



**Southern Sudan**

**EVALUATION OF  
THE NUTRITIONAL SURVEILLANCE ACTIVITIES**

**IN SOUTHERN SUDAN**

**JANUARY – DECEMBER 2003**

## **ACKNOWLEDGEMENTS**

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- ♦ SRRC and all partner agencies, OLS and non-OLS, for their collaboration
- ♦ All the communities who so willingly shared their personal information and assisted with the surveys.

## LIST OF ACRONYMS

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ANA	Annual Needs' Assessment – World Food Programme
ACF-USA	Action Against Hunger USA
EPI	Expanded Programme of Immunisation
FAO	Food and Agriculture Organisation
FEWSNET	Famine Early Warning System Network
GAM	Global Acute Malnutrition
IDP	Internally Displaced Person
INGO	International Non-Governmental Organisation
IRIN	Integrated Regional Information Networks
MoH	Ministry of Health
MUAC	Mid-Upper Arm Circumference
NFI	Non Food Item
NSCSE	New Sudan Centre for Statistics and Evaluation
OLS	Operation Lifeline Sudan
OLS EP&R	Operation Lifeline Sudan Emergency Preparedness and Response
PHCC	Primary Health Care Centre
PHCU	Primary Health Care Unit
SAM	Severe Acute Malnutrition
SFC/P	Supplemental Feeding Centre/ Program
SINGO	Sudanese Indigenous Non-Governmental Organisation
SPLM/A	Sudanese People Liberation Movement/Army
SRRC	Sudan Relief and Rehabilitation Commission
TFC/P	Therapeutic Feeding Centre/ Program
UN	United Nations
UNDP	United Nations Development Programme
UNICEF	United Nations International Children's Emergency Fund
UNICEF WES	UNICEF Water, Environmental and Sanitation
UNOCHA	United Nations Office of the Coordination for Humanitarian Affairs
WFP	World Food Programme
WFP/TSU	World Food Programme/ Technical Support Unit
WHO	World Health Organization

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## EXECUTIVE SUMMARY

According to 28 nutrition surveys implemented in southern Sudan in 2003, the estimated average prevalence of global acute malnutrition and severe acute malnutrition, expressed in Z-scores, were **20.8%** and **3.6%** respectively. In 2002, the estimated average rates of GAM and SAM were **26%** and **5%** respectively, suggesting an improvement of the nutritional situation in southern Sudan. This has to be moderated by methodological uncertainties and an apparent growth in nutritional issues in Bahr El Ghazal balancing the seemingly improving situation in Upper Nile.

Table 1: Results of all nutrition surveys implemented in southern Sudan, in 2003

LOCATION	REGION*	AGENCY	MONTH	GAM	SAM
Panomdit /Chuei Payams, Sobat County, Northern Upper Nile	UN	ACF-USA	January	23.4%**	4.8%**
Old Fangak Payam, Old Fangak County, Central Upper Nile	UN	ACF-USA	March	35.9% [31.2%-40.9%]	8.2% [5.8%-11.5%]
Jalle, Baidit Payams in Padak, South Bor County, Central Upper Nile,	UN	TEARFUND	March	20.8% [17.0%-24.8%]	2.4% [1.3%-4.7%]
Dirror district, Bieh State, Jonglei	UN	MSF-B	April	20.0% [16.9%-23.1%]	2.8% [1.5%-4.1%]
Pagak payam, Maiwut County, Eastern Upper Nile	UN	ACF-USA	April	23.9% [20.0%-28.2%]	5.2% [3.4%-7.9%]
Lekuangle, Pibor Payam, Pibor County, Eastern Upper Nile	UN	ACF-USA MEDAIR	May	32.5% [27.9%-37.4%]	6.8% [4.6%-9.9%]
Bugaya, Mabaan Payam, Mabaan County, Eastern Upper Nile	UN	ACF-USA	July	13.1% [9.8%-17.1%]	1.9% [0.8%-4.1%]
Gumriak Payam, Ruweng County, Western Upper Nile	UN	ACF-USA	September	15.7%*	4.6%*
Nyadin Payam, Zeraf County, Central Upper Nile	UN	ACF-USA	October	19.4% [15.6%-23.7%]	6.0% [4.0%-9.0%]
Nyadin/Toch Payams, Zeraf County, Central Upper Nile	UN	ACF-USA	November	17.8% [14.4%-21.8%]	4.9% [3.1%-7.5%]
Atar, Alam, Piji, Duk Payams, Khorfulous County, Central Upper Nile	UN	ACF-USA	November	12.1% [9.3%-15.6%]	0.7% [0.1%-2.1%]

\*UN: Upper Nile – BEG: Bahr El Ghazal – EEQ: Eastern Equatoria

\*\* Exhaustive survey – no confidence interval.

LOCATION	REGION*	AGENCY	MONTH	GAM	SAM
Akuem, Aweil East County	BEG	MSF-F	January	13.3% [10.4%-16.8%]	1.7% [0.8%-3.5%]
Baac, Malualbai, Madhol, Malual East Payams, Aweil East And North	BEG	TEARFUND	February	25.0% [22.2%-28.1%]	5.6% [3.7%-8.3%]
Panthou, Ajak, Wuncum, Tieraliet, Wathmok Payams, Aweil South County	BEG	TEARFUND	February	22.6% [18.8%-26.8%]	3.1% [1.7%-5.3%]
Alek Payam, Gogrial County	BEG	NCA	March	23.0% [19.3%-28.0%]	3.6% [2.1%-6.1%]
Riau Payam, Gogrial County	BEG	NCA	March	22.9% [18.9%-27.6%]	4.3% [2.6%-7.0%]
Aweil North, Aweil West Counties	BEG	CONCERN	March	24.3% [21.6%-27.2%]	4.7% [3.5%-6.2%]
Gogrial County***	BEG	CEAS	March	22.6%	3.5%
Akok, Panyok, Wunrok, Turalei, Aweng Payams, Twic County,	BEG	GOAL	April	33.1% [30.1%-36.2%]	5.2% [4.0%-7.0%]
Akop, Ananatak, Paweng, Makuac Payams, Tonj County, Lakes Region	BEG	MSF-CH	April	22.9% [19.2%-27.0%]	3.8% [2.3%-6.1%]
Toch, Pathuon Payams, Gogrial County	BEG	WORLD VISION	May	32.0% [29.0%-35.1%]	5.3% [4.0%-6.9%]
Pagol, Warrap, Tonj, Thiet Payams, Tonj County	BEG	WORLD VISION	May	20.1% [17.6%-22.9%]	3.5% [2.5%-5.0%]
Aweil East County	BEG	MSF-F	June	22.2% [18.5%-26.4%]	4.0% [2.5%-6.4%]
Akuem, Aweil East County	BEG	MSF-F	October	19.4% [16.9%-22.2%]	2.2% [1.4%-3.5%]
Aweil North, Aweil West Counties	BEG	CONCERN	November	12.9% [10.1%-16.5%]	0.7% [0.2%-2.3%]
Mangargier, Gakrol, Wathmok Payams, Aweil South County	BEG	TEARFUND	November	16.2% [13.0%-20.0%]	1.4% [0.5%-3.0%]
Baac, Malualbaai, Madhol, Malual Payams, Aweil East And North Counties	BEG	TEARFUND	November	16.6% [13.2%-20.5%]	1.9% [0.9%-3.8%]
Akop, Ananatak, Paweng, Makuac Payams, Tonj County, Lakes Region	BEG	MSF-CH	December	9.0% [6.3%-11.6%]	0.4% [0.1%-1.7%]
Nimule Corridor	EEQ	CRS	March	13.4% [11.2%-15.9%]	1.8% [1.0%-2.9%]
<b>AVERAGE RATES OF ACUTE MALNUTRITION IN SOUTHERN SUDAN</b>				<b>20.8%</b>	<b>3.6%</b>

\*UN: Upper Nile – BEG: Bahr El Ghazal – EEQ: Eastern Equatoria

\*\*\* ACF-USA did not receive the comprehensive report from CEAS. The results come from the Starbase, UNOCHA, March 2004 where the confidence interval was not mentioned. The results of this survey have been mentioned in the above table for information but have not been included in the calculation of the average rates of acute malnutrition in southern Sudan.

The potential improvement of the nutritional situation in southern Sudan must be gauged against the fact that:

- About 70% of the surveys (19 out of 28) are fully above emergency levels (in GAM rates).
- About 90% of the surveys indicate a situation at emergency levels or above, taking into account these areas where the upper bracket of the confidence intervals stands above 15%.

The sad history of southern Sudan makes it tempting to evaluate such figures in relative terms, compared to other years. Nonetheless, in absolute terms, all figures above clearly show an acute nutritional emergency.

As a result of the nutrition surveys, many nutrition emergencies were detected and the analysis of the causes leading to malnutrition were often related to food security, health services, childcare practices, water and sanitation, highlighting the multisectoral nature of malnutrition. It is expected that time will be required before these root causes of malnutrition in southern Sudan can be tackled. It also suggests that all responses to detected malnutrition should be multisectoral.

Training and advocacy activities show progress in 2002 over 2003: more agencies were trained and more crises were responded to in 2003. Levels reached remain however quite perfectible. For example, 9 Sudanese organizations, whether institutional or non – governmental, were trained in nutritional surveillance in 2003, compared to 6 in 2002, a 50% increase. None of these agencies, however, could carry out a single survey in 2003 as in 2002, primarily for lack of funding and support. The capacity of these organizations should be enhanced on all fronts.

Advocacy activities yielded more success in 2003: 59% of recommendations following an ACF-USA survey were taken up, compared to only 50% in 2002. As noteworthy as this progress is, in particular in the health sector, this remains insufficient, notably in the water and sanitation sector where response rates in 2003 stood at 28% and 0%, respectively.

It remains difficult to estimate if nutritional surveillance has had an impact on donors' capacity to prioritise their interventions in that sector, acknowledging the constraints posed by a structural emergency on scarce resources. As the forthcoming peace opens up new avenues for donors to explore, it is worth restating that the nutritional situation in southern Sudan warrants considerable attention and should be included as a funding priority. In particular, it will be of paramount importance to allot resources in order to gradually increase the capacity of the southern Sudan governance structures to address malnutrition autonomously.

Of five major famines that occurred in the world in the last two decades, three were in Sudan. This needs not be a fatality.

Considering the analysis of the current context of southern Sudan and its expertise in detection and treatment of malnutrition, ACF-USA strongly advocates for:

- ➔ **A maintained focus on detecting and treating acute malnutrition.**
- ➔ **Multisectoral approach of malnutrition**, from detection to treatment of malnutrition.
- ➔ **Strengthening of the local capacities** to allow nutrition-skilled Sudanese to take over the nutritional surveillance activities and the treatment of malnutrition, in a long-term approach.
- ➔ Development of the Sudanese capacity to monitor the nutritional situation throughout southern Sudan **while maintaining/increasing in the short term the capacity to detect and respond to nutritional emergencies.**
- ➔ Consideration of **nutrition as a Public Health priority** for the Secretariat of Health, the emerging structures of the South Sudan Government and their financial partners in order to integrate nutrition in the policy and structuration of the Secretariat of Health. This should allow for the active participation in the building of Sudanese capacity to detect, treat and prevent malnutrition, and the better collaboration with donors and agencies involved in detection, treatment and prevention of nutrition emergencies.

### *The southern Sudan context*

Sudan has been in war for over 2 decades engendering loss of life, displacement and destruction. The war, combined with natural disasters (drought, floods), has led to the deterioration of the welfare of the populations especially in terms of nutrition, health and food security. In order to stop the long conflict between the 2 main belligerents i.e. the Government of Sudan and the SPLM, the international community facilitated peace talks that ended in the signature on 26<sup>th</sup> of May 2004 of existing protocols and amendments resulting in a framework agreement. It constitutes a very positive sign towards peace and stabilization of the South Sudanese context. This will probably be a leading factor to allow for the return of thousands of former displaced persons and/or refugees, who are expecting to arrive in southern Sudan in the later part of the year.

