

# EMERGENCY NUTRITION QUARTERLY BULLETIN

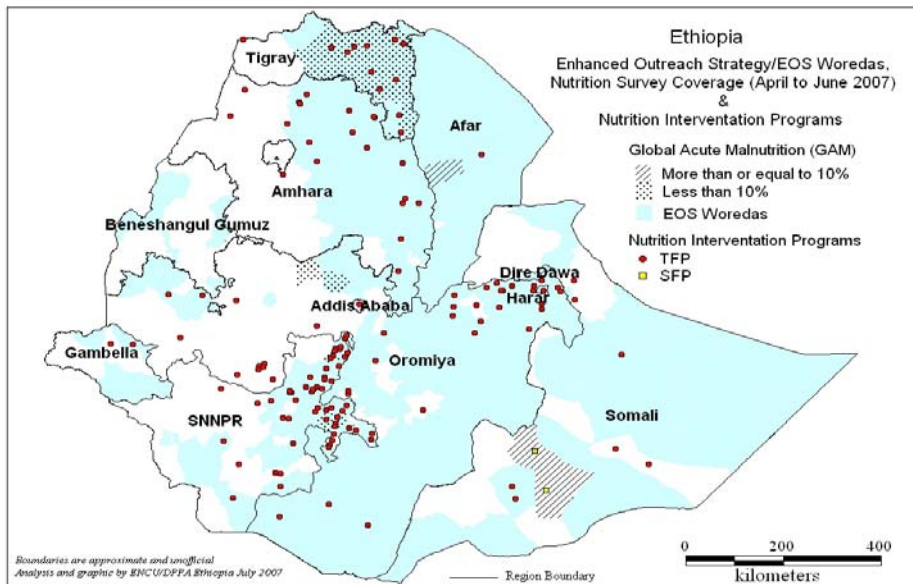
(Second Quarter 2007)

Emergency Nutrition Coordination Unit

Early Warning Department

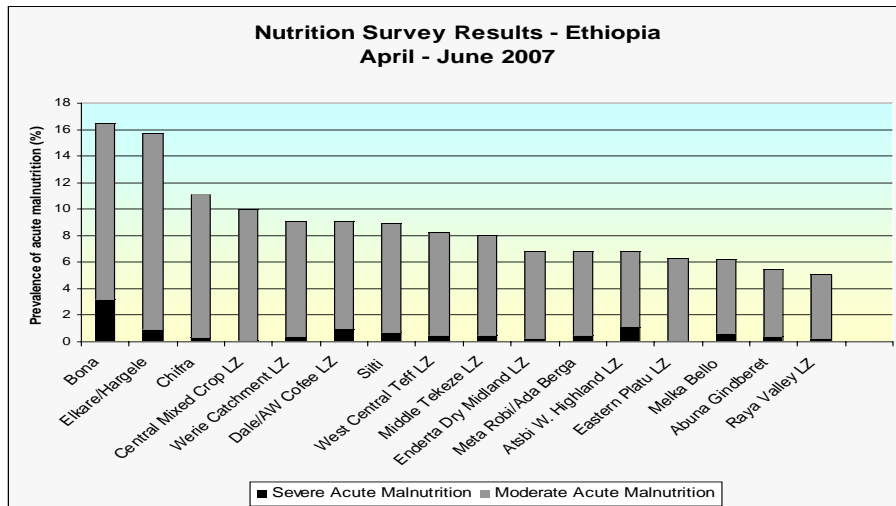
(Disaster Prevention and Preparedness Agency)

Figure 1



A total of 16 nutrition surveys were conducted by SCUK, GOAL, ACF, WV-Ethiopia, SCUSA, RENCU/DPPB in SNNPR, Afar, Somali and Tigray regions between late March and early June 2007. Twelve nutrition surveys were carried out in the predominantly cropping areas of Oromiya, SNNPR and Tigray regions during the late post-harvest *meher* season while the remaining four were conducted in the pastoral areas of Somali and Afar regions. The prevalence of global acute malnutrition was below 10 percent in all surveyed woredas of Tigray, Oromiya and SNNPR except in Bona in SNNPR where Global Acute Malnutrition (GAM) was 16.4 percent. GAM was also slightly above 10 percent in Chifra and in the surveyed pastoral areas as shown in figure 2. The summary findings of the surveys conducted are presented and discussed in subsequent sections. Figure 1 presents nutrition intervention programmes, nutrition survey coverage and EOS at woreda level.

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### Silti Woreda

Compared with May 2006 survey results with GAM of 12.2 percent, the level of malnutrition in 2007 had decreased though not statistically significant.

### Bona Woreda

The levels of malnutrition were classified as critical. Based on the SAM prevalence of 3.2 percent as defined by Z-score it was estimated that a total of 714 under-five children needed therapeutic and while 2943 were to be enrolled in supplementary feeding interventions.

## SNNP REGION

### SILTE ZONE

#### • Silti Woreda

A 23 by 33 cluster nutrition survey using the SMART methodology was conducted by GOAL in Silti woreda in March 2007 to serve as an end line evaluation of its CTC programme that had been implemented for eight months and handed over to the woreda health sector in January 2007. A total of 763 children aged 6-59 months were surveyed. Retrospective mortality information was collected from 2690 individuals using 90 days recall period. The Data were analysed using Nutrisurvey SMART software.

**Nutrition:** The prevalence of GAM was estimated at 8.9 percent with 0.7 percent Severe Acute Malnutrition (SAM) while bilateral oedema was 0.1 percent. GAM was relatively higher among young (6-29 months) than among older children (30-59 months). Compared with May 2006 survey results with GAM of 12.2 percent, the level of malnutrition in 2007 had decreased though not statistically significant. The prevalence of malnutrition was classified as poor based on the national assessment guideline and typical in Ethiopian context.

**Health:** Mortality rates with CMR at 0.11/10,000/day and under five mortality rate at 0.16/10,000/day fell below the average levels for developing countries. Both crude and under five death rates had decreased compared to the May 2006 levels of 0.46 and 0.94/10,000/day respectively. Morbidity in children was estimated at 23.9 percent with acute watery diarrhea being top on the list of morbidities. Immunization coverage for BCG was 57.3 percent and measles 75.1 percent. Vitamin A coverage was generally higher at 95.0 percent. About 10 percent of the population has access to safe drinking water.

**Livelihood/Food Security:** According to the SNNPR Livelihood Profiles by FewNet in January 2006, large portion of the woreda lies within Alaba-Mareko Lowland Pepper LZ. It was reported that at the time of the survey the food security situation was satisfactory. The woreda received adequate rain during previous

*meher* & the current *belg* seasons. The communities interviewed rated the livestock and pasture conditions as average (42.4 percent) and good (63.6 percent) respectively.

#### Conclusion & Recommendations:

The prevalence of global acute malnutrition (8.9 percent) was relatively lower than in 2006 at the same season indicating an improvement. Mortality was within acceptable limits. This was an indication of the normal food security situation in the woreda at the time of the survey. However, there was no improvement in vaccination coverage. Access to clean water remained a concern to be addressed in the woreda. It was recommended to improve vaccination coverage and assure proper close monitoring during the upcoming hunger season.

