degrees of insecurity for years and many for decades. While we broadly recognise that social and economic development is a precursor to peace, only a third of the total Official Development Aid (ODA) is disbursed in conflict-affected countries. In most cases, the share of humanitarian aid continues to increase at the cost of development aid (DCD-DAC, 2009). Moreover, this substantial "short-term" aid are renewed over several years, often without adequate planning or a sufficient evidence base to make the policies effective or appropriate to these situations. The use of national statistics from these countries as a basis for aid further compounds the problem.

3.1 The Millennium Development Goals (MDG)

One of the principal tools of monitoring development is the Millennium Development Goals (MDGs).

In September 2000, leaders from 189 nations agreed on nine goals aimed at freeing a major portion of humanity from the shackles of extreme poverty, hunger, illiteracy, and disease by 2015. They established targets for achieving gender equality and the empowerment of women, environmental sustainability, and a global partnership for development (Ban Ki-moon, Secretary-General, United Nations, 2009).

Each goal is associated with different targets and indicators to monitor progress. Health indicators such as child and maternal mortality, vaccination coverage, and nutrition are central to the MDGs. In this section we take a closer look at the health indicators of goals 1, 4, 5, and 6 and their data sources, and discuss the difficulties of monitoring MDGs in conflict.

1. Eradicate extreme poverty and hunger Target 1.C is to halve, between 1990 and 2015, the proportion of people that suffer from hunger. There are two indicators to monitor progress: the prevalence of underweight children under-five years of age and the proportion of population below the minimum level of dietary energy consumption. The

Millennium Development Goals

1. Eradicate extreme poverty and hunger
2. Achieve universal primary education
3. Promote gender equality and empower women
4. Reduce child mortality
5. Improve maternal health
6. Combat HIV/AIDS, malaria and other diseases
7. Ensure environmental sustainability
8. Develop a global partnership for development

former has decreased by 10% from 1990 to 2007 in Sub-Saharan Africa compared to a 60% decrease in Eastern Asia (UN, 2009).

4. Reduce child mortality The only target associated with this goal is to reduce the under-five mortality rate by two-thirds, between 1990 and 2015. There are three indicators monitoring progress towards this objective: the infant and under-five mortality rates as well as the proportion of one-year-old children immunised against measles. Measles is indeed one of the leading causes of death among children. Between 2000 and 2007, measles deaths dropped by 74 per cent, with the largest reduction in Sub-Saharan Africa, thanks to the expansion of routine vaccination campaigns. Since 1990, deaths of children under five have decreased by 28%, dropping from 12.5 million to 9 million. In Sub-Saharan Africa, mortality has decreased by 20%, in Eastern and Southern Asia it decreased by 51% and 36% respectively (United Nations, 2009).

5. Improve maternal health By 2015, the maternal mortality ratio should be reduced by two-thirds as measured by the maternal mortality ratio itself and

the proportion of births attended by skilled health personnel. A second objective is universal access to reproductive health measured by the contraceptive prevalence rate, adolescent birth rate, antenatal care coverage (at least one visit and at least four visits), and unmet needs for family planning.

6. Combat HIV/AIDS, malaria and other diseases The spread of both HIV-AIDS and malaria is expected to have begun to reverse by 2015 though universal access to treatment. Ten other indicators such as condom use, school attendance of orphans, and malaria-specific death rates, will help monitoring progress[1].

3.2 Reporting on MDG from conflict theatres

The global monitoring process receives national statistics that are either drawn from nationwide surveys or from national surveillance systems. Nationwide surveys sometimes exclude surveying areas where insecurity is an issue and do not include refugees or the internally displaced in their sampling frames. National surveillance systems draw their data from institutional reporting networks (such as hospitals or clinics), therefore only capturing data on those who have contact with hospitals or die in them. Hospitals and dispensaries in developing countries are famously concentrated in urban centres. There are very few functioning health service centres in rural areas, let alone in areas where there are hostilities. In many countries, the conflict is between government and rebel forces, so public sector services are even less likely to operate in those parts.

The national sources used for the MDGs have many weaknesses that make them inappropriate for monitoring development in conflict-affected countries.