Although the signature of this agreement is encouraging, many places of southern Sudan fall prey to consistent and violent conflicts, like in Rumbek/Yirol counties, Shilluk Kingdom, Akobo, Mading, Lekuangle and the north of Western Upper Nile. Insecurity still prevents proper needs assessments and adequate interventions in these locations. The current fighting highlights the difficulty in stabilizing the context on the ground and the subsequent need for intervention to support the victims of these conflicts, including people fleeing the fighting.

Similarly nutritional emergencies persist in southern Sudan and malnutrition still needs to be addressed. While the comprehensive peace is about to be signed, all leading factors to malnutrition – poor health conditions, limited access to health services, food insecurity and poor childcare practices – will probably not be tackled in the coming months and ACF-USA still anticipates nutritional emergencies. Consequently there is still a strong need to continue to track and detect nutritional emergencies while maintaining the capacity to treat malnutrition through multisectoral interventions. ACF-USA will remain particularly vigilant in the coming months on the evolution of the security situation and the movements of population in order to assess and respond in a timely manner to the upcoming nutritional emergencies.

In such a context where peace offers the perspective of building a local and sustainable system of detection and prevention of malnutrition meanwhile nutritional emergencies still need to be identified and addressed, ACF-USA has paid a particular attention to the nutritional surveillance activities currently in place in southern Sudan. ACF-USA has proceeded to the evaluation of the nutritional surveillance activities in 2003, as it did for 2002, with the particular aims to provide a general picture of the malnutrition in southern Sudan in 2003 as compared to 2002, to evaluate the impact of nutritional surveillance activities, particularly those that ACF-USA has promoted, and to provide recommendations on the needed improvements and adaptations to the current context of upcoming peace.



### *Nutritional surveillance*

As a brief reminder, nutrition surveys aim at detecting acute malnutrition within a given population, more specifically among the under-5-years population. Acute malnutrition comes either as marasmus (or wasting, i.e. low weight in respect to height), or kwashiorkor (evidenced by presence of bilateral oedema), as opposed to chronic malnutrition characterised by stunting or growth failure (low weight or height in respect to age). Acute malnutrition can be detected as moderate (weight for height index between 80% and 70% of the median<sup>1</sup>; or -3 and -2 Z-scores<sup>2</sup>) or severe (weight for height index below 70% of the median; or -3 Z-scores; and /or oedema). Severe acute malnutrition (SAM) represents a high risk of mortality and needs to be addressed urgently to prevent death. The global acute malnutrition (GAM) refers to both moderately and severely malnourished cases, all below 80% of the median or -2 Z-scores, and /or oedema.

Malnutrition is a state resulting from nutritional inadequacy in which an individual's physiological and physical functions are impaired. It normally starts either with failure of an individual to acquire enough to eat or ill health. In some cases malnutrition may result from loss of appetite or inefficient use of nutrients, which may occur secondary to disease states. In times of food scarcity and famine, there tends to be growth failure in children, usually as a result of protein energy malnutrition as well as effects of specific micronutrient (vitamins and minerals) deficiency diseases. Other physical functions that may be affected include resistance to disease, the ability to work, pregnancy and lactation. Though its immediate causes are inadequate dietary intake and infectious disease, malnutrition is the result of a series of factors related to food security, public health and hygiene, and childcare and social environment.

In order to estimate the prevalence of malnutrition within a given population, the anthropometric nutrition surveys target the children aged 6 to 59 months. Indeed, because they are in a growth period, they are particularly vulnerable to disease and food shortage, and in case of crisis they face a higher risk of mortality than the rest of the population. The methodology to be used and the sample of children to be measured are determined according to the total population size and dispersion. In addition to the anthropometric measurements (age, sex, weight, height, oedema, MUAC<sup>3</sup>), nutrition surveys gather information on health, food security, and water and sanitation. A retrospective mortality survey is usually conducted alongside the nutrition survey.

WHO has established nutrition emergency thresholds in southern Sudan: is considered as an emergency any situation where the rate of global acute malnutrition is above 15% and/or the rate of severe acute malnutrition is above 4%<sup>4</sup>.

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<sup>1</sup> The expression of malnutrition in percentage of the median takes in account the median weight of the reference population (NCHS).

<sup>2</sup> The expression of malnutrition in Z-scores takes in account the median weight as well as the standard deviation from this median weight.

<sup>3</sup> MUAC: Mid-Upper Arm Circumference; this is a relevant indicator of the risk of mortality among children aged 1 to 5 years: MUAC is more significant for children aged 1 year and plus ( $\geq 75$  cm in height) since MUAC does not change a lot from 6 months up to 1 year.

<sup>4</sup> World Health Organization, 1995. *Classification of wasting prevalence in under five's*.

### *ACF-USA interventions in nutrition surveillance*

ACF-USA has been carrying out nutritional surveillance activities in southern Sudan since 2001 through:

- **Rapid nutrition assessments**, which aim at quickly estimating the prevalence of malnutrition within a given area; if the nutritional situation is alarming, a nutrition survey is usually carried out (the nutrition surveys provide a better representation of the nutritional status of the population).
- **Nutrition surveys**, as explained above.
- **Advocacy for the implementation of the recommendations** formulated after nutrition surveys: all nutrition surveys reports contain recommendations for interventions in order to address the problems identified mainly in the sectors of emergency feeding, food aid, primary health care, food security, water and sanitation, and basic living conditions. ACF-USA cannot address all the identified problems and therefore widely disseminates the reports and recommendations in order to create awareness on the areas of concern. Because interventions did not take place as recommended, ACF-USA decided last year to have a proper advocacy strategy: in addition to the awareness through meeting or bilateral interviews, ACF-USA supports targeted agencies to intervene through a 2-month follow up.
- **Training sessions on nutrition surveillance** in order to enable other agencies to implement nutrition surveys in their areas of operation. ACF-USA having the capacity to conduct a limited number of nutrition surveys only, ACF-USA encourages partners to ensure the monitoring of the nutrition situation in some locations, to increase the geographical coverage of the nutritional surveillance and to improve the detection of nutrition emergencies in southern Sudan. ACF-USA provides 3 categories of training: introductory (overview of nutrition/malnutrition and surveys methodologies), advanced (data processing and analysis) and nutrition managers' workshop (decision-making regarding nutrition).

In 2002, ACF-USA carried out an evaluation of its nutrition surveillance activities (nutrition surveys and related advocacy) to determine the performance of its activities but also to determine the nutritional situation in southern Sudan in general. The findings of the evaluation were presented during an awareness workshop that took place in June 2003.

The key recommendations to improve the nutritional situation in southern Sudan were:

- The promotion of multi-sectoral interventions
- The continuation of nutritional surveillance with emphasis on activities contributing to early warning;
- Capacity building for local NGOs;
- The implementation of nutrition causal analysis in areas with persistent high rates of malnutrition.

These recommendations have been integrated within ACF-USA strategy and in 2003 ACF-USA conducted **3 rapid assessments** and **9 nutrition surveys**, initiated **a survey on the underlying causes of malnutrition** in one specific location (Old Fangak – Upper Nile), organised **5 training sessions** attended by 26 agencies, including 6 Sudanese ones, and has strengthened its **advocacy for the implementation of recommendations** formulated after nutrition surveys.

The recommendations from 2002 evaluation of nutritional surveillance in southern Sudan have been also taken into consideration by various agencies, as displayed by the improvement of the nutritional surveillance activities in 2003.

### ***Nutritional surveillance activities in 2003 in southern Sudan***

In 2003, **29 nutrition surveys** were conducted by **12 agencies** – namely ACF-USA, CEAS<sup>5</sup>, Concern, Goal, CRS, Medair, MSF-B, MSF-CH, MSF-F, NCA, Tearfund and World Vision – which represents an 38% increase in activity compared to 2002 when 10 agencies (ACF-USA, Goal, CRS, MSF-B, MSF-CH, MSF-F, MSF-H, Tearfund and World Vision) had carried out 21 nutrition surveys.

**11** of the nutrition surveys conducted in 2003 were carried out in **Upper Nile**, **17** in **Bahr El Ghazal** and **1** in **Eastern Equatoria**.

The complete results of the nutritional surveys implemented in southern Sudan in 2003 are presented in the table 1 in the executive summary. They are detailed for Upper Nile and Bahr El Ghazal in section IV.

These nutritional activities have allowed for the detection of nutritional emergencies and have contributed to increase the information on the nutritional situation throughout southern Sudan.

The present evaluation of the nutrition surveillance activities in southern Sudan in 2003 will provide a picture of the nutritional situation over the year, including specific trends, and will also propose an evaluation of the nutritional surveillance activities and their impact (nutrition surveys, advocacy and training), as well as recommendations for improvements and adaptations to the current and forthcoming context.

## **I. OBJECTIVES OF THE EVALUATION OF THE NUTRITIONAL SURVEILLANCE IN SOUTHERN SUDAN IN 2003**

The objectives of this evaluation have been specified as follows:

- ☞ To provide a picture of the malnutrition situation and trends in southern Sudan in 2003.
- ☞ To determine the performance and impact of the nutrition training conducted in 2003;
- ☞ To evaluate the impact of the nutritional surveillance on the improvement of the nutritional situation in southern Sudan (awareness, interventions);
- ☞ To determine the effectiveness of ACF-USA advocacy activities in 2003;
- ☞ To make recommendations for the current and future nutrition surveillance activities in southern Sudan.

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<sup>5</sup> CEAS: results reported by Starbase, UNOCHA, March 2004. ACF-USA did not receive the comprehensive report and has not been in a position to include the information for the analysis.

## **II. METHODOLOGY FOR THE EVALUATION OF THE NUTRITIONAL SURVEILLANCE IN SOUTHERN SUDAN IN 2003**

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The evaluation of 2003 nutritional surveillance has been done through:

- ☞ A review of the nutrition surveys carried out by ACF-USA as well as other agencies – according to the available information.
- ☞ A review of ACF-USA advocacy activities and interviews with agencies targeted through the advocacy plans;
- ☞ A review of ACF-USA nutrition training reports;
- ☞ Literature review for general information (ANA WFP, FEWSNET and UNICEF reports).

This evaluation does not consider the nutrition surveillance activities carried out in the Government of Sudan-controlled areas of the South.

## **III. METHODOLOGY OF THE NUTRITION SURVEYS**

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This section is meant to inform the reader on the methodologies used for the nutrition surveys and the possible biases in the interpretation of the results.

### **1. Methodology of the nutrition surveys carried out in 2003**

There are different possible methodologies to carry out nutrition surveys, mainly depending on the size and repartition of the population. Basically the 2 main types of survey are:

- The **exhaustive survey** where all children aged 6 to 59 months of the target area are measured; as it includes the whole of the target population, the exhaustive survey gives the exact prevalence of malnutrition in that population.
- The **sampling surveys** where only a representative sample of children aged 6 to 59 months of the target area is measured. The results provide an estimated prevalence of malnutrition among that population. The prevision of the survey depends on the size of the sample, which in turn determines the “confidence interval”, the true figure for malnutrition being contained within the confidence interval.

Thus in 2003 anthropometric data were collected through:

- ☞ **Exhaustive surveys** – in 2 locations where the under-5 population was inferior to 1,000 individuals.
- ☞ **Two-stage cluster sampling methodology** for the other surveys: with the two-stage cluster sampling, the *sample* is randomly selected among the target population on the basis of 30 *clusters* of 30 children, leading to a sample size of 900 children. The *first stage* consists of the random selection of villages and the *second stage* of the random selection of families in the villages. All the children aged 6 to 59 months of the selected families are included in the survey. In all data that is presented, the prevalence of malnutrition is estimated with a 95% confidence interval.

## **2. Note on the interpretation of the results of the nutrition surveys**

### **2.1. Estimated average of malnutrition in southern Sudan**

The report gives estimated averages of the rates of acute malnutrition in southern Sudan, broken down for Upper Nile and Bahr El Ghazal; however it has to be noted that these are not a statistical representation of the nutritional situation throughout the South, but rather give an indication of the general situation.