### SIDAMA ZONE

#### • Bona Woreda

A multi-agency standard nutrition 20 x36 cluster survey using the SMART methodology was conducted in Bona Woreda in May 2007 after rapid assessment results indicated a deteriorating nutritional status in April. A sample size of 720 children aged 6-59 months participated in the survey.

**Nutrition:** The prevalence of global and severe acute malnutrition was as 16.4 and 3.2 percent respectively. No a single oedema case was reported. MUAC results mirrored that estimates by WHZ. No significant different between boys and girls. The levels of malnutrition were classified as critical according to the national guideline. Based on the SAM prevalence of 3.2 percent as defined by WHZ-score it was estimated that a total of 714 under five children needed therapeutic and while 2943 were to be enrolled in supplementary feeding interventions. However, the admission criteria are based on weight for height percentage median bringing down the number of children that would be enrolled in TFP and SFP to 434 and 2639 respectively. Bona is a newly established woreda, thus, no baseline data were available for comparison.

**Health:** The CMR was found to be 0.43/10,000/day while under five mortality rate was 1.1/10,000/day. No baseline data on previous levels of death rate was available in the woreda; however, under five mortality rates indicated an emergency that was not critical according to the national guidelines. Retrospective morbidity two weeks preceding the survey indicated that Acute Watery Diarrhoea (AWD) was most prevalent accounting for 36.8 percent of the total reported morbidity. Scabies ranked second with 19.1 percent. The overall morbidity prevalence was modest at 21.1 percent.

Measles immunization coverage both routine and during Enhanced Outreach Strategy (EOS) campaign was 77 percent, 11 percentage points higher than the national average. BCG confirmed by scar trailed at 46.1 percent far below the national average. Vitamin supplementation coverage in the last 6 months was somewhat lower at 58.9 percent. Table 1 summarises the survey results conducted in SNNPR. Generally the assessed and reported indicators varied considerably across the woredas in the region.

**Livelihood/Food Security:** The main (94.4 percent) livelihood of the communities in Bona is subsistence agriculture complemented by casual labour. However, at the time of survey, 23 percent of the interviewed households were purchasing food. About 63 percent of the interviewed households were eating two meals per day to cope with the deteriorating food situation in the woreda. Food and nutrition interventions in the surveyed woreda are presented in Table 2.

**Conclusion:** The nutritional status in the woreda was critical. SC/OTP programme was recommended and immediately initiated by Save the Children US in Ethiopia funded by UN OCHA. It was also recommended to strengthen the EOS/ TSFP intervention in Bona including distributing TSFP food on monthly basis rather than once in three months to take care of children that were not captured by the EOS screening programme and prevent further worsening of the children's nutritional status. Improvement in water services and general health education to address the AWD was also recommended.

● **Dale and Aleta Wondo woredas**

ACF conducted a 16 x 43 standard nutrition survey in the Coffee Livelihood Zone of Dale and Aleta Wondo woredas as a follow up of the December 2006 survey. At the time of preparing this bulletin survey report was still not yet submitted to ENCU and hence the presentation is limited to the anthropometry and mortality results.

The prevalence of global acute malnutrition was estimated at 9.1 percent and SAM at 0.9 percent. Despite that the current survey was conducted relatively in the hunger season, there was a statistically significant decrease in the level of acute malnutrition from 16.4 percent GAM (CI: 13.7-19.2 percent) in December 2006 to 9.1 percent (CI6.6-11.6 percent) in June 2007.

The crude and under five mortality rates were estimated at 0.05 and 0.23/10,000/day respectively, far below the emergency levels. Contrary to acute malnutrition, there was no significant decrease in both crude and under five mortality rates between the two surveys.



**Dale & Aleta Wondo Woredas**

Despite that the current survey was conducted relatively in the hunger season, there was a statistically significant decrease in the level of acute malnutrition from 16.4 percent in December 2006 to 9.1 percent in June 2007.

**Table 1: Survey Results for SNNPR**

Key indicators	Sidama zone		Silti zone
	Bona May 20-27	Dale & Aleta Wondo CLZ June	Silti 23-28 March
% GAM in Z-scores (95% CI)	16.4 (12.3-20.6)	9.1 (6.6-11.6)	8.9 (6.1-11.8)
% SAM Z-scores (95% CI)	3.2 (1.3-5.1)	0.9 (0.1-1.8)	0.7(0.1-1.2)
% Kwashiorkor	1.1	0.2	0.1
CMR Death/10,000/day (95% CI)	0.43 (0.18-0.67)	0.05 (0.0-0.15)	0.11 (0.0-0.23)
U5MR Death//10,000/day (95% CI)	1.12 (0.38-1.85)	0.23 (0.0-1.06)	0.16 (0.0-0.44)
Major causes of U5MR	Malnutrition & unknown	NR*	Unknown
% Morbidity	21.1	NR	23.9
Major illnesses or symptoms	Diariahoea & scabies	NR	AWD
% Measles coverage by card (95% CI)	4.0 (2.3-6.7)	NR	5.1(CI: NR)
% Measles coverage by card + recall (95% CI)	73.0 (67.9-77.5)	NR	75.1 (CI: NR)
% BCG coverage (scar) (95% CI)	46.1(40.9-51.4)	NR	57.3 (CI: NR)
% Vitamin A in past 6 months (95% CI)	58.9 (53.0-63.4)	NR	95.0 (CI: NR)

\* Not Reported

**Table 2: Food and Nutrition Interventions in Surveyed Woredas of SNNPR**

	Sidama Zone			Silti Zone
	Bona	Dale	Aleta Wondo	Silti
Estimated population size	111,495	406,354	368038	162,807
Estimated Under Five population	22,299	81,271	73,608	32,561
Productive Safety Net – No of beneficiaries	NO	23,550	23,490	19,841
% of rural population	0.0	6.0	6.4	12.2
Food Aid Jan-June 07 – No of beneficiaries	NO	NO	NO	NO
% of rural population	0.0	0.0	0.0	0.0
EOS- 6th round screening	Dec. 2006	No	Dec. 2006	Dec. 2006
No of children acutely malnourished*	2,517	No	568	3,105
As % of screened children	13.0	0.0	8.6	10.4
Therapeutic Feeding Unit	Bona HC	Bokaso HC Mesenkela HC Yirgalem Hospital	Aleta Wondo HC Chiko HC	No
Outreach Therapeutic Programme	Yes SC-US	Yes ACF	Yes ACF	Yes GOAL

\* MUAC below 12.0 cm and/or oedema



# ENCU

## Meta Robi/Ada Berga and Abuna Gindberet Woredas

The levels of malnutrition in Meta Robi and Ada Berga were classified as poor and typical for chronically malnourished communities.