First, they are often outdated, especially for certain key MDG indicators. Measles vaccination coverage (MVC) is an indicator whose value is often repeated from year to year, raising questions about its reliability. For example, Mozambique and Chad reported the same coverage for six and five years, respectively, until 2007.

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[1]Those are: HIV prevalence among those aged 15-24; condom use at last high-risk sex; the proportion of those aged 15-24 years with comprehensive correct knowledge of HIV/AIDS; the ratio of school attendance of orphans to school attendance of non-orphans aged 10-14; the proportion of population with advanced HIV infection with access to antiretroviral drugs; the incidence and death rates associated with malaria, the proportion of children under 5 sleeping under insecticide-treated bed nets; the proportion of children under 5 with fever who are treated with appropriate anti-malarial drugs; the incidence, prevalence and death rates associated with tuberculosis and the proportion of tuberculosis cases detected and cured under directly observed treatment.

Somalia provides a good illustration of the weakness in a global reporting system for mortality. There, the World Development Indicators report about 0.44 deaths per 10,000 persons per day (the average Sub-Saharan mortality rate) over the last six years, probably in the absence of any vital registration system. In reality, nearly 150 surveys from Somalia indicate results near emergency thresholds for the last two years and in some areas well beyond them (CE-DAT, 2010).

Another example is the Democratic Republic of Congo, for which infant and under-five mortality rates per 1,000 live births are only available for five years (1990, 1995, 2000, 2005, 2007). When these are transformed into mortality rates per 10,000 persons per day[2] and plotted against CE-DAT data (Figure 3.1), almost all of the survey estimates are not only above the MDG statistics but most are above the emergency threshold. This paints a very different picture of the situation in the Democratic Republic of Congo than is reflected using the MDG indicator.

Second, MDG reports rely mainly on MICS, DHS, and LSMS as data sources. While these are invaluable sources of data from countries that otherwise lack proper vital registration and reporting, they do not include IDPs, refugee populations, or indeed, conflict areas. Since conflict-affected population subgroups can represent not only a substantial part of the country's population but often some of its poorest, MDG indicators may therefore be misleading for certain countries.

Third, there is high variability of health indicators reported by humanitarian NGOs within conflict-affected regions.

For example, measles vaccination coverage can vary from 20% (which is tantamount to no vaccination program) to 95% coverage (which is higher than the WHO recommended threshold) in different parts of the same region (Figure 3.2, Table 3.1). Recall that to reduce the risk of measles outbreaks, measles vaccination coverage should reach and be maintained at the 95% threshold recommended by SPHERE, especially in crowded emergency settings, or when there are large population displacements and high levels of malnutrition.

These differences are critical pieces of information that are not captured in the

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[2]Assuming an even distribution of deaths by age between birth and 12 months and between 12 months and 5 years and little change in under-five mortality in the past five years.

Figure 3.1: Child mortality in Democratic Republic of Congo : survey data contrasts with MDG reports
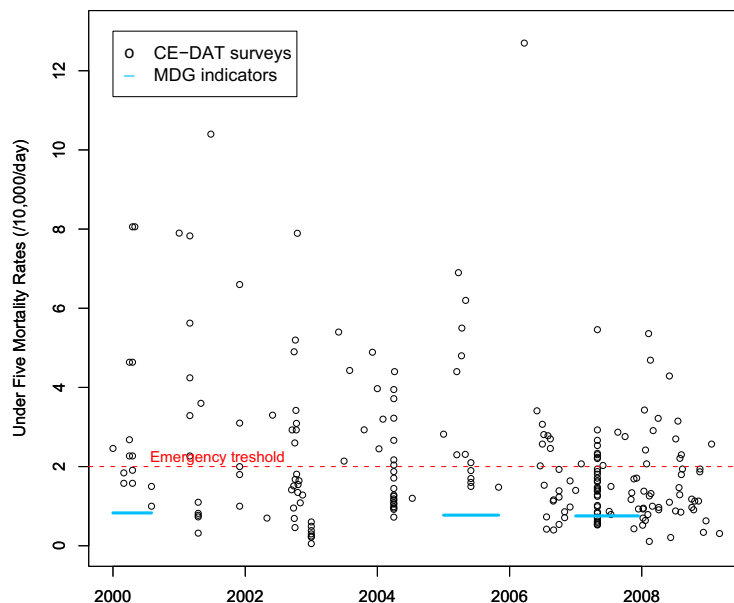
Those crude mortality rates apply to a recall period from 2 to 22 months.