Also significant is the number of nutrition surveys that detected nutritional emergencies, i.e. surveys for which the detected average rate stood above 15% of global acute malnutrition. This information will be used in the following analysis as a key indicator of the gravity of the nutrition situation in the assessed areas.

### **2.2. Geographical coverage**

The report also gives an estimated representation of the geographical coverage of the nutrition surveillance activities in 2003. For practical reasons, the reference unit used is the county.

Again, the maps do not give a statistical representation of the coverage but rather an indication of the number of counties covered and the estimated average of the rates of malnutrition detected there.

### **2.3. Seasonal variations**

While the results of the nutrition surveys could suggest seasonal variations – higher rates of malnutrition detected during the hunger period (March to September) – the limited number of surveys per months and locations prevents a detailed analysis of seasonal trends over the year. When comparable trends are available, as in Aweil East and Old Fangak, they are not easy to reconcile: patterns of malnutrition follow the hunger gap in Aweil East while they have constantly increased over the last three years on Old Fangak. This warrants further analysis.

## **IV. TRENDS OF MALNUTRITION IN SOUTHERN SUDAN IN 2003**

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In 2003, **29 nutrition surveys** were conducted in southern Sudan. Out of these 29, only 28 have been considered for the following analysis since methodology and other elements were not available for the nutrition survey carried out by CEAS in Gogrial County, Bahr El Ghazal, in March 2003.

### **1. The geographical coverage of the nutrition surveys**

The locations surveyed in 2003 were selected according to the different following criteria:

- ☞ Recommendations formulated after rapid assessments suggesting a worrying nutritional situation;
- ☞ Monitoring of the nutrition situation of specific locations on a regular basis;
- ☞ Lack of baseline information on nutrition with a particular concern in the area;
- ☞ Or evaluation of the effectiveness of agencies' intervention.

The majority of the nutrition surveys in 2003 were carried out as a result of the monitoring of the nutrition situation in specific locations (22 surveys out of 28). 6 other surveys were conducted in new areas:

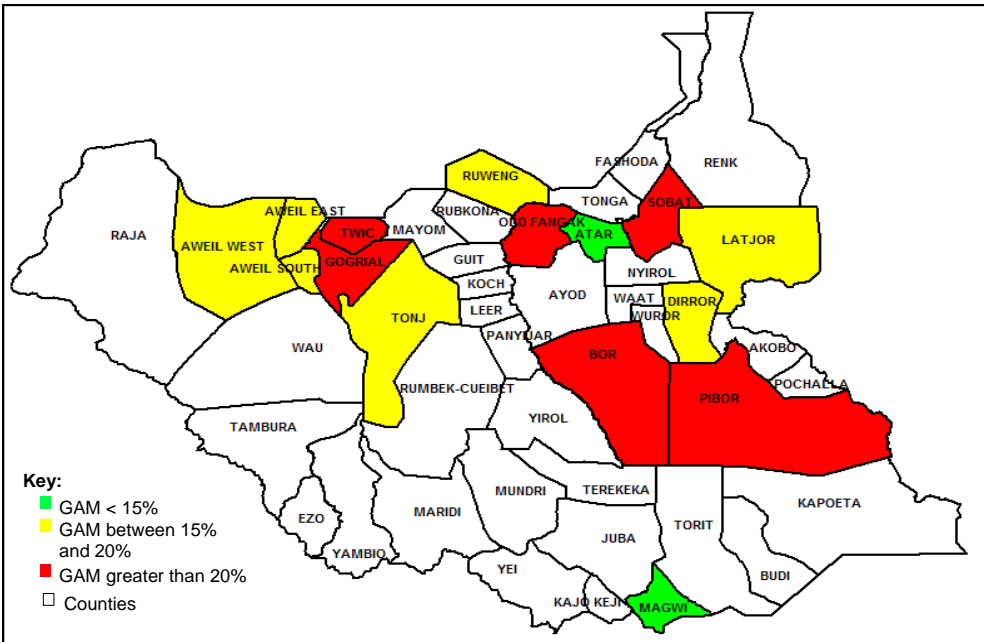
- ♦ *In Upper Nile*: Chuei, Sobat County; Pagak, Maiwut County, Latjor state; Lekuangole, Pibor County; Bugaya, Mabaan, Latjor state; Pagol, Ruweng County;
- ♦ *In Bahr El Ghazal*: Aweil West.

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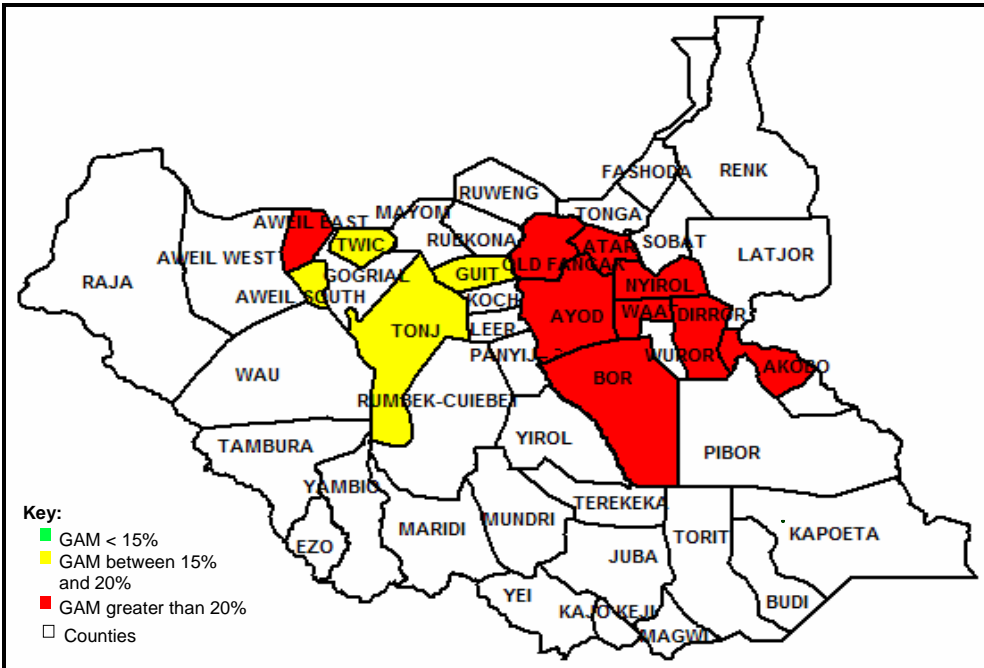
In total, the nutrition surveys of 2003 have covered **15 counties**, 8 in Upper Nile, 6 in Bahr El Ghazal and 1 in Equatoria, which represent a similar geographical coverage compared to 2002 when 9 counties were covered in Upper Nile, 5 in Bahr El Ghazal and 1 in Equatoria.

The maps on the following page show counties covered in 2002 and 2003.

Map 1: geographical coverage of the nutrition surveys in 2003



Map 2: geographical coverage of the nutrition surveys in 2002 – according to the evaluation of the nutritional surveillance in southern Sudan in 2002.



The number of counties covered in 2003 is the same than in 2002. The increase in the number of nutrition surveys in 2003 is explained by an enhanced surveillance in Bahr El Ghazal and most significantly by the monitoring of specific locations throughout the year (more nutrition surveys were carried out in the same locations). In 2003, new surveys were conducted in Pibor, Latjor, Sobat, Ruweng and Aweil West Counties.

There are several counties where nutrition surveys were conducted in 2002 but not followed up upon in 2003 (Akobo, Nyirol, Waat and Ayod, in Upper Nile).

## 2. Trends of malnutrition in Upper Nile

**11 nutrition surveys** were conducted in Upper Nile region: 1 in Western Upper Nile, 7 in Central Upper Nile and 3 in Eastern Upper Nile. Out of these 11 nutrition surveys, 9 were conducted by ACF-USA.

Table 2: Results of the nutrition surveys implemented in Upper Nile, in 2003.

LOCATION	AGENCY	MONTH	GAM	SAM
Panomdit /Chuei Payams, Sobat County, Eastern Upper Nile	ACF-USA	January	23.4%*	4.8%*
Old Fangak Payam, Old Fangak County, Central Upper Nile	ACF-USA	March	35.9% [31.2%-40.9%]	8.2% [5.8%-11.5%]
Jalle, Baidit Payams in Padak, South Bor County, Central Upper Nile,	TEARFUND	March	20.8% [17.0%-24.8%]	2.4% [1.3%-4.7%]
Dirror district, Bieh State, Jonglei, Central Upper Nile	MSF-B	April	20.0% [16.9%-23.1%]	2.8% [1.5%-4.1%]
Pagak payam, Maiwut County, Eastern Upper Nile	ACF-USA	April	23.9% [20.0%-28.2%]	5.2% [3.4%-7.9%]
Lekuangole, Pibor Payam, Pibor County, Central Upper Nile	ACF-USA MEDAIR	May	32.5% [27.9%-37.4%]	6.8% [4.6%-9.9%]
Bugaya, Mabaan Payam, Mabaan County, Eastern Upper Nile	ACF-USA	July	13.1% [9.8%-17.1%]	1.9% [0.8%-4.1%]
Gumriak Payam, Ruweng County, Western Upper Nile*	ACF-USA	September	15.7%*	4.6%*
Nyadin Payam, Zeraf County, Central Upper Nile	ACF-USA	October	19.4% [15.6%-23.7%]	6.0% [4.0%-9.0%]
Nyadin/Toch Payams, Zeraf County, Central Upper Nile	ACF-USA	November	17.8% [14.4%-21.8%]	4.9% [3.1%-7.5%]
Atar, Alam, Piji, Duk Payams, Khorfulous County, Central Upper Nile	ACF-USA	November	12.1% [9.3%-15.6%]	0.7% [0.1%-2.1%]
<b>AVERAGE</b>			<b>21.3%</b>	<b>4.4%</b>

\* Exhaustive survey – no confidence interval.

5 nutrition surveys were conducted in locations where no nutritional information existed previously (Panomdit/Chuei, Pagak, Lekuangole, Bugaya and Gumriak). The implementation of these nutrition surveys was the result of recommendations from joint-agencies rapid assessments.

Among these locations, 3 displayed alarming rates of malnutrition, largely above the emergency thresholds identified by WHO:

- ☞ **23.4% GAM** and **4.8% SAM** for Panomdit/Chuei Payams in Sobat County,
- ☞ **23.9%** [20.0%-28.2%] **GAM** and **5.2%** [3.4%-7.9%] **SAM** in Pagak Payam, Maiwut County, Latjor State.
- ☞ **32.5%** [27.9%-37.4%] **GAM** and **6.8%** [4.6%-9.9%] **SAM** for Lekuangole, Pibor County in Jonglei Region.



In the 3 cases, the major reason explaining such high rates of malnutrition was the food shortage resulting of poor crops harvests in 2002/2003, mainly due to late and insufficient rains and floods (as highlighted in ANA WFP 2002/2003 reports). In Pagak Payam, Maiwut County, Latjor State the lack of food was exacerbated by the arrival of returnees and IDPs fleeing the conflicts of the Ethiopian refugee camp of Pinyidu in November 2002 and the attacks from the Murles, which stressed the already limited food resources.

The particularly poor health conditions – characterized by a high prevalence of diarrhea, malaria, TB and kala-azar, and limited health services – also contributed to the deterioration of the nutritional status of the under-5 population.

