

Working paper

# Darfur: Counting the Deaths (2). What are the trends?

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December 2005

**Complex Emergency Database**



# Darfur: Counting the death (2)

## What are the trends?

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### Abstract

Within Sudan, the 6 million Darfurians are some of the very poorest. A third of this population has been driven from their homes and the most of the rest live amidst terror, aggression and violence. Recent surveys indicate that mortality in Darfur among accessible populations has declined in recent months. However, they also indicate that there remain large tracts where populations co-exist with violence and high insecurity and on whom we do not have precise information on either mortality or nutritional status.

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## 1. Introduction

In 2005, Sudan ranked as a medium level human development country along with others such as Uganda, Nepal and Ghana. In comparison, Kenya, Nigeria or Rwanda, ranked lower on the same index. On the GDP index however, Sudan remained substantially lower than the Sub-Saharan average, making it a low income country by most economic indicators.

Within Sudan, the 6 million Darfurians are some of the very poorest. A third of this population has been driven from their homes and the most of the rest live amidst terror, aggression and violence.

In January 2005, UN Secretary General Kofi Annan gave the International Criminal Court a sealed list of 51 names of people suspected of committing war crimes and crimes under international law in Darfur. On June 6, 2005, the ICC announced that it would launch a formal investigation into these alleged war crimes. It is expected to be the largest investigation handled by the court since it was established in June 2002.

On November 22, 2005, the UN Secretary General made his monthly report to the General Assembly on Darfur. The report was not encouraging and painted a deteriorating picture despite an acknowledgement of the recent decline in mortality. Insecurity generated by lawlessness, destruction of crops and attacks on villagers and farmers are escalating again. Violence against women and children are matters of grave concern on moral grounds as well as barriers to civil peace. Reliable data is unavailable and therefore the exact magnitude and nature of the prevailing pattern of deaths are unknown, compromising effective aid intervention.

As a result of the above scenario, mortality, so far only of interest to epidemiologists in support of humanitarian action, has entered the international political agenda.

The CRED – CE-DAT team produced estimations of mortality based on multiple surveys undertaken in Darfur from September 2003 to January 2005. Their analysis concluded that there had been a total of nearly 122 000 deaths over this period, of which about 110 000 (including those in Chad refugee camps) could be considered excess deaths attributed to factors related to the conflict. About 30% of these deaths could be attributed to direct violence, the rest mainly was due to diseases.

The CE-DAT team has re-estimated mortality in the Darfur region, including new survey information and bringing the previous estimates up-to-date.

## 2. Mortality in Darfur

Recent surveys indicate that mortality in Darfur among accessible populations has declined in recent months. However, they also indicate that there remain large tracts where populations co-exist with violence and high insecurity and on whom we do not have precise information on either mortality or nutritional status.

The results from the state-wide WHO survey<sup>3</sup> did not show major differences with other surveys that cover the same period, but were conducted on a smaller scale. Therefore, the WHO survey was considered representative for the areas it covered and the following estimations are based on its data.

**Table 1: Surveys conducted between January and August 2005 in Darfur region, Sudan**

Location	Period	CMR*	Conducted by
<b>North Darfur</b>			
Entire state	nov/04 jun/05	0.80	MoH, WHO
El Fasher	dec/04 mar/05	0.30	ACF-F, CHF, MoH, SMA, UNICEF, WFP, WHO
Korma	apr/05	1.26	MSF-B
Kabkabiya	feb/05 may/0	0.66	ACF-F
Kutum town, Kassab	mar/05 may/0	0.32	GOAL
Abu Shok camp	mar/05 jun/05	0.60	ACF-F
<b>West Darfur</b>			
Fur Baranga	oct/04 jan/05	0.89	SC-US
Mornei camp	oct/04 jan/05	0.80	Concern, MoH, UNICEF
Entire state	nov/04 jun/05	0.60	MoH, WHO
Golo, Gildu, Rokero	dec/04 mar/05	1.12	GOAL
Sirba	mar/05 jun/05	0.67	SC-US
Ardamat, Dorti, Riyad, Abu-Zar camp	mar/05 jun/05	0.53	Concern, MoH, SC-US, UNICEF
Zalingei camps	apr/05 jul/05	0.87	ACT, Caritas, NCA
Zalingei town	may/0 aug/05	0.60	ACT, Caritas, NCA
<b>South Darfur</b>			
IDP camps in entire state	nov/04 jun/05	0.80	MoH, WHO
Gereida camp	dec/04 jan/05	1.18	ACF-F
Nyala	nov/04 feb/05	0.26	ACF-F
Kalma camp	oct/04 feb/05	0.94	MSF-H

\* CMR: Crude Mortality Rate; expressed in number of deaths per 10 000 persons per day.

