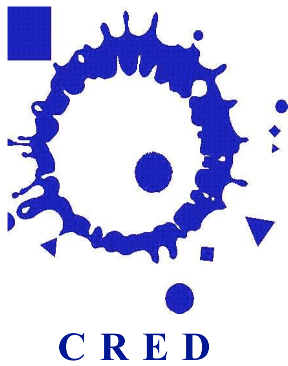

The Democratic Republic of the Congo:
A brief analysis of anthropometric surveys from 2000-2006

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1. INTRODUCTION

The following presents a brief analysis of the mortality and nutrition situation in the Democratic Republic of Congo from 2000-2006 based on a summary of surveys, academic articles, and UN documentation over that period. The information was collected for the purpose of analysis in CRED's Complex Emergency Database (CE-DAT).

At the present time the database has only limited information for the years prior to 2000 and so has not included them in the analysis, although we acknowledge that the conflict began in 1998.

N.B. There were ten provinces plus Kinshasa until February 2006 when the government changed the Constitution to include 26 provinces. However as this is not yet reflected in documentation for DRC we will maintain the previously used 11 provinces.

2. TIMELINE OF CONFLICT

1997: The government of Mobutu Sese Seko is ousted from power by a rebellion led by Laurent-Désiré Kabila with support from Rwanda (who were attempting to force genocide perpetrators seeking refuge in the DRC back into Rwanda).

1998: Laurent Kabila turns against Rwandan and Ugandan supporters to reduce their influence and power in the DRC. Rwanda and Uganda retaliate under the auspices of protecting national borders but underlying is a conflict over DRC's vast mineral resources.

Two separate conflict fronts develop. The first in the East (Kivus, Maniema, Kasai Oriental, and North Katanga) under RCD-Goma control (backed by Rwanda), particularly in big villages. The second in the North East (Equateur and Oriental Province) under the control of MLC (backed by Uganda).

1999: Lusaka Accord, a ceasefire agreement, is signed by warring factions but fighting continues especially in Eastern parts of the country. Mandated an Inter-Congolese Dialogue for the creation of a transitional government, constitution, and election proceedings.

UN Mission to the Congo (MONUC) established although with limited mandate and small troop numbers.

2001: Laurent-Désiré Kabila assassinated. Son Joseph Kabila named head of state.

2002: Accord signed in South Africa bridging the way for peace and for the new government.

2003: Transitional government is formed. MONUC expands its mission in the DRC. Foreign troops are withdrawn. Fighting greatly diminished although DRC forces continue to try and control smaller rebel groups.

2006: DRC holds first multi-party elections in July between Joseph Kabila and Jean-Pierre Bemba but results of the election are disputed. Second election held in October. Despite initial rioting, Bemba concedes defeat.

(Refugees International, 2006).

3.0 POPULATION DEMOGRAPHICS

The total population within the DRC is estimated to be approximately **57,549,000 people** (WHO, 2006**).**

The population estimate for the DRC includes 204,500 refugees from numerous conflicts in surrounding countries (Table 1)**.**

Table 1. Estimated refugee population currently living in the DRC.

Country	Number of Refugees
Angola	106,800
Rwanda	42,400
Burundi	19,100
Uganda	19,000
Sudan	11,700
Congo-Brazzaville	5,200

*USCRI, 2005.

Of increasing concern is the large internally displaced population (IDP) currently residing in almost every province throughout the DRC. In 2005 the UNDP estimated the population of IDPs at 1,664,000 (UNDP, 2005). Since that time numbers have fluctuated within the country and between provinces, although current figures from OCHA suggest there are **1,477,327 IDPs** spread over the following provinces:

Table 2. Estimated IDP population currently living within the DRC (see attached map).

Province	Number of Displaced Persons
North Kivu	686,500
South Kivu	197,135
Ituri (within Province Orientale)	185,500
Katanga	175,815
Equateur	100,000
Province Orientale	85,330
Kasai Orientale/Kasai Occidental	40,000
Maniema	5,650
Kinshasa	1,800

*OCHA, 2006.

There are an additional 431,000 Congolese refugees currently seeking asylum in other countries (UNDP, 2006).

4.0 CE-DAT SURVEY RESULTS

The following are results drawn from surveys in the CE-DAT database from 2000-2006. The three main indicators CMR, U5MR and GAM are widely recognized as those that best illustrate the humanitarian status of affected populations. Tables 4,6, and 8 in the following three sections indicate the severity of the situation in progressively shaded boxes.

4.1 MORTALITY

National level statistics put the current crude death rate (CDR) in the DRC at 13.27/1000 people, which is converted to a crude mortality rate (CMR)[1] of 0.36 deaths/10,000 people/day (CIA, 2006). This is slightly below the Sphere standard for Sub-Saharan Africa of 0.44/10,000/day but should not be interpreted to signal that the mortality situation in the DRC is above alarm.

There are currently 89 survey results for crude mortality rate (CMR) in the database for 2000-2006 in the 11 provinces of DRC. They represent a mixture of IDPs, residents, returnees, and some refugees.

