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PU-AMI Afghanistan

ACF INTERNATIONAL Afghanistan

ANTHROPOMETRIC AND MORTALITY
SMART SURVEY FINAL REPORT
Kunar Province, Afghanistan
Sep, 2015

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EXECUTIVE SUMMARY

Kunar is one of the 34 provinces of Afghanistan, located in the northeastern part of the country. It has 15 districts: Bar Kuner, Chapa Dara, Dan gam, Dara I Pech, Ghazi Abad, Khas Kuner, Naran Aw Badil, Marwera, Nari, Nor gal, Sawkai, Shaegal, Sarkani, Wata poor and capital is Asadabad.

The overall objective of the survey was to evaluate current nutritional status of vulnerable population living in Kuner Province and levels of possible contributing health and WASH factors. However, the survey has covered 5 districts, but covering 41 % (around **428,800**) of the overall province population, as the remaining, mostly low populated mountainous districts were classified as inaccessible due to insecurity. The covered districts were namely Wata Poor, Asmar, Narang, Shegal and Sarkani and the survey was held from 7th to 16th Sep 2015.

The survey design was a cross sectional study with two-stages clusters samplings using Standardized Monitoring of Relief and Transition (SMART) methodology.

The Global Acute Malnutrition rates identified by weight-for-height <-2 z-scores (WHO 2006) of **11.8%** (95% CI 9.7-14.3) were found to be serous while GAM was alert if MUAC <-125 rates are considered (**8.7%,** (95% CI 7.1-10.5). These two rates do not cover the same individuals in the sample. The rates of stunting and underweight were extremely high, 50.3 **%** (95% CI 57.3-65.6) and **37.7**% (95% CI 33.5-42.1). The mortality rates were acceptable: 0, 30 (95 % CI 0.17-0.52) of CDR and 1.66 **(95**% CI 0.97-2.82) for U5MR.
The geographical terrain of the Kuner province are mountains and has made it mostly inaccessible to basic health services including nutrition services for the male and female children and women especially in the Wata poor, Asmar and Shegals districts which were included in the Assessments, in the summer all of peoples are going to mountains and grasses place to collect the grasses and woods and this times poor care taking of children happened.

The analysis of possible contributing factors has shown compromised mother's nutritional status are very high (18.4%), low Iron supplementation within pregnant (37.1%), 2-weeks recall morbidity (25%), low vitamin A supplementation (64 % and very low de-worming for children (45 %), as well as extremely poor exclusive breastfeeding (46%) and timely complementary feeding practices (73%).

In conclusion, this survey provided evidence that the children in Kuner province were under acute and chronic nutritional stress in form of stunting indicating the requirement of urgent appropriate public health nutritional intervention. The findings of this survey have important implications for public health policy-makers, planners and organizations seeking to meet national and international developmental targets.

The recommendations are made mainly to address the risk factors to under nutrition, especially all services of preventive health such as supplementation for children and pregnant women, basic reproductive health. Special attention have to be given to access and utilization of community based health care, at basic health posts and home visits, to reinforce basic IYCF, with strong focus to exclusive breastfeeding and complementary feeding promotion and support. Coordinated multi-sectorial long-term programming at provincial level would be best to support the worrying very high levels of acute malnutrition and stunting.

INTRODUCTION:

Kunar is one of the 34 provinces of Afghanistan, located in the northeastern part of the country. It has 15 districts: Bar Kuner, Chapa Dara, Dan gam, Dara I Pech, Ghazi Abad, Khas Kuner, Naran Aw Badil, Marwera, Nari, Nor gal, Sawkai, Shaegal, Sarkani, Wata poor and capital is Asadabad.

It is one of the four "N2KL" provinces (Nangarhar Province, Nuristan Province, Kuner Province and Laghman Province).N2KL is the designation used by US and Coalition Forces in Afghanistan for the rugged and very violent region along the Line border opposite Pakistan's Federally Administered Tribal Areas and Khyber Pakhtunkhwa. Kuner is the center of the N2KL (Nangarhar, Nuristan, Kuner, Laghman) region.

It borders with Nangarhar Province to the south, Nuristan Province to the north, Laghman Province to the west and has a border with Pakistan in the east. The province covers an area of 4339 km^2. Nearly nine tenths (86%) of the province is mountainous or semi mountainous terrain while one eighth (12%) of the area is made up of relatively flat land. The primary geographic features of the province are the lower Hindu Kush mountains which are cut by the Kuner River to form the Kuner. The River flows south and southwest from its source in the Pamir area and is part of the Indus river watershed via the Kabul River which it meets at Jalalabad. The Kuner is a primary draining conduit for the Hindu Kush basin and several tributaries, including the Pech, form distinct and significant valleys in the area. The mountains, narrow valleys with steep walls, and rivers present formidable natural obstacles and have impacted all movement through the province throughout history. Even in the early 21st century, movement on foot, with pack animals, or with motorized vehicles is extremely limited and challenging due to the significant geographic restrictions.

According to latest statistics, the total population of Kuner province was estimated to be around **428,800.**[1] Pashtuns are majority and make up to 95% of the total population, followed by Nuristanis at 5%. Pashto is the main language in the area and nearly all the residents practice Sunni Islam.

Around 96% of the population of Kuner lives in rural districts while 4% lives in urban areas. Momandzai, Safi, Salarzai, and Mishwanai are among the most important tribes.

Only 5 out of 15 districts in Kuner province was surveyed due to security issues and inaccessibility of far areas (see table 1 below) The population of these 3 district represent 41% of the entire population of Kuner Province(**428,800**). According to SMART methodology, the results cannot be extrapolated to the whole province but only representative of the surveyed areas. This is a limitation with regards to having a complete picture of the nutritional status of children under five year and pregnant/lactating women in the Kuner province.

Table 1: Districts covered in SMART survey, Kunar Province, September 2015.

District	Total Population (inhabitants)
Wata poor	52228
Narang	38476
Asmar	25116
Shigal	60456

[1]Settled population of Kunar province civil Division Urban, Rural and Sex 2012-2013

Sarkani	33781
Total	**177013**

Objective of the survey

Broad objective

- To evaluate nutrition situation of vulnerable population groups in 5 districts of Kuner together with estimation the level of possible contributing factors.

Specific objective

- To estimate Crude death Rate and under five death rate
- To determine prevalence of under nutrition in 0-59 months children
- To determine core IYCF practices of children 0-23 months
- To determine the MUAC based nutrition status of Pregnant and lactating women
- To study WASH proxy indicators: household water storage, water use and mother's hand washing practices.
- To estimate Vitamin A supplementation and deworming coverage in the last 6 months among children under 5 years and Iron/folate supplementation among pregnant women.
- To estimate coverage of measles and BCG vaccination
- To assess the 2-weeks recall morbidity among children 0-59 months based

Justification of the survey

The justification of this SMART survey was to investigate and find up to date nutrition, mortality and IYCF data specific to these districts and to inform better future programing with evidence based specific information for the areas of intervention of
Première Urgence-Aide Médicale Internationale (PU-AMI).
PU-AMI is BPHS implementing partner of MoPH in Kuner. As such PU-AMI is charged to mainstream CMAM in health facilities under their responsibility. The present survey will help them to improve their programming and it is viewed as a great opportunity to build PU-AMI staffs capacity on the ground.

Since there is no district specific information on nutritional status of local population, this survey was provide information relevant only for the 5 covered districts. This information was also complementing the results from 2013 National Nutrition Survey providing an update for those 5 districts.

Sample size for the anthropometry and the mortality survey

The sample size of households to survey was determined by using the ENA for SMART 2011 software (April 2015). The table below summarizes all parameters used for sample size calculation.

Table 2: Parameters for sample size calculation for anthropometry, SMART-KUNAR, Sep 2015

Parameters for Anthropometry	Value	Assumptions based on context
Estimated Prevalence of GAM (%)	12 %	According to the MoPH National Nutrition Survey-2013[2], the Global Acute Malnutrition prevalence is estimated at 16.2% (95% CI 12.32 - 21.08). The standard deviation of these results was considered to be high (SD 2.6) and above the recommended limit of 1.2. But in July 2012 PU-AMI also conducted Nutrition survey before NNS, the prevalence of this survey was 12.0 (95 %CI: 10.1 - 14.3 95%). In this case the point prevalence of 12.0 from the Kuner survey was used because it had standard deviation of 0.94 which is within the limit 1.2. It is therefore considered to be more accurate and thus used as the estimated prevalence
Desired precision	± 3%	Based on the estimated prevalence chosen SMART recommends the following. In case of selection of estimated prevalence lower than 5% a desired precision of 2 is recommended. In case of an estimated prevalence between 5 and 10% the recommended desired precision is ±2.5 and a precision of ±3 for estimated prevalence of 10-15%. Since the estimated prevalence for this survey is 12% then a desired precision of 3 was selected as per SMART recommendation.
Design Effect	1.5	The population living in the 5 targeted districts is considered as having similar living conditions and the same access to food and social conditions. Nevertheless, access to health facilities cannot be estimated as similar within the targeted population as some remote areas are not well served by health facilities. Hence the design effect was estimated at 1.5.
Children to be included	**736**	Minimum Children 6-59 months old. However to avoid possible bias of selection for younger age group, all children from 0 to 59 months old found in the selected households were surveyed.
Average HH Size	7.5	According to CSO population data 2010-2011, the average household size is 5.5. According to the National Nutrition Survey 2013, the average household size is **7.7** – most recent result. According to the National Mortality Survey of 2010, the average household size is 7, 8. According to the national vulnerability assessment of Afghanistan 2014, the average HH size is **7.3**[3]. Therefore, based on these 4 sources, an average household size of 7.5 is used based on 2 more recent results.
% Children under-5	15.6%	The proportion of children under five was estimated at 20% according to the national nutrition policy and CSO estimates[4]. However, the estimated U5 population according to the Afghanistan Mortality survey 2010 is at 15.6% providing a more conservative and accurate percentage[5]. Therefore, 15.6% is used and considered the more conservative and accurate estimate.