<sup>3</sup> These estimates are based on the recent WHO survey "Mortality survey among Internally Displaced Persons and other affected populations in Greater Darfur" available on <http://www.emro.who.int/sudan/>

## 2.1 Methodological Notes

We calculated the numbers of total deaths, excess deaths due to conflict and violence-related deaths. The excess deaths were computed by subtracting from the total those deaths that would have occurred in Darfur without the conflict. The value that was used to calculate the expected number without the conflict was 11/1 000/year or 0.3/10 000/day for the entire country as reported by UNICEF<sup>4</sup>. According to its MICS survey, the under 5 mortality rate (U5MR) in Darfur was similar to the country average. Therefore, we have assumed that the national CMR would also approximate the Darfur CMR, should the conflict not have occurred.

The estimates are further divided into two periods:

- Period 1: September 2003 – January 2005
- Period 2: February 2005 – June 2005
- Total period: September 2003 – June 2005 (Period 1 + Period 2)

## 2.2 Estimations for inaccessible areas

The main uncertainties were introduced by the lack of information from areas inaccessible due to insecurity. We accounted for these by applying survey estimates available from one high-violence zone to the one for which we have no information. This is highly unsatisfactory but may be the best approximations in the absence of any data.

South Darfur has been the State with the least available information since 2003. The WHO survey, which is the best region-wide recent data currently available includes only the **internally displaced in camps** for South Darfur.

The proportion of violent deaths in the whole region in period 2 (Table 2) is based on applying the rates obtained for violent deaths in this period for North Darfur to South Darfur to obtain the total.

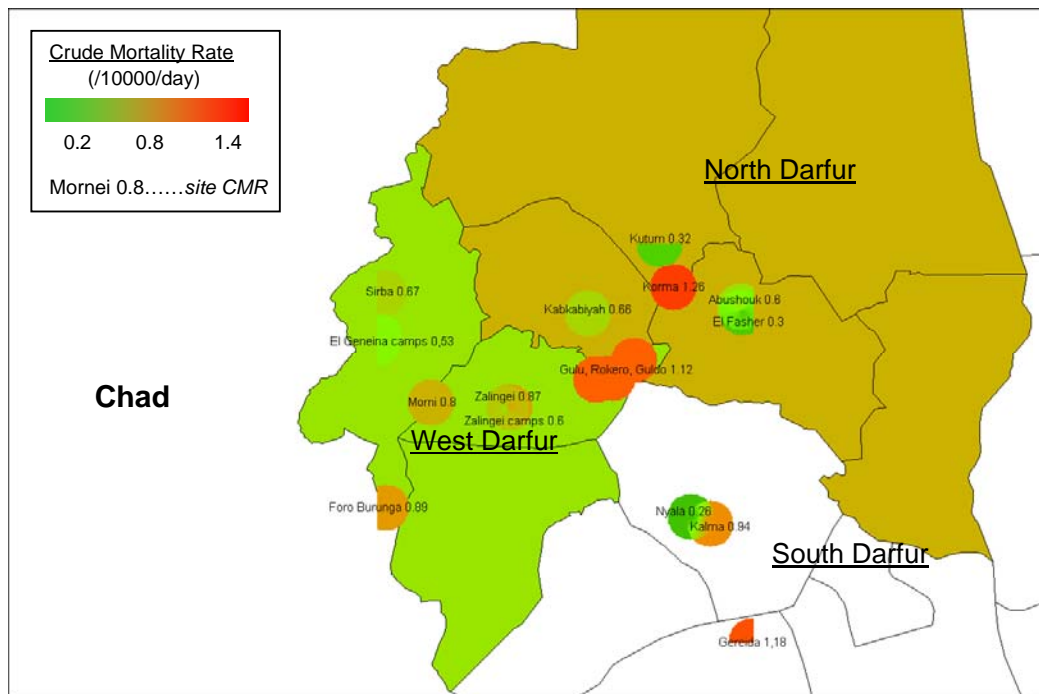
In North Darfur the insecure areas were essentially the SLA held areas where the WHO survey team were allowed access and therefore North Darfur estimates are complete for all the State.

