

The Philippines– SMART Survey

February 2014

1. Introduction

On 8 November 2013, Typhoon Haiyan, locally known as Yolanda, hit the Philippines. In its wake, 14.1 million people have been affected and 4.1 million displaced.¹ Infrastructure, water and sanitation, food security and medical services have been badly affected. Prior to the typhoon Global Acute Malnutrition (GAM) was estimated at 7.3%. The Philippines is one of the ten most affected countries in terms of absolute numbers of wasting with 769,000² children under-5 either having either severe or moderate acute malnutrition.

The National Nutrition Cluster has developed a package of nutrition services that it is implementing in 81 municipalities that have been prioritized across three regions (Region VI, VII, and VIII). The focus is on the promotion and protection of IYCF, prevention of acute malnutrition and micronutrient deficiencies, and treatment of acute malnutrition.

In partnership with the Technical Working Group partners including UNICEF, WFP, WHO, ACF and other NGOs, the country and provincial authorities will conduct a nutrition survey in the most severely affected areas by Typhoon Haiyan.

1.1 General Objectives

The purpose of this survey is to:

- Provide updated information on the nutritional situation of children 6-59 months in typhoon affected villages with the purpose to utilize the data results to improve programming of Nutrition Cluster partners;
- Assess coverage of Vitamin A supplementation, measles vaccination and feeding programmes;
- Provide information on infant and young child feeding practices.
- Recommend immediate and medium/ long-term interventions to save lives and support livelihoods.

1.2 Specific Objectives

- To measure the prevalence of acute malnutrition in children aged 6-59 months.
- To measure the prevalence of stunting in children aged 6-59 months.
- To determine the coverage of vitamin A supplementation in the last six months among children aged 6-59 months.
- To determine the coverage of measles vaccination among children aged 9-59 months.
- To determine the prevalence of child illness (acute respiratory infection and diarrhoea) among children 6 to 59 months of age.
- To examine the progress of establishment of selective feeding programs for treatment of malnourished children in communities;

¹ OCHA. Situation Report No. 28 (as of 31 December 2013)

² 'Improving Child Nutrition, The achievable Imperative for Global Progress', UNICEF, New York, April 2013

- To estimate the prevalence of maternal malnutrition using the mid-upper arm circumference (MUAC) among women of reproductive age (15-49 years old);
- To investigate infant and young child feeding practices among children 0-23 months.

2. Methodology

This nutrition survey will be based on the SMART (Standardized Monitoring and Assessment of Relief and Transition) methodology. Based on the latest SMART methodology (Version 1, 2006), nutrition surveys using SMART Methods are simple, rapid, and transparent to provide nutrition data for immediate action. Standardized procedures and recommendations are given in order to collect timely and reliable data from the field.

2.1 Target population

This survey aims to estimate the current nutritional status of children from the most severely affected populations by Typhoon Haiyan that struck the Philippines on November 8th, 2013. The target population for the anthropometric survey was all children aged between 6 and 59 months of age because they represent the most vulnerable portion of the population. In selected households, all eligible children were measured. Information will also be collected on women of reproductive age (15-49 years). The target group for the ICYF survey was all children between 0 and 23 months of age as recommended by IYCF indicators. Copies of the questionnaires will be provided in the annexes of the report.

2.2 Sampling

Due to the big size of the population of interest, the Nutrition Survey will use a two-stage random sample. The first stage sample of clusters will be drawn from the latest statistics for each municipality included in the affected regions (dating from November 30th, 2013). Clusters will be selected using the PPS (Probability Proportional to size) method.

The second stage of sampling will use a simple random selection of households within the cluster. The team leader will be responsible to use a complete and updated list of all households in the Cluster (here municipality) and then a random number table will be used to randomly select the households to be included in the survey.

2.3 Sample Size Calculation

The sample size for the nutrition survey will use the ENA software. The following assumptions based on the given context will be done to obtain the number of children to survey:

Parameters	Value	Assumptions
Estimated Prevalence of GAM (%)	10%	In the FNRI of 2011, the prevalences across the Regions VI-VIII range from 5.3%-7.8%. There is certainly an increase after the typhoon yet we are not seeing many children malnourished during the rapid assessments- consequently, a new range of 7-10%, and use the upper limit of range to be on the safe side.
± Desired precision	3%	Since the GAM prevalence is higher and it is a baseline survey, a precision of ± 3% was chosen.