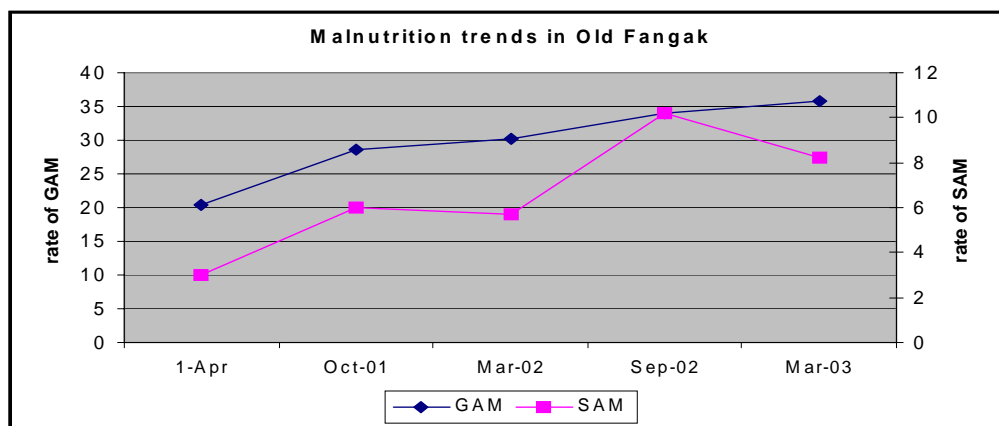
In Bugaya, Mabaan County (Latjor state) and Gumriak payam in Ruweng County, the rates of malnutrition were less alarming in comparison to the above-mentioned areas, being below (13.1% [9.8%-17.1%] GAM and 1.9% [0.8%-4.1%] SAM in Bugaya) or just reaching the emergency thresholds (15.7% GAM and 4.6% SAM in Gumriak). While the main reasons of malnutrition were similar (poor harvest combined with poor health conditions), it seems that the extent of the problems were less important since both surveys were conducted at the end of the hunger gap, i.e. the most critical period of the year in terms of food availability.

The 6 other nutrition surveys were carried out as a result of the monitoring of the nutritional situation in specific locations (Old Fangak, Nyadin/Toch, and Atar for ACF-USA; Dirror payam for MSF-F; and Padak for Tearfund). These nutrition surveys have allowed to draw trends and to do comparison from one year to another. While in 3 locations the nutritional situation seems to have significantly improved, the situation remained stable in Mareang (Nyadin/Toch) and seems to have deteriorated in Old Fangak.

In Old Fangak, the survey conducted in March 2003 (during the hunger gap) displayed again an alarming rate of acute malnutrition with a GAM rate of **35.9%** [31.2%-40.9%] compared to 30.3% [26.0%-34.9%] in March 2002. The difference between the 2 surveys has to be gauged against confidence intervals: the situation might have remained unchanged but with low probability. Any deterioration is likely but cannot be quantified.

Figure 1 below graphs the evolution of the acute malnutrition rates over time.

**Figure 1:** Estimated malnutrition trends in Old Fangak, Upper Nile, 2001-2003.



The probable deterioration of the nutritional situation in Old Fangak, despite interventions in various sectors (feeding programs, food distribution, distribution of seeds, tools and fishing equipment, of non-food items, and primary health care), has been a particular concern for ACF-USA who had been intervening in the location for several years. It was initially thought that inappropriate cultivation conditions, leading to poor harvests and food shortage, were the main reasons explaining malnutrition. Following the 2003 nutrition survey, ACF-USA implemented new feeding programmes and a community-based health education and nutritional surveillance programme, and carried out a survey on the underlying causes of malnutrition. The latter revealed that malnutrition was the result of a multitude of factors involving particularly illness and childcare practices.

In Mareang (Naydin/Toch), the surveys carried out did not suggest a major change in the rates of acute malnutrition: **17.8%** [14.4%-21.8%] in 2003 compared to 18.2% [14.5%-22.5%] in 2002, during the same period of the year. Food shortage and diseases, consecutive to floods, were identified as the main leading factors of malnutrition in this area.

In the 3 last locations, the nutritional situation seem to have improved:

- ☞ In Khorfulous County (Atar, Piji, Duk, Alam), the prevalence of malnutrition has dropped from 33.1% [28.5%-38.0%] in November 2002 to 12.1% [9.3%-15.6%] one year later.
- ☞ In Dirror Payam, Bieh State (Jonglei region), the survey carried out by MSF-B revealed a prevalence of wasting of 20.0% [16.9%-23.1%] GAM whereas in 2002, the rate of global acute malnutrition was 39.9% [34.4%-45.5%] during the same period of the year.
- ☞ Tearfund conducted a survey in Padak (South Bor County) during the hunger gap that revealed a prevalence of wasting of 20.8% [17.0%-24.8%] GAM; in 2002, a survey carried out by ACF-USA during the same period showed a prevalence of global acute malnutrition of 37.7% [33.1%-42.4%].

In all cases, the improvement in the nutritional situation over 2002 was mainly attributed to the increased availability of food in 2003, owing to good rainfalls and better access to the farms as no major insecurity incident occurred in these areas. Also the interventions of the agencies on ground, like the feeding programmes implemented by MSF-B in Dirror Payam following the nutrition survey of May 2002, have certainly contributed to enhance the nutritional status of the under-5 population.

In 2003, the estimated average prevalence of acute malnutrition in Upper Nile was **21.3%** for GAM and **4.4%** for SAM, expressed in Z-scores<sup>6</sup>. In 2002, the estimated average rates were **28.2%** for GAM and **6.2%** for SAM, leading to the conclusion that the overall nutritional situation in the region might have improved in 2003. This suggests an overall improvement in the nutritional situation in the area.

However, the average rate remains significantly above emergency threshold. Of all surveys, 8 are fully above the 15% cut off (i.e. the lower bracket of the confidence interval remains above 15%) and 1 is almost fully over this cut off point (the lower bracket of the confidence interval is at 14.4%). Overall, 81% of surveys carried out indicate nutritional emergencies if accounting for GAM figures only. The figure lowers to 72% if accounting for SAM figures (one location exhibited GAM rates over 15% and SAM rate under 4%).

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<sup>6</sup> Average calculated from the 11 nutrition surveys carried out in Upper Nile in 2003.

Taken together, these observations suggest that the nutritional situation has improved in Upper Nile in 2003 but that it remains very precarious and of great concern. Indeed, there are virtually no other areas in the world where such figures as observed in Upper Nile would be deemed an improvement.

The observed improvement of the nutritional situation in Upper Nile in 2003 can chiefly be attributed to increased security, with subsequent positive impact on the following:

- **Food security:** while the year 2002 was characterized by the deterioration of food security due mainly to escalation of conflicts and unfavourable rainfalls patterns (ANA WFP 2002/2003), the ANA WFP 2003/2004 highlighted that “the overall food security situation improved in 2003 compared to that of 2002. This can be attributed to relative peace and security in many parts of the region, as well as the occurrence of good rainfall and increase of areas under cultivation. The livestock conditions also improved in 2003 with a decline of cattle rustling that was expected to contribute to the availability of cow milk for children. Because of good rainfalls and flooding, fishing was an important source of food”.
- **General food distribution** done by WFP also prevented further deterioration of the food security in Upper Nile.

However, the following factors have contributed to the general poor nutritional situation in Upper Nile in 2003:

- **Health:** the health situation has remained quite poor with high prevalence of diseases. The main causes of death reported from the mortality retrospective surveys were diarrhea, malaria (fever), low respiratory infections, kala-azar and tuberculosis (TB); the latter 2 being mentioned mainly for the above 5 years old. This observation was confirmed by UNICEF<sup>7</sup> who reported that the main causes of morbidity in Upper Nile in 2003 were malaria, diarrhea and lower respiratory infections. The health services are still limited: Upper Nile counts only 8% of the health facilities existing in southern Sudan, corresponding to 179 health facilities for 2.6 million people<sup>8</sup>. The health services are not distributed evenly, and natural barriers (swamps) and distance often hamper their access. In addition, vaccination coverage is extremely low – 10% of the under-5 children are vaccinated against measles in Upper Nile<sup>9</sup>, 7% according to the nutrition surveys (with check of the card).
- **Water and sanitation:** while Upper Nile contains roughly one third of the population of southern Sudan, but accounts only for 12% of the existing safe water points (boreholes, protected wells)<sup>10</sup>. Out of these existing safe water points, it is estimated that only 38% are operational<sup>11</sup>, meaning that 1 safe water point serves approximately 3,700 people. Actually rivers, swamps, and ponds are the main sources of water in Upper Nile. Water is used for all household purposes, including for drinking, and is usually not treated, hence its contamination and water-borne diseases (diarrhea). Open defecation is commonplace and this practice enhances the risk of transmission of diseases.

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<sup>7</sup> EPI and Morbidity Statistics (Draft), Southern Sudan 2003

<sup>8</sup> UNOCHA Starbase, March 2004

<sup>9</sup> UNICEF, EPI and Morbidity Statistics – Southern Sudan – 2003 – draft.

<sup>10</sup> UNICEF WES database, presentation during the WES Coordination Meeting, 30<sup>th</sup> April 2004, in Lokichoggio: out of the 5,587 successful water points registered in Southern Sudan, only 649 are located in Upper Nile.

<sup>11</sup> UNOCHA Starbase, March 2004.

- **A large part of the underlying causes of malnutrition are also related to childcare practices:** breastfeeding, weaning, feeding, hygiene, and health seeking. The heavy women's workload affects the availability of the mothers for childcare and indirectly influences the nutritional status.

Thus, while the nutritional situation in Upper Nile seems to have improved compared to 2002, mainly because of the improvement of the food security owing to better security and good rainfalls, acute malnutrition is still highly prevalent and constitutes an emergency in most of Upper Nile.

### 3. Trends of malnutrition in Bahr El Ghazal

**17 nutrition surveys** were conducted in Bahr El Ghazal. The number of nutrition surveys implemented in this region has significantly increased compared to 2002, when only 7 surveys were conducted. While the geographical coverage has slightly increased with one additional location assessed in 2003 compared to 2002, the higher number of nutrition surveys has allowed for a better monitoring and has provided a better picture of the nutritional situation in Bahr El Ghazal in 2003.

**Table 3: Results of the nutrition surveys implemented in Bahr El Ghazal, in 2003.**

LOCATION	AGENCY	MONTH	GAM	SAM
Akuem, Aweil East County	MSF-F	January	13.3% [10.4%-16.8%]	1.7% [0.8%-3.5%]
Baac, Malualbai, Madhol, Malual East Payams, Aweil East And North	TEARFUND	February	25.0% [22.2%-28.1%]	5.6% [3.7%-8.3%]
Panthou, Ajak, Wuncum, Terialiet, Wathmok Payams, Aweil South County	TEARFUND	February	22.6% [18.8%-26.8%]	3.1% [1.7%-5.3%]
Alek Payam, Gogrial County	NCA	March	23.0% [19.3%-28.0%]	3.6% [2.1%-6.1%]
Riau Payam, Gogrial County	NCA	March	22.9% [18.9%-27.6%]	4.3% [2.6%-7.0%]
Aweil North, Aweil West Counties	CONCERN	March	24.3% [21.6%-27.2%]	4.7% [3.5%-6.2%]
Gogrial County*	CEAS	March	22.6%	3.5%
Akok, Panyok, Wunrok, Turalei, Aweng Payams, Twic County,	GOAL	April	33.1% [30.1%-36.2%]	5.2% [4.0%-7.0%]
Akop, Ananatak, Paweng, Makuac Payams, Tonj County, Lakes Region	MSF-CH	April	22.9% [19.2%-27.0%]	3.8% [2.3%-6.1%]
Toch, Pathuon Payams, Gogrial County	WORLD VISION	May	32.0% [29.0%-35.1%]	5.3% [4.0%-6.9%]
Pagol, Warrap, Tonj, Thiet Payams, Tonj County	WORLD VISION	May	20.1% [17.6%-22.9%]	3.5% [2.5%-5.0%]
Aweil East County	MSF-F	June	22.2% [18.5%-26.4%]	4.0% [2.5%-6.4%]
Akuem, Aweil East County	MSF-F	October	19.4% [16.9%-22.2%]	2.2% [1.4%-3.5%]
Aweil North, Aweil West Counties	CONCERN	November	12.9% [10.1%-16.5%]	0.7% [0.2%-2.3%]
Mangargier, Gakrol, Wathmok Payams, Aweil South County	TEARFUND	November	16.2% [13.0%-20.0%]	1.4% [0.5%-3.0%]
Baac, Malualbaai, Madhol, Malual Payams, Aweil East And North Counties	TEARFUND	November	16.6% [13.2%-20.5%]	1.9% [0.9%-3.8%]
Akop, Ananatak, Paweng, Makuac Payams, Tonj County, Lakes Region	MSF-CH	December	9.0% [6.3%-11.6%]	0.4% [0.1%-1.7%]
<b>AVERAGE</b>			<b>21%</b>	<b>3.2%</b>

