

### NUTRITION SURVEY OF 6 TO 59 MONTH CHILDREN FROM BUTHIDAUNG TOWNSHIPS, NORTHERN RAKHINE STATE, REPUBLIC OF UNION OF MYANMAR, DECEMBER 2013

**Preliminary Anthropometric Results** 

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- ✓ Action Contre la Faim team for its technical support,
- ✓ And last, but not least, the Action Contre la Faim Nutrition survey team for its enthusiastic efforts and diligence throughout the survey period.

This preliminary report contains nutrition anthropometric indicators of the surveyed areas' 6-59 month children. The final report will also include analysis of mortality, morbidity, Infant and Young Child Feeding (IYCF) practices, Food Security and Livelihood (FSL), Mental Health and Care Practices (MHCP) and Water Sanitation and Hygiene (WASH) indicators. The final report will be disseminated after it is validated in mid-February, 2014.

# Summary of key anthropometric findings in the representative areas of Buthidaung Township where the SMART survey took place:

- GAM was 21.4% (17.9 25.3 95% C.I)
- SAM 3.7% (2.3 6.0 95% C.I)
- Total stunting was 58.6% (50.1 66.6 95% C.I) and severe stunting was 28.6% (22.6 35.5 95% C.I)
- Total underweight was 51.9% (45.4 58.3 95% C.I.) and severe underweight was 17.2 % (12.9 22.6 95% C.I.)



#### Introduction

Action Contre la Faim (ACF) started its intervention in Myanmar in 1994. The first activities launched were water, sanitation and hygiene program in several Townships of the Rakhine Sate (Kyauktaw, Mrauk-U and Minbya) aiming at reducing the mortality rates of the most vulnerable populations. In 1995, Water, Sanitation and Hygiene (WASH) and, Food Security and Livelihood (FSL) programs were implemented in the Northern Rakhine State (NRS).

The first nutrition and mortality survey in NRS was carried out in November 2000. A 2<sup>nd</sup> one was conducted in January 2003. Based on their results showing a prevalence of Global Acute Malnutrition (GAM) above the emergency threshold, ACF started its nutrition activities in the area in September 2003. Since then, the situation has been regularly monitored through nutrition surveys in 2006, 2007, 2008, 2009 and 2010, all taking place during the cold, dry season (November – January). Retrospective mortality surveys were conducted in conjunction with the nutrition surveys until 2008. Mortality surveys have not been carried out in the last years as the demographic and epidemiological situation remains stable in the area, without any main event potentially changing mortality patterns among the population in the area. Due to the tense electoral context in November 2010, a mortality survey could have been perceived negatively by authorities and thus the mortality survey was not envisaged. Two SMART surveys were planned to be carried out in MGD and BTD in 2012 but were cancelled due to the 2012 crisis.

A nutrition survey using Standardized Monitoring & Assessment of Relief Transitions (SMART) methodology took place in Buthidaung Township, between December 3<sup>rd</sup> and 19<sup>th</sup> 2013. A total of 244 out of 283 villages in Buthidaung Township (242,683 out of 254,648 populations)1 were considered for the survey. Exclusion criteria included: the military and police camps and inaccessible areas (due to lack of safe roads and river, security concerns). Exclusion criteria will be elaborated in the final report.

<sup>&</sup>lt;sup>1</sup> UNHCR 2011 Population survey



#### **Nutrition Survey Objectives**

Main objective of the survey:

✓ To assess the prevalence of global and severe acute malnutrition among children from 6 to 59 months old.

Specific objectives of the survey:

- ✓ To evaluate the prevalence of severe and chronic malnutrition among 6-59 month children;
- $\checkmark\,$  To monitor and analyze mortality, morbidity, IYCF, MHCP , WASH, FSL factors linked to malnutrition ;
- ✓ To compare the results with the previous nutrition surveys and to analyze the evolution of the nutritional situation in Buthidaung township;
- ✓ To propose recommendations in terms of program implementation and nutritional surveillance according to the findings.

#### Methodology

#### Sample size

Households were the primary sampling unit and the intended sample size was to give acceptable representative results. The statistics listed below were entered into ENA for SMART<sup>2</sup> software and a representative sample of 358 households (387 households including 7.5% non-response), including 406 children (6-59 month), henceforth referred to as children, was identified. A total of 37 clusters including 12 households per cluster was the intended target for the survey.

- $\checkmark$  20.3% estimated prevalence<sup>3</sup>
- ✓ 5% ± precision<sup>4</sup>
- ✓ 1.5 design effect<sup>5</sup>
- ✓ 7 average household size<sup>6</sup>
- ✓ 18% children under 5<sup>7</sup>
- ✓ 7.5% non-response HH

<sup>&</sup>lt;sup>2</sup> ENA for SMART, version May 4, 2011

<sup>&</sup>lt;sup>3</sup> WFP Household definition 2010, 2011 UNHCR Population survey, ACF SMART Survey 2010

<sup>&</sup>lt;sup>4</sup> SMART. June 2012. Sampling Methods and Sample Size Calculation for the SMART Methodology

<sup>&</sup>lt;sup>5</sup> SMART. June 2012. Sampling Methods and Sample Size Calculation for the SMART Methodology

<sup>&</sup>lt;sup>6</sup> UNHCR 2011 Population survey, ACF SMART Survey 2010

<sup>&</sup>lt;sup>7</sup> ACF SMART Survey 2010



A standard two-stage random cluster sampling methodology was implemented to ensure that each household within the sampling universe had an equal opportunity of being selected. **First stage:** random selection of clusters

A total of 244 villages out of 283 villages (242,683 out of 254,648 populations<sup>8</sup>) from the surveyed areas in Buthidaung Township were entered into ENA for SMART software and 37 clusters were randomly selected in 32 village tracts.

#### Second Stage: random selection of households within clusters

Each cluster was mapped by the team that was assigned the cluster. For villages with more than approximately 150 households, random segmentation selection was implemented<sup>9</sup>. This was followed by arbitrarily numbering each household. A random number table was then used to select 12 households.

#### Results

Data was entered into ENA for SMART to determine nutritional indicators of WHZ, MUAC, WAZ and HAZ using WHO 2006 Growth Standards. Analysis was run without exclusion.

The anthropometric measurements of 430 children were recorded. The number of children was higher than the required 406; therefore a representative sample is ensured.

	Boys		Girls		Total		Ratio
AGE (mo)	no.	%	no.	%	no.	%	Boy:girl
6-17	46	50.0	46	50.0	92	21.2	1.0
18-29	58	50.0	58	50.0	116	26.8	1.0
30-41	56	57.1	42	42.9	98	22.6	1.3
42-53	36	42.9	48	57.1	84	19.4	0.8
54-59	28	65.1	15	34.9	43	9.9	1.9
Total	224	51.7	209	48.3	433	100.0	1.1

#### Table 1: Distribution of age and sex of sample

<sup>9</sup> Sampling Methods and Sample Size Calculation for the SMART Methodology, June 2012

<sup>&</sup>lt;sup>8</sup> UNHCR 2011 Population survey



Results showed that there was no significant difference in age distribution (p=0.257) as well as no significant difference between the number of boy and girl (p=0.471).

#### Weight-for-Height (Wasting)

There were 433 children found in the survey but 3 were refused to take anthropometric measurement and so the anthropometric result showed that for 430 children only.

Weight-for-height is a reflection of the child's weight relative to their height. Wasting is the process where recent significant weight loss is usually the consequence of disease and/or acute starvation<sup>10</sup>.

## Table 2: Prevalence of acute malnutrition based on weight-for-height z-scores (and/or oedema) and by sex

	All	Boys	Girls
	n = 430	n = 222	n = 208
Prevalence of global malnutrition	(92) 21.4 %	(43) 19.4 %	(49) 23.6 %
(<-2 z-score and/or oedema)	(17.9 - 25.3	(14.5 - 25.5	(18.7 - 29.2
	95% C.I.)	95% C.I.)	95% C.I.)
Prevalence of moderate malnutrition	(76) 17.7 %	(35) 15.8 %	(41) 19.7 %
<pre>(&lt;-2 z-score and &gt;=-3 z-score, no</pre>	(14.6 - 21.2	(11.7 - 21.0	(15.2 - 25.2
oedema)	95% C.I.)	95% C.I.)	95% C.I.)
Prevalence of severe malnutrition	(16) 3.7 %	(8) 3.6 %	(8) 3.8 %
(<-3 z-score and/or oedema)	(2.3 - 6.0 95%	(1.7 - 7.4 95%	(2.0 - 7.2 95%
	C.I.)	C.I.)	C.I.)

<sup>&</sup>lt;sup>10</sup> WHO (1995), Physical Status: The use and interpretation of Anthropometry



## Table 3: Prevalence of acute malnutrition by age group, based on weight-for-height z-scores and/or oedema

		Severe (<-3 z-	wasting score)	Mode was (>= -3 ar sco	erate ting nd <-2 z- re )	Nor (> = -2 :	mal z score)	Oed	ema
Age	Total	No.	%	No.	%	No.	%	No.	%
(mo)	no.								
6-17	92	6	6.5	25	27.2	61	66.3	0	0.0
18-29	116	0	0.0	19	16.4	97	83.6	0	0.0
30-41	96	3	3.1	8	8.3	85	88.5	0	0.0
42-53	83	4	4.8	14	16.9	65	78.3	0	0.0
54-59	43	3	7.0	10	23.3	30	69.8	0	0.0
Total	430	16	3.7	76	17.7	338	78.6	0	0.0

#### Mid Upper Arm Circumference (MUAC)

Table 4: Prevalence of acute malnutrition based on MUAC cut off's (and/or oedema) and by sex

	All	Boys	Girls
	n = 430	n = 222	n = 208
Prevalence of global malnutrition	(61) 14.2 %	(18) 8.1 %	(43) 20.7 %
(< 125 mm and/or oedema)	(11.3 - 17.7	(5.2 - 12.4 95%	(15.9 - 26.4
	95% C.I.)	C.I.)	95% C.I.)
Prevalence of moderate malnutrition	(49) 11.4 %	(13) 5.9 %	(36) 17.3 %
(< 125 mm and >= 115 mm, no	(9.0 - 14.3 95%	(3.4 - 9.9 95%	(12.7 - 23.1
oedema)	C.I.)	C.I.)	95% C.I.)
Prevalence of severe malnutrition	(12) 2.8 %	(5) 2.3 %	(7) 3.4 %
(< 115 mm and/or oedema)	(1.6 - 4.8 95%	(1.0 - 5.0 95%	(1.4 - 7.9 95%
	C.I.)	C.I.)	C.I.)



#### Weight-for-Age (Underweight)

Weight-for-age is a reflection of the body mass of the child, which is relative to the age of the child and is influenced by both the height-for-age and the weight-for-height<sup>11</sup>.

Table 5: Prevalence of underwe	ight based on wei	ght-for-age z-scores	by sex
	Build and a set weight		Ny CCA

	All	Boys	Girls
	n = 430	n = 222	n = 208
Prevalence of underweight	(223) 51.9 %	(111) 50.0 %	(112) 53.8 %
(<-2 z-score)	(45.4 - 58.3	(41.7 - 58.3	(45.9 - 61.6
	95% C.I.)	95% C.I.)	95% C.I.)
Prevalence of moderate underweight	(149) 34.7 %	(80) 36.0 %	(69) 33.2 %
(<-2 z-score and >=-3 z-score)	(29.6 - 40.0	(28.7 - 44.1	(27.1 - 39.8
	95% C.I.)	95% C.I.)	95% C.I.)
Prevalence of severe underweight	(74) 17.2 %	(31) 14.0 %	(43) 20.7 %
(<-3 z-score)	(12.9 - 22.6	(9.5 - 20.1	(14.9 - 27.9
	95% C.I.)	95% C.I.)	95% C.I.)

Table 6: Prevalence of underweight by age group, based on weight-for-age z-scores

		Severe underweight (<-3 z-score)		Mode underv (>= -3 ar sco	erate weight nd <-2 z- re )	Nor (> = -2	mal z score)	Oed	ema
Age	Total	No.	%	No.	%	No.	%	No.	%
(mo)	no.								
6-17	92	19	20.7	29	31.5	44	47.8	0	0.0
18-29	116	23	19.8	33	28.4	60	51.7	0	0.0
30-41	96	11	11.5	35	36.5	50	52.1	0	0.0
42-53	83	17	20.5	33	39.8	33	39.8	0	0.0
54-59	43	4	9.3	19	44.2	20	46.5	0	0.0
Total	430	74	17.2	149	34.7	207	48.1	0	0.0

<sup>11</sup> WHO (1995) Physical Status: The use and interpretation of Anthropometry



#### Height-for-Age (Stunting)

Height-for-age shows the linear growth of the child and a deficit shows the long-term cumulative inadequacies of health or nutrition<sup>12</sup>.

Table 7: Prevalence o	of stunting based	on height-for-age	e z-scores and by sex

	All	Boys	Girls
	n = 430	n = 222	n = 208
Prevalence of stunting	(252) 58.6 %	(134) 60.4 %	(118) 56.7 %
(<-2 z-score)	(50.1 - 66.6	(50.4 - 69.5	(48.0 - 65.0
	95% C.I.)	95% C.I.)	95% C.I.)
Prevalence of moderate stunting	(129) 30.0 %	(69) 31.1 %	(60) 28.8 %
(<-2 z-score and >=-3 z-score)	(25.3 - 35.1	(24.6 - 38.4	(22.8 - 35.8
	95% C.I.)	95% C.I.)	95% C.I.)
Prevalence of severe stunting	(123) 28.6 %	(65) 29.3 %	(58) 27.9 %
(<-3 z-score)	(22.6 - 35.5	(21.7 - 38.2	(21.4 - 35.5
	95% C.I.)	95% C.I.)	95% C.I.)

#### Table 8: Prevalence of stunting by age group based on height-for-age z-scores

		Severe stunting (<-3 z-score)		Moderat (>= -3 and	e stunting <-2 z-score )	Normal (> = -2 z score)	
Age (mo)	Total	No.	%	No.	%	No.	%
	no.						
6-17	92	18	19.6	25	27.2	49	53.3
18-29	116	42	36.2	36	31.0	38	32.8
30-41	96	30	31.3	30	31.3	36	37.5
42-53	83	26	31.3	25	30.1	32	38.6
54-59	43	7	16.3	13	30.2	23	53.5
Total	430	123	28.6	129	30.0	178	41.4

<sup>12</sup> WHO (1995) Physical Status: The use and interpretation of Anthropometry



#### Classification

Classification of malnutrition categorized by interpretation of levels are based on the following<sup>13</sup>

- ✓ Wasting: Acceptable (0-5%) / Poor (5%-9%) / Serious (10%-14%) / Critical (≥15%);
- ✓ Underweight: Low (<10%) / Medium (10%-19%) / High (20%-29%) / Very High (≥ 30%).
- ✓ Stunting: Low (less than 20%) / Medium (20%-29%) / High (30%-39%) / Very High (≥ 40%);

#### Table 9: Buthidaung SMART Survey nutrition indicators according to WHO classification

Indicators	WHO Classification
Prevalence of global malnutrition (GAM)	Critical 21.4% (17.0) 25.2.05% (C1)
(<-2 z-score and/or oedema)	Childa 21.4% (17.9 – 23.5 95% C.I)
Prevalence of underweight	$V_{00}$ High 51.0% (45.4 – 58.2.05% C I)
(<-2 z-score)	Very High 51.9% (45.4 – 58.5 95% C.1)
Prevalence of stunting	Very High 58.6% (50.1 $-$ 66.6.95% C I)
(<-2 z-score)	very righ 58.6% (50.1 – 66.6 55% C.f)

#### Preliminary Recommendations Based on Anthropometric Results

- 1. To conduct a nutrition program coverage survey to evaluate the current coverage and the impact of Therapeutic Feeding Program and Supplementary Feeding Program in Buthidaung Township and evaluate the barrier to the nutrition program.
- 2. To Conduct another SMART survey every two years to monitor and compare nutrition anthropometric indicators.
- 3. To conduct an anthropologic study in order to explore knowledge, perceptions and practices related to gender, care, health, nutrition, WASH, food security and livelihoods and to increase our understanding of the context, available resources and barriers to prevent child under provide operational recommendations for designing adapted interventions.
- 4. To continue to have an integrated approach through Food Security and Livelihood, WASH, Mental Health and Care Practices and nutrition activities in Buthidaung Township.
- 5. To advocate getting a better health services coverage in Buthidaung Township.

<sup>&</sup>lt;sup>13</sup> WHO, 1995 The management of nutrition in major emergencies