Source: CE-DAT (2010); MDG Indicators (2010)

MDGs. One approach to address this problem would be to use the data from these surveys to calculate, using appropriate statistical methods, a correction factor for the national statistics. Guidance on estimating the indicators from non-traditional data sources could be a valuable input and improve the relevance of the MDG process for conflict areas.

Table 3.1: Average percentage of children (age 9-59 months) vaccinated against measles (St. Dev.) as reported by humanitarian NGOs

Country	2006		2007		2008	
Congo, Dem. Rep.	74 (30%)	n=27	82 (21%)	n=17	83 (15%)	n=43
Ethiopia	57 (10%)	n=36	65 (13%)	n=15	69 (8%)	n=10
Kenya	84 (19%)	n=15	-		86 (23%)	n=16
Somalia	73 (22%)	n=20	51 (18%)	n=45	43 (14%)	n=27
Sudan	65 (23%)	n=40	66 (21%)	n=28	66 (22%)	n=19

Source: CE-DAT (2010)

Finally, methods and standardisation issues remain an important obstacle to

Figure 3.2: Measles vaccination coverage among children 9-59 months in selected conflict-affected countries, 2006-2008
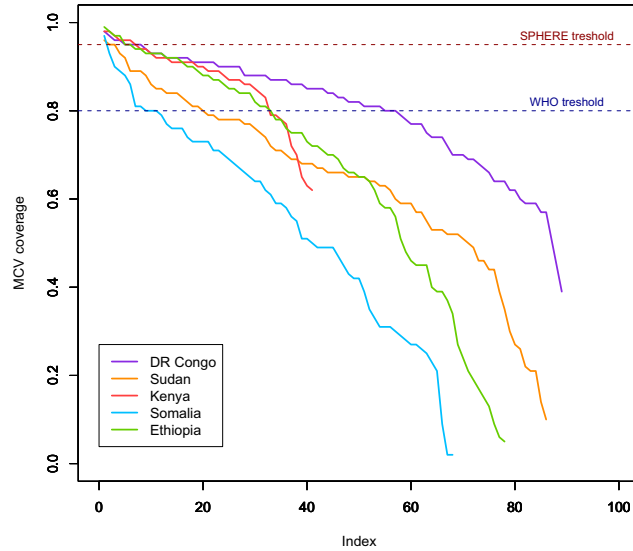
Vaccination coverages sorted from highest to lowest.

Source: CE-DAT (2010)

data analysis for conflict countries. Comparisons between surveys are difficult as age ranges differ between those used by the NGOs (6-59 months) and MICS or DHS (0-59 months). The same problem arises for statistics on measles vaccination where NGOs report on vaccination coverage from 9 to 59 months and MDGs report for 12 to 23 months. In addition, to further confuse matters, while acute malnutrition is the more appropriate indicator for early warning in severe food shortage situations, underweight is the most widely used indicator for development measurement purposes. This makes it difficult to monitor changes in nutritional conditions during transition periods using trend analyses. While MICS or DHS are conducted every 5 to 10 years and the smaller sample surveys are undertaken almost continuously, agreement on methods and definitions would provide some statistical continuity and comparability over time and space.

Chapter 4

Conclusion

Warring factions in several countries have recently signed peace agreements, such as Burundi, Angola, and Sierra Leone. The glimmer of light after long years of ferocious civil conflict is slightly dimmed by a prognosis of a 50% success rate of sustained peace (Collier, 2007). Relapse into conflict is common despite energetic peace negotiations and large-scale development aid. Easterly (2009) suggests that aid in Africa suffers from a lack of learning: development aid remains in a cycle of reinventing old ideas instead of testing and discarding failed ones. In a broad sense, this approach also applies to post-conflict situations where the development or peace building strategies have often been unable to stabilise societies in a lasting manner or to provide communities with a reason not to resume fighting. The challenge here is to learn and apply from the past.