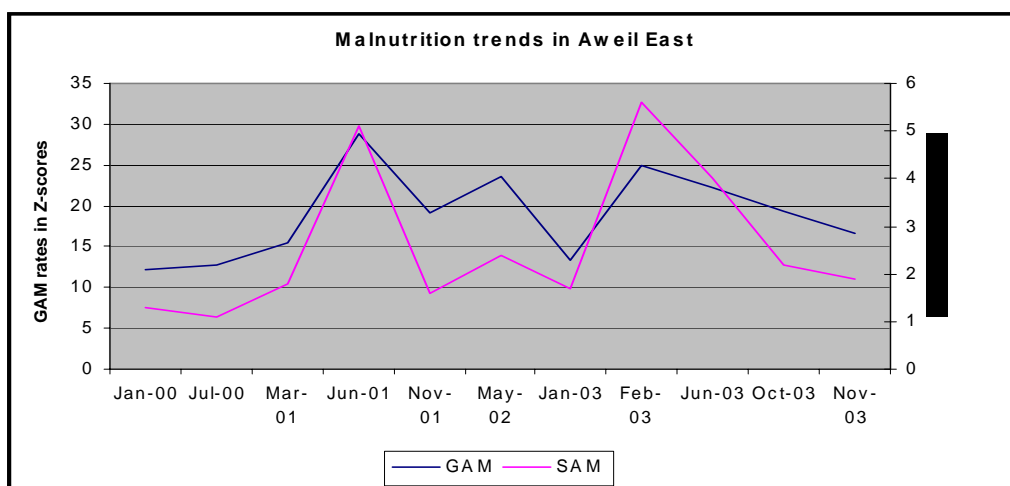
\* ACF-USA did not receive the comprehensive report from CEAS. The results come from the Starbase, UNOCHA, March 2004 where the confidence interval was not mentioned. The results of this survey have been mentioned in the above table for information but have not been included in the calculation of the average rates of acute malnutrition in Bahr El Ghazal.

Except in Aweil West, the nutrition surveys were carried out as part of the nutritional monitoring, either through existing programs (e.g. feeding programs) and/or as a follow up to previous surveys in areas where malnutrition had been detected as of ongoing concern. In the Aweils, the results suggested that the nutritional situation had not significantly improved over 2002. It seems to have deteriorated in Tonj, and more importantly in Twic and Gogrial.

The high rates of malnutrition found in Bahr El Ghazal were mainly due to a high prevalence of diseases combined with very limited health services, and situations of serious food insecurity. Indeed, in addition to the unfavourable climatic conditions (floods), these areas were largely affected by insecurity (including fighting and cattle raiding), which led to movements of population, inability of people to cultivate normal size of land, and high stress on the limited existing resources. The influx of returnees from the North also contributed to the rapid exhaustion of the food resources in these locations. ANA WFP 2003/2004 report mentioned that Gogrial and Aweil West were the most food insecure locations of southern Sudan because of insecurity, dry spells and pests, floods and influx of returnees in 2003.

In the case of Aweil East, nutritional information exists since 2000, allowing for the following trend analysis

Figure 2: Estimated malnutrition trends in Aweil East, Bahr El Ghazal, 2000-2003.



The figure above highlights the precarious nutritional situation throughout the years with average rate of global malnutrition rarely below the 15%.

In 2003, the average prevalence of global acute malnutrition in Bahr El Ghazal was **21%** and **3.2%** for severe acute malnutrition, expressed in Z-scores. The overall nutrition situation in the region seems to have slightly deteriorated in 2003 compared to 2002 when the rate of global acute malnutrition was **18.9%** and the rate of severe acute malnutrition **2.2%**.

About 70% of surveys show GAM rates fully above emergency levels (including confidence interval brackets). This figure rises to over 90% when taking into account GAM rates that are above or slightly below emergency rates (including surveys where average GAM rates are under 15%, but with upper confidence interval bracket over 15%). In other terms, there is only one survey showing clearly rates below emergency thresholds.

Focusing on SAM rates, only one area displays a situation fully above emergency levels. 62.5% of surveys however show SAM rates standing at about emergency levels (i.e. with average rates under 4%, but with upper confidence interval bracket over 4%).

As in Upper Nile, the situation in Bahr El Ghazal is therefore characterized by an exceptionally high vulnerability to malnutrition.

Generally, the poor nutritional situation in Bahr El Ghazal in 2003 can be explained by the following factors:

- **Food security:** the ANA WFP 2002/03 reported a poor harvest, explaining the pockets of food insecurity and the high rates of acute malnutrition during the post harvest period and the hunger gap. Serious food crises were detected in Aweil West and Gogrial, requiring emergency general food distributions.
- **Returnees:** the influx of returnees in the region created a stress on the food resources of the region.
- **Health:** the main causes of death reported were malaria, diarrhoea and respiratory infections. The poor health conditions contribute to enhance the rate of malnutrition. Also, like in Upper Nile, the health services remain limited in Bahr El Ghazal, with 166 health facilities for a total population of 4.2 millions people<sup>12</sup>. While the measles coverage is higher (23.4%)<sup>13</sup> than in Upper Nile (7%), it remains insufficient to protect the under-5 children and measles outbreaks were reported in the course of the year.
- **Water and Sanitation:** Bahr El Ghazal accounts for 42% of the existing safe water points (boreholes, protected wells). Out of these existing safe water points, only 20%, i.e. 440, are operational<sup>14</sup>. Actually rivers, swamps, and ponds are the main sources of water in Bahr El Ghazal. Water is used for all household purposes, including for drinking, and is usually not treated, hence the contamination and water-borne diseases (diarrhea). Open defecation is commonplace and this practice enhances the risk of transmission of diseases.
- **Childcare:** like in Upper Nile, hygiene, feeding practices and childcare have probably contributed to the poor nutrition situation.

Despite interventions of various agencies through feeding programmes and health facilities, the nutritional situation in Bahr El Ghazal is still a concern with very high rates of acute malnutrition. Food insecurity, diseases combined with low coverage of health facilities, childcare practices, and poor hygiene practices composed the main root causes of malnutrition in Bahr El Ghazal.

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<sup>12</sup> UNOCHA Starbase, March 2004.

<sup>13</sup> Average coverage of measles vaccination calculated from the nutrition reports having measles vaccination information.

<sup>14</sup> UNOCHA Starbase, March 2004.

#### **4. Equatoria**

From the available information, only one nutrition survey was conducted in Eastern Equatoria, in Nimule Corridor, among the IDPs and during the hunger gap, as a result of the monitoring of the nutritional situation in this location. The results revealed a rate of global acute malnutrition of 13.4% [11.2% - 15.9%], a figure alarmingly close to suggesting an emergency situation<sup>15</sup>. Malnutrition was attributed to poor water and sanitation conditions, and high morbidity and mortality mainly due to diarrhoea, malaria and measles.

In 2002 2 nutrition surveys were carried out in the same county, still leading to a very low geographical coverage of the nutrition surveillance activities in Equatoria. In Western Equatoria particularly, the food situation was secure compared to Eastern Equatoria, probably explaining why no nutrition survey was carried out in this area in 2003. However, although not a priority, the collection of baseline information and monitoring of the nutrition situation remains necessary to anticipate any deterioration of the nutritional situation in this region.

#### **5. Discussion on the nutritional situation in southern Sudan in 2003**

According to 28 nutrition surveys implemented in southern Sudan in 2003, the estimated average prevalence of global acute malnutrition and severe acute malnutrition, expressed in Z-scores, were **20.8%** and **3.6%** respectively. In 2002, the estimated average rates of GAM and SAM were **26%** and **5%** respectively, suggesting an improvement of the nutritional situation in southern Sudan. This has to be moderated by methodological uncertainties and an apparent growth in nutritional issues in Bahr El Ghazal balancing the seemingly improving situation in Upper Nile.

This potential improvement must be gauged against the fact that:

- About 70% of the surveys (19 out of 28) are fully above emergency levels (in GAM rates).
- About 90% of the surveys indicate a situation at emergency levels or above, taking into account these areas where the upper bracket of the confidence intervals stands above 15%.

The sad history of southern Sudan makes it tempting to evaluate such figures in relative terms, compared to other years. Nonetheless, in absolute terms, all figures above clearly show an acute nutritional emergency.

While the year 2002 was considered as poor in terms of crops and livestock production due to erratic rainfalls with prolonged dry spells, and escalation of insecurity (ANA WFP 2002/2003), 2003 was characterized by a slight improvement of the food security situation, especially following a fairly good harvest at the end of 2003. Although pockets of food insecurity remained, particularly in Bahr El Ghazal, the interventions of different agencies in the sectors of nutrition/feeding programmes, food distribution, agricultural input and health have contributed to this general enhancement of the food security situation. However insecurity, movement of returnees and IDPs, poor health and water and sanitation conditions, and childcare practices maintained the rate of global acute malnutrition above 15%.

As a result of the nutrition surveys, many nutrition emergencies were detected and the analysis of the causes leading to malnutrition were often related to food security, health services, childcare practices, water and sanitation, highlighting the multisectoral nature of malnutrition. It is expected that time will be required before these root causes of malnutrition in southern Sudan can be tackled.

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<sup>15</sup> The confidence interval is above 15%.

At the same time, the pre-peace context offers the perspective of building a local and sustainable system of detection and prevention of malnutrition where the nutritional situation could be monitored on a more regular basis and with an expanded geographical coverage. Nutrition surveys are time-consuming and expensive, preventing optimum coverage of the nutritional surveillance activities over space and time. For one year now, ACF-USA has been experimenting 2 community-based nutritional surveillance systems (in Old Fangak and Jiech, Upper Nile) aiming at collecting and analysing nutrition data on a monthly basis. Unfortunately, the project faces the constraints related to many community activities based on a voluntary system (difficulty in maintaining the motivation of the volunteer surveyors and in mobilising the community to support them). While not fully efficient at the time being, these pilot projects provide good basic information that could contribute significantly to the future nutritional surveillance.

Other initiatives are proposed yet to gradually move forwards the implementation of monitoring systems by emerging southern Sudan governing bodies. Various agencies are already working in close collaboration with the different Secretariats/Ministries of the South and the New Sudan Centre for Statistics and Evaluation (NSCSE) in order to set up a common and standardised monitoring of the livelihoods. The Livelihoods Analysis Forum gathers many organisations involved in various sectors of intervention in order to promote a multisectoral monitoring.

Regarding nutrition data more specifically, UNICEF has already identified sentinel sites where regular information could be collected, and the modalities of the nutritional surveillance are under discussion at the nutrition coordination level. This takes into consideration:

- *Methodological issues*: mode of monitoring (active or passive), identification of the sentinel sites (number, locations, representation, nature of the sites – community, health centres, others), and the data to be collected (anthropometric measurements, other information);
- *Analysis of the information*: by nutrition agencies individually or in coordination, other organisations (INGOS/SINGOs), Secretariat of Health and/or the NSCSE;
- *Technical support*: need to train more personnel on the detection of malnutrition and to give the material means to collect and analyse the data;
- *Timeliness*: the handling of such a monitoring by the southern governmental bodies could not be accomplished before several months or years of preparation. Transition steps are needed to accompany a smooth transfer of the competences.

The move from nutrition surveys to nutritional monitoring system requires that the current Secretariat of Health – and the forthcoming Ministry of Health of South Sudan – integrate nutrition as a priority in its policy and organization. It is the necessary decision to allow for a better consideration of malnutrition as one of the major problems affecting life of the under-5 years children in the South, and a better integration and collaboration of partners for the detection, treatment and prevention of malnutrition.