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<sup>4</sup> UNICEF. (2003) "The State of the World's Children 2003"

In West Darfur, the situation was more complex. The WHO survey did not cover the population living in the Jebel Mara area held by the SLA. We have used the results from a direct survey (GOAL) in the Jebel Mara area to improve the representativeness of the mortality estimate in this normally inaccessible population.

**Figure 1: Map of the Darfur, Sudan showing surveys conducted between January and August 2005.**



Source: CE-DAT Database on Conflict Mortality, Morbidity and Nutrition, CRED, Brussels 2005 – [www.cred.be/cedat](http://www.cred.be/cedat)

### 3. Results

Table 2 presents the estimations for total deaths, excess deaths and violence-related deaths in the Darfur region based on multiple surveys which have been compiled and validated by CE-DAT.

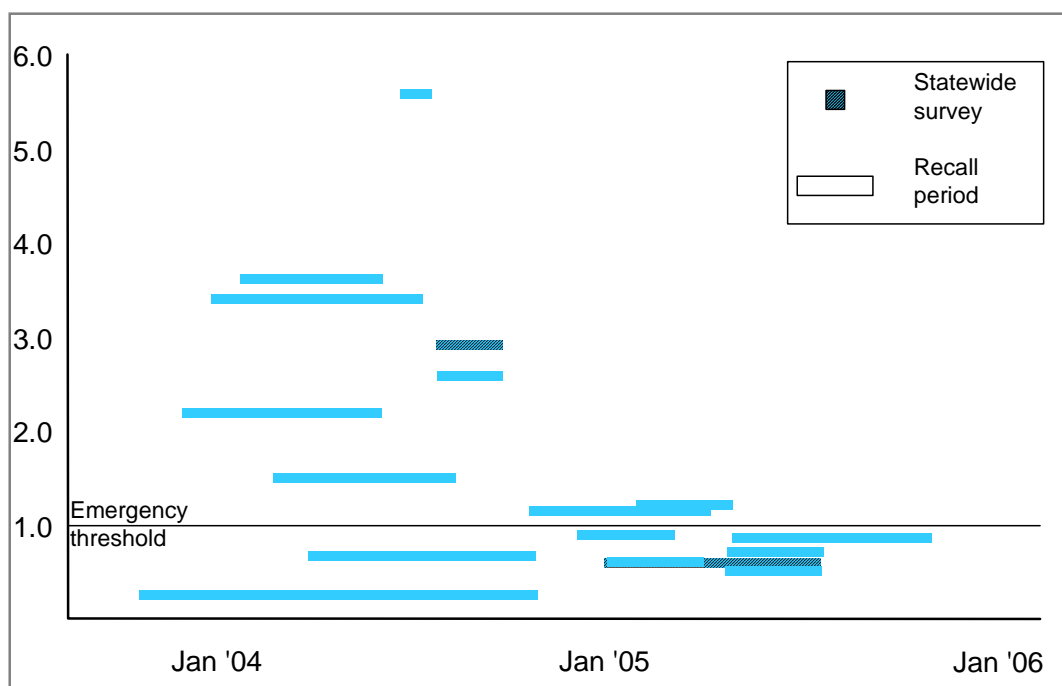
**Table 2. Estimations of number of dead in Darfur, September 2003 – June 2005**

Sep.2003 - Jun.2005 Total period (1+2)			Sep.2003 - Jan.2005 Period 1			Feb.2005 - Jun.2005 Period 2		
Total	Excess	Violence (%)	Total	Excess	Violence (%)	Total	Excess	Violence (%)
157 819	131 060	40 935 (26%)	121 582	107 402	32 000 (26%)	36 237	23 658	8 935 (25%)

### 3.1. Period 1 (Sept 2003 – Jan 2005)

A full report with estimations, methods and conclusions is available on <http://www.cred.be/cedat/documents.htm> or by request for copies to Regina Below ([regina.below@uclouvain.be](mailto:regina.below@uclouvain.be)).

**Figure 2: Crude mortality rate in West Darfur, Sudan (/10,000/day)**



The report also includes estimations made by the US Department of State using a similar dataset. Table 1 presents the mortality estimates made by the CE-DAT team. For those made by US State Department, please consult their full report.