Current post-conflict reconstruction includes programs dealing with democratisation, elections, and other peace process actions that are valued Western concepts but not necessarily valued across all cultures. Leadership and governance are important for stable and free societies but are not, by any stretch of the imagination, low hanging fruits, especially as these concepts vary across cultures. In contrast, management of grievances, which can be major drivers in prolonging conflict, can play a role in reducing inequities and should be addressed appropriately. Particularly, monitoring key indicators that provide early warning on growing inequities can be a valuable complement to the political efforts to maintain peace. In the immediate post-conflict period, where peace agreements are signed and guerrilla warfare has come to a fragile halt, needs of civil community should be immediately addressed in order to legitimise the ruling power and provide a reason for the community to stop supporting the rebels.

A reasonable approach for post-conflict development would be to immediately launch interventions that are visible and tangible to the civil community as peace dividends. Concrete and practical programmes that improve chances of survival and livelihoods are such visible signs (Zwi and Grove, 2006; Rushton, 2005; MacQueen, 2000). Community-based health care delivery in post-war Mozambique was successfully perceived by the civil population as a sign of normalization of life and encouraged the peace process (Pavignani and Colombo, 2001). There are also instances of ceasefires where warring parties agreed to stop hostilities and allow implementation of vaccination campaigns (WHO, 2010). Grass roots services - such as garbage collection and child healthcare - have been observed to be key factors for social stabilisation (Zoellick, 2008). Functioning services such as community health centres can confer legitimacy on a new local government whose interest in the welfare of its people becomes tangible.

The main condition for this paradigm to be successful is a better evidence base for planning and programming in conflict-affected regions.

Firstly, demographic information on conflict-affected communities is invaluable and critical for post-conflict peace. Effective post-conflict planning also requires sound evidence on whether major demographic changes have occurred in the population, such as youth bulges, male deficits, uncommonly high fertility rates, male migration, labour shortages, or increases in women-headed households. Timely data on mortality, fertility and migration can provide rich insights for post-conflict action. Demographic patterns can help identify effective interventions and target the right subgroups. Equally importantly, population distribution provides the necessary denominators without which rates are not statistically valid or comparable. Up-to-date demographic data can accurately estimate future population distributions, which can then be used to build electoral lists or sampling frames for surveys. Finally, even if census or large-scale surveys cannot be conducted, small-scale surveys, representative of the conflict-affected population, should be one of the very first steps taken before drawing up development plans.

Secondly, an in-depth understanding of essential livelihood needs, in particular those pertaining to health and nutrition are essential for effective post-conflict programmes. Hunger, death and illness should be recognised as central preoccupations of an individual's and a community's sense of well-being, especially in populations who have experienced or are experiencing armed hostilities. In order to identify the

specific needs of conflict-affected communities and appropriately target the services, much better use can be made of existing data. Creative statistical techniques used in meta-analyses can piece together data from different sources and could allow a better understanding of the dynamics of these situations. Furthermore, increased collaboration between initiatives such as MDGs, MICS, DHS and LSMS, and humanitarian NGOs would substantially enhance the completeness and quality of the data. In particular, inter-institutional agreements on definitions, methods and standards for surveys in conflict settings should be a priority. Representativeness of nationwide surveys in conflict-affected countries would be greatly enhanced with the addition of an optional module in the survey questionnaire, making them truly representative of these countries.

The conflict-affected populations, which still number in hundreds of millions, represent some of the poorest and the most marginalized communities in the world. They have typically received little attention except for humanitarian relief, which may have exacerbated their poverty and reduced their options for independent living. A development plan that is still rooted in emergency actions but incorporates progressively long-term policies could provide quick results while supplying building blocks for sustainable development. Finally, the main barrier to progress is lack of a knowledge base on the survival needs of these communities, where long-term stability is underpinned by tangible improvements in household livelihoods - an unmistakable sign of good governance.

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