The WHO emergency threshold of 1 death/10,000 people/day is an emergency threshold used in the humanitarian community to signal that a situation has reached alert level. **37 of the 89 surveys (41.57%) found CMRs above the emergency threshold of 1/10,000/day**.

7 of the 12 (58.3%) surveys conducted amongst IDPs and IDPs-residents found CMRs above 1/10000/day, whereas 26 out of 70 (37.14%) surveys conducted amongst resident populations found elevated CMRs.

Table 3. Average CMR (per 10,000 per day) by province and the number of surveys (in brackets) on which the calculations are based.

Province	2000	2001	2002	2003	2004	2005	2006
Bandundu	NA	0,4 (1)	0,72 (2)	NA	0,41 (2)	NA	NA
Bas-Congo	NA	0,6 (1)	0,46 (1)	NA	0,26 (1)	NA	NA
Equateur	NA	1,75 (2)	0,20 (1)	2,10 (1)	0,77 (4)	0,60 (5)	1,34 (2)
Kasai Occidental	NA	NA	1,28 (1)	NA	0,54 (2)	NA	NA
Kasai Oriental	NA	NA	0,81 (3)	NA	0,65 (4)	NA	NA
Katanga	3,78 (1)	1,1 (1)	1,07 (4)	1,58 (3)	0,91 (6)	1,07 (2)	2,13 (3)
Kinshasa	NA	NA	0,59 (1)	NA	0,46 (1)	NA	NA
Maniema	NA	2,1 (2)	0,99 (1)	NA	1,71 (2)	NA	NA
North Kivu	NA	NA	0,83 (3)	NA	0,54 (3)	0,74 (2)	NA
Province Orientale	0,75 (3)	NA	1,43 (3)	NA	0,54 (4)	4,1 (1)	NA
South Kivu	1,29 (3)	NA	0,63 (1)	NA	1,59 (5)	1,03 (1)	NA

[1] Crude Mortality Rate (CMR) is a measure used to estimate the rate at which members of the population die during a specific period from all causes.

Table 4. Summary of survey results above and below WHO emergency threshold for CMR.

Status	Crude Mortality Rate (CMR /10000/day)	Number of Surveys (from 2000-Present)	Percentage (%)
Acceptable	CMR <= 1	52	58,43
Alert	CMR >=1 or <=2	29	32,58
Crisis	CMR >=2	8	8,99

4.2 UNDER FIVE MORTALITY RATE

There are currently 98 survey results for under five mortality rate (U5MR)[2] in the database for 2000-2006 in the 11 provinces of DRC. They represent a mixture of IDPs, residents, returnees, and some refugees.

A U5MR of < 2 deaths/10,000 persons/day is internationally recognized as representing an "acceptable" level (or expected level) of deaths per day, which roughly works out to be a doubling of the CMR for the region. A U5MR of ≥2/10,000/day but ≤4/10,000/day represents an escalation of a situation, and anything ≥4/10,000/day is considered a crisis.

61 of the 98 (62.25%) surveys of U5MR in the DRC over the past six years found U5MRs above the alert status.

12 of the 98 (12.25%) found there to be an emergency situation. **Four of the surveys that suggest an emergency situation were taken within the past two years**.

11 out of the 15 surveys (73.33%) taken in IDP/IDP-resident situations showed a U5MR of ≥2/10,000/day, whereas 32 out of 76 surveys (42.11%) taken in resident situations found similar U5MR.

Table 5. Average U5MR (per 10,000 per day) by province and the number of surveys (in brackets) on which the calculations are based.

Province	2000	2001	2002	2003	2004	2005	2006
Bandundu	NA	1 (1)	2,01 (2)	NA	1,04 (2)	NA	NA
Bas-Congo	NA	2 (1)	1,51 (1)	NA	0,92 (1)	NA	NA
Equateur	NA	4,2 (2)	1,28 (1)	4,89 (1)	1,86 (4)	1,76 (5)	3,41 (2)
Kasai Occidental	NA	NA	2,60 (1)	NA	1,40 (2)	NA	NA
Kasai Oriental	NA	NA	2,21 (3)	NA	1,63 (4)	NA	NA
Katanga	8,06 (1)	6,75 (2)	3,31 (4)	3,75 (3)	2,64 (6)	2,60 (2)	6,11 (3)
Kinshasa	NA	0,76 (8)	1,42 (1)	NA	1,25 (1)	NA	NA
Maniema	NA	5,75 (2)	2,93 (1)	NA	2,66 (1)	NA	NA
North Kivu	NA	NA	3,05 (3)	NA	1,12 (3)	1,90 (2)	NA
Province Orientale	1,36 (3)	NA	2,69 (3)	NA	1,05 (4)	6,9 (1)	NA
South Kivu	2,79 (5)	NA	0,95 (1)	NA	2,81 (4)	3,15 (1)	NA

[2] Under Five Mortality Rate (U5MR) is an estimate of the number of deaths from all causes among children between birth and five years of age over a specific period of time.

Table 6. Summary of survey results above and below WHO emergency threshold for U5MR.

Status	Under Five Mortality Rate (U5MR /10000/day)	Number of Surveys (from 2000-Present)	Percentage of total (%)
Acceptable	U5MR <= 2	44	44,89
Alert	U5MR >=2 or <=4	42	42,86
Crisis	U5MR >=4	12	12,25

4.3 NUTRITION

There are currently 56 survey results for global acute malnutrition (GAM)[3] in the database for 2000-2006 in 9 of the 11 provinces of DRC. They represent a mixture of IDPs, residents, returnees, and some refugees.

A GAM Z-score ≥10% is generally considered to indicate a serious nutrition situation, while ≥15% is a warning of a critical acute nutrition situation.

25 of the 56 surveys (44.64%) found GAM ≥10% indicating a serious situation. Only 2 of the 56 (3.57%) surveys indicated a critical situation. **However 5 of the 56 surveys (8.93%) that found a serious acute nutrition situation were conducted in 2006.**

11 of the 16 surveys (68.75%) conducted in IDP/IDP-resident populations found GAM ≥10%, whereas 13 of 33 surveys (39.39%) conducted in resident populations found a GAM of ≥10%.

Table 7. Average GAM (%) by province among children 6-59 months and the number of surveys (in brackets) on which the calculations are based.

Province	2000	2001	2002	2003	2004	2005	2006
Bandundu	NA	NA	NA	NA	NA	NA	NA
Bas-Congo	NA	NA	NA	NA	NA	NA	NA
Equateur	NA	NA	NA	4,4 (1)	10,75 (2)	7,58 (5)	13,60 (2)
Kasai Occidental	NA	NA	NA	NA	NA	NA	NA
Kasai Oriental	NA	NA	9,5 (3)	28,1 (1)	NA	NA	NA
Katanga	NA	NA	NA	5,03 (3)	6,45 (2)	4,90 (2)	11,8 (3)
Kinshasa	NA	10,89 (8)	NA	NA	NA	NA	NA
Maniema	NA	9,35 (2)	NA	16,9 (1)	14,40 (1)	NA	NA
North Kivu	NA	11,1 (2)	NA	11,85 (2)	11,9 (1)	8,0 (2)	NA
Province Orientale	7,7 (2)	NA	NA	NA	NA	NA	NA
South Kivu	7,1 (2)	NA	10,9 (1)	9,8 (3)	8,3 (3)	6,4 (2)	NA

[3] Global Acute Malnutrition (GAM) is an index measuring weight-for-height, reflecting recent weight loss or gain, which is the best indicator of wasting. Here GAM calculated using Z-scores (defined as weight-for-height index less than -2 standard deviations from the median weight of the reference distribution for children of the same height and/or having oedema) were used for the analysis.

Table 8. Summary of survey results above and below accepted emergency threshold for GAM.

Severity	GAM WFH Z-Score Scales (%)	Number of Surveys (2000-Present)	Percentage of total surveys (%)
Acceptable	<5	3	5,36
Poor	5-9,9	28	50
Serious	10-14,9	23	41,07
Critical	>15	2	3,57

Areas of low GAM must be looked at against U5MR. Areas with good nutrition and high child mortality may seem contradictory, but high levels of child mortality in the immediate past (mortality surveys are recalls and nutrition surveys are instant pictures) may present only those children who have survived or who had better nutritional status to begin with.

5.0 CONCLUSIONS

- In 2004 the IRC estimated that potentially 3.9 million people died from causes directly or indirectly attributable to the conflict during the years of 1998-2004. In addition to quantifying the magnitude of the conflict they provided the following key insights:
    - **Most deaths were from easily preventable and treatable illnesses rather then violence**;
    - **Most mortality rates were higher in unstable eastern provinces**.
- Our analysis of the distribution of CMR and U5MR across all provinces yielded similar findings. **Mortality rates were higher in unstable provinces in which the 2001 and 2003 conflict front lines ran through**.
- As a result of the instability in the eastern provinces, large populations were forced out of their homes and communities and have become displaced in eastern provinces, i.e. North and South Kivu, among others. **The main humanitarian priority will be in provinces that are recipients of the displaced rather than the places where the conflict is concentrated.**
- Displaced populations have moved into areas with little capacity to accommodate huge influxes of people putting additional strains on available resources. **The additional burden of malnourished people (who are therefore more prone to illness) without shelter will stretch the resources of the local health sectors to their limits**. Disease outbreaks such as cholera, plague, and typhoid fever in South Kivu and Kinshasa (dense population per square kilometer) are a signal of poor sanitation conditions and may be a warning that facilities are stretched to capacity.
- While **vaccination programs remain paramount** to addressing preventable diseases, a sentinel surveillance system however crude would be a significant step towards preventing situations from worsening and preempting disease outbreaks.

The above conclusions have been drawn based on the evidence available but any input provided by colleagues in the field would be welcome, as it would improve the quality of the analysis provided.

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Figure 1. Map of IDP distribution within the DRC as documented by IDMC, August 2006.