### 3.2. Period 2 (February - June 2005)

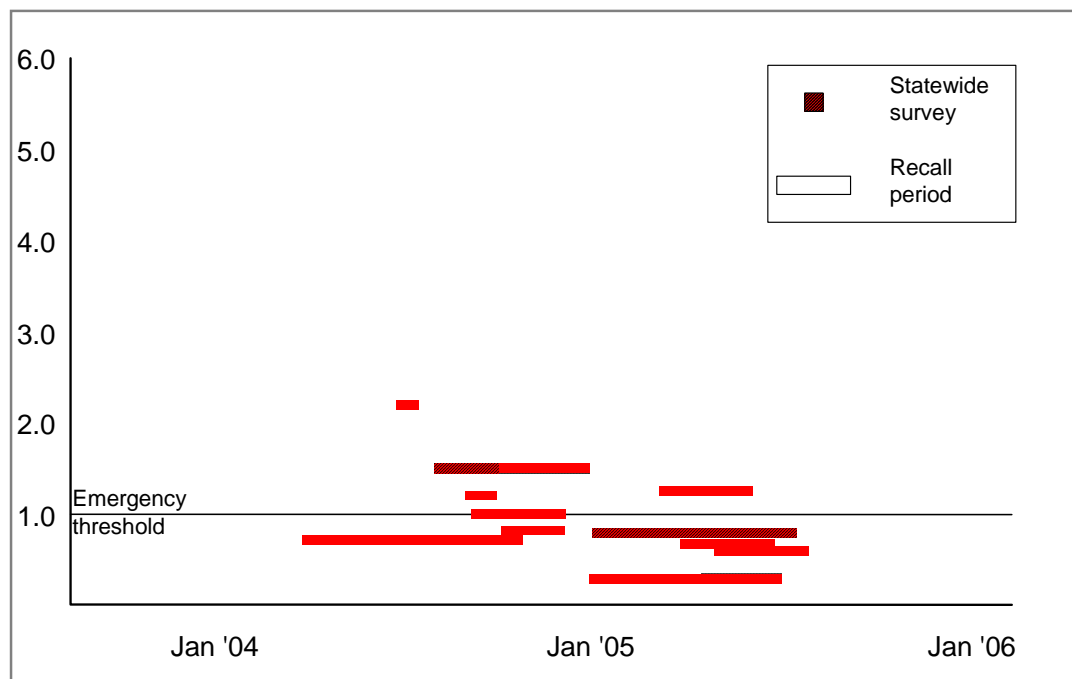
The CMR in this period both for the total population and for excess mortality, is lower than in the previous period when violence was widespread and the food and health situation were very precarious. Humanitarian aid programmes had just started up and their protective effects on the population were not yet fully realized.

By early 2005, aid programmes had settled in earnest and violence had declined, except for localised areas. Excess deaths decreased from 7 times to twice the expected number of expected deaths between period 1 and period 2.

Surveys indicate that, **on average**, the proportion of violent deaths has not changed from the previous period remaining at about a quarter of the total.

It should be emphasized however, that although during 2004 a significant reduction of violence-related deaths occurred over the entire region, at the end of that year casualties due to violence in North Darfur increased again (Figure 5). The situation in West Darfur however was stabilised.