## OROMIA REGION

### WEST SHEWA ZONE

#### • Meta Robi/Ada Berga and Abuna Gindberet Woredas

Based on the reports of deteriorating food security by the Multi Agency Monitoring Team, DPPA requested SCUK to conduct nutrition surveys in most affected woredas of West Shewa zone. Two separate surveys, one in Meta Robi/Ada Berga and the second in Abuna Gindberet woreda, were undertaken from 24 to 28 May 2007 using the SMART methodology. The findings are summarized in Table 3 and discussed in subsequent topics below.

**Nutrition:** The prevalence of global acute malnutrition was estimated at 6.8 percent in Meta Robi/Ada Berga and 5.1 percent in Abuna Gindberet. Severe acute malnutrition was 0.5 and 0.3 percent in (Meta Robi/Ada Berga) and Abuna Gindberet respectively. No previous surveys had been conducted in all the survey woredas to allow comparison of the current findings. According to the national guideline the levels of malnutrition in Meta Robi/Ada Berga and Abuna Gindberet were classified as poor and typical for chronically malnourished communities.

**Health:** Both CMR and U5MR were low and within the non-emergency levels, with CMR of 0.08 and U5MR of 0.24 for Meta Robi/Ada Berga and CMR of 0.13 and U5MR of 0.89/10,000/day in Abuna Gindberet woreda. Overall morbidity in children was low at 15.2 and 7.6 percent in Meta Robi/Ada Berga and Abuna Gindberet respectively. Diarrhea & cough were the main causes of morbidity among children.

Immunization coverage was below average as indicated by low BCG coverage of 38.0 percent in Meta Robi/Ada Berga and 20.6 percent in Abuna Gindberet woreda. Measles vaccination (card + recall) coverage was also low both in Meta Robi/Ada Berga (64.2 percent) and Abuna Gindberet (69.5 percent). Vitamin A supplementation was higher at 76.6 and 81.6 percent in Meta Robi/Ada Berga and Abuna Gindberet respectively. Access to health services was gener-

ally described as poor in the lowland parts.

**Livelihood/Food Security:** Majority of the population in Meta Robi/Ada Berga and Abuna Gindberet woredas relies on agriculture and benefit from both *meher* and *belg* seasons with high dependence on *meher* rains. The previous harvest was reported below normal due to the effect of flood and landslide during the previous *keremt* season where the lowlands were more affected and displaced many households.

Shortage of grazing land and livestock disease was reported in the lowland parts of Abuna Gindeberet woreda. These woredas became food insecure in the recent years due to population growth, declining landholding, degradation, poor and untimely rain falls. A total of 50,995 beneficiaries in Meta Robi/Ada Berga and Abuna Gindberet woredas were receiving emergency food assistance. Table 4 shows food and nutrition interventions in the surveyed woredas in Oromia region.

**Conclusion:** The prevalence of global acute malnutrition in the three surveyed woredas was found to be low at the time of the survey while the food security situation in the lowland areas remained poor. Geographic bias might partly explained the low prevalence of acute malnutrition as the nutritional status of the lowland might have been masked by the effects of less affected agro ecological zones. In such a situation where the distribution of malnutrition was heterogeneous and highly localized, it would have been more appropriate to do the survey by agro ecological basis as this would help to reflect the situation in the lowland areas.

**Recommendations:** Given the poor food security situation in the lowland areas the following recommendations were made to prevent further deterioration of the situation:

- Continue with the ongoing emergency relief food assistance throughout the

upcoming hunger season targeting the lowland population in all the three woredas.

- Strengthening the EPI programme in all the surveyed woredas.
- Close monitoring of the overall situation with particular attention to lowland population.

## EAST HARARGE ZONE

### ● Melka Bello Woreda

A standard nutrition survey was conducted in Melka Bello by Save the Children UK using a 24 by 30 two stage cluster sampling SMART methodology. A sample size of 720 under five children and 2895 individuals were interviewed to estimate the levels of malnutrition and crude death rate respectively. The survey was conducted among other things to provide information for IMC programming.

**Nutrition:** The nutritional status in Melka Bello was reported as "typical" with 6.2 percent global acute malnutrition. Severe acute malnutrition levels were estimated at 0.6 percent. No baseline data in the woreda were available for comparison.

**Health:** The crude and under five mortality rates were estimated at 0.07 and 0.14/10,000/day respectively, both falling within the normal levels. Morbidity in children was modest estimated at 18.0 percent. Diarrheal disease was the most common cause of morbidity. It was reported that the health care service and EPI coverage was below the national coverage as indicated by low BCG and measles (card and recall) vaccination coverage rates of 55.8 and 41.0 percent respectively. Vitamin A supplementation was estimated at 68.6 percent.

**Livelihood/Food Security:** Majority of the population is agrarian and relies on rain fed agriculture and described as highly *meher* dependent. The main cash crops include *chat* and coffee. It was reported that the woreda experienced crop failure in the previous five years due to poor performance of both the *keremt* and *belg* rains and hence the area was beneficiary of food aid in the

past years. However, a relatively better food security situation was reported at the time of the survey due to better performance of *meher* rain in 2006. At the time of the survey 80 percent of the households interviewed stated that the current *belg* rain started one month later than its usual time of onset, hence assumed to affect the *belg* harvest. A total of 18 *kebeles* were beneficiary of Productive Safety Net Programme (PSNP) while four others were assisted through an emergency relief programme.

### Conclusion & Recommendations:

The over all nutritional status in Melka Bello was normal as explained by low prevalence of global acute malnutrition as well as acceptable levels of crude and under five mortality rates. Food security was satisfactory. The performance of the *belg* harvest would determine whether the nutrition situation in the *belg*-dependent areas was likely to deteriorate or not in the coming months. In the mean time it was recommended to continue the existing PSNP and strengthen the routine EPI program with close monitoring of the *belg*-dependent communities.



### Melka Bello Woreda

The nutritional status in Melka Bello was reported as "typical". The crude and under five mortality rates were within the normal levels.

**Table 3: Survey Results for Oromia**

Key indicators	East Hararge zone	West Shewa zone	
	Melka Bello March 22- 4 April	Meta Robi & Ada Berga 24-28 May	Abuna gindberet 24-28 May
% GAM in Z-scores (95% CI)	6.2 (4.3-8.0)	6.8 (5.0 - 8.7)	5.1(CI: 3.7 - 6.5)
% SAM n Z-scores (95% CI)	0.6 (0.0-1.1)	0.5 (0.0 - 1.1)	0.3 (0.0 - 0.6)
% Kwashiorkor	0.0	0.0	0.0
CMR Death/10,000/day (95% CI)	0.07(0.00- 0.16)	0.08 (0.0-0.18)	0.13 (0.0-0.28)
U5MR Death/10,000/day (95% CI)	0.14 (0.0- 0.38)	0.24 (0.0-0.71)	0.89 (0.0-2.50)
% Major causes of U5MR	NR *	NR	Diarrhoea
% Morbidity	18.0	15.2	7.6
Major illnesses or symptoms	Diarrhea & Cough	Diarrhea & Cough	Diarrhoea & Cough
%Measles coverage by card (95% CI)	12.0 (4.3-19.7)	5.6 (1.0-10.1)	1.2 (0.0-2.4)
%Measles coverage by card + recall (95% CI)	55.8 (48.0-63.6)	64.2 (54.4-73.9)	69.5 (60.7-78.2)
% BCG coverage (scar) (95% CI)	41.0 (31.8-50.2)	38.0 (30.7-45.2)	20.6 (14.5-26.7)
% Vitamin A in past 6 months (95% CI)	68.6 (60.2-77.0)	76.6 (69.7-83.5)	81.6 (76.2-87.0)