Naturally, a great onus falls upon donors as they consider their funding strategies in anticipation of peace and reconstruction. The analysis presented in this report argues forcefully in favour of including nutritional surveillance – and the treatment of malnutrition – as core duties of the forthcoming health infrastructures in southern Sudan that should be fully supported during the pre – interim and interim periods.

This process will require time and dedication before being fully efficient. Consequently, while building the capacity of the Sudanese it is necessary to maintain the capacity of international agencies to implement nutrition surveys to detect emergencies.



ACF-USA will closely follow up and participate in the elaboration of this project, and put its expertise in nutrition surveillance at the disposal of southern Sudan governance structures, present and forthcoming.

**Main recommendations for nutrition surveillance:**

↳ To maintain the implementation of a number of nutrition surveys in order to detect nutritional emergencies and monitor the nutritional situation in specific areas of concern in the South;

↳ For the emerging southern structures (secretariats/ministries, NSCSE) and nutrition agencies (INGOs, SINGOs and UN) to work in close collaboration in order to develop a monitoring system aiming at estimating the nutritional situation in the South on a regular basis, and early detecting any deterioration.

↳ For the Secretariat of Health to integrate nutrition as a priority in its policy and structuration in order to allow for developing the recommended nutritional monitoring system, encouraging the building of Sudanese capacity to detect malnutrition and collaborating with agencies involved in detection of nutrition emergencies.

**V. DEVELOPMENT OF THE CAPACITY TO IMPLEMENT NUTRITION SURVEYS IN 2003**

As mentioned previously, there are a clear need to promote the implementation of nutrition surveys, and at the same time a need to develop a monitoring system. Both will be met through the development of the capacities of the personnel in the field to detect malnutrition.

Consequently, for 2 years now, ACF-USA has been proposing training on nutrition surveys and rapid assessments in order to share its know-how and to encourage other organisations to detect malnutrition in their areas of intervention.

Following on recommendations of ACF-USA evaluation of the nutritional surveillance activities in 2002, ACF-USA continued to offer training sessions in 2003 and promoted Sudanese personnel, either through SRRC/SPLM and SINGOs, or the local staff of international agencies, the latter composing a pool of skilled persons for the development of the South in general.

The training provided by ACF-USA focuses on the nutrition surveys methodologies and the analysis of the collected data. There are 3 categories of training:

- ♦ Introductory training: overview of nutrition/malnutrition, nutrition anthropometric surveys indicators, sampling methodology, etc. The objective of this section is to give trainees a sound understanding of the nutritional surveillance with particular emphasis on the implementation of the surveys.
- ♦ Advanced training: training on data processing with EPI 5/EPI NUT softwares and analysis. The objective of this section is to give trainees knowledge on nutrition survey data treatment and overview on interpreting data and report writing.
- ♦ Nutrition managers' workshop: The workshop targets programmes managers or decision-makers of nutrition agencies. The objective of this workshop is to discuss malnutrition and nutritional surveillance information – type, limitations and use.

In 2003, ACF-USA conducted 2 introductory training sessions, 2 advanced training sessions and the managers' workshop, gathering 26 different agencies<sup>16</sup> in total – international and indigenous NGOs, and OLS support agency. It represents an increase over 2002 when 23 organisations attended the different training sessions (3 introductory, 2 advanced and 2 managers' workshops).

Table 4. Training carried out by ACF-USA in 2003

Location	Kind of training	No of training sessions	No of Agencies	Agencies
Lokichoggio	Introductory	2	12	TEARFUND, GOAL, CRS, NCA, MSF-F, MSF-B, MEDAIR, CMA, JAM, MSF-CH, DOT, OXFAM
Lokichoggio	Advanced	2	8	MEDAIR, JAM, MSF-B, OXFAM, CMA, TEARFUND, CEDAS, GOAL
Nairobi	Managers' workshop	1	15	IRAD, WORLD VISION, CRS, PCOS, DOR, SAFE HARBOR/IRAD, EP&R OLS, CMA, CHIWESE, NCDS, CONCERN, CEAS, WORLD RELIEF, SYCP, NCDA,

After each training session, an evaluation was carried out to appraise the teaching methodology, coverage and relevance. The results of the evaluations are given in the annex 1.

The attendance of indigenous NGOs increased in 2003: 9 indigenous NGOs and counterparts (CEDAS, IRAD, DOT, PCOS, DOR, CHIWESE, NCDS, SYCP, NCDA) participated in training in 2003 versus 6 in 2002 (RASS, SRRA, DOT, HARD, SUPRAID, NESINET/AORD). Although this increase is a positive trend, there is still a limited number of Sudanese agencies participating. Most of the interviewed SINGOs argued that they did not have the resources to move their participants to Lokichoggio where most of the training sessions took place (lack of funds to cover travelling and accommodation costs).

Because ACF-USA did not register the nationality of the participants, it is not possible to estimate the number of Sudanese personnel who attend the training in 2002 and 2003, and to estimate the evolution from one year to the other either.

Training sessions offered in 2003 were useful as most of the participants used the know-how to conduct nutrition surveys in different areas of southern Sudan. Thus, out of the 26 organisations who participated in training in 2003, **11 (44%) implemented nutrition surveys** in their areas of operation: Goal, Tearfund, Concern, CRS, World Vision in collaboration with World Relief, MSF-B, MSF-CH, MSF-F, NCA, and Medair in collaboration with ACF-USA; as compared to 5 only (Tearfund, MSF-B, MSF-H, MSF-CH, CRS) in 2002. They used the standardized methodology for nutrition surveys that allowed for comparability of the results.

<sup>16</sup> ACF-USA is not included.

Nevertheless, none of the Sudanese organisations that participated in training conducted nutrition surveys in 2003, highlighting one of the limits of the training initiative. Indeed, while local NGOs appreciate the possibility to increase their knowledge and their technical capacity in detecting malnutrition, they however lack the material resources to implement nutrition surveys:

- Nutrition survey kits (weighing scales, height boards, MUAC tapes...)
- Funds to mobilise a team for the duration of the nutrition survey
- Computers and software to be able to analyse the collected data.

Ways to improve the support to the Sudanese agencies have been explored:

- ☞ To increase the attendance of the Sudanese organisations/official structures to ACF-USA training through:
  - Covering part of the costs for travelling to and accommodation in the location where the training sessions take place; UNICEF is currently supporting this initiative;
  - Providing training also in Nairobi and southern Sudan in order for the Sudanese organisations to have a better access to ACF-USA training;
  - Possibly proposing correspondence courses on nutrition surveys: this initiative is under review within ACF-USA;
- ☞ To encourage the implementation of nutrition surveys through:
  - Supporting SINGOs to get funds for the implementation of nutrition surveillance activities – this could be done through collaboration on proposal writing; training on financial management and donors issues; or for agencies and the Secretariat of Health – in the future the Ministry of Health of the South Sudan Government – to subcontract SINGOs for the implementation of nutrition surveys;
  - Supporting SINGOs requests to UNICEF for nutrition surveys kits;
  - Funding data analysing tools and related means;
  - Increasing the collaboration between organisations that have experience in conducting nutrition surveys and SINGOs in need of technical support.
- ☞ To encourage the implementation of nutrition rapid assessments, which require less material resources than nutrition surveys and which provide relevant indication of an emergency.

Taking into consideration the needed evolution from nutrition surveys towards regular monitoring system, the needs for training on nutrition surveillance activities will probably increase, particularly for the personnel directly involved in that data collection and analysis. Depending on the extent of the nutrition monitoring system, the needs for training could be very important, targeting several hundred of Sudanese staff. ACF-USA will closely follow up and participate in the elaboration of this project, and propose its expertise in nutrition surveillance and training to emerging southern structures.

**Main recommendations for training on nutrition surveillance activities:**

- ↪ To continue to share technical expertise to conduct nutrition surveys and rapid assessments.
- ↪ To encourage the Sudanese agencies to participate in the training sessions that ACF-USA organise, while adapting the organisation of the training to their constraints.
- ↪ To encourage Sudanese agencies and future governmental structures to implement nutrition surveillances activities, specifically through ensuring that the Sudanese agencies have the resources to carry out and analyse nutrition surveys; providing them with the knowledge on how to get the resources; and encouraging the collaboration with organisations having experience.
- ↪ To register the nationality of the persons attending ACF-USA training in order to estimate the impact of the training on building the capacities of the Sudanese communities.
- ↪ To support the training of the personnel involved in the upcoming nutrition monitoring system.
- ↪ For the Secretariat of Health to integrate nutrition as a Public Health priority in its policy and structuration in order to actively participate in the building of Sudanese capacity to detect malnutrition and to better collaborate with agencies involved in detection of nutrition emergencies.
- ↪ For Donors to acknowledge the importance of maintained and strengthened nutritional surveillance activities and to fund SINGOs and the forthcoming authorities of southern Sudan.

## VI. THE RESPONSE TO NUTRITIONAL EMERGENCIES IN 2003

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Most of the nutrition surveys carried out in 2003 displayed emergency situations requiring interventions in various sectors: opening of feeding programmes to prevent severely malnourished children from death and moderately malnourished from any further deterioration of their nutritional status; emergency distribution of food rations; food security support; strengthening of the health services; and improvement of the water and sanitation conditions. Because malnutrition is the result of a combination of factors involving these different sectors, all included recommendations for a multisectoral response to the malnutrition, both on short and long terms.

One of the concerns outlined in ACF-USA evaluation of the nutritional surveillance activities in 2002 was the difficulty in ensuring proper interventions following the dissemination of the findings of the nutrition surveys. ACF-USA had advocated for a better mobilisation of the possible actors, and has since then set up a proper follow up of the recommendations through an advocacy strategy for each nutrition survey.

Indeed, ACF-USA disseminates the nutrition surveys reports to a wide range of partners in order to create awareness on the locations of concern. The targeted partners include:

- ☞ SPLM Health Secretariat
- ☞ SRRC, both at Lokichoggio level and in the area where the surveys are implemented
- ☞ The communities where the surveys are carried out
- ☞ All UN agencies operating in the South (UNICEF, WHO, FAO, WFP, UNDP, UNOCHA)
- ☞ All NGOs working in the areas where the surveys are carried out
- ☞ All nutrition agencies
- ☞ Existing database systems (FEWSNET, IRIN, UNICEF Resource Centre, WFP Resource Centre).

Beyond this dissemination and as ACF-USA is not necessarily in a position to cover all the needed interventions, ACF-USA develops an advocacy plan for each nutrition survey, which aims at appealing to targeted agencies and designing interventions in the areas of concern with them. ACF-USA identifies the target organisations according to their mandate, their usual locations of intervention and their operational strategy. During the 2 months following the release of the results, ACF-USA maintains a close relation with the targeted agencies, trying to figure out if the recommended activities can be implemented and looking for other agencies if the first fail. The appeal is done through individual meetings as well as announcements in coordination meetings. After 2 months, if needs are still not met, ACF-USA liases with OLS EP&R in order for them to take over the advocacy for the most urgent needs.

For the year 2003, out of 71 recommendations that ACF-USA formulated in its nutrition surveys reports, 59% were implemented by the targeted agencies. The table below shows the number of recommendations per location and the corresponding responses.

**Table 5:** Recommendations per location and response, ACF-USA nutrition surveys in southern Sudan, 2003.

<b>Locations surveyed</b>	<b>No of recommendations</b>	<b>Taken up</b>	<b>Not taken up</b>
Pandomit/Chuei	10	5	5
Old Fangak	11	9	2
Pagak	11	3	8
Lekuangle	11	8	3
Bugaya, Maaban	6	5	1
Gumriak	8	3	5
Nyadin/Toch	8	5	3
Khorfoulos (Atar)	6	4	2
<b>TOTAL</b>	<b>71</b>	<b>42 (59%)</b>	<b>29 (41%)</b>

The tables in annex 1 display the detailed recommendations formulated for each of the 9 nutrition surveys that ACF-USA carried out in 2003.