**Figure 3: Crude mortality rate in North Darfur, Sudan (/10,000/day)**

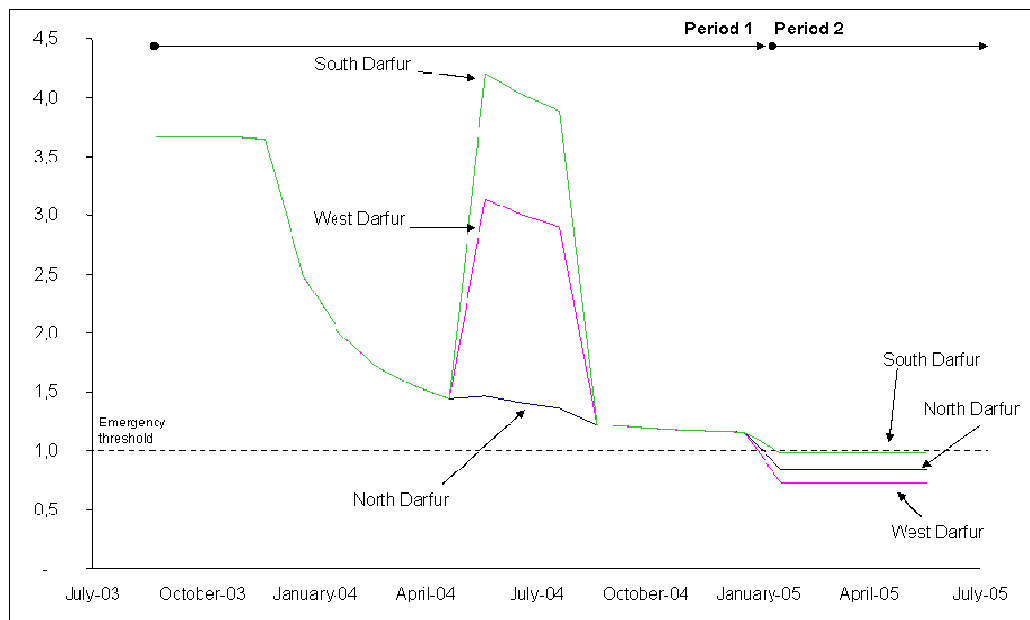




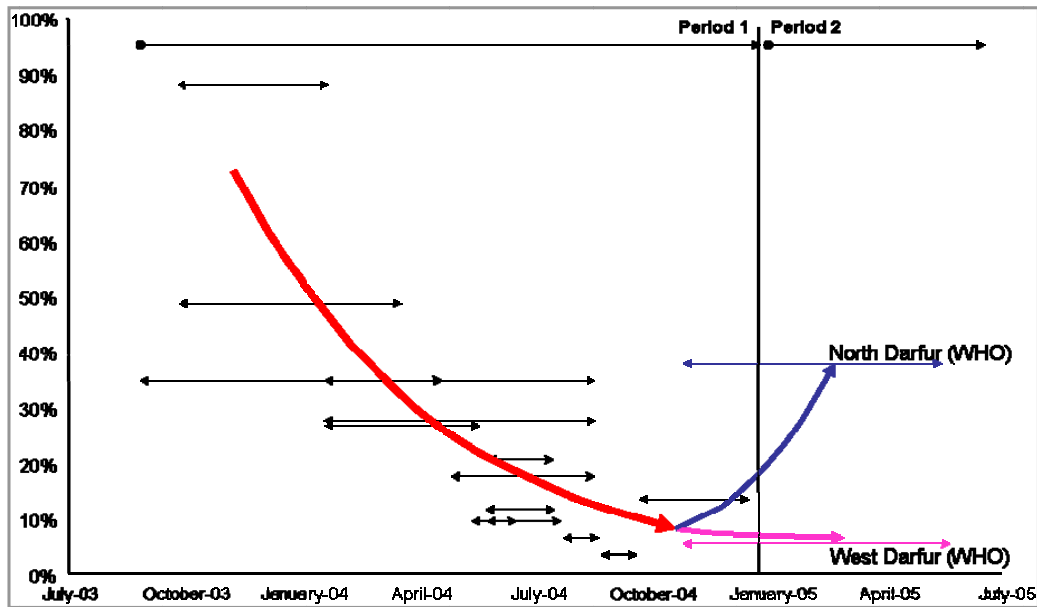
### 3.3 Total period

Since September 2003, there have been nearly 160 000 deaths in the Darfur Region. Nearly 83 percent of these were in excess of what could have been expected over this period. Of the total numbers of dead in this period, over 25% were due to violence. Although we are unable to distinguish between armed violence and civil violence, we feel that it is safe to assume that most of the violent deaths are due to the on-going armed conflict.

**Figure 4: Crude mortality rate in Darfur region, Sudan (July 2003-July 2005)**



**Figure 5: Proportion violence-related deaths in North and West Darfur, Sudan  
(July 2003-July 2005)**



Note: The curves in the graph do not represent mathematical regressions, but visual