\* Not Reported

**Table 4: Food and Nutrition Interventions in Surveyed Woredas of Oromia**

Region	East Hararge Zone	West Shewa Zone		
	Melka Bello	Meta Robi	Ada Berga	Abuna Gindberet
Estimated population size	146,051	144,252	117,922	200,522
Estimated Under Five population	29,210	28,850	23,584	40,104
Productive Safety Net – No of beneficiaries	24,626	No	No	No
% of rural population	16.9%	0.0	0.0	0.0
Food Aid April-June 07 – No of beneficiaries	No	36,537	4,906	9,510
% of rural population	0.0	25.0	4.2	4.7
EOS Screening	May 2006	May 2007	May 2007	No
No of children acutely malnourished*	1,849	1,245	851	No
As a % of screened children	6.3	5.7	4.1	0.0
Therapeutic Feeding Unit	No	No	No	No
Outreach Therapeutic Programme	No	No	No	No

\* MUAC below 12.0 cm and/or oedema



# CONCERN

## Chifra Woreda

Considering that the overall mean Z-score of the study population was about -1 WHZ score, ENCU suspected that the SAM based on the WHZ was underestimated and recommended OTP programme in Chifra woreda.

## AFAR and SOMALI REGION

### AFAR REGION

### ZONE ONE

#### • Chifra Woreda

A 21x30 cluster nutrition survey was conducted in Chifra woreda using the SMART methodology. A total of 639 children aged between 6-59 months was sampled and information on mortality was gathered from 2622 individuals within a 90 days recall period. The survey was conducted by Save the Children UK in collaboration with the Afar DPPB.

**Nutrition:** The prevalence of GAM and SAM was estimated at 11.1 and 0.3 percent, respectively. No a single oedema case was reported. On the other hand severe acute malnutrition estimated by MUAC <11cm was five times higher (at 1.6 percent) than that was estimated by weight for height Z-score. Based on the WHZ SAM results no a single child was eligible for admission in the OTP programme. Considering that the overall mean Z-score of the study population was about -1 WHZ score, ENCU suspected that the SAM based on the WHZ was underestimated and recommended OTP programme in Chifra woreda.

No significant difference among boys and girls was noted. No baseline data to compare as this was the first time the survey was conducted in Chifra woreda. Taking into account presence of malnutrition aggravating factors in the woreda, the level of malnutrition fell into the serious category.

**Health:** The crude and under five death rates were 0.41 and 0.93/10,000/day respectively. No baseline data to compare with the current survey, however, the CMR was somehow higher compared to levels found in developing countries while that of under five was within the normal according to the national guidelines.

The overall reported morbidity within two weeks preceding the survey was relatively low at 13.6 percent. Of the report-

ed illnesses, fever accounted for above 40 percent while AWD and cough were responsible for about 24 and 23 percent respectively.

Immunization coverage as estimated by measles was about 47 percent. BCG coverage confirmed by scar was extremely low trailing at below 10 percent (8.9 percent). Vitamin A coverage was 54.1 percent still considered low compared with the national average.

**Livelihood/Food Security:** Chifra woreda livelihood depends mainly on livestock and its products. Unfortunately livestock were threatened by cumulative effect of recurrent droughts resulting from poor performance of *Karma* and complete failure of *Sugum* rains. Generally the food security was reported to be poor and was expected to deteriorate for three to four weeks more. The drought was also reported to have affected school attendance and unusual drop out of 95 percent was reported in Samsam primary school.

At the time of survey pasture was a great problem and animal conditions were described as average by the livestock experts. Livestock prices had decreased by 50 percent compared to same period in 2006 because of the poor animal conditions. Food prices was reported to be stable with exception of wheat

Herds of livestock were migrating from the woreda to other areas like Warebabo (south Wollo zone) and Hebru, Mille, Aura and Teru in search for good pasture. 2007 was described as the worst in the last five years in the woreda. The administration in the woreda informed the survey team that, the livestock migration was causing some conflict around Awash River.

**Conclusion:** The nutritional status in the woreda was classified as serious based on the national categorization and Sphere Standard. The big difference in SAM estimated by WHZ and MUAC was of concern. This was the first survey in the woreda and thus it was not



# ENCOUNTER

## Elkare and Hargele Woredas

The levels of malnutrition of 15.7 percent was classified as critical and found to have been on the higher side compared to the previous survey results of August 2006.

possible to compare both malnutrition and death rate. PSNP and EOS interventions were recommended to be strengthened. The region also asked food assistance from DPPA for 1555 individuals. SC/OTP programme was recommended as well. IMC was discussing with Afar authorities to start the SC/OTP intervention.

Food security prospect was expected to worsen further if no interventions were to be made. Reduction of number of meals per day as a coping strategy was an indication that household food security had started been stretched. Normalization depended much on the *Sugum* (rains in June)

### SOMALI REGION

#### AFDER AND LIBEN ZONE

- **Elkare and Hargele Woredas**

A 15x 30 cluster nutrition survey was conducted in Erkaale and Hargele woredas by the SC UK between March and April 2007 using the SMART methodology. Sample size for children aged 6-59 months was 459. Information on mortality within 90 days of recall was collected from 2085 individuals in order to estimate the crude and under five death rates.

**Nutrition:** The prevalence of GAM was 15.7 percent while SAM was low at 0.9 percent. No significant difference in levels of malnutrition between boys and girls. No Oedema cases were reported. Based on survey results a total of 190 under five children needed SC/OTP nutrition services while the corresponding figure for SFP was estimated to be 3123.

The levels of malnutrition reported in April 2007 had increased significantly compared levels of GAM of 10.5 percent that was reported in August 2006. The two surveys were conducted in two different seasons thereby confounding the interpretation and nature of the increase. The levels of malnutrition were classified as critical. A summary of nutrition, health and food security situations in Afar and Somali regions is presented in Table 5.

**Health:** Based on the survey results crude mortality rate was

0.57/10,000/day. The under five mortality rate was 2.2/10,000/day. According to the national guideline, the levels of death rate among under five was classified as serious and passed the emergency threshold for developing countries and Sub Saharan Africa. Compared to the August 2006 findings, the CMR had slightly decreased while that of under five had considerably increased. The increased death rate was likely to be due to AWD that was reported to have led to several deaths especially in Elkare woreda. As explained earlier seasonality limits objective comparison of the results in between two surveys.