[2] National Nutrition Survey of Afghanistan, UNICEF, 2013
[3] National vulnerability assessment of Afghanistan, 2014
[4] CSO: Central Statistics Office of Afghanistan, 2010-2011
[5] Afghanistan Mortality survey, 2010

% Non-response Households	6%	The percentage of non-respondent households was estimated at 6%.
Households included	**744**	Households
Parameter	**Mortality survey**	**Rationale**
Estimated death rate	**0.5/10000 /day**	No updated death rate at population level; Recommended in cases where there is no specific mortality data for the area to be surveyed
Desired precision	**0.3**	In order to meet set mortality objectives and inline to estimated death rate
Design effect	**1.5**	Cater for heterogeneity in the County population being sampled is homogeneous
Recall period	**120**	Start point of recall period (during the start 8th of Hama solar month 1394.
Average HH size	**7.5**	National vulnerability assessment of Afghanistan -2014 and National Nutrition Survey 2013
Per cent of non-respondent	**6%**	Past experience from assessments in Afghanistan due to cultural challenges and sensitivity regarding mortality information. Anticipated community mobilization is expected to create further awareness
Population to be included	**2904**	Population
Households to be Included	**412**	Households

1. IYCF Sampling

The sample size for collection of data on IYCF indicators were calculated by developing a stratified proportionate sampling methodology (using the Care International Sampling Spread Document) so as to cater for the sample sizes required for the various indicators of IYCF practices, which are disaggregated by age. Four main IYCF indicators (WHO, 2010)[6] were used to calculate the sample size. The prospected prevalence rates of the four indicators: Exclusive Breastfeeding Rate; Timely Initiation of Breastfeeding; Minimum Dietary Diversity and Minimum Meal Frequency (Table 3) were used to determine the sample size. The same desired precision levels were used for the each of the four IYCF indicators and a design effect of 1.5 was used for the cluster methodology (Table 2). Information on the proportion of the under-fives and the average household size was solicited from the Afghanistan mortality survey 2010.

[6] WHO 2010, Indicators for Assessing Infant and Young Child Feeding Practices

A non-response rate estimated at 6% (based on rationale provided above) was used in the calculation of the sample. The resulting sample sizes for the four IYCF indicators are shown in the Table 2 below

In the table below in order to estimate the actual population for children 0-23 months the IYCF calculator has factored the percentage of children in this group by assuming that 40% of children under the age of 5 years were between 0-23 months. In this case the calculation were

$$Total\ \#\ of\ HH = (\left(\frac{sample\ size\ of children}{\frac{average\ HH\ size x\ \%\ under5years}{100}}\right) x\ 0.4 + \left(\frac{sample\ size\ of children}{\frac{average\ HH\ size\ x\ \%\ under5years}{100}}\right) x\ 0.4\ ))\ x\ \%\ non\ response\ rate$$

Table 3: IYCF sample size calculation

Indicator	Estimated prevalence (%)	± desired precision	Design effect	Sample size (children 0-23 m)	Households to be included
Exclusive breastfeeding	50	8	2	327	330
Timely initiation of breastfeeding	50	8	2	327	330
Minimum dietary diversity	50	8	2	327	330
Minimum meal frequency	50	8	2	327	330

For the exclusive breast feeding indicator, the survey was conducted the questionnaires to all illegible children found in the survey.

Based on the parameters indicated above, Anthropometric sample were used as the overall sample size since it is the highest and therefore qualifies to represent the other indicators. Therefore with the selection of the highest sample size (744 HH) the other indicators were representation within the larger sample size selected.

2. Sampling Methodology

A two-stage cluster sampling with probability proportionate to size (PPS) design were employed for the integrated nutritional assessments. The Emergency Nutrition Assessment (ENA) for Standardized Monitoring of Relief and Transitions (SMART) latest version (updated 21st April 2015) were used to determine the sample size using.

5.1 Selecting clusters

A two stage sampling methodology was employed. In the first stage is the cluster selection. Clusters were sampled using probability proportional to population size (PPS).

It is estimated that one team could cover 16 households per day. By targeting 16 households per cluster per day, a total number of 47 clusters are expected to be reached over the duration of this survey (744 HHs/16HHs/day=46.5 clusters), which were round up to 47 clusters in order to reach the required 744 households. This was allowed the survey to reach the minimum sample required of 736 children for the anthropometric sample – Children 6-59 months.

A total of 47 villages corresponding to 47 clusters were included in the survey; Reserve Clusters (RCs) were selected by ENA software version 2011 updated 21st April 2015. Reserve clusters was only been used if 10% or more clusters were impossible to reach during the survey.

5.2 Selecting households and children

Simple random sampling method were used where an up-to-date list of the households in each village were created to select the households at random, with enough information to allow them to be located. All households were enumerated and given numbers by the survey team. The 16 households were chosen randomly from these enumerated households, by randomly drawing from a hat or using a random number table. In each selected village, one or more community member(s) were asked to help the survey teams to conduct their work by providing information about the village with regard to the geographical organization or the number of households.

In cases where it is difficult to obtain an updated list of Households systematic random sampling were used to identify the households to be surveyed. The teams were trained on both methods of sampling (simple and systematic random sampling) and they was also be offered with materials to assist in determining the households during the data collection exercise.

In cases where there are large villages in a cluster, the village was divided into smaller segments and a segment was selected randomly to represent the cluster. This division was done based on existing administrative units e.g. neighborhoods, or streets or natural landmarks like river, road, or public places like market, schools, and masjids.

All the children living in the selected house in the correct age range (children from 0 to 59 months old were included for anthropometric measurement and 0-23 months for IYCF were included, without regard to height). If more than one eligible child is found in a household, both were included, even if there are twins. Eligible orphans living in the selected Households was also be surveyed.

All of the selected HH were included in the mortality survey as well as was respondent to questions concerning the HH as a whole (ex. water storage).

Any empty households, or households with missing or absent children were revisited at the end of the sampling day in each cluster; any missing or absent children that was not be subsequently

found was not be included in the survey. A cluster control form was used to record all these missed and absent households.

3. Case definitions and inclusion criteria

The household were the basic sampling unit. Here, a household were defined as all people eating from the same pot and living together (WFP definition). In Afghanistan, the term household is often defined and/or used synonymous with a compound – which potentially represents more than one household as defined here. In this case, a two-step process were ensured with the village leaders/community elders and then identifying compound together with the use of the list of households within the community, asking if there are multiple cooking areas to determine what members of the household/compound should be included in the study.

Different parameters are used to assess the nutritional status of an individual. Weight, height, Mid Upper Arm Circumference and bilateral oedema are the most commonly used. These are often linked to sex and age.

For each selected child, the following information were collected:

- ✓ **Age (in months)**

Only children between 0 and 59 months old of age were included. Height was not be considered as a valid criterion in absence of age due to the high stunting rates in KUNAR province. Age was confirmed by showing a vaccination card or a birth certificate, if available. If these documents are not available, the use of a local event calendar built for Kuner province was used to determine the age. The age was recorded into the questionnaire in months.

- ✓ **Sex**

Male or female

- ✓ **Weight (in kg)**

Children were weighed to the nearest 0.1kg by using an Electronic Uni-scale. The children who can easily stand were asked to stand on the weighing scale and their weight recorded. In a situation when the children could not stand up, the double weighing method were applied.

- ✓ **Height (in cm)**

Measuring board was used to measure bare headed and barefoot children. The precision of the measurement is 1 mm. Children of less than 2 years of age were measured lying down and those equal to or above 2 years of age measured standing up.

- ✓ **Mid-Upper Arm Circumference (in mm)**

MUAC were used as an indicator of mortality risk for malnutrition and were measured to the nearest 1mm for all children with an indicated age of greater than 6 months, using the UNICEF MUAC strips. An adult MUAC tape were used to measure women of reproductive age (15-49 years)

- ✓ **Oedema**

Only children with bilateral pitting nutrition oedema were recorded as having nutritional oedema

this was checked by applying normal thumb pressure for at least 3 seconds to both feet.

4. Anthropometric Indicators: Definition of nutritional status of children 0-59 months

7.1 Acute malnutrition

Acute malnutrition in children 0-59 months can be expressed by using 2 indicators; Weight for Height (W/H) or Mid Upper Arm Circumference (MUAC) as described below.

- ✓ **Weight-for-height index (W/H)**

A child's nutritional status is estimated by comparing it to the weight-for-height curves of a reference population (WHO standards data[7]). These curves have a normal shape and are characterized by the median weight (value separating the population into two groups of the same size) and its standard deviation (SD).

The expression of the weight-for-height index as a Z-score (WHZ) compares the observed weight (OW) of the surveyed child to the mean weight (MW) of the reference population, for a child of the same height. The Z-score represents the number of standard deviations (SD) separating the observed weight from the mean weight of the reference population: WHZ = (OW - MW) / SD.

During the field data collection, the weight-for-height index in Z-score was calculated on the field for each child in order to refer malnourished cases to appropriate centre if needed. Moreover, the results were presented in Z-score using WHO reference in the final report.

- ✓ **Mid Upper Arm Circumference (MUAC)**

The mid upper arm circumference does not need to be related to any other anthropometric measurement. It is a reliable indicator of the muscular status of the child and is mainly used to identify children with a risk of mortality. The MUAC is an indicator of malnutrition only for children greater or equal to 6 months.