In comparison to 2002, the proportion of recommendations taken up has increased in 2003. The table below displays the number of recommendations taken up in 2002:

**Table 6:** Recommendations per location and response, ACF-USA nutrition surveys in southern Sudan, 2002.

<b>Locations surveyed</b>	<b>No of recommendations</b>	<b>Taken up</b>	<b>Not taken up</b>
Old Fangak	10	7	3
Jiech	9	4	5
Keew	8	2	6
Lankien	8	5	3
Nyal	6	4	2
Padak	8	4	4
Mareang	8	5	3
Khorfoulos (Atar)	8	2	6
<b>TOTAL</b>	<b>65</b>	<b>33 (50%)</b>	<b>32 (50%)</b>

While only half of the recommendations formulated after nutrition surveys were taken up in 2002, 59% were implemented in 2003, suggesting an improvement and the probable impact of ACF-USA advocacy follow up on the interventions.

Similarly to 2002, the main sectors of interventions cited in the recommendations of 2003 have referred to emergency nutrition programmes, food security (including food aid), health, water and sanitation, and relief items.

**Table 7:** Recommendations per sector of intervention, ACF-USA nutrition surveys in southern Sudan, 2003.

<b>Sectors of intervention</b>	<b>Frequency of recommendation</b>	<b>Frequency of response</b>
<b>FOOD AID:</b> Food distribution	8	8
<b>NUTRITION:</b>		
- Emergency feeding programs	6	2
- Nutrition surveillance activities	3	1
<b>HEALTH:</b>		
- EPI services (measles)	4	4
- Health promotion	6	4
- Maintain or increase of health services	6	5
<b>FOOD SECURITY:</b>		
- Seeds and tools distribution	3	3
- Fishing equipment distribution	3	2
- Veterinary services	4	2
- Food security monitoring	7	3
<b>NFI DISTRIBUTIONS:</b>		
- NFI distribution	1	1
<b>WATER and SANITATION:</b>		
- Drilling boreholes/ digging wells	7	2
- Digging latrines	1	0

The recommendations that have been mostly taken up in 2003 were, as in 2002, food aid delivery, health promotion, distribution of seeds, tools, fishing equipment, and non-food items.

Recommendations regarding health, particularly the improvement of the health services (supply of medical kits, opening of specialised centres, outreach activities, laboratory facilities, increase of supervision of PHCUs), including EPI activities, have been better taken up in 2003 compared to 2002.

On the contrary feeding programmes, food security monitoring, drilling of boreholes and wells, and building of latrines were not implemented since the number of agencies in charge of these activities is limited. ACF-USA was able to respond only to part of the identified needs, particularly through 2 feeding programmes, in Old Fangak and Lekuangole, Upper Nile, health education and hygiene promotion programme in Old Fangak, and distribution of food security and non-food items in many locations.

The recommendations formulated in other agencies' nutrition reports mainly targeted the organisation itself and WFP for general distribution, restricting the recommended interventions to their own capacity.

The main reasons given by the targeted agencies, including ACF-USA, regarding their difficulties in taking up the formulated recommendations were:

1. Lack of budget allocations for extra activities (contingency funds)
2. Lack of flexibility for interventions in non-core project areas
3. Lack of skilled personnel
4. Lack of, or late response to, project proposals submitted to donors following recommendations
5. Insecurity

6. Lack of water, particularly for the implementation of feeding or health programmes.

ACF-USA hopes that the awareness on the constraints that the agencies met in the implementation of recommendations will help in increasing their flexibility (in terms of funds and areas of interventions) and their capacity to react to situations of emergency.

Though a lot of recommended activities were not implemented, ACF-USA's advocacy strategy has allowed for an improvement in taking up recommendations compared to 2002. ACF-USA would like to go further in the sensitisation of the main partners – including SRRC, Secretariat of Health and donors – on nutritional emergencies, and suggest the creation of a mechanism or a mixed structure allowing for the rapid mobilisation of the implementing and decision-making actors and the prioritisation of the interventions – particularly in view of an increased number of nutrition surveys and regular nutrition monitoring.

Again ACF-USA strongly recommends multisectoral interventions to tackle malnutrition and advocates for several agencies to mobilise their resources to respond to nutritional emergencies.

**Main recommendations on the needed interventions following nutrition surveys:**

- ↪ To recommend multisectoral interventions to tackle nutritional emergencies.
- ↪ To continue advocating for rapid and coordinated interventions from targeted agencies.
- ↪ To envisage a coordination mechanism or a mixed structure involving implementing and decision-making partners (NGOs, UN, SRRC/MoH and donors), in order to raise concerns on critical nutrition emergencies, to prioritise the situations and to help in making decision for interventions.
- ↪ For the Secretariat of Health to integrate nutrition as a Public Health priority in its policy and structuration in order to actively participate in the building of Sudanese capacity to detect, treat and prevent malnutrition, and to better collaborate with donors and agencies involved in detection, treatment and prevention of nutrition emergencies.



## VII. CONCLUSION

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In 2003, the nutrition surveillance activities in southern Sudan have allowed for the detection of a number of nutritional emergencies and have contributed to the multisectoral response to the needs of the most vulnerable populations. Because of the vastness of the South and the limited capacities in terms of nutritional surveillance, it would be presumptuous to pretend having covered most of the nutrition emergencies, but at least a great number have been identified and measures to tackle these alarming situations have been taken.

The analysis of the trends of malnutrition over 2003 suggests an improvement of the nutrition situation in southern Sudan, with estimated average rates of 20.8% of global acute malnutrition and 3.6% of severe acute malnutrition, expressed in Z-scores. In Upper Nile the improvement seems more evident compared to Bahr El Ghazal where results suggest a slight deterioration of the nutrition situation. Although improving, more than 95% of the nutrition surveys suggested malnutrition levels above the emergency threshold of 15%.

The estimated improvement of the nutritional situation in 2003 compared to 2002 is explained by an improvement of the food security situation although some pockets of food insecurity remained, particularly in Bahr El Ghazal. The interventions of different agencies in the sectors of nutrition/feeding programmes, food distribution, food security and health have also contributed to this slight improvement. However insecurity, movement of returnees and IDPs, poor health and water and sanitation conditions, childcare practices all contributed to a high incidence of acute malnutrition.

Also the nutritional surveillance activities have improved since 2002:

- The number of nutrition surveys implemented has increased, allowing mainly for strengthening of the monitoring in specific locations and increasing the geographical coverage in Bahr El Ghazal;
- The number of agencies participating in ACF-USA training increased, resulting in a higher number of nutrition surveys implemented in 2003.
- The number of Sudanese agencies participating in training on nutrition surveys has increased as well, and need to be encouraged in the future.
- Almost 60% of the recommendations that ACF-USA formulated in its reports were taken up, improving the response to nutritional emergencies and malnutrition.

Although a comprehensive peace agreement is about to be signed, all leading factors to malnutrition – poor health conditions, limited access to health services, food insecurity and poor childcare practices – will probably not be tackled in the coming months and ACF-USA still foresees nutritional emergencies in the South. At the same time, the pre-peace context offers the perspective of building a local and sustainable system of detection and prevention of malnutrition where the nutritional situation could be monitored on a more regular basis and with an expanded geographical coverage. Nutrition surveys are time-consuming and expensive, preventing optimum coverage of the nutritional surveillance activities over space and time.

The move from nutrition surveys to nutritional monitoring system requires that the current Secretariat of Health – and the forthcoming Ministry of Health of South Sudan – integrate nutrition in its policy and structuration. This process will require time and dedication before being fully efficient. Consequently, while building the capacity of the Sudanese it is necessary to maintain the capacity of international agencies to implement nutrition surveys to detect emergencies.

While ACF-USA is actively involved in the reflection on the way to have more regular, systematic and standardized nutritional information, as well as a better geographical coverage, ACF-USA will still recommend and ensure the implementation of nutrition surveys in order to detect upcoming nutrition emergencies.

In order to reach this objective, ACF-USA will continue organising training while adapting to the constraints faced by the Sudanese agencies in attending the sessions. Also ACF-USA will work on the possibility for the Sudanese organisations to access the resources to implement nutrition surveys or rapid assessments.

Also ACF-USA, while continuing to advocate for multisectoral response to malnutrition, will reinforce its follow up of the recommendations in order to increase the impact of the nutrition surveys on needed interventions.

Finally ACF-USA requires the support from the Secretariat of Health, the emerging structures of the South Sudan Government and the donors in order to consider nutrition as a Public Health priority for the children of the South and to mobilise the necessary resources to tackle malnutrition in the short and long terms.

Considering the analysis of the current context of southern Sudan and its expertise in detection and treatment of malnutrition, ACF-USA strongly advocates for:

- ➔ **A maintained focus on detecting and treating acute malnutrition.**
- ➔ **Multisectoral approach of malnutrition**, from detection to treatment of malnutrition.
- ➔ **Strengthening of the local capacities** to allow nutrition-skilled Sudanese to take over the nutritional surveillance activities and the treatment of malnutrition, in a long-term approach.
- ➔ Development of the Sudanese capacity to monitor the nutritional situation throughout southern Sudan **while maintaining/increasing in the short term the capacity to detect and respond to nutritional emergencies.**
- ➔ Consideration of **nutrition as a Public Health priority** for the Secretariat of Health, the emerging structures of the South Sudan Government and their financial partners in order to integrate nutrition in the policy and structuration of the Secretariat of Health. This should allow for the active participation in the building of Sudanese capacity to detect, treat and prevent malnutrition, and the better collaboration with donors and agencies involved in detection, treatment and prevention of nutrition emergencies.

## VIII. RECOMMENDATIONS FOR NUTRITIONAL SURVEILLANCE ACTIVITIES

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### **Nutrition surveillance:**

- ☞ To maintain the implementation of a number of nutrition surveys in order to detect
- ☞ To maintain the implementation of a number of nutrition surveys in order to detect nutritional emergencies and monitor the nutritional situation in specific areas of concern in the South.
- ☞ For the emerging southern structures (secretariats/ministries, NSCSE) and nutrition agencies (INGOs, SINGOs and UN) to work in close collaboration in order to develop a monitoring system aiming at estimating the nutritional situation in the South on a regular basis, and early detecting any deterioration.

### **Training on nutrition surveillance:**

- ☞ To continue to share the technical expertise to conduct nutrition surveys and rapid assessments.
- ☞ To encourage the Sudanese agencies to participate in the training sessions that ACF-USA organise, while adapting the organisation of the training to their constraints.
- ☞ To encourage Sudanese agencies and future governmental structures to implement nutrition surveillances activities, specifically through ensuring that the Sudanese agencies have the resources to carry out and analyse nutrition surveys; providing them with the knowledge on how to get the resources; and encouraging the collaboration with organisations having experience.
- ☞ To propose a monitoring of the implementation nutrition surveys for the organisations, particularly SINGOs, who have no previous experience.
- ☞ To register the nationality of the persons attending ACF-USA training in order to estimate the impact of the training on building the capacities of the Sudanese communities.
- ☞ To support the training of the personnel involved in the upcoming nutrition monitoring system.

### **Interventions to tackle malnutrition:**

- ☞ To recommend multisectoral interventions to tackle nutritional emergencies.

### **Advocacy for interventions:**

- ☞ To continue advocating for rapid and coordinated interventions from targeted agencies.
- ☞ To envisage a coordination mechanism or a mixed structure involving implementing and decision-making partners (NGOs, UN, SRRC/MoH and donors), in order to raise concerns on critical nutrition emergencies, to prioritise the situations and to help in making decision for interventions.

### **Policy:**

- ☞ For the Secretariat of Health to integrate nutrition as a Public Health priority in its policy and structuration in order to actively participate in the building of Sudanese capacity to detect, treat and prevent malnutrition, and to better collaborate with donors and agencies involved in detection, treatment and prevention of nutrition emergencies.

## APPENDIXES

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### Appendix 1. Evaluation of ACF-USA training offered in 2003.