The overall morbidity two weeks preceding the survey was about 40 percent with a slight increase compared to the 30.5 percent in August 2006. Diarrhoea continued to be top on morbidity list followed by cough and fever. Expanded programme for immunization in the two woredas were far below the national averages. Measles coverage stood at 38.3 percent while BCG was just above five percent. Vitamin A supplementation decreased significantly from 42.5 percent in August 2006 to 19 percent in April 2007. The difference could be explained by the fact that vitamin A supplementation is provided through EOS programme at six months interval. By the time of the survey more than six months had passed since the previous EOS vitamin A supplementation. Generally immunization coverage in the woreda was low in both rounds of surveys.

**Livelihood/Food Security:** The food security in the two woredas was described as poor resulting from poor *Gu* rains or no harvest in 2006. Animal conditions were explained as average in areas with relatively good pasture. However, milk for children was reported to have been decreased. There were no reliable market for livestock due to Rift Valley Fever animal and meat export ban and other reasons. *Deyr* rains were reported to be better compared with 2006 and improved pasture and harvest in the woreda were expected. Table 6 below shows food and nutrition interventions undertaken in the surveyed woredas in Afar and Somali regions.

However, before the nutrition survey was conducted Islamic Relief implemented SFP in 10 sites (5 in Elkare and 5 in Hargele) in the two woredas. It was suspected that the coverage of the SFP was inadequate.

**Conclusion:** The levels of malnutrition of 15.7 percent was classified as critical and found to have been on the higher side compared to the previous survey. Mortality among under five children had also passed the emergency threshold level whose large part was likely explained by AWD. It was recommended to closely monitor the situation following relatively high levels of morbidity especially AWD coupled with deteriorating trend of food security.

**Table 5: Survey Results for Afar and Somali Region**

Key indicators	Afar		Somali	
	Zone one		Afder zone	
	Chefera	Elkare and Hargele		
	May 29-7	June	March 26-7	April
% GAM in Z-scores (95% CI)	11.1	(8.2-14.0)	15.7	(11.6-19.8)
% SAM n Z-scores (95% CI)	0.3	(0.0-0.7)	0.9	(0.0-1.9)
% Kwashiorkor	0.0		0.0	
CMR Death/10,000/day (95% CI)	0.41	(0.12-0.69)	0.57	(0.24-0.91)
U5MR Death/10,000/day (95% CI)	0.93	(0.14-1.72)	2.23	(0.0-4.5)
Major causes of U5MR	NR *		AWD	
% Morbidity	13.6	(CI: NR)	40.1	(29.9-50.3)
Major illnesses or symptoms	Diarrhoea, ARI, Fever		Diarrhea, ARI & Fever	
% Measles coverage by card (95% CI)	0.0		0.2	(0.0-0.7)
% Measles coverage by card + recall (95% CI)	47.1	(36.2-58.1)	38.3	(26.5-50.1)
% BCG coverage (scar) (95% CI)	8.9	(4.5-13.3)	5.2	(1.3-9.1)
% Vitamin A in past 6 months (95% CI)	54.1	(43.3-65.1)	19.0	(8.2-29.7)

\* Not Reported

**Table 6: Food and Nutrition Interventions in Surveyed Woredas of Afar and Somali**

	Afar		Somali	
	Zone One		Afder zone	
	Chefera	Elkare	Hargele	
Estimated population size	89,505	40,192	74,182	
Estimated Under Five population	17,901	8,038	14836	
Productive Safety Net – No of beneficiaries	30,000	No	No	No
% of rural population	33.5	0.0	0.0	0.0
Food Aid Jan-June 07 – No of beneficiaries	No	No	No	No
% of rural population	0.0	0.0	0.0	0.0
EOS- Screening	April 2007	NO	NO	NO
No of children acutely malnourished*	2,517	NO	NO	NO
As a % of screened children	21.0	0.0	0.0	0.0
Therapeutic Feeding Unit	No	No	No	No
Outreach Therapeutic Programme	No	No	No	No

\* MUAC below 12.0 cm and/or oedema



# ENCOUNTER

## TIGRAY REGION

The nutrition situation was considered normal in all the livelihood zones with no significant difference in the prevalence of acute malnutrition.

## TIGRAY REGION

In the second quarter of 2007, a total of eight standardized nutrition surveys were conducted in Tigray region by regional ENCU/DPPB. The main objective was to gather baseline nutrition information following the newly established livelihood zones, which were done around 2006/2007. The livelihood zones covered included Atsbi Wenberta Highland LZ, Eastern plateau LZ, Enderta Dry midland LZ, Raya Valley LZ, Central Mixed Crop LZ, West Central Teff LZ, Middle Tekeze LZ and Werei Catchment LZ. At the time of compiling this bulletin the final reports for all eight surveys were still being prepared and hence the findings below are from the preliminary reports. Table 6 presents the summary findings of the surveys carried out in the eight livelihood zones.

**Nutrition:** The prevalence of Global Acute Malnutrition and Severe Acute Malnutrition in the 8 zones ranged from 5.1 to 9.9 and 0.1 to 1.1 percent respectively. According to the national guideline the nutrition situation was considered normal in all the livelihood zones with no significant difference in the prevalence of acute malnutrition. It was however, surprising that standard deviation of weight-for-height in the survey results of six livelihood zones were slightly below the cut off points. If there will be no changes in the final analysis, then the prevalence of acute malnutrition in these zones might have been underestimated. Since there were no previous surveys conducted on livelihood basis, data for comparison were not available.

**Health:** Morbidity in children ranged from 27.7 to 45.5 percent. On average one out of three children suffered from at least one or more illnesses. Diarrhea and coughing were the major illnesses reported. Both the CMR and U5MR were normal ranging from 0.04 to 0.33 and 0.14 to 0.86 deaths/10,000/day respectively. Measles vaccination (card + recall) coverage was one of the highest (88.2 to 94.6 percent) and the coverage for BCG was above average ranging from 62.9 to 79.7 percent. No information on water and sanitation was reported.

**Livelihood/Food Security:** The information on livelihood and food security incorporated in this bulletin has been extracted from the Tigray Livelihood Profiles developed by Livelihood Integration Unit/DPPA, 2006/2007. The agricultural activities in most of these zones are predominantly depending on *keremt* rain which starts in June and ends up in September. Though the levels vary, all livelihood zones practice mixed farming with crop and livestock production. Six livelihood zones out of eight were reported to have chronic food insecurity due to extensive degradation, poor soil fertility and erratic rain fall. However, Raya Valley and West Central LZs were generally considered to have good food security if not affected by erratic rainfall. All livelihood zones were the beneficiaries of PSNP and EOS programmes.

The livestock sales are important sources of income for better off households while PSNP and wage labour were rated as the main sources of income for the poor. The poor households earn 10-30 percent of their annual food requirement from PSNP. The period between June to September marks the peak hunger season when the *meher* harvest is depleted and during which households get most of their food through purchase. PSNP and therapeutic feeding units were the food and nutrition interventions respectively, implemented in the surveyed livelihoods as summarized in Table 8.