#### 4. Nutritional status in Darfur compared to S. Sudan

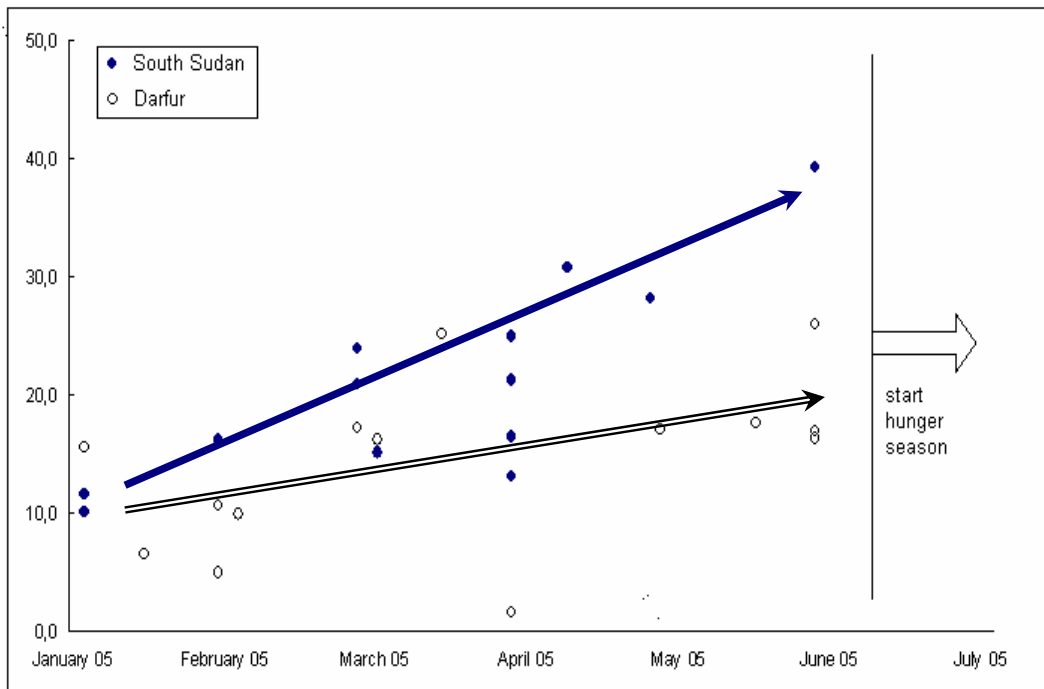
Our analyses indicated from the start that the humanitarian aid in Darfur, which started in earnest in mid 2003 has been rapid and efficient. Inadequacies exist, of course, in specific areas or at specific times. However, by and large the aid response, especially in the food distribution sector has functioned well, despite security hurdles.

Recent data indicate that the bulk of the hunger and malnutrition problem may now be elsewhere than in Darfur. Figure 6 presents the results of surveys in Darfur and South Sudan.

Since January 2005, the average rate of GAM is 15% in Darfur, compared to 20% in South Sudan. The trends in both these regions show major cause for concern, since malnutrition rates are relatively high.

In the absence of more recent data, the conditions among the South Sudan children seem set for worsening as of June 2005.

**Figure 6: Global acute malnutrition in Darfur and South Sudan (January-July 2005)**



Source: Complex Emergencies Database (CE-DAT), CRED

*Note: The lines in the graph do not represent mathematical regressions, but visual approximations.*

Malnutrition among the under-fives in certain areas like Jonglei approaches nearly 40% and might have approached famine-like conditions in the past hunger season.

Nutritional status in Darfur, on the other hand, hovers at the same levels since the beginning of the year, partly due to continued food distribution.

Malnutrition in the rest of Sudan (mostly South Sudan), has steadily increased during the first half of the year. Nearly 50% of the children under five in this region are suffering from global acute malnutrition and will need emergency feeding.

## 5. Conclusions

The mortality has declined in Darfur over the last few months though a political solution has not yet been found. Violence and insecurity remains a serious problem, although it is probably in isolated clusters. There has been an increase in violence-related deaths in North Darfur in the first 6 months of the year. All other surveys or evidence point to

continued localised violence in South Darfur, from where data availability remains unsatisfactory.

The profile of mortality also displays great variability, with specific geographic areas suffering from high mortality and others not doing any worse than the national average or those of neighbouring countries.

The numbers of excess deaths calculated here are likely to be over-estimations, since the baseline 0.3/10 000/day is lower than the Sphere recommended baseline of 0.44/10 000/day (Sub-Saharan Africa average).<sup>5</sup>

While the current data for accessible populations in the Darfur Region provides an approximation of the reality, much more needs to be done to improve the estimation of mortality in inaccessible areas and in particular in South Darfur. Hence, our current estimations for the South are based on many assumptions.

Finally, a judgement call is essential on the trade-off between resources needed for increasingly better data and humanitarian aid. A line has to be drawn, however contentious, between what level of precision is enough for the purposes of aid and for negotiations.

## **Acknowledgements**

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<sup>5</sup> The use of the Sphere baseline for Sub-Saharan Africa (0.44/10 000/day) would have resulted in approximately 17 000 excess deaths, nearly 6000 less than this estimation using 0.3/10 000/day.