#### A. Evaluation of the 2 introductory training sessions in 2003:

Aspects under evaluation	Score*	
	March 2003	August 2003
The training met your objectives	4.5	4.7
The training met the planned objectives	4.4	4.6
The pace of the training	3.5	4.3
The balance of the content of the training	4.1	4.0
The usefulness/ relevance of the training for your work	4.4	4.8
The presentation and facilitation of the training	4.1	4.4

\*1= very poor, 2= poor, 3= satisfactory, 4= good, 5= very good (average of participants' scores)

#### B. Evaluation of the 2 advanced training sessions in 2003:

Aspects under evaluation	Score*	
	July 2003	October 2003
The training met your objectives	4.6	4.4
The training met the planned objectives	4.2	4.6
The pace of the training	3.8	4.4
The balance of the content of the training	4.3	4.6
The usefulness/relevance of the training for your work	4.8	4.8
The presentation and facilitation of the training	4.5	4.8

\*1= very poor, 2= poor, 3= satisfactory, 4= good, 5= very good (average of participants' scores)

The evaluation of the training sessions displayed a high level of satisfaction among the participants.

For the Managers' workshop, a discussion held at the end of the session pointed out the importance of this workshop particularly regarding the use of the nutrition surveys results for intervention.

**Appendix 2** - Recommendations formulated following ACF-USA nutrition surveys in 2003

Date	Location	Recommendations	Action to whom	Action taken
January	Pandomit /Chuei payams Sobat County	- Food Aid distribution at 75% ration	WFP	- Food was distributed on Feb 25 <sup>th</sup> to 28 <sup>th</sup> at 25% ration.
		- Open TFC and SFC	ACF-USA Medair Tearfund MSF sections	- Not Possible - Not Possible - Not Possible - Interest in intervening but need to make consultations with the North. (Not done)
		- Continue supporting PHCU with Kits	Medair	- To continue supporting the PHCU with kits.
		- Equip existing health infrastructure to handle vaccinations with emphasis on measles and treatment of TB/ establishment of TB clinic.	Medair	- No plans to carry out measles vaccination, no plans to intervene on TB as have not heard of outbreak. Cases can also be referred to Keew,
			Unicef	- Willing to support any organization planning to carry out measles vaccination
		- Drilling of boreholes in Maloc	Oxfam	-On principle not able to drill in Payuer but this is subject to approval of ECHO proposal.
		- Distribution of NFI, seeds, tools and fishing equipment	Medair SSOM	- Plan to make a distribution together with Open doors in April. - Made distribution on 17 <sup>th</sup> – 21 <sup>st</sup> March.
		- Intensify health promotion	Medair	- Currently having staff on ground doing health promotion
		- Monitor food security	FAO	- Not done
		- Nutrition surveillance	ACF-USA Tearfund MSF sections UNICEF	- Not done
	Medair	Not possible		
- Nutrition Education	UNICEF	Not done		

Date	Location	Recommendations	Action to whom	Action taken
March	Old Fangak, payam Zeraf County	- Food distribution at 50% ration.	WFP	- Plan to distribute in June at 50%.
		- Support children aged 3yrs and below with food supplement	WFP	- Not done.
		- Monitor Food Security	ACF-USA	- Done
		- Open TFC/SFC	ACF-USA	- Done
		- Carry out EPI services especially measles immunization	COSV	- Action pending the repair of this soon as fridge is repaired this will be done.
		- Drill more boreholes in Pulpam	UN water	- Water table is too low for the currently available equipment.
		- Assess livestock situation	VSF-B	- Not possible
			SC-UK	- Supporting a local INGO (Nath Community development Society) who will take over activities in the area.
		- Nutrition Surveillance	ACF-USA	Done
		- Community outreach activities	COSV	- Not done. Will use periphery PHCUs in other parishes.
	ACF-USA	- Done		
	ACF-USA	- Done		

Date	Location	Recommendations	Action to whom	Action taken/Agencies answers
April	Pagak payam, Maiwut County	<ul style="list-style-type: none"> <li>- Treat SAM and MAM</li> <li>- Support IRC to carry out measles campaign</li> <li>- Carry out a measles campaign</li> <li>- Blanket supplementation</li> <li>- Target food aid delivery at 75%</li> <li>- Address issue of shallow borehole</li> <li>- Assess fishing equipment needs and intervene accordingly</li> <li>- Implement outreach activities</li> <li>- Assess fishing equipment requirement and intervene accordingly. Monitor Food security situation</li> <li>- Nutrition surveillance</li> </ul>	<ul style="list-style-type: none"> <li>ACF-USA</li> <li>UNICEF</li> <li>IRC</li> <li>WFP</li> <li>WFP</li> <li>IRC</li> <li>CARE</li> <li>IRC</li> <li>CARE</li> <li>IRC</li> </ul>	<ul style="list-style-type: none"> <li>- Not possible</li> <li>- Will give support after evaluation of proposal</li> <li>- Implementation of a campaign if they get support</li> <li>- To be included in general food distribution basket.</li> <li>- Plan to distribute in May at 75%</li> <li>- Mandate does not cater for depth of borehole as long as water is provided.</li> <li>- Not done</li> <li>- Done. CHWs doing home visits and patient follow-up.</li> <li>- Not done</li> <li>- Not done</li> </ul>

Date	Location	Recommendations	Action to whom	Action taken
May	Lekuangle payam, Pibor County	<ul style="list-style-type: none"> <li>- Treat acute malnutrition</li> <li>- Food aid delivery at 100%</li> <li>- Immunization campaign</li> <li>- Support Medair to carry out a measles campaign</li> <li>- Treatment of livestock diseases</li> <li>- Monitor food security and distribute seeds and tools</li> <li>- Undertake livelihoods assessment</li> <li>- Implement long-term livestock interventions</li> <li>- Improve preventive measures through EPI, deworming and health and nutrition education</li> <li>- Maintain hygiene promotion services</li> <li>- Avail water sources</li> </ul>	<ul style="list-style-type: none"> <li>Medair, ACF-USA Tearfund</li> <li>WFP</li> <li>Medair</li> <li>UNICEF</li> <li>VSF B</li> <li>FAO</li> <li>FAO</li> <li>VSF B, COOPI</li> <li>Medair</li> <li>Medair</li> <li>UN water Medair COOPI</li> </ul>	<ul style="list-style-type: none"> <li>- Done</li> <li>- Done at 75%</li> <li>- Need for further follow-up</li> <li>- Will be supporting Medair.</li> <li>- Stopped working in the location</li> <li>- Distributed together with COOPI</li> <li>- Not done</li> <li>- Not done</li> <li>- Not done</li> <li>- Not done</li> <li>- Not done</li> </ul>



Date	Location	Recommendations	Action to whom	Action taken
July	Bugaya, Maaban County	<ul style="list-style-type: none"> <li>- Food distribution at 75%</li> <li>- Introduce hygiene promotion, deworming and community outreach services</li> <li>- Improve existing the health infrastructure to handle vaccinations with an emphasis on measles</li> <li>- Monitor food security, pest management and ox-plough</li> <li>- Provide safe water</li> <li>- Drill 10 boreholes</li> </ul>	<ul style="list-style-type: none"> <li>WFP</li> <li>Oxfam</li> <li>Medair</li> <li>Goal</li> <li>Goal</li> <li>Medair</li> <li>CARE</li> <li>FAO</li> <li>Oxfam</li> <li>Servants Heart</li> <li>UNICEF</li> </ul>	<ul style="list-style-type: none"> <li>- Food distributed in July</li> <li>- Have been and will continue conducting health promotion</li> <li>- Not permanent in the place but if there is funding will venture into place</li> <li>- Need for further follow-up</li> <li>- Plan to carry out a routine measles immunization Jan 2004. Have supplied enough medical kits to PHCU.</li> <li>- Not permanent on ground thus not possible at the moment, but looking to venture in the area</li> <li>- Had planned a distribution, which was diverted due to rains. New assessments are currently underway.</li> <li>- Have interest in location. Offering a trainer to go on ground.</li> <li>- Not done</li> <li>- To meet and discuss with other agencies. Not done</li> </ul>

Date	Location	Recommendations	Action to whom	Action taken
September	Gumriak payam, Ruweng County	<ul style="list-style-type: none"> <li>- Food distribution at 100%</li> <li>- Increase medical support</li> <li>- Explore health sector and provide supplementary services</li> <li>- Open TFC/SFC linked with health structure</li> <li>- Assess tools, seeds and fishing equipment needs and distribute accordingly</li> <li>- Explore possibility of doing health promotion</li> <li>- Drill boreholes</li> <li>- Distribute guinea worm filters and provide health education</li> </ul>	<ul style="list-style-type: none"> <li>WFP</li> <li>Medair</li> <li>MSF-B</li> <li>ACF-USA</li> <li>ACF-USA</li> <li>Oxfam</li> <li>UN water</li> <li>Carter centre</li> </ul>	<ul style="list-style-type: none"> <li>- Food distributed in October at 50%</li> <li>- Have sent 4 PHCU kits and plan to visit on 20<sup>th</sup> February.</li> <li>- Not possible as they have just opened in another location and have their own criteria in determining new locations.</li> <li>- Not possible due to lack of water</li> <li>- Distribution done and currently a post distribution assessment taking place.</li> <li>- Not done</li> <li>- Not done</li> <li>- Not done</li> </ul>

Date	Location	Recommendations	Action to whom	Action taken
October/ November	Nyadin/Toch (Mareang), Zeraf County	<ul style="list-style-type: none"> <li>- To implement 75% ration</li> <li>- Increase medical support and institute a measles campaign</li> <li>- Open SFC/TFC</li> <li>- Monitor nutrition situation and food security</li> <li>- Drill borehole or dig wells</li> <li>- Continue offering veterinary services</li> <li>- Hygiene promotion activities</li> <li>- To monitor agricultural activities and introduce ox-plough in Nyadin and Toch.</li> </ul>	<ul style="list-style-type: none"> <li>WFP</li> <li>COSV</li> <li>Tearfund</li> <li>ACF-USA</li> <li>SC-UK,</li> <li>OXFAM</li> <li>UN water</li> <li>VSF-B</li> <li>SC-UK</li> <li>FAO</li> <li>CARE</li> </ul>	<ul style="list-style-type: none"> <li>- Food was delivered at 50 % ration.</li> <li>- Not possible (no response)</li> <li>- Not possible. Priority is in another location with higher rate of malnutrition; they have intervened in the location in 2002 but the coverage was very low</li> <li>- The monitoring is on regular basis</li> <li>- Will provide materials to dig wells and facilitate in construction of latrines.</li> <li>- Have fixed areas of operation, therefore can not intervene.</li> <li>- Not possible (If SC-UK is intervening then will give priority to another location.)</li> <li>- They maintain their services</li> <li>- Will enhance supervision of CHWs on hygiene promotion</li> <li>- Not possible (The target population did not have capacity for ox-plough.)</li> <li>- Operates only in Eastern Upper Nile and don't have capacity to operate in Upper Nile.</li> </ul>

<b>Date</b>	<b>Location</b>	<b>Recommendations</b>	<b>Action to whom</b>	<b>Action taken</b>
<b>November</b>	<b>Atar, Alam, Piji, Duk payams, County Khorfulous</b>	<ul style="list-style-type: none"> <li>- Increase medical kits, increase supervision</li> <li>- Distribution of food</li> <li>- Monitor food security and initiate ways of improving agricultural productivity</li> <li>- Establish veterinary services</li> <li>- Support school</li> <li>- Build latrines and institute health promotion</li> </ul>	<ul style="list-style-type: none"> <li>Medair</li> <li>WFP</li> <li>ACF-USA</li> <li>VSF-B</li> <li>UNICEF</li> <li>OXFAM</li> </ul>	<ul style="list-style-type: none"> <li>- Will not increase medical support due to sufficient kits already in the PHCU's,</li> <li>- Will increase supervision from once to twice in every four months.</li> <li>- Done at 50% ration</li> <li>- Done</li> <li>- Have trained 10 CHWs</li> <li>- Planning to distribute 2 educational kits equivalent to 400 children from the month of April</li> <li>- Has target areas of operation but willing to collaborate with other agencies.</li> </ul>