Design Effect	1.7	To allow the difference between rural and urban and between barangay and evacuation centers; certain regions have been affected by flooding, others have had more NGO interventions.
Children to be included	711	Based on the formula above done in ENA

The SMART Methodology recommends converting the number of children into number of households (fixed household method) for the numerous reasons: it is easier to create lists of households than lists of children in the field; sample sizes calculated in number of children can encourage teams to skip households without any children (thus introducing a bias for household-level indicators); and households can provide a common metric for comparing sample size of many indicators. In order to do the conversion of number of children to sample into number of households, the following assumptions were made:

Parameters	Value	Assumptions
Average HH Size	5.05	FNRI says avg. size of 5.05 (p. 65).
% Children under-5	13.5%	Based on latest population data from November 30 th , 2013 for the 81 municipalities: $397071/2941268 = 13.5\%$
% Non-response Households	10	The percentage of non-response chosen was relatively high because evacuation camps are included within the sampling frame, and there is still a lot of movement of people who are returning back to their homes.
Households to be included (according to ENA)	1287 households	

The number of households to be completed per day was determined according to the time the team could spend on the field excluding transportation, other procedures and break times. The details below are taken into consideration when performing this calculation based on the given context:

1. Departure from office at 8am and back at 5pm.
2. Travel time to reach the municipality: 1h.
3. Duration for initial introduction and selection of households: 1h.
4. Time spent to move from one household to the next: 5 min.
5. Average time in the household: 20 min.
6. Breaks: 2 breaks of 15 min each and 1 break of 30min.

With a sample size of 1287 households, estimations of travel time, break time and other factors, has yielded to the conclusion of having 12 HH per day per team, assuming that one team would be composed of three people (with at least one female enumerator) under the responsibility of one supervisor.

The total number of households in the sample was then divided by the number of households to be completed in one day, to get the number of clusters to be included in the survey. If we assume two days in each municipality (cluster) as majority are very large (more than 30,000 people in each municipality):

$$1287 \text{ HHs} / [12 \text{ households per day} \times 2 \text{ days in each cluster}] = \mathbf{54 \text{ Clusters}}$$

2.4 Final Sampling Strategy

In conclusion, this survey will be sampling: 54 Clusters with 12 Households in each (assuming 2 days in each Cluster).

2.5 Cluster Selection

Using the ENA software, the 54 Clusters will be drawn from the latest sampling frame of the 81 municipalities of the affected regions with their corresponding population size (dating from November 30th, 2013). Clusters will be selected using the PPS (Probability Proportional to size) method. The random selection of the Clusters was done only once and these are the municipalities that will be our Clusters for this survey:

Table 1. Municipalities selected as clusters for the survey.

Region	Province	Geographical unit	Population size	Cluster Number
Region VI	Aklan	balete	27045	1
Region VI	Aklan	Batan	30875	2
Region VI	Aklan	Kalibo	42399	3
Region VI	Capiz	Dao	32503	4
Region VI	Capiz	Dumalag	36060	5
Region VI	Capiz	Ivisan	30278	6
Region VI	Capiz	Jamindan	35145	7
Region VI	Capiz	Mambusao	32070	8
Region VI	Capiz	Panay	37520	9
Region VI	Capiz	Panitan	37540	10
Region VI	Capiz	Pontevedra	35805	11
Region VI	Capiz	Pres Roxas	23850	12
Region VI	Capiz	Roxas City	130368	13,14
Region VI	Capiz	Sapian	24138	15
Region VI	Capiz	Sigma	29896	16
Region VI	Iloilo	Ajuy	44757	17
Region VI	Iloilo	Banate	26320	18
Region VI	Iloilo	Barotac Viejo	48716	19
Region VI	Iloilo	Bingawan	13445	20
Region VI	Iloilo	Concepcion	33765	21
Region VI	Iloilo	Estancia	58995	22
Region VI	Iloilo	Lemery	24650	23
Region VI	Iloilo	Passi City	61864	24
Region VI	Iloilo	San Dionisio	38905	25
Region VI	Antique	Barbaza	23000	26
Region VI	Antique	Culasi	24632	27
Region VI	Antique	Pandan	23832	28
Region VII	Cebu	Bantayan	37393	29
Region VII	Cebu	Madridejos	17453	30
Region VIII	Leyte	Tacloban City	276468	31,32,33,34
Region VIII	Leyte	Ormoc City	191200	35,36,37,38