**Conclusion:** The nutrition situation with 5.1 to 9.9 percent GAM was found to be typical in the post harvest period and in an area where most of the livelihood zones are described as chronically food insecure. Continuation of the existing PSNP and EOS/TSFP with close monitoring was recommended as the nutritional status was expected to deteriorate around August to September during the hunger season.

**Table 7: Survey Results for Tigray**

Key indicators	Eastern zone		Central & Southern zones	Southern zone	Eastern & Central zone	Central and Southern Zone	North Western, Central & Southern zone	North Western & Central zones
	Atsbi wenberta Highland LZ 26 March - 04 April	Eastern plateau LZ 04-18 April	Enderta drymidland LZ 26 March - 03 April	Raya valley LZ 11-19 April	Central mixed crop LZ 26 March - 05 April	Werie Catchment LZ 05-15 May	Middle Tekeze LZ 19-26 May	West central Teff LZ 23 April - 01 May
% GAM in Z-scores (95% CI)	6.8 (5.0-8.6)	6.3 (4.6-8.0)	6.8 (5.0-8.5)	5.1 (3.5-6.8)	9.9 (7.5-12.2)	9.1 (6.5-11.6)	8.0 (6.1-9.9)	8.2 (6.3-10.0)
% SAM n Z-scores (95% CI)	1.1 (0.4-1.8)	0.1 (0.0-0.4)	0.2 (0.0-0.4)	0.2 (0.0-0.4)	0.1 (0.0-0.4)	0.4 (0.0-0.9)	0.5 (0.0-1.1)	0.5 (0.0-1.0)
% Kwashiorkor	0.2	0.1	0.2	0.2	0.0		0.0	0.3
CMR Death/10,000/day (95% CI)	0.29 (0.02-0.56)	0.33 (0.13-0.53)	0.07 (0.0-0.14)	0.25 (0.05-0.46)	0.08 (0.02-0.14)	0.04 (0.0-0.14)	0.16 (0.03-0.28)	0.17 (0.0-0.49)
U5MR Death//10,000/day (95% CI)	0.86 (-0.94-2.66)	0.26 (0.0-0.98)	0.14 (0.0-0.3)	0.32 (0.03-0.62)	0.19 (0.0-0.4)	0.20 (0.0-0.77)	0.33 (0.0-0.83)	0.21 (0.0-0.74)
Major causes of U5MR	Diarrhoea & Cough	NR *	NR	NR	NR	NR	NR	Diarrhoea & Cough
% Morbidity	45.5	30.2	41.5	27.7	30	27.3	29.5	31.1
Major illnesses or symptoms	Diarrhoea & Cough	Diarrhoea & Cough	Cough & Fever	Diarrhoea & Cough	Fever	Diarrhoea & Cough	Diarrhoea & Cough	Diarrhoea & Cough
% Measles coverage by card (95% CI)	60.3 (55.3-65.3)	69.67 (67.0-73.5)	39.2 (CI: NR)	18.7 (CI: NR)	43.6 (CI: NR)	56.4 (52.8-60.10)	54.6 (49.5-59.6)	61.5 (58.0-65.0)
% Measles coverage by card+ recall (95% CI)	92.9 (89.3-95.4)	93.4% (78.0- 83.0)	88.2 (86 - 91)	91.0 (72.0 - 79.0)	94.5 (93.0 - 96.0)	94.6 (92.9-96.2)	94.6 (91.7-96.5)	92.1 (88.8-94.5)
% BCG coverage (scar) (95% CI)	77.8 (72.8-82.8)	79.65 (75.2-83.4)	64.5 (CI: NR)	62.85 (CI: NR)	68.6 (CI: NR)	66.1% (62.5-69.60)	68.8 (63.9-73.3)	73.3 (68.7-77.7)

\* Not Reported

**Table 8: Food and Nutrition Interventions in Surveyed Woredas of Tigray**

	Eastern zone		Central & Southern zones	Southern zone	Eastern & Central zone	North Western & Central zones	North Western, Central & Southern zone	Central and Southern Zone
	Atsbi wenberta Highland LZ	Eastern plateau LZ	Enderta drymidland LZ	Raya valley LZ	Central mixed crop LZ	West central Teff LZ	Middle Tekeze LZ	Werie Catchment LZ
Estimated population size	104,747	422,556	400,297	204,547	342,291	403,291	384,561	199,673
Estimated Under Five population	20,949	84,511	80,059	40,909	68,458	80,658	76,912	39,935
Productive Safety Net – No of beneficiaries	61,818	222,764	194,913	99,496	149,007	63,250	119,059	82,925
% of rural population	59.0	53.0	49.0	48.6	44.0	16.0	31.0	41.5
-June 07 – No of beneficiaries	No	No	No	No	No	No	No	No
% of rural population	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EOS Screening	June 2007	June 2007	June 2007	June 2007	June 2007	June 2007	June 2007	June 2007
No of children acutely malnourished*	2,467	7,818	5,855	3,502	3,608	4,744	6,294	3,288
As a % of screened children	15.0	15.0	10.0	10.0	8.0	7.4	10.1	10.8
Therapeutic Feeding Unit	Yes Freweni HC	Yes Adigrat HS Freweni HC	Yes Samare HC	Yes Alamata HS	Yes Adigrat HS Adwa HS Axum HS	Yes Axum HC Tahtay Maychew HC Shire MCH Shire HS	Yes Samre HC Abi Adi HS	Yes Abi Adi HS Axum HS
Outreach Therapeutic Programme	No	No	No	No	No	Yes Gov	No	No

\* MUAC below 12.0 cm and/or oedema

## QUALITY CHECK OF ANTHROPOMETRY DATA FROM NUTRITION SURVEYS

Using the Nutrisurvey software for SMART the quality of the anthropometric data of the nutrition surveys was checked. The results are presented in table 9. The indicators used to check the data quality include:

- *Bias in children selection:* The demographic profiles of the survey samples were checked to verify whether the samples were not biased in terms of age and sex as compared with the typical demographic distribution (WHO 2000) for the target children (6-59 months) in the developing world. There was no significant age bias in the 16 surveys presented in this bulletin where the younger age group (6-29 months) lied between 38 to 48 percent close to the likely 49 percent while the older age group, (30-59 months) lied between 52 to 62 percent close to the expected 51 percent. There was no sex bias in any of the 16 surveys.

- *Bias in weight & height measurements:* The quality check on the distribution of the final decimal for weight and height measurements indicated that there was no significant digit preference for all 16 surveys presented in this bulletin.

- *Standard Deviation of WHZ:* The standard deviation of weight-for-height z-scores of 10 surveys out of 16 fell within the plausible range of 0.8-1.2. Surprisingly six out of eight surveys from Tigray region displayed a low SD of WHZ, which might be due to measurement error and or over cleaning of the raw data.

- *Moment of Skew ness & Kurtosis:* All surveys had a moment of skew ness within the acceptable range of plus or minus one indicating that the distribution of WHZ for each survey was symmetrical as to be in the normal distribution. Fourteen of the surveys did not show kurtosis problem while two surveys, i.e. Hargele & Elkere and Dale & Aleta Wondo CLZ exhibited a positive kurtosis indicative of a relatively peaked WHZ distribution.

**Conclusion:** All surveys were in line with the quality check standard criteria except six surveys conducted in Tigray that showed a low SD of WHZ which were likely to underestimate the prevalence of global acute malnutrition. The exhibition of low SD is more common than the other indicators and hence this is an area that requires further investigation and perhaps conducting validation surveys.

ENCU

**Table 9: Results of Survey Quality Check for the Second Quarter**

Agency	Woreda	Digit preference		SD of WHZ	Skewness of WHZ	Kurtosis of WHZ	No. Of WHZ flags (%)	Representative ness of the sample		
		Weight	Height					Age group (in months)	Distribution (%)	Sex Ratio
Islamic Relief/SCUK	Hargele & Elkere	No	No	0.91	0.61	1.81*	0.65	6-29 30-59	46.8 53.2	1.1
SCUK	Chifera	No	No	0.87	0.38	0.53	0	6-29 30-59	42.4 57.6	1.1
SC-UK	Melka Bello	No	No	0.81	0.04	0.45	0.28	6-29 30-59	44.1 55.9	0.9
SC-UK	Meta Robi/Adea Berga	No	No	0.85	0.11	-0.16	0	6-29 30-59	45.4 54.6	1.0
SC-UK	Abuna Gendeberet	No	No	0.84	0.18	-0.15	0	6-29 30-59	46.7 53.3	0.9
GOAL	Silti	No	No	0.80	0.06	0.000	0	6-29 30-59	46.0 54.0	1.0
SNNPRENCU/Muti-agency	Bona	No	No	0.91	-0.11	0.02	0	6-29 30-59	38.0 62.0	0.9
Tigray ENCU/DPPB	Estern Plateau LZ	No	No	0.72**	0.09	0.09	0%	6-29 30-59	43.7 56.3	1.1
Tigray ENCU/DPPB	Western Central LZ	No	No	0.76**	0.27	0.24	0%	6-29 30-59	42.7 57.3	1.0
Tigray ENCU/DPPB	Raya vally LZ	No	No	0.76**	-0.00	-0.23	0%	6-29 30-59	48.3 51.7	1.0
Tigray ENCU/DPPB	Central mixed crop LZ	No	No	0.75**	0.21	0.18	0	6-29 30-59	42.2 57.8	1.0
Tigray ENCU/DPPB	Enderta Dry Midland LZ	No	No	0.79**	0.16	0.27	0.15	6-29 30-59	46.0 54.0	1.1
Tigray ENCU/DPPB	Astebi Womberta Highland LZ	No	No	0.83	0.23	0.59	0.16	6-29 30-59	42.3 57.7	1.1
Tigray ENCU/DPPB	Middle Tekeze LZ	No	No	0.78**	0.15	0.03	0	6-29 30-59	44.3 55.7	1.0
Tigray ENCU/DPPB	Werei Cathment LZ	No	No	0.80	0.08	-0.15	0	6-29 30-59	44.5 55.5	1.1
ACF	Dale & Aleta Wondo CLZ	No	No	0.98	0.51	1.29 *	0.45	6-29 30-59	40.6 59.4	0.9

\* Kurtosis Problem

\*\* Low SD of WHZ



# ENCU

## DATA QUALITY CHECK OF EOS MUAC SCREENING

Beginning of May 2007, ENCU has been conducting data quality checks for the EOS MUAC screening data from all the woredas implementing EOS. Main problems identified included: compilation, summation, unusual levels of malnourished children both moderate and severe and, high prevalence of acute malnutrition among pregnant and lactating women than children.

Feedback on the data quality was provided jointly by UNICEF, WFP and ENCU to the DPPB and RHB at the regional level. So far the feedback was positively received by the regional authorities and other stakeholders. As a result, follow up on the screening process and data compilation were revisited and eventually corrections were made and re-submitted.

UNICEF, WFP, MOH and ENCU found that quality check and provision of feedback had two advantages. First alerts the regional, zone, woreda and individuals conducting the screening that the data are being checked and second, reminds them that they are responsible and accountable for the results, and delays in interventions that may result due poor data quality.

Currently ENCU is in the process of developing a "standard criteria" for the quality check of the EOS MUAC screening data. The criteria will be discussed, agreed and communicated to all stakeholders. It is hoped that the commonly agreed criteria will to a great extent reduce weakness and increase reliability of the EOS data for faster and effective decision making on the interventions.

## NUTRITION SURVEY DATABASE

Table 10 presents the number of standardized nutrition surveys conducted in Ethiopia since 2000. It does not include surveys conducted in resettlement areas, IDP and refugee camps. Since 2000 to June 2007 a total of 443 standard nutrition surveys were conducted. Raw data and final reports of these surveys except few conducted April-June 2007 are kept at ENCU data base.

**Table10: Number of surveys per region and year**

Region	Year								Total
	2000	2001	2002	2003	2004	2005	2006	2007	
SNNPR	9	5	35	30	14	25	20	9	147
Oromia	3	2	20	27	22	20	14	4	112
Amhara	5	9	24	17	9	7	6	2	79
Somali	8	5	5	5	8	11	12	2	56
Tigray	0	0	6	7	3	3	0	8	27
Afar	0	0	4	5	1	6	4	1	21
Gambella	0	0	0	0	0	0	0	0	0
Benshangul									
Gumez	0	0	0	0	0	0	0	0	0
Harare	0	0	0	0	0	0	0	1	1
<b>Total</b>	<b>25</b>	<b>21</b>	<b>94</b>	<b>91</b>	<b>57</b>	<b>72</b>	<b>56</b>	<b>27</b>	<b>443</b>

## PERFORMANCE OF EMERGENCY NUTRITION INTERVENTION PROGRAMMES

Following nutrition assessments, emergency nutrition interventions are recommended and implemented depending on the levels of malnutrition and aggravating factors. Between January and June 2007 several partners were implementing emergency nutrition interventions in various woreda in Ethiopia based on 2006 and 2007 survey results. The table below summarizes TFPs performance based on selected indicators recommended by the national Emergency Nutrition Guidelines and the Sphere Standards.



**Table11: Performances of TFPs implemented by humanitarian agencies in Ethiopia (January - June 2007)**

Agency	Woreda	Time Frame	Type of Programme	Total Admission	Total Exits	Coverage (%)	Recovery (%)	Death Rate (%)	Defaulter Rate (%)
CONCERN	Kalu	Jan-May	TFP	435	267	NA*	230 (86.1)	4.1	5.2
CONCERN	Dessie Zuria	Jan-May	TFP	390	234	NA	190 (81.2)	2.6	7
MSF-Holland	Humera	Jan- Apr	TFP	25	21	NA	16 (76.2)	9.5	14.3
MSF Holland	Abdurafi	Jan-Apr	TFP	20	20	NA	18 (90)	5.0	0
ACF	Aleta Wondo	Jan-May	TFP	492	458	NA	345 (75.3)	0.0	6
ACF	Dale	Jan.-March	TFP	177	401	NA	293 (73.1)	0.0	6.9
MSF-Greece	Addisamen	Jan.-May	TFP	231	251	NA	196 (78.1)	11.2	8.4
GOAL	Derashe	Apr-May	TFP	111	30	98	28(93.3)	6.1	0
ADRA	Kerafo	Jan-Jun	TFP	956	644	77.7	587(91.1)	1.7	6.1
WVE	Kedida Gamela	Jan-June	TFP	212	117	NA	111(94.9)	2.5	4.3
WVE	Damboya	Jan-June	TFP	421	229	NA	221(96.5)	1.3	2.2
WVE	Durame	Jan-June	TFP	21	12	NA	11 (91.7)	0.0	8.3
SC US**	Bona	June-July	TFP	319	79	75.2	41 (51.9)	0.0	0
	Gondar	Jan.-May	TFP	115	115	NA	95 (82.6)	3.5	11.3
	Hiwot Fana Hospital	Jan.-May	TFP	163	160	NA	98 (61.2)	3.1	16.2
Total				4028	3038	NA	2480 (81.6)	2.6	6.5

\* Not available

\*\* 29.1% of the total discharge were transfer out, while non-response was 1.3% up to 1st week of July. The information presented in Table 11 were submitted by partners and from UNICEF data base.



From Table 11 above it is clear that the performance of most of TFP implemented in the various woredas in terms of recovery, death and defaulter rates were all impressive. All the indicators were above the recommended Sphere Standard cut off points except in Bona woreda where the low cure rate was mainly due to high transfer rate of 29.1 percent.

As a result of high recovery rate, out of 3038 children that were discharged from TFPs in the mentioned woredas, 2480 of them equivalent to 81.6 percent were cured. In other words, these children were saved from further nutritional status deterioration and possibly death. Overall death and defaulter rates in the TFPs was generally low summarized at 2.6 and 6.5 percent respectively, both falling within the national and Sphere Standards recommended levels.

One major challenge in the implementation of the emergency nutrition interven-

tions feeding programmes in Ethiopia is calculating the coverage of the feeding programmes. As it can be seen from the Table 11 above, only three (ADRA, GOAL and SC US) out of seven agencies were able to provide information on coverage.

The other challenge is submission of monthly TFP performance reports. According to UNICEF data base dating back from 2003 to 2006 only 52% of the reports were completed.

ENCU calls upon all partners first, to consider and estimate the coverage of the feeding programmes before interventions commences as recommended in Sphere Standards and national guidelines. Second, partners should submit monthly feeding performance reports based on the national format throughout the feeding programme life.

## UPDATE ON THE PROGRESS OF NUTRITION CLUSTER ROLL OUT IN ETHIOPIA

After the Inter-Agency Standing Committee (IASC) generic Terms of Reference (TOR) on the cluster approach was distributed globally, the Ethiopian government in collaboration with humanitarian agencies reviewed and approved the cluster approach roll out in March 2007. UN level cluster leads in collaboration with government sector lead were required by the UN OCHA to coordinate the roll out of each respective cluster. On part of the UN system, UNICEF is the cluster lead for nutrition, water and sanitation.

Coordination is critical for the successful and effective cluster roll out. UNICEF the nutrition cluster lead through ENCU had an advantage of having an already existing Multi-Agency Nutrition Task Force (MANTF). This forum brings together all stakeholders working in emergency nutrition in Ethiopia.

An Adhoc MANTF meeting was held and members briefed about the need of the cluster approach and how it would work. Since MANTF members are more than 100 participants, a small group called "nutrition cluster core group" was

formed. The core group has 29 members from nine NGOs (ACF, CONCERN, CARE, GOAL, IMC, SC-UK, SC-US, WVE and VALID); three government institutions (DPPA, EHNRI, FMOH) and four UN agencies (UNICEF, UNHCR, WFP and WHO). The main tasks of the core group include: preparing the nutrition cluster TOR, action and contingency plans, identify gaps and recommend ways for filling the gaps. The group agreed to meet weekly until its tasks are completed.

By the end of June 2007 the nutrition cluster TOR were being finalized and would be circulated to all MANTF members for information and final comments before send to the government for endorsement and UN OCHA for reference.

The nutrition cluster approach provides a unique opportunity for streamlining decision making with respect to emergency nutrition assessments and responses. Let all stakeholders use the opportunity optimally.

## SUMMARY FINDINGS OF THE MUAC, WFH AND BODY-SHAPE RESEARCH STUDY

ENCU with funds from UNICEF contracted a consultant to conduct a research in May 2006, looking at the relationship between MUAC, WHZ and body shape (sitting to standing height ration) in agrarian and pastoralist populations of Ethiopia. The principal reason to undertake the study was the discordance observed between the prevalence estimates returned by WHZ and MUAC case-definitions during nutrition surveys undertaken in Somali region.

The study investigated the hypothesis that a portion of this observed discrepancy between the prevalence estimates returned by WHZ and MUAC case-definitions was due to differences in body-shape in older or taller children (i.e. age 24 months or height 85 cm) between agrarian and pastoralist populations. Data on sitting height along with standard anthropometric measurements

were collected by SC-UK from Amhara and Somali regions. Data from Afar region were provided by courtesy of CONCERN. A comparative analysis between agrarian and pastoralist was then undertaken using data from 1481 and 2741 children respectively.

The study findings confirmed the hypothesis and showed that:

- SSR (Sitting height to Standing height Ratio) differed between the populations surveyed with pastoralists tending to have significantly lower SSR values (longer legs/shorter trunks) than agrarians.
- WHZ and WHZ case-status were significantly associated with body-shape (SSR) in both pastoralist and agrarians regardless of which reference population (NCHS or WHO) was used to calculate WHZ.

- The effect of body-shape for standard WHZ case-definition was to overestimate prevalence of malnutrition in both groups, the effect being larger in the pastoralist group because of the smaller SSR values.
- MUAC was also associated with body-shape in both groups while MUAC case-definition was not associated with body-shape in both groups.
- No effect of the body-shape on MUAC standard case-definition was detected.

It was concluded that the use of WHZ introduced an upwards bias in prevalence estimates when used in the pastoralist group, unless corrected by body-shape, but no significant bias was noted in the agrarian group.

The study recommended using MUAC in preference of WHZ for estimating prevalence of acute undernutrition in surveys. The study also recommended conducting an operational research into the survey methods using MUAC with the aim of developing a method and guidelines that will enable partners to undertake and analyze such surveys.

The report was shared with MANTF members, Nutrition Technical Working

Group (NTWG) and presented in the June 2007 monthly MANTF meeting. Members recommended that the findings should be further discussed and agree on the way forward. The full research report is available upon request from ENCU.