Table 4: Cut offs points of MUAC, children 6-59 months, WHO Recommendations

Target group	MUAC (mm)	Nutritional status
Children 6-59 months	> or = 125 and < 135	No malnutrition
	< 125 and > or = 115	Moderate acute malnutrition
	< 115	Severe acute malnutrition

- ✓ **Nutritional bilateral pitting oedema**

Nutritional bilateral pitting oedema is a sign of Kwashiorkor, one of the major clinical forms of severe acute malnutrition. When associated with Marasmus (severe wasting), it is called Marasmic-Kwashiorkor. Children with bilateral oedema are automatically categorized as being severely malnourished, regardless of their weight-for-height index. The table below defines the acute malnutrition according to W/H index, MUAC criterion and oedema.

[7] WHO: World Health Organization, WHO growth curves for children, 2006

Table 5: Definition of acute malnutrition according to weight-for-height index (W/H), expressed as a Z-score according to WHO standards

Severe Acute Malnutrition (SAM)
W/H <-3 z-score and /or bilateral oedema and/or MUAC < 115 mm
Moderate Acute Malnutrition
W/H <-2 z-score and >= -3 z-score and absence of bilateral oedema and/or MUAC >= 115mm and <125mm
Global Acute Malnutrition (GAM)
W/H <-2 z-score and /or bilateral oedema and MUAC < 125 mm

7.2 Chronic malnutrition

The height-for-age index (H/A)

The height-for-age measure indicates if a child of a given age is stunted and so if he is chronically malnourished. This index reflects the nutritional history of a child rather than his/her current nutritional status. This is mainly used to identify chronic malnutrition. The same principle is used as for weight-for-height; except that a child's chronic nutritional status is estimated by comparing its height with WHO standards height-for-age curves, as opposed to weight-for-height curves. The height-for-age index of a child from the studied population is expressed in Z-score (HAZ). The HAZ cut-off points are presented in table 6.

Table 6: Cut offs points of the Height for Age index (HAZ) expressed in Z-score, WHO standards

Not stunted	≥ -2 z-score
Moderate stunting	-3 z-score ≤ H/A < -2 z-score
Severe stunting	< -3 z-score

7.3 Mortality Indicator Calculation

The mortality indicators included all households, regardless of the presence of children. All members of the household were counted, using the household definition.

- ✓ **Crude death rate (CDR)**

Number of persons in the total population that dies over a defined period of time.

$$CDR = \frac{\text{Nb of deaths x 10000 persons}}{\text{population at mid} - \text{interval x time interval in days}}$$

- ✓ **Under-5 death rate (U5DR)**

The probability for those children aged 0-5 years to die during a specific time interval. Calculated as:

$$U5DR = \frac{\text{Nb of deaths of U5s x 10000 U5s}}{\text{population of U5s at mid} - \text{interval x time interval in days}}$$

5. Additional Indicators – Health & WASH

Beside anthropometric data, additional information was collected as follows:

- ✓ **Immunization status, deworming and vitamin A supplementation**

Mothers/caretakers of all children were asked if children received all the necessary vaccinations, which was subsequently be verified by reviewing the vaccination card, if available. If the vaccination card was not available, then recall of the caregiver option was considered. The deworming and the Vitamin A supplementation of children were also recorded using samples.

- ✓ **Morbidity**

Mothers/caretakers of children were asked if children had experienced an illness in the past 2 weeks. Acute respiratory infection, fever and diarrhoea were recorded when symptoms according to the case definition are described by the caretaker.

- ✓ **Mothers nutritional status and Iron/Folate supplementation for pregnant**

Women in childbearing age were assessed for their nutritional status based on MUAC using the cut-off of 230 mm.

- ✓ **Water storage and Usage**

House hold heads were asked what type of container they use for storing drinking water and also how much water they used in the HH in the last 24 hours to assess the water use per person per day.

- ✓ **Hand washing practices**

The mothers were asked on what occasions they wash their hands and also what they use to wash their hands to determine the hand washing practices in the surveyed area.

6. Infant and Young Child Feeding Practices Indicators (IYCF)

The IYCF indicators used in the measurement of infant and young child feeding practices asked to the mothers/caretakers of children aged 0-23 months are described as follows.

- ✓ **Child ever breastfed**

Proportion of children who have ever received breast milk.

- ✓ **Timely initiation of breastfeeding**

Proportion of children born in the last 23 months who were put to the breast within one hour of birth.

- ✓ **Provision of colostrum in the first 3 days of life**

Proportion of children who received colostrum (yellowish liquid) within the first 3 days after birth.

- ✓ **Exclusive breastfeeding under 6 months**

Proportion of infants 0-5 months of age who are fed exclusively with breast milk.

- ✓ **Continued breastfeeding at 1 year**

Proportion of children 12 – 15 months of age who are fed with breast milk.

- ✓ **Individual Dietary Diversity Score**

Proportion of 6-23 months children consumed minimum 4 food groups the last 24 hours.

- ✓ **Introduction of solid, semi-solid or soft foods:**

Proportion of infants 6-8 months of age who receive solid, semi-solid or soft foods.

- ✓ **Continued breastfeeding at 2 years**

Proportion of children 20–23 months of age who are fed breast milk.

7. Questionnaires, training, team compositions and supervision

Five teams of three members were conducted the field data collection. Each team was composed of one PU-AMI team leader and two PU-AMI data collector. Each team had at least two female data collectors to ensure acceptance of the team amongst the surveyed households; particularly for IYCF questionnaires. Each female member of the survey team was accompanied with a mahram[8] to facilitate the work of the female data collectors at the community level. The teams were supervised by ACF and PU-AMI nutrition program manager/nutrition focal points.

The entire teams were received a 7-days training on the survey methodology and all its practical aspects; conducted by ACF Nutrition SMART Program Manager. A standardization test was conducted over the course of 1day, measuring 10 children, in order to evaluate the accuracy and the precision of the team members in taking the anthropometrics measurements. A one-day field test was conducted by the teams in order to evaluate their work in real field conditions. Feedback was provided to the team in regard to the results of the field test; particularly in relation to digit preferences and data collection. Refresher training on the anthropometric measurement and on the filling of the questionnaires and the household's selection were organized on the last day of the training by ACF to ensure overall comprehension before going to the field.

One field guidelines document with instructions and household definition and selection document were provided to each team member. All documents, such as local event calendar, questionnaires or consent forms were translated in Pashtu, local language, for better understanding and to avoiding direct translation during the data field collection. The questionnaires were back translated using a different translator and were pre-tested during the field test. Alterations were made as necessary.

Daily data entry and analysis were done using ENA for anthropometric data, plausibility check, and feedback were provided to the data collection teams. Anthropometric data was all be directly entered into ENA while IYCF and other data were completed through an excel spreadsheet.

[8] Women are not allowed to go outside without being accompanied by one male relative called locally a 'mahram'.

8. Data analysis

The anthropometric and mortality data were analyzed using ENA software 2011 version, 21st April 2015 updated. Survey results were presented in reference to WHO standards for overall final analysis.

Other indicators were analyzed using Excel version 2010 and were expressed in percentage out of the sample surveyed.

SURVEY FINDING:

3.1. Child health Nutrition

3.1.1. Description of the sample

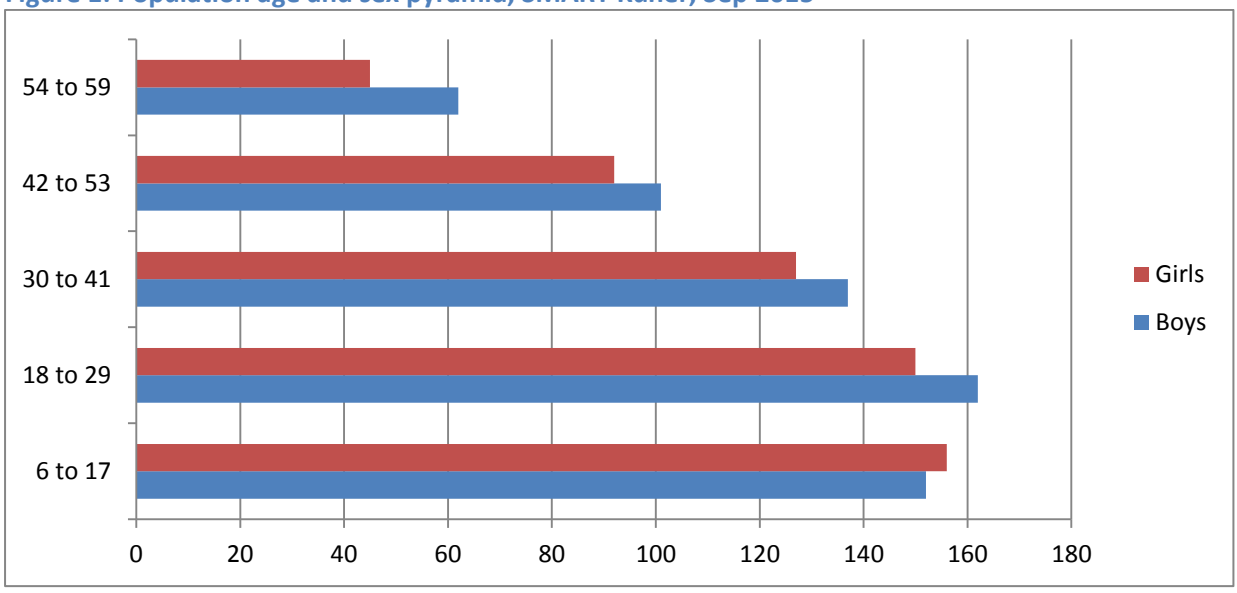
Anthropometric data was collected from 1184 children between 6-59 months. Out of 47 clusters were selected in the sample and clusters remained due to security problems and data collection were done from 46 clusters and after this Non-response Rate was 0.7 %, the overall boy to girl ratio was 1.1 indicating that sampling was unbiased and within expected range of values (0.8 – 1.2) (**Table 7).**

The age distribution showed under representation in some age groups such as 42-59 months. This could probably be due to approximation of ages amongst 81% of the sampled children. The sex and age pyramid (Figure 2) follow a normal shape.