Region VIII	Leyte	Merida	27224	39
Region VIII	Leyte	Dulag	41757	40
Region VIII	Leyte	Palo	62727	41,42
Region VIII	Leyte	Abuyog	57146	43
Region VIII	Leyte	Alangalang	46411	44
Region VIII	Leyte	Kananga	48027	45
Region VIII	Leyte	Carigara	47444	46
Region VIII	Leyte	Tanayuan	50119	47
Region VIII	Leyte	Albuera	40553	48
Region VIII	Eastern Samar	Guiuan (inlcuding Homonhon)	47037	49
Region VIII	Eastern Samar	Oras	34760	50
Region VIII	Eastern Samar	Can-avid	19785	51
Region VIII	Eastern Samar	Gen. McArthur	12214	52
Region VIII	Eastern Samar	Taft	17183	53
Region VIII	Eastern Samar	Marabut	10581	54

2.6 Household Selection Techniques

For each of the randomly selected municipalities done by ENA and taking into account that the vast majority of municipalities being so large (> 30,000 people), the latest population estimates for each barangay (sub-geographical area within each municipality) is needed to render household selection more feasible for survey teams without introducing selection bias. A segmentation based on barangays will be performed in order to facilitate the enumeration and selection of households. Using systematic random sampling, one segment will be selected at random based on the PPS method. Once a segment is selected, 12 households within that segment will be selected using simple random sampling. Similarly, for the municipalities with 2 or more Clusters assigned to them (see highlighted municipalities in Table 1), numerous barangays (segments) will be selected in a similar fashion with each one representing Cluster of 12 households.

For this survey, the definition of a household refers to the group of people that share the same source of food. For evacuation centers, based on the camp managers' definition, a household will refer to all individuals who respond to the same household leader.

A household was considered absent when its members slept there last night and were out for the day of the survey.

2.7 Survey Teams

The nutrition survey will be conducted by 4 teams. Each team will consist of 3 members (one team leader and two measurers). The team leader will be responsible for the coordination of fieldwork, introductions to all district and village authorities, the random selection of households, daily data entry during the data collection, ensuring a high level of data quality collected by the team and a positive, productive and safe work environment for the team.

The measurers will be responsible for determining the date of birth or age of child and confirming with the calendar of local events, correctly measuring and recording the results of the height, weight and MUAC of the children aged 6-50 months.

Specific personnel that will be responsible for data entry of the two questionnaires will also be hired. These individuals will learn how to enter the collected data into the electronic versions of the field questionnaires into the ENA-Epi Info software.

2.8 Data Collection Schedule

The data collection will take place from the 3rd to the 15th of February, 2014. Based on the geographical locations of the municipalities across Regions VI, VII and VIII, the following schedule was devised:

Dates (Monday – Saturday)	Region	Province
February 3rd-8th	Region VIII	Leyte
	Region VIII	Eastern Samar
February 10th-16th	Region VI	Capiz
	Region VI	Aklan
	Region VI	Iloilo
February 17th-20th	Region VI	Iloilo
	Region VII	Cebu

2.9 Anthropometric Measurements

Anthropometric measurements taken on children 6-59 months were height (to the nearest 1 cm) using a standard height board, weight (to the nearest 100 g) using a SECA scale, MUAC on the left arm using a MUAC tape. Weight-for-height z-score was then determined using the WHO Weight-for-Height tables. Severely malnourished children were referred to an OTP where available. In the case that no official documentation about birth date was available or if the mother did not know the exact birthdate of her child by heart (documentation was lost during the typhoon), age will be estimated using an event calendar.

2.10 Anthropometric Equipment

- *Weighing Scale:* the SECA Standing Digital Scale for Adult and Children
- *Length/height measuring boards:* Shorr boards for measuring adults and children (Baby/infant/adult L-hgt mea.system/SET-2 for Shorr boards)
- *MUAC Tapes:* MUAC for children and MUAC for women of reproductive age (15-49 years).

2.11 Reserve Clusters

In the case that several of the selected Clusters cannot be surveyed due to insecurity, accessibility, or refusal, the ENA software has automatically selected Reserve Clusters at the planning stage. 10% of the required clusters + 1 have been pre-selected. All of these Reserve Clusters will only be used if ever 10% or more of the selected Clusters cannot be surveyed. Table 2 outlines which municipalities were selected as Reserve Clusters.

Table 2. Reserve Clusters for this survey

Region	Province	Geographical unit	Population size	Cluster Number
Region VI	Capiz	Cuartero	34700	RC
Region VI	Iloilo	Sara	58000	RC
Region VII	Cebu	Daanbantayan	37449	RC
Region VIII	Leyte	Tacloban City	276468	2 x RC
Region VIII	Leyte	Palompon	54163	RC