

# Rapid Food Security And Nutrition Assessment

South Kordofan

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**On the cover:**

Displaced Nuban people hiding in caves in the Nuba Mountains, South Kordofan, Sudan, June 2012.

TOMO KRIZNAR

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## Editor's Note

The following report documents findings from a rapid food security and nutritional assessment conducted in South Kordofan state from August 5 to August 19, 2012 by an international non-governmental organization. Due to security concerns, the organization wishes to remain anonymous, but requested that the Enough Project publish the report to further corroborate existing evidence of the humanitarian disaster unfolding today in Sudan. The Enough Project was solely responsible for the report's final production and distribution but did not contribute to its content or findings.

Experts in health assessments in humanitarian crises at The John Hopkins Bloomberg School of Public Health vetted the assessment and found its research and methodology to be sound and its findings to be credible. The assessment was comprised of Mid-Upper Arm Circumference, or MUAC, screenings that were conducted on children 6-59 months-old and standard food security questionnaires that were administered to heads of households.

The assessment is significant because it is the first international, third-party, on-the-ground assessment of food security and nutrition in South Kordofan since June 2011, when the government of Sudan banned all international humanitarian aid organizations from operating in the state. No similar assessment has been carried out in Blue Nile state; however, the condition of refugees from Blue Nile indicates that the food security situation in that state may be comparable to that in South Kordofan today.

The findings verify suspicions held by the international community for more than a year: that the government of Sudan's violent campaign against civilian populations in South Kordofan state and its intentional denial of international humanitarian aid to areas controlled by the Sudan People's Liberation Movement-North, or SPLM-N, have resulted in severe malnutrition and dire food security outlooks.

In particular, the assessment finds:

- The food security situation in South Kordofan has dramatically deteriorated, with 81.5 percent of households surviving on one meal per day, compared to only 9.5 percent one year ago, and 0 percent two years ago.
- The prevalence of malnutrition among children in South Kordofan is "serious" bordering on "critical," according to the World Health Organization's malnutrition prevalence classifications. A "critical" classification for malnutrition is the worst or most dire classification possible.
- This dry season's harvest, which is currently underway, is expected to yield a significantly smaller amount of food than normal because farmers were unable to plant seeds due to persistent bombing by the Sudan Armed Forces. This means that civilians will require alternative sources of food immediately.

- 65.7 percent of households have less than one week's food stock. This is particularly troubling because food is not readily available for purchase, the harvest is low-yielding, and incomes are scarce or non-existent.
- 96.4 percent of households report having less income than normal, and 73.2 percent of households currently having no income at all. This effectively precludes the majority of households from purchasing available food stocks.
- The ongoing conflict has further limited access to and availability of commodities at local markets, which has fuelled widespread displacement in search of food.

The rapid food security and nutritional assessment indicates that the situation in South Kordofan today is very similar to that which existed in Somalia towards the beginning of 2011, which ultimately developed into the Horn of Africa famine. While there were early warning indicators for Somalia at that time, interventions were not fully scaled to a level that met the growing need until the situation hit crisis levels and a famine was declared. If the international community does not respond to similar early warning indicators in South Kordofan, the situation could become as severe as the famine in Somalia, in which hundreds of thousands of people died, including 29,000 children in three months.

*For an overview of what the international community can do to address the humanitarian crisis in South Kordofan and Blue Nile states, see the Enough Project's accompanying policy brief ["The Humanitarian Crisis in South Kordofan and Blue Nile: Next Steps for Policy Makers."](#)*



## Overview

Violence in Sudan has internally displaced or severely affected hundreds of thousands of people and resulted in thousands more fleeing to South Sudan and Ethiopia. The insecurity, displacement, and limited commercial access are placing critical stressors on livelihoods and are contributing to widespread food insecurity.

Many displaced people are hiding in caves in the Nuba Mountains from aerial bombardments carried out by the Sudan Armed Forces, or SAF, without access to adequate shelter, food, or clean water. They must hunt and gather their food to survive. Trade flows into the area are extremely limited, humanitarian operations are virtually non-existent, and the population lives under a constant threat of insecurity.

Malnutrition levels among children under five have already exceeded recognized crisis levels in South Kordofan. This assessment found that 81.5 percent of households are surviving on only one meal a day, and 73.2 percent of households have no source of income.

## Executive summary

### Key findings from rapid assessment in South Kordofan:

- The nutrition situation is serious, verging on critical, with a current global acute malnutrition, or GAM, rate in children 6-59 months of 14.9 percent and a severe acute malnutrition, or SAM, rate of 3.6 percent and the presence of aggravating factors.
- The food security situation has dramatically deteriorated, with 81.5 percent of households surviving on one meal a day, compared to only 9.5 percent one year ago and 0 percent two years ago.
- Currently 65.7 percent of households have less than one week's food stock.
- Food security outlook expects significantly smaller than normal harvest due to reduced land seeded and poor quality of existing crops.

### Key Recommendations:

- Targeted supplementary and therapeutic feeding programs are required to address the high rates of acute malnutrition in South Kordofan.
- Blanket supplementary feeding is also required for children 6-59 months to protect this at-risk population from becoming malnourished.
- Food assistance interventions in the form of commodity distributions, or GFD, are required in order to meet the hunger gap and prevent further deterioration of the food security context for the population of South Kordofan.

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## Introduction

### Background and context

The conflict in South Kordofan between the Sudan Armed Forces, or SAF, and the Sudan People's Liberation Movement-North, or SPLM-N, has been ongoing for more than one year. It is estimated that the violence has internally displaced or severely affected 520,000 people (170,000 in areas controlled by the government of Sudan; 350,000 in SPLM-N areas) and resulted in another 61,000 fleeing to Unity state in South Sudan (refer to map in Annex1).<sup>1</sup> The insecurity, displacement, and limited commercial access are placing critical stressors on livelihoods and contributing to widespread food insecurity. Several areas throughout South Kordofan have reached crisis or emergency phases.<sup>2</sup>

Access and availability of food is generally better in areas controlled by the Sudanese government, due to improved commercial access and the presence of international humanitarian actors.<sup>3</sup> Populations living in SPLM-N controlled areas are especially vulnerable because the government of Sudan has affirmatively blocked international humanitarian aid access. Therefore, trade flows into the area are extremely limited, humanitarian operations are virtually non-existent, and the population lives under a constant threat of insecurity.<sup>4</sup> Large numbers of internally displaced people, or IDPs, are hiding in caves in the Nuba Mountains without access to adequate shelter, food, or clean water. Malaria, diarrhea, and respiratory diseases are increasing while malnutrition levels among children under five have already exceeded recognized crisis levels in certain areas of South Kordofan.<sup>5</sup>

The primary objective of this assessment is to establish the food security and nutritional status of the population of South Kordofan. The data obtained will:

- Inform stakeholders on the current nature and scale of the situation
- Provide a foundation for recommendations to meet the needs of the population
- Assist in decision making and planning of appropriate humanitarian assistance required

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## Methodology

This rapid nutrition and food security assessment was conducted in SPLM-N controlled areas between August 5-19, 2012 by skilled staff trained in the methodology presented. Mid Upper Arm Circumference, or MUAC, screening was conducted of children 6-59 months, and standard food security questionnaires were administered to head of households. A two-stage cluster sampling using probability proportional to size design was employed in this survey sampling a total of 30 clusters. Population data for South Kordofan was obtained from the state's 2010 census data.<sup>6</sup> Administrative units were used as the sampling unit. Administrative units with restricted access due to security were removed from the sampling frame before clusters were selected. Households to be surveyed within the clusters were randomly selected using the Expanded Program on Immunization, or EPI, methodology.<sup>7</sup>

Within each cluster all children between the ages of 6 and 59 months were included in the sample for the MUAC and oedema screening. For the rapid food security assessment seven head of households were surveyed in each cluster. In total 232 livelihoods interviews were conducted and 2,467 children were included in the anthropometric assessment.

In addition, the assessment drew from 30 (one per cluster) community-level interviews conducted with a group of five to ten people using a standardized questionnaire to investigate the communal food security situation faced by each village.

Emergency Nutrition Analysis, or ENA, was used to analyze the MUAC screening data while the livelihoods data was analyzed using EPI Info version 3.5.3.

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## Nutritional situation

MUAC data were collected and analyzed from 2,467 children aged 6-59 months old. The gender ratio of male to female was 1.10:1. The age ratio (6-29 months:30-59 months) was 1.10:1 showing a slightly over representation of children under 30 months with 52.4 percent in this age group compared to an average of 49.4 percent for developing countries<sup>8</sup>.

The proxy prevalence of GAM using MUAC measurements is 14.9 percent with the SAM at 3.6 percent (Table 1). This GAM rate of 14.9 percent places the situation as serious verging on critical according to the WHO malnutrition prevalence classifications (Table 2) falling just 0.1 percent below the critical level, the presence of aggravating factors, and all the 95 percent confidence intervals falling across the serious and critical classifications. The variation among the prevalence rate of malnutrition among boys and girls was insignificant, indicating both the male and female children have equal access to food and are exposed to similar risk factors.

**TABLE 1**  
**Prevalence of acute malnutrition based on MUAC measurements (and/or oedema)**

	<b>Boys</b> n = 1,294	<b>Girls</b> n = 1,173	<b>All</b> n = 2,467
<b>Global Acute Malnutrition</b> <i>MUAC &lt; 125 mm and/or oedema</i>	<b>13.8 %</b> (12.1 - 15.8 95% CI)	<b>16.0 %</b> (14.0 - 18.2 95% CI)	<b>14.9 %</b> (13.5 - 16.3 95% CI)
<b>Severe Acute Malnutrition</b> <i>MUAC &lt; 115 mm and/or oedema</i>	<b>3.1 %</b> (2.3 - 4.2 95% CI)	<b>4.2 %</b> (3.2 - 5.5 95% CI)	<b>3.6 %</b> (2.9 - 4.4 95% CI)

**TABLE 2**  
**GAM rates expressed according to the WHO classification of malnutrition prevalence**

	<b>Boys</b> (n = 1,294)	<b>Girls</b> (n = 1,173)	<b>All</b> (n = 2,467)
<b>Wasting (GAM)</b>	Serious	Critical	Serious

Classification of malnutrition categorized by WHO classifications is based on the following<sup>8</sup>: Wasting: acceptable (0-5 percent) / poor (5-10 percent) / serious (10-15 percent) / critical (greater than 15 percent).

All cases of severe acute malnutrition were detected by MUAC criteria (Table 3) with no cases of oedema and marasmic kwashiorkor detected. Table 3 also highlights the inverse association between age in months and prevalence of moderate acute malnutrition. The prevalence is significantly higher in young children (6-29 months) as compared to the older children (30-59 months). This might be attributable to the very poor child feeding practices and frequent infection of common childhood illnesses during weaning period.

**TABLE 3**  
**Prevalence of acute malnutrition by age, based on MUAC measurements and/or oedema**

Age (months)	Total no.	Severe wasting (MUAC < 115 mm)		Moderate wasting (MUAC < 125 mm and >= 115 mm and)		Normal (MUAC >= 125 mm)		Oedema	
		No.	%	No.	%	No.	%	No.	%
6-17	604	29	4.8	103	17.1	472	78.1	0	0.0
18-29	688	33	4.8	96	14.0	559	81.3	0	0.0
30-41	660	13	2.0	48	7.3	599	90.8	0	0.0
42-53	492	13	2.6	30	6.1	449	91.3	0	0.0
54-59	23	1	4.3	1	4.3	21	91.3	0	0.0
<b>Total</b>	<b>2,467</b>	<b>89</b>	<b>3.6</b>	<b>278</b>	<b>11.3</b>	<b>2,100</b>	<b>85.1</b>	<b>0</b>	<b>0.0</b>

The analysis of the evolution of the malnutrition prevalence among this population over the past years is not feasible due to the absence of nutritional data covering this targeted area.

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## Food security situation

The rapid food security assessment assisted in establishing the household food security situation, existing coping mechanisms, and food security outlook of the population in South Kordofan. The results presented below are taken from both the household food security survey and the community-level interviews.

### Household food security

- **High levels of displacement:** 39.0 percent of households state they are currently displaced.
- **Decreased levels of income:** 96.4 percent of households report having less income than normal with 73.2 percent of households currently having no income.
- **Low food reserves:** 65.7 percent of households have less than one week's food stock.
- **Stressed livelihoods:** The three main current sources of food are purchase (39.2 percent), predominately from outside the local area, and hunting (26.3 percent). In the coming three months 69.0 percent will be relying on their own production as their main source of food.
- **Poor expected harvest:** Fewer households were able to plant crops (57.3 percent), and the acreage they were able to plant was also smaller compared to two years ago (median acreage one third of the size of two years ago). The harvest is expected to be worse (60.4 percent) or much worse (15.7 percent) than a normal year.
- **Increased livestock deaths:** The current condition of livestock is predominately poor (62.1 percent) and very poor (27.6 percent), with 69.2 percent of communities experiencing animal disease outbreaks and all communities having livestock deaths, with 51.7 percent having lost at least half their livestock.
- **Increased commodity prices:** The majority of households (84.4-90.5 percent depending on commodity) stated that the price of food commodities (maize, beans, oil, and sorghum) had all increased relative to the same time last year.
- **Low food availability:** 51.5 percent of households state that local availability of food is their biggest barrier to attaining food security.

### Aggravating Factors:

The general living conditions of the population confound the high rates of malnutrition. The assessment found that 63.4% of the population is currently accessing water from unimproved sources, increasing their risk of water-borne diseases that can affect the ability to absorb nutrients and negatively impact nutritional status. The low latrine usage further contributes to the population's health risks by increasing the probability of faecal-oral transmission of disease. The complex interaction of disease and malnutrition is further exacerbated by the presence of malaria in the communities. The low coverage of

mosquito nets puts the population at greater risk of contracting malaria, which not only impacts immediate health but can also lead to anaemia and micronutrient deficiencies.

Overall, 72.4% of communities have experienced disease outbreaks in the preceding three months, with only 2.6% of individuals visited by a community health worker in the preceding year.

The high rates of malnutrition and the aggravating factors present in the communities point to the situation getting progressively worse.

- 63.4% are currently accessing water from unimproved source
- 89.7% do not use a latrine
- 87.5% of children under five years old do not sleep under an insecticide-treated net, or ITN
- 72.4% of communities have experienced a disease outbreak in the last three months
- 2.6% have been visited by a community health worker in the past year

### Coping strategies

- **Migration of whole households:** 93.1 percent of communities experienced out migration of entire households this year with the primary reason being in search of food (70.4 percent).
- **Decreased food consumption:** 81.5 percent of households are currently surviving on one meal a day, compared to only 9.5 percent eating one meal a day one year ago and 0 percent two years ago.
- **Sale of livestock:** 25.2 percent of communities are using sale of livestock as a coping mechanism.

In general, July through September are normally the worst months for food security in South Kordofan as it is prior to the harvesting of the first crops in late September. Due to the extremely poor harvest of 2011, the lean season arrived earlier (May/June) and with more intensity than normal. To survive, people have resorted to coping mechanisms such as migration, hunting, foraging, selling off livestock, and reducing meals per day.

FIGURE 1  
Typical seasonal calendar for South Kordofan<sup>10</sup>

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
					Preparation and Planting		Weeding		Harvest		
		Dry Season			Rainy Season						
					Lean Period						

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## Recommendations

### Nutrition summary and recommendations

The high rate of GAM requires immediate attention. Due to the limitations of the rapid assessment the situation may be even more serious considering inaccessible areas of South Kordofan were unable to be included in this assessment.

Attention must be given to malnourished children in South Kordofan to protect them from falling into the severe acute malnutrition category. The therapeutic and supplementary program component of community-based management of acute malnutrition should be initiated to rehabilitate malnourished children.

Blanket supplementary feeding to children 6-59 months will be important to protect this vulnerable population from becoming acutely malnourished due to the lack of available and accessible food locally.

Access to health services to prevent and treat childhood illnesses that lead to aggravating levels of malnutrition should be supported.

A full standard food security, health, and nutrition and mortality survey is required in South Kordofan to obtain detailed information on the health and nutrition status of this population.

### Food security summary and recommendations

The rapid food security assessment revealed that overall food security is poor (both access and availability) and livelihoods are stressed. Vulnerabilities have been exacerbated through adoption of negative coping mechanisms (especially the sale of household assets) and reduced purchasing power.

The ongoing conflict has further limited access to and availability of commodities on local markets, which has fuelled widespread displacement in search of food.

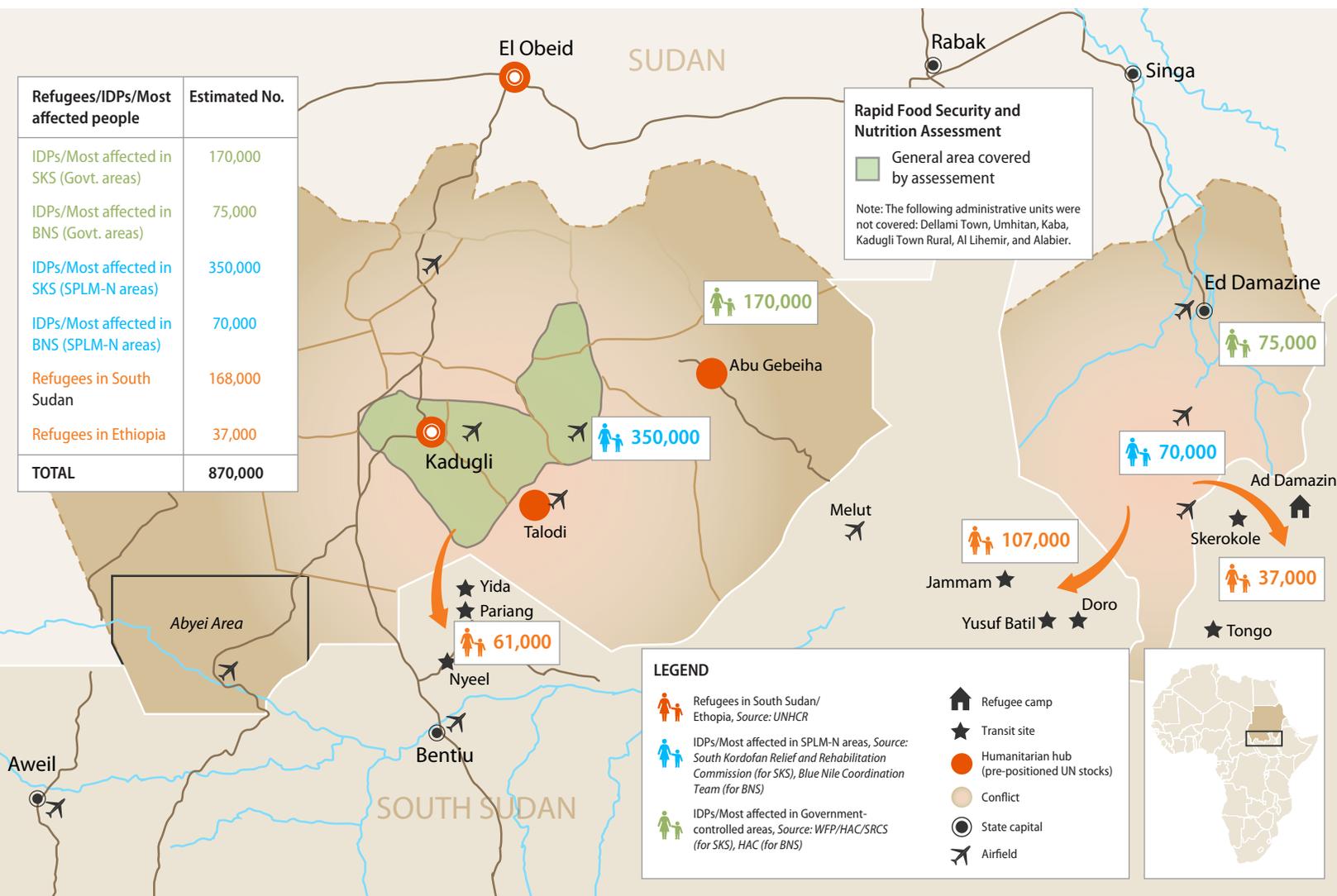
Despite the anticipated harvest in October, the food security outlook remains poor as households have seeded significantly less land and expect poor yields.

Given the existing food security context, increased household vulnerability, and a reduced anticipated harvest, this situation will likely result in an expanded and more severe hunger gap.

Food assistance interventions in the form of commodity distributions are recommended in order to meet the hunger gap and prevent deterioration of the food security context in both the IDP and host communities. Once food availability and access have improved, it would be reasonable to expect a transition to more conditional and livelihood programming.

Further market analysis would be useful for understanding geographic pockets of accessibility, trade flows, and how this relates to current displacement.

ANNEX 1: Map depicting population movement and assessment area in border regions<sup>11</sup>



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## Endnotes

- 1 OCHA (2012). Sudan: Humanitarian Situation in South Kordofan and Blue Nile. 26<sup>th</sup> June 2012
- 2 USAID and FEWSNET (2012), *Sudan Food Security Outlook Update*, 1.
- 3 OCHA (2012), *Humanitarian Bulletin - Sudan*, 1–2.
- 4 USAID and FEWSNET (2012), *Sudan Food Security Outlook Update*, 2.
- 5 Confidential report by Nuba humanitarian workers (November 11, 2011)
- 6 Despite the significant population movement in recent months the census data still provides the most detailed breakdown of projected population figures at the village level.
- 7 Methodology followed: ENCU/DPPA (2006). Guiding Principles for Rapid Nutrition Assessments
- 8 GPE Discussion Paper Series: No.31. AGE STANDARDIZATION OF RATES: A NEW WHO STANDARD World Health Organization 2001.
- 9 WHO, 2003, "The Management of Nutrition in Major Emergencies"
- 10 Holt, Julius, and Lorraine Coulter. *Livelihoods Zoning "Plus" Activity in Sudan*. FEWSNET, August 2011
- 11 Adapted from OCHA (2012): SUDAN: Humanitarian situation in South Kordofan and Blue Nile (28<sup>th</sup> June 2012)

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Enough is a project of the Center for American Progress to end genocide and crimes against humanity. Founded in 2007, Enough focuses on the crises in Sudan, South Sudan, eastern Congo, and areas affected by the Lord's Resistance Army. Enough conducts intensive field research, develops practical policies to address these crises, and shares sensible tools to empower citizens and groups working for change. To learn more about Enough and what you can do to help, go to [www.enoughproject.org](http://www.enoughproject.org).

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