Table 7: Distribution of age and sex of sample, SMART Kuner, Sep 2015

	Boys		Girls		Total		Ratio
AGE (mo)	**no.**	**%**	**no.**	**%**	**no.**	**%**	**Boy:girl**
6-17	152	49.4	156	50.6	308	26.0	1.0
18-29	162	51.9	150	48.1	312	26.4	1.1
30-41	137	51.9	127	48.1	264	22.3	1.1
42-53	101	52.3	92	47.7	193	16.3	1.1
54-59	62	57.9	45	42.1	107	9.0	1.4
Total	614	51.9	570	48.1	1184	100.0	1.1

Figure 1: Population age and sex pyramid, SMART Kuner, Sep 2015



3.2. Anthropometric results

3.2.1. Data quality

The anthropometric data were analyzed using ENA for SMART Software (version 2011, 21st April 2015 updated). The plausibility check report is available in Annex 2.

A summary of the statistical parameters by index is in the table below.

Table 8: Mean z-scores, Design Effects and excluded subjects, SMART- Kuner, Sep 2015

Indicator	n	Mean z-scores ± SD	Design Effect (z-score < -2)	z-scores not available*	z-scores out of range
Weight-for-Height	1167	-0.89±0.94	1.46	0	17
Weight-for-Age	1167	-1.72±1.04	2.32	0	17
Height-for-Age	1123	-1.98±1.21	1.69	0	61

* contains for WHZ and WAZ the children with edema.

3.3. Prevalence of acute malnutrition

Weight-for-height Z-scores (WHO 2006) and/or oedema

The sex and age disaggregated results are presented in Table 9 and 10 respectively. The Prevalence of wasting is insignificantly higher among boys as compared to girls. The younger Children (6-29 months) seem to be more affected than older (30-59 months). There were no edematous cases (**Table 9**).

Table 9: Prevalence of acute malnutrition based on weight-for-height z-scores (and/or oedema) and by sex, SMART- Kuner, Sep 2015

	All n = 1167	Boys n = 603	Girls n = 564
Prevalence of global malnutrition (<-2 z-score and/or oedema)	(138) 11.8 % (9.7 - 14.3 95% C.I.)	(83) 13.8 % (10.9 - 17.3 95% C.I.)	(55) 9.8 % (7.2 - 13.1 95% C.I.)
Prevalence of moderate malnutrition (<-2 z-score and >=-3 z-score, no oedema)	(111) 9.5 % (7.7 - 11.7 95% C.I.)	(67) 11.1 % (8.5 - 14.3 95% C.I.)	(44) 7.8 % (5.6 - 10.8 95% C.I.)
Prevalence of severe malnutrition (<-3 z-score and/or oedema)	(27) 2.3 % (1.5 - 3.5 95% C.I.)	(16) 2.7 % (1.6 - 4.3 95% C.I.)	(11) 2.0 % (1.0 - 3.7 95% C.I.)

The prevalence of oedema is 0.0%.

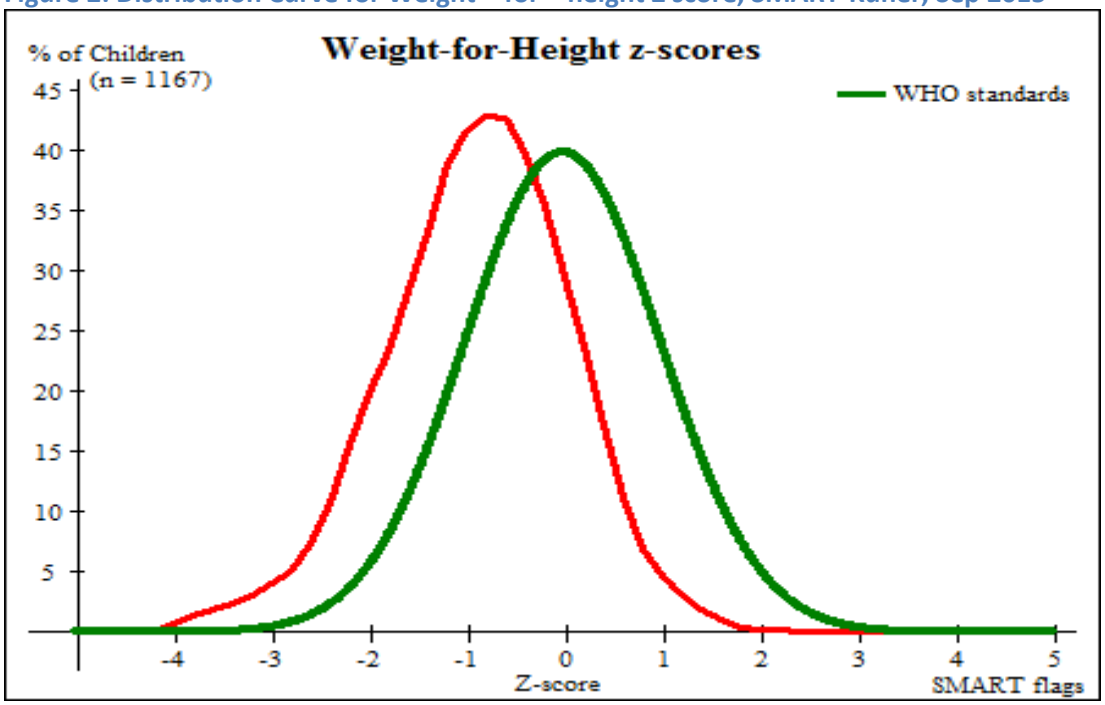
Table 10: Prevalence of acute malnutrition by age, based on weight-for-height z-scores and/or oedema, SMART-Kuner, Sep 2015

		Severe wasting (<-3 z-score)		Moderate wasting (>= -3 and <-2 z-score)		Normal (> = -2 z score)		Oedema	
Age (mo)	**Total no.**	**No.**	**%**	**No.**	**%**	**No.**	**%**	**No.**	**%**
6-17	299	14	4.7	38	12.7	247	82.6	0	0.0
18-29	308	8	2.6	36	11.7	264	85.7	0	0.0
30-41	262	3	1.1	18	6.9	241	92.0	0	0.0
42-53	192	1	0.5	16	8.3	175	91.1	0	0.0
54-59	106	1	0.9	3	2.8	102	96.2	0	0.0
Total	1167	27	2.3	111	9.5	1029	88.2	0	0.0

Table 11: Distribution of acute malnutrition and oedema based on weight-for-height z-scores, SMART-Kuner, Sep 2015

	<-3 z-score	>=-3 z-score
Oedema present	Marasmic kwashiorkor No. 0 (0.0 %)	Kwashiorkor No. 0 (0.0 %)
Oedema absent	Marasmic No. 35 (3.0 %)	Not severely malnourished No. 1149 (97.0 %)

Figure 2: Distribution Curve for Weight – for – height Z score, SMART-Kuner, Sep 2015



MUAC cut-off classification and/or oedema:

The prevalence of acute malnutrition based on MUAC cut-off is presented in **Table 12**. The younger children (6-29 months) seem to be more affected than older (30-59 months;
Out of 143 children identified with MUAC<125 mm, only 61 were with WHZ<-2 representing only 35.4% of the acutely malnourished children in the sample.

Table 12: Prevalence of acute malnutrition based on MUAC cut off's (and/or oedema) and by sex, SMART-Kuner, Sep 2015

	All n = 1178	Boys n = 612	Girls n = 566
Prevalence of global malnutrition (< 125 mm and/or oedema)	(102) 8.7 % (7.1 - 10.5 95% C.I.)	(47) 7.7 % (6.0 - 9.8 95% C.I.)	(55) 9.7 % (7.4 - 12.7 95% C.I.)
Prevalence of moderate malnutrition (< 125 mm and >= 115 mm, no oedema)	(75) 6.4 % (5.1 - 8.0 95% C.I.)	(33) 5.4 % (4.0 - 7.2 95% C.I.)	(42) 7.4 % (5.4 - 10.2 95% C.I.)
Prevalence of severe malnutrition (< 115 mm and/or oedema)	(27) 2.3 % (1.5 - 3.5 95% C.I.)	(14) 2.3 % (1.3 - 4.1 95% C.I.)	(13) 2.3 % (1.3 - 3.9 95% C.I.)

Table 13: Prevalence of acute malnutrition by age, based on MUAC cut off's and/or oedema, Sep 2015.

		Severe wasting (< 115 mm)		Moderate wasting (>= 115 mm and < 125 mm)		Normal (> = 125 mm)		Oedema	
Age (mo)	**Total no.**	**No.**	**%**	**No.**	**%**	**No.**	**%**	**No.**	**%**

6-17	304	20	6.6	34	11.2	250	82.2	0	0.0
18-29	311	4	1.3	34	10.9	273	87.8	0	0.0
30-41	264	3	1.1	3	1.1	258	97.7	0	0.0
42-53	192	0	0.0	3	1.6	189	98.4	0	0.0
54-59	107	0	0.0	1	0.9	106	99.1	0	0.0
Total	1178	27	2.3	75	6.4	1076	91.3	0	0.0

5.5. Prevalence of Underweight based (WHO 2006)

The underweight is defined by weight-for-age z-scores (WAZ). The sex and age disaggregated results are represented in **Table 14 and 15**.

Table 14: Prevalence of underweight based on weight-for-age z-scores by sex, SMART-Kuner, Sep 2015.

	All n = 1167	**Boys** n = 604	**Girls** n = 563
Prevalence of underweight (<-2 z-score)	(440) 37.7 % (33.5 - 42.1 95% C.I.)	(228) 37.7 % (31.5 - 44.4 95% C.I.)	(212) 37.7 % (33.0 - 42.5 95% C.I.)
Prevalence of moderate underweight (<-2 z-score and >=-3 z-score)	(309) 26.5 % (23.3 - 29.9 95% C.I.)	(162) 26.8 % (21.5 - 32.9 95% C.I.)	(147) 26.1 % (22.5 - 30.0 95% C.I.)
Prevalence of severe underweight (<-3 z-score)	(131) 11.2 % (9.1 - 13.7 95% C.I.)	(66) 10.9 % (8.6 - 13.8 95% C.I.)	(65) 11.5 % (8.7 - 15.2 95% C.I.)

Table 15: Prevalence of underweight by age, based on weight-for-age z-scores, SMART-Kuner, Sep 2015.

		Severe underweight (<-3 z-score)		**Moderate underweight (>= -3 and <-2 z-score)**		**Normal (> = -2 z score)**		**Oedema**	
Age (mo)	**Total no.**	**No.**	**%**	**No.**	**%**	**No.**	**%**	**No.**	**%**
6-17	299	30	10.0	69	23.1	200	66.9	0	0.0
18-29	306	46	15.0	99	32.4	161	52.6	0	0.0
30-41	263	32	12.2	76	28.9	155	58.9	0	0.0
42-53	193	18	9.3	40	20.7	135	69.9	0	0.0
54-59	106	5	4.7	25	23.6	76	71.7	0	0.0
Total	1167	131	11.2	309	26.5	727	62.3	0	0.0

5.6. Prevalence of Stunting based on Height-for-Age Z scores (HAZ)

The chronic malnutrition or stunting is defined by Height-for-age Z-scores (HAZ) <-2. The sex and age disaggregated results are represented in **Table 16 and 17**.

Table 16: Prevalence of stunting based on height-for-age z-scores and by sex, SMART-Nuristan, Aug 2015.

	All n = 1123	Boys n = 578	Girls n = 545
Prevalence of stunting (<-2 z-score)	(565) 50.3 % (46.4 - 54.2 95% C.I.)	(295) 51.0 % (45.9 - 56.1 95% C.I.)	(270) 49.5 % (44.3 - 54.8 95% C.I.)
Prevalence of moderate stunting (<-2 z-score and >=-3 z-score)	(332) 29.6 % (26.5 - 32.8 95% C.I.)	(170) 29.4 % (25.4 - 33.8 95% C.I.)	(162) 29.7 % (25.3 - 34.5 95% C.I.)
Prevalence of severe stunting (<-3 z-score)	(233) 20.7 % (17.8 - 24.1 95% C.I.)	(125) 21.6 % (18.3 - 25.4 95% C.I.)	(108) 19.8 % (15.8 - 24.6 95% C.I.)

Table 17: Prevalence of stunting by age based on height-for-age z-scores, SMART-Kuner, Sep 2015.

		Severe stunting (<-3 z-score)		Moderate stunting (>= -3 and <-2 z-score)		Normal (> = -2 z score)	
Age (mo)	**Total no.**	**No.**	**%**	**No.**	**%**	**No.**	**%**
6-17	280	32	11.4	73	26.1	175	62.5
18-29	297	86	29.0	105	35.4	106	35.7
30-41	255	66	25.9	74	29.0	115	45.1
42-53	187	35	18.7	50	26.7	102	54.5
54-59	104	14	13.5	30	28.8	60	57.7
Total	1123	233	20.7	332	29.6	558	49.7

Figure 3 shows the distribution of HAZ of the observed population, compared to WHO Reference curve. In Kuner, it was shifted to the left, suggesting restricted linear growth of the observed population. Further analysis (**Figure 4**) suggests that linear growth retardation is at its highest in the lower age group of children (18-29 months) and overall trend increases with the increase of age.

Figure 3: Gaussian (normal) distribution curve, HAZ, SMART –Kuner, Sep 2015

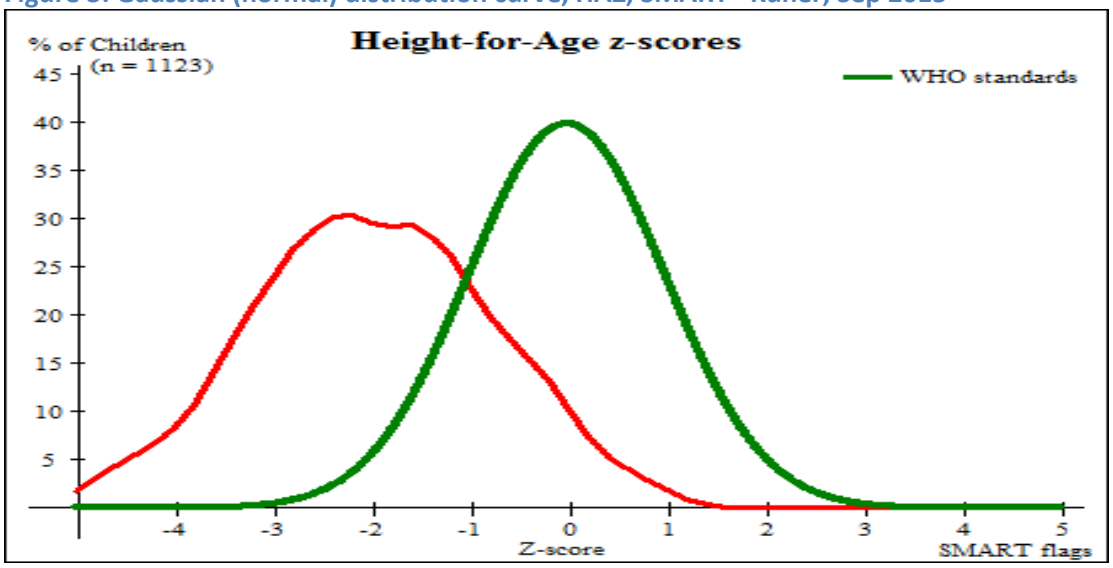
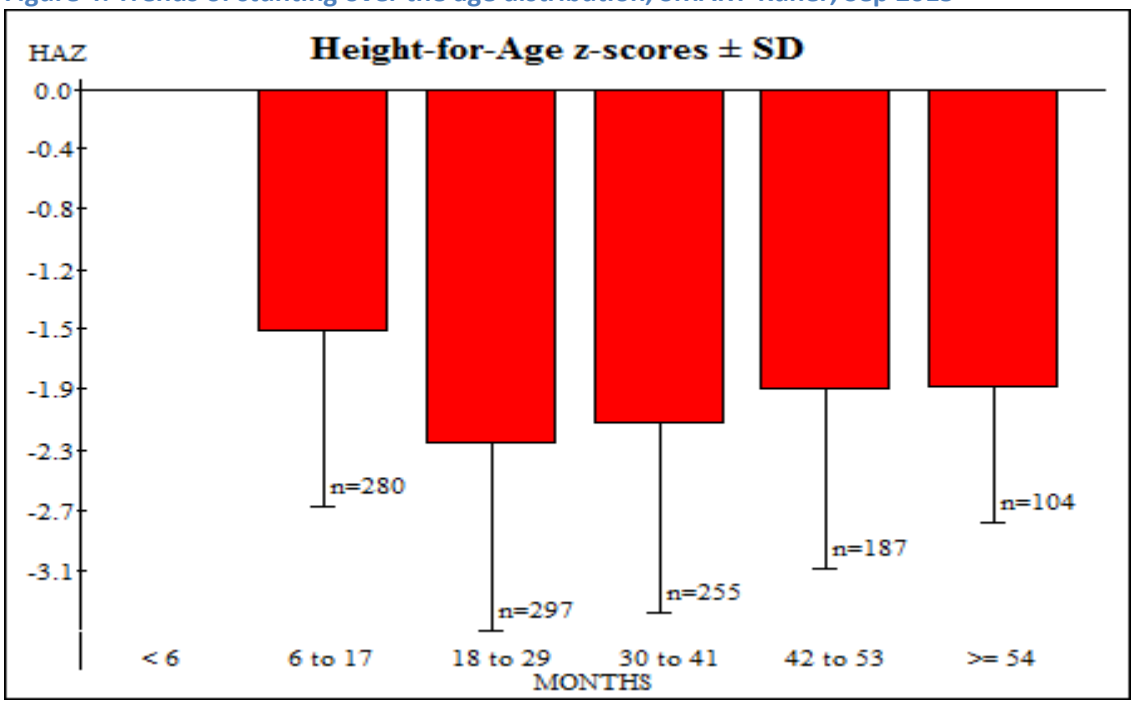


Figure 4: Trends of stunting over the age distribution, SMART-Kuner, Sep 2015



4.7. Prevalence of overweight based (WHO 2006):

The prevalence of overweight is based on weight-for-height in z-score >2 and found to remain low.

Table 18: Prevalence of overweight based on weight for height cut offs and by sex (no oedema), SMART-Kuner, Sep 2015.

	All n = 1167	Boys n = 603	Girls n = 564
Prevalence of overweight (WHZ > 2)	(1) 0.1 % (0.0 - 0.6 95% C.I.)	(1) 0.2 % (0.0 - 1.2 95% C.I.)	(0) 0.0 % (0.0 - 0.0 95% C.I.)
Prevalence of severe overweight (WHZ > 3)	(0) 0.0 % (0.0 - 0.0 95% C.I.)	(0) 0.0 % (0.0 - 0.0 95% C.I.)	(0) 0.0 % (0.0 - 0.0 95% C.I.)

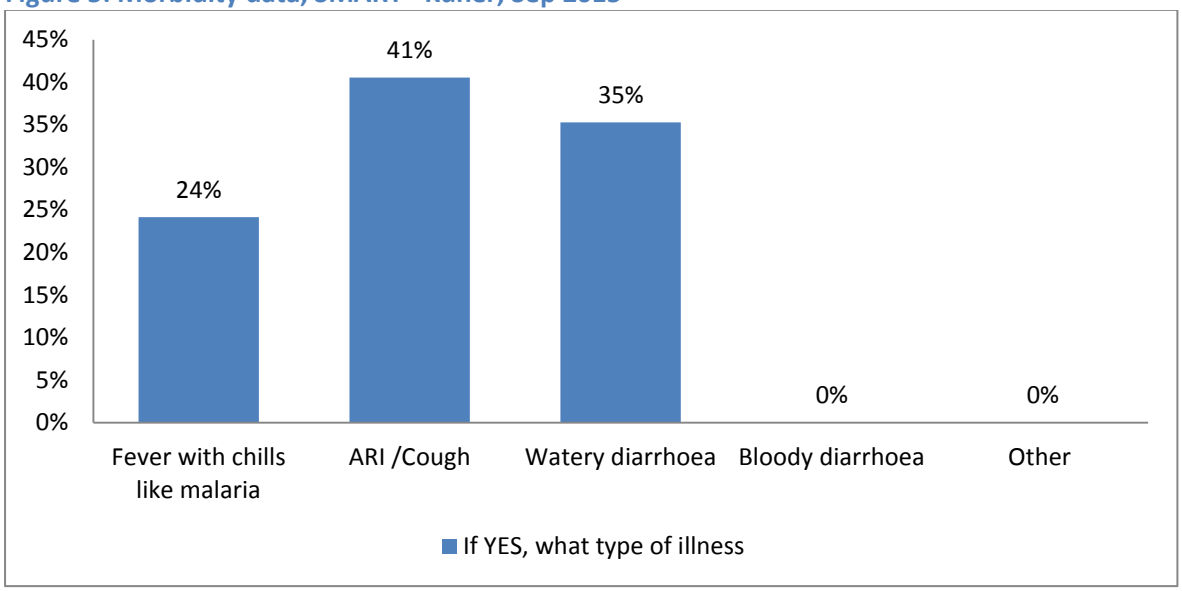
* contains for WHZ and WAZ the children with edema

6. CHILD HEALTH INDICATORS

6.1. Two weeks recall morbidity (children 0-59 months)

A total of 1331 respondents answered about whether they experienced health issue in the last 2 weeks prior to the day of visit of the survey team, **25 %** responded with "yes". The frequencies of the symptoms are presented in the figure below.

Figure 5: Morbidity data, SMART –Kuner, Sep 2015



6.2. Immunization

Immunization, supplementation and deworming are proxy indicators informing community health outreach and health seeking behaviours concisely information (**table 19** for all vaccination).

Table 19: Immunization age based on vaccination, SMART –Nuristan, Aug 2015

Types of Vaccine	Yes by card/ Yes by Recall /No/DNK	%
Measles immunization coverage (>=9 months old(n=1081)	Verification by cards	**52**
	Both by cards and recalls	**94**
BCG immunization coverage (0-59 months old (n=1331)	Scar	**94**
	No Scar	**6**
Polio immunization coverage (0-59 months old children(n=1331)	Verification by cards	**57**
	Both by cards and recalls	96

5.3. Supplementation and Deworming

Supplementation and deworming are proxy indicators informing community Health outreach and health seeking behaviors. A summary of the results are presented in the below. See below.

Table 20: Vitamin A and Deworming coverage, SMART –Kuner, Sep 2015

	Class	Frequency	%
Vitamin A supplementation aged 6-59 months (6 months recall) , n=681	Yes	435	64%
	No	246	36%
Deworming aged 12-59 months (6 months recall) , n=1012	Yes	454	45%
	No	558	55%

6. IYCF INDICATORS

Indicators for infant and young child feeding (IYCF) practices included all children 0 – 23 months. A total of 564 children included in the sample. The results are presented as percentage of the total answers available, and as such were not presented with confidence interval (**See Table 21**).

Table 21: Infant and Young Child Feeding Practice, SMART –Kuner, Sep 2015

Core Indicators	Definition	N	%

Child ever breastfed (n=564)	Proportion of children who have ever received breast milk	564	100
Timely initiation of breastfeeding (n=564)	Proportion of children born in the last 23 months who were put to the breast within one hour of birth	533	95
Provision of colostrum within first 3 days (n=564)	Proportion of children who received colostrum (yellowish liquid) within the first 3 days after birth	563	100
Still breast feeding at 1 year (n=562)	Proportion of children 12–15 months of age Who are fed breast milk.	533	95
Exclusive breast feeding (n=564)	Proportion of infants 0–5 months of age who are fed exclusively with breast milk.	346	46
Introduction of solid, semisolid or soft foods (n=78)	Proportion of infants 6–8 months of age who Receive solid, semi-solid or soft foods.	57	73

7. MATERNAL NUTRITION STATUS AND HAND WASHING

All women aged between 15 and 49 years, found in the selected households, were included in the analysis of the following 3 key indicators:

- Physiological status
- Nutritional status based on MUAC cut-off
- Iron/folate for pregnant women (at least once during the visit of the survey team)

The results are presented in the tables below.

Table 22: Physiological status of women of reproductive age (15 – 49 years), (n=1015), SMART – Kuner, Sep 2015

Status	Frequency	%
Pregnant	204	20%
Lactating	509	50%
Pregnant & Lactating	22	2%
Non-pregnant & non-lactating	280	28%

Table 23: Nutritional status of women of reproductive age based on Mid-upper arm, SMART-Kuner, Sep 2015 (n=1012)

MUAC Cutoff	Frequency	%
MUAC <230 mm	186	18.4%
MUAC =or > 229 mm	826	81.6%

Table 24: Iron folate for pregnant women based on available answers, (n=224), SMART –Kuner, Sep 2015

Iron-folate for PLW	Frequency	%
Yes	83	37.1%
No	135	60.3%
Do not know	6	2.7%

Practices of hand washing are indicated in Table 25.

Table 25: Hand washing, SMART –Kuner, Sep 2015, (n=727)

Hand Washing care takers (n=587)	Frequency	%
Only water	164	23%
Soap	235	32%
Soap when I can afford it	326	45%
Traditional herb	2	0%
Other	0	0%

Although the percentage of people using water only for hand washing is low, a chi- square test was done in order to assess the relationship between hand washing and episode of diarrhea. The result indicated that children from households not using soap were more likely to have diarrhea compared to children from households using soap ($p< 0.05$).

Table 26: Hand washing at 4 critical moments, (n=728), SMART –Kuner, Sep 2015

Response	Frequency	%
Wash hands at all 4 critical moments	622	85
After Toilet/latrines	714	98%
Before cooking	684	95%
Before eating	709	98%
After taking children to the toilet	673	93%

* This was a multiple response question; percentages don't add up to 100.

NB: As this information was largely knowledge/recall based, there is no practical Verification process to know if mothers/caretakers actually practiced hand washing at all 4 critical points or if they were largely recalling times to which they were previously informed.

8. MORTALITY AND DEMOGRAPHICS

8.1. Demography

The mortality questionnaire in SMART is designed in a way that some additional useful Demographic data can be withdrawn. Summary is available in **Table 28**. A total of 6957 Individuals were surveyed and 1331 were reported to have children under age of 5 years.

Table 27: Short summary of demographics, SMART- Kuner, Sep 2015

Indicator	Value
Average HH size	9.5
Children under 5	19.8%
Most frequent HH size	7
Min HH Size	2
Max HH Size	35

8.2. Mortality

Mortality was included in the survey, with basic data collected at the household level, using the retrospective mortality methodology, with a 120 days recall period. Heads of household were the main responders, from all households included in the survey, a total of 729 households, regardless if the households had children or not. Crude Mortality Rates and Under Five Mortality rates are presented in Table 27).

Table 288: Crude mortality rates (CMR) and under-5 mortality rates (U5MR), SMART- Kuner, Sep 2015

Retrospective Mortality in 120 days prior to survey	Rate	(95% CI)
CMR (total deaths/10,000 people / day):	0.30	0.17-052
U5MR (deaths in children under five/10,000 children under five / day):	1.61	0.97-2.82

9. HOUSEHOLD INFORMATION

Several questions concerning the surveyed households were collected which included structure and type of households, livelihoods, water access and storage.

9.1. Structure and type of household

This information is concisely presented in the below table:

Table 29: structure and type of households, (n=731) SMART – Kuner, Sep 2015

Head of HH	Frequency	%
Male	714	98%
Female	7	1%
Both	5	1%
Others	5	1%

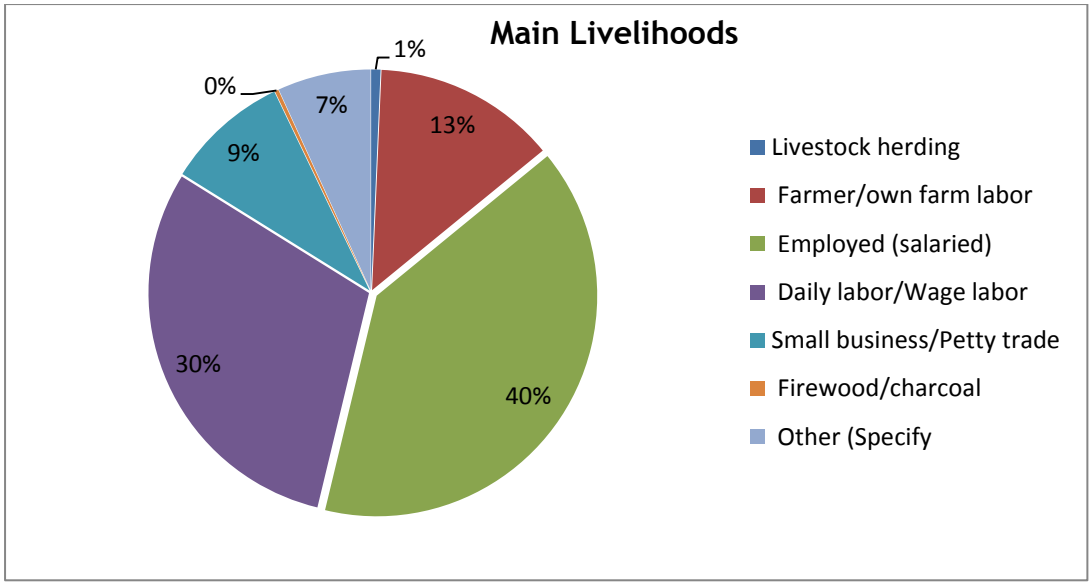
Table 30: type of family- SMART Kuner, Sep 2015

Family type	Frequency	%
Monogamous	702	96.0%
Polygamous	27	3.7%
Single parent	2	0.3%

9.2. Main lively hoods

The main livelihoods were defined as those of the family heads. The livestock herding was of 1%. See **figure 6** below.

Figure 6: main lively hoods, (n= 731), SMART – Kuner, Sep 2015

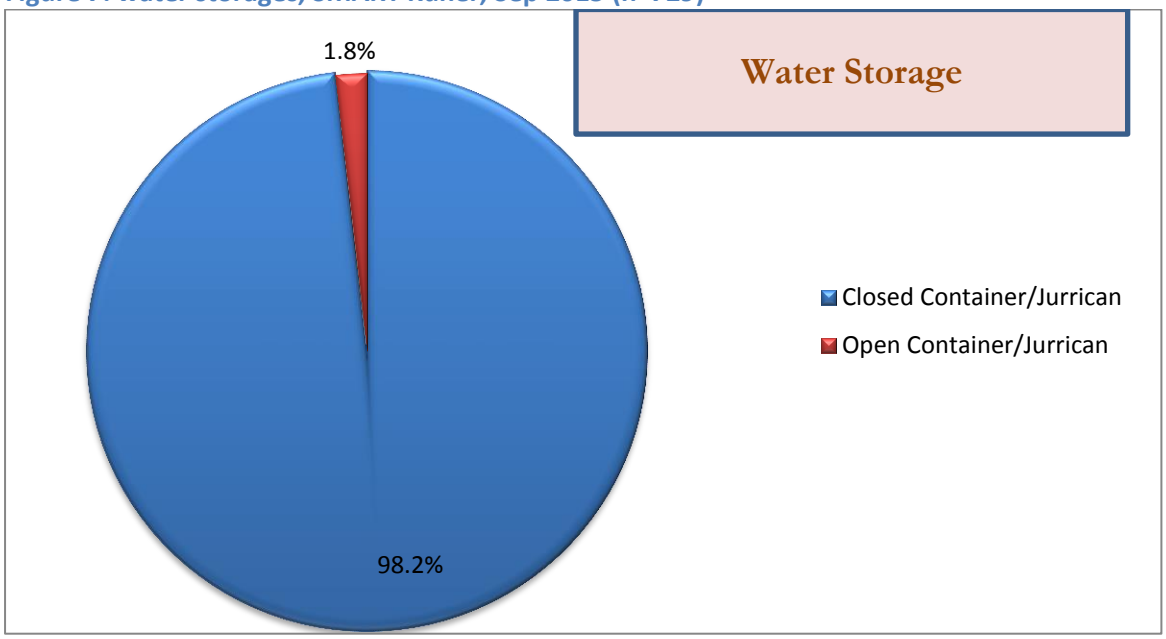


10. WAHS

10.2. Water storage and consumption

A total from 731 households studied, representing 729 households during the survey finding showed most of household stored water in closed container/jurricans (98.2 %) water storage in closed container and (1.8 %) water storage in open container
(See **figure 7**).

Figure 7: water storages, SMART Kuner, Sep 2015 (n=729)



A total of 731 responders, representing 729 households and 6957 individuals, were included, either male or female. Data collection asked for the total amount of water in total litters you used in your household excluded of animals, and subsequently organized into range of litters

used. The results were then divided into the quantity of water in litters available to each household member per day as compared to SPHERE standard of 15L/person/day. **See figure 8 and 9).**

Figure 8: Percentage of households with access to 15L of water/person/day (n=729), SMART – Kuner, Sep 2015

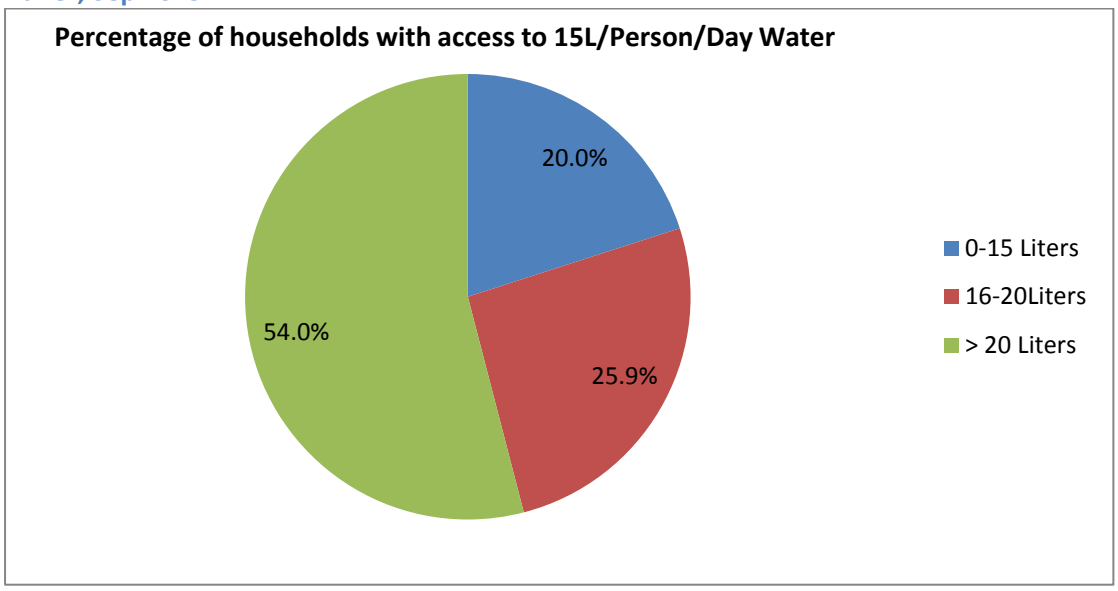
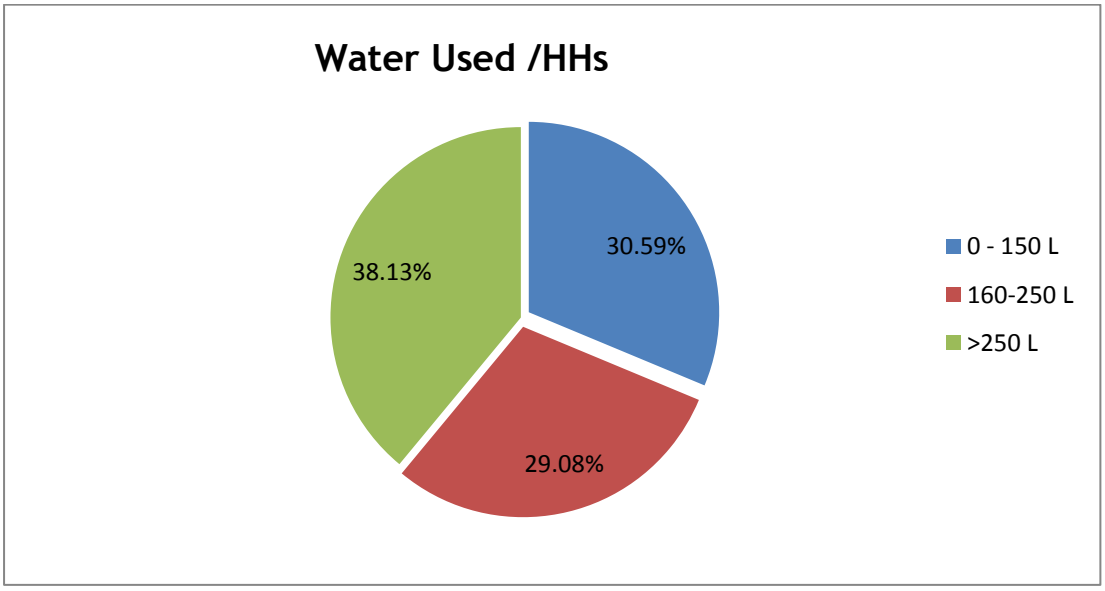


Figure 9: Household level daily quantity of water used in litters n=729), SMART – Kuner, Sep 2015



11. DISCUSSIONS

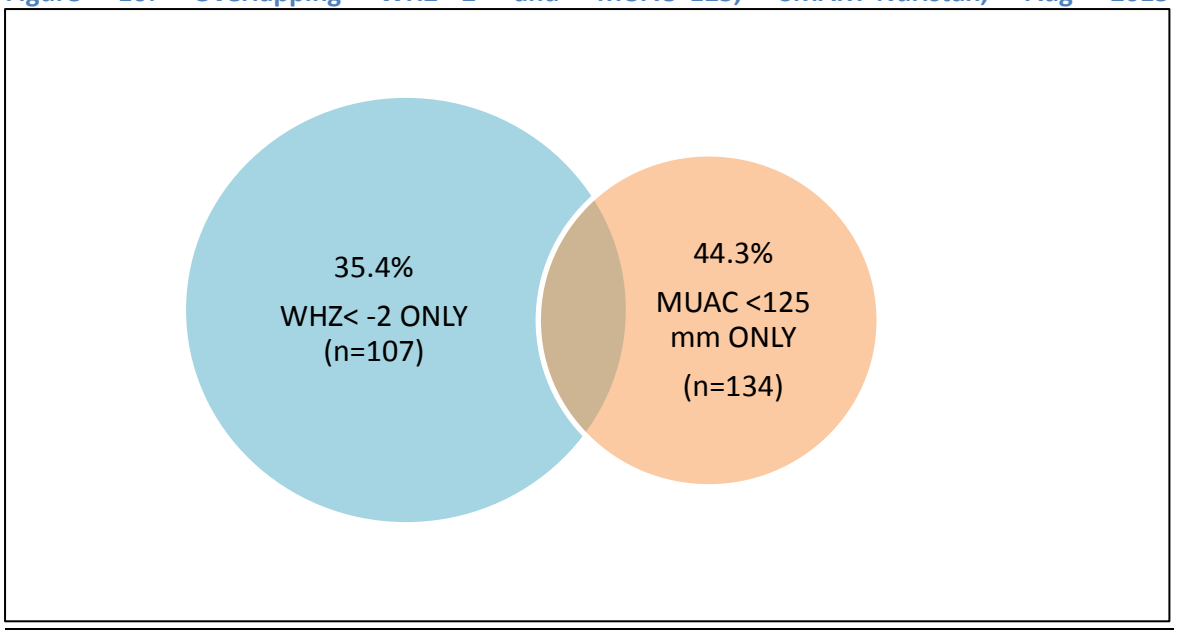
11.1 Nutritional Status

11.1.1 Global Acute Malnutrition

This SMART Nutrition Survey was conducted in 5 districts of Kuner province between 7th to 16th Sep 2015. The GAM rate, based on WHZ was of 11.8 % [CI: 9.7-14.3]. It is lower than the WHO emergency threshold of 15%, but classified by serous. The SAM rate, based on WHZ, was 2.3% and no emergency, used in the context of Afghanistan to trigger emergency.
The GAM rate based on MUAC was 8.7% [CI: 7.1-10.5], is high from the GAM rate based on WHZ is significant deference. It can be classified as alert if WHO standards are considered. In-depth analysis indicated that the WHZ and MUAC prevalence are not based on the same Children.

Figure10 schematically demonstrates this difference. Only 20.3% children in the sample were detected as acutely malnourished according both criteria. The survey have shown that children having MUAC <125 mm were more stunted (HAZ<-2) than wasted (WHZ<-2). This data support the hypothesis that in Kuner about 35.4 % of the acutely malnourished children are by WHZ. Therefore, MUAC based community screenings are not enough to detect all acutely malnourished children eligible for treatment according to the criteria stipulated in the Afghanistan National IMAM Guidelines. This has to be however further investigated. Both GAM WHZ and MUAC have been more prevalent among children 6-29 months compared to
Children 30-59 months old. This suggests higher vulnerability of younger children to wasting.

Figure 10: Overlapping WHZ<-2 and MUAC<125, SMART-Nuristan, Aug 2015



11.1.2. Chronic malnutrition

Chronic malnutrition trends in Kuner province remain worrying. The results of the present survey clearly showed that, based on WHO classification of severity of malnutrition, the overall prevalence of stunting was (50.3%) [CI: 46.4-54.2]. One in every 2 children included in the survey were found to be stunted, while 2 in every 5 children was under weight. The very high stunting rates can probably be due to prevalence of diseases (25% reported of being ill 2 weeks prior to survey), poor infant feeding practices morbidity (exclusive breastfeeding was found to be 46% and timely complementary feeding was of 73%) has been known to expose children morbidity and malnutrition and even death. The rate of stunting was lower than the national stunting figures reported in the NNS2013 (56.3%) and 6% stunting decrease from 2013 NNS , the very young age group, 6-29 months, was found to be suffered by lower linear growth which could be linked with eventual premature or low birth weight babies and/or low maternal nutrition status. Increasing trends of stunting with the age were also observed.
High stunting requires long term nutrition interventions combined with infant and young children nutrition and scaling up deworming practice as well encouraging timely health seeking behavior during illness to be put in place to reverse this trend. Maternal nutrition and reproductive health also needs to be improved significantly in order to have better impact on high stunting.

11.1.3. Maternal nutritional status

There are no commonly accepted standards for maternal nutrition status. In line with the Afghanistan National Guideline, the MUAC cutoff for women of 230 mm is used to approximately identify their status. In this survey 18.4 % of the mothers were found to have a MUAC<230mm, which suggest that a considerable number of PLWs in Kuner are Malnourished. The main concern was iron supplementation among pregnant women which the survey found to be very low (37.1%). The Iron supplementation prevent anemia during pregnancy and eventual life-threatening complications during delivery. Therefore it decreases maternal mortality, prenatal and perinatal infant loss and prematurity which can be directly related to child stunting in the first 2 years of life. Although not of emergency matter, the Iron/Folate supplementation for pregnant women needs to be increased significantly by reinforcing the usual channels for that in BPHS/CBHC. The BPHS Implementing partner needs to make immediately significant progress by reinforcing ANC and CHW home visits to PLW and keep continuously in Kuner province.

11.2. Mortality Rates:

The survey showed that the Crude Mortality Rate (CMR) and under five mortality rate (U5MR) were 0.30 (95% CI: 0.17-0.52) and 1.66 (95% CI; 0.97-2.82) respectively. Both CMR and U5MR rates were below the WHO's emergency thresholds of 2/10,000/day and 4/10,000/day respectively but it is worryingly.

11.2. Risk Factor:

11.2.1. Morbidity, supplementation and deworming

The UNICEF conceptual framework of malnutrition can be used to explain the probable causes of under-nutrition in this area. Diseases weaken an individual immune system causing them have other side effects such as reduced food intake and diarrhea. In the 5 districts of
Kuner province, more than half of the sampled children had suffered from one form of illness or another (25 %) such as diarrhea, fever, cough and skin infection.
The coverage of Vitamin A supplementation, 6 months prior to the survey, was good. About 64% children received vitamin A supplementation. One of the core functions of Vitamin A is to boost an individuals' immunity hence important of supplement. Building awareness on Vitamin A is of importance as the current rates are high compared to the recommended WHO target of 80%, vitamin A coverage which probably happened due to effectiveness of the integrated NIDs campaign.
The proportion of all children aged 12-59 months who had received deworming in the last 6 months was poor (45%) in Kuner province it has related in Nutrition for absorption of minerals and vitamins.

11.2.2. Infant and young child feeding practices

Optimal infant and young child nutrition, especially exclusive breastfeeding is estimated to prevent potentially 1.4 million deaths every year among children under five years old. Infant and young child feeding nutrition in this area still needs to be improved.
Findings so far have indicated that timely initiation of breastfeeding, colostrum feeding and continuous breastfeeding up to the first year of life were well practiced by the mothers. However, exclusive breastfeeding rate of 46% respectively is of real concern as these potentially contribute to stunting in the first two years of life. The complementary feeding, is extremely poor (73 %) and often mixed with tea (inhibits iron absorption). These two practices need to be significantly improved in a targeted manner.

11.2.3. Water Hygiene and Sanitation (WASH)

The WASH indicators collected in this survey were mostly limited to the most pragmatic and easy to collect using a SMART methodology. WASH findings from the 5 districts of Kuner province, It is important to note that due to the limited scope of WASH questions and indicators included, a more general conclusion of the WASH situation is not possible. Also the survey did not include observation of the practice of hand washing and the responses are suspected to be more of knowledge,
Morbidity levels are aggravated the poor WAHS condition characterized by poor sanitation facilities and poor hand washing practice at 4 critical points and washing hand practice by soap is very low (32 %) respectively is concern that potentially contribute in the morbidity .
It is very important to know Kuner is difficult geographical terrains and it made mostly inaccessible to health facilities including health and nutrition services.
Traditional barriers those cause inappropriate utilization of health services for instance mother and child services especially in the summer due to collecting woods and grasses in the mountains and immigration from villages to mountains and grasses places

11. RECOMMENDATIONS

Some recommendations have been drawn after the context analysis as a bellow.

Survey finding	Recommendations	Responsible
GAM rates (WHZ base=11.8% and MUAC base=8.7 %) High stunting rate 50.3 %	✓ Prioritize activities addressing chronic malnutrition, high stunting rates, at the community level, through food security/agricultural, nutrition cooking demonstrations, IYCF, micronutrients rich food and appropriate supplementation and improving maternal health and nutrition. ✓ Community mobilization program should be extended to remote areas as much as possible according to security clearance. ✓ To strength and continues TSFP programs to prevent and treat moderate acute malnutrition children. ✓ It is strongly recommended to continue the activities or implementation of IMAM program where do not exist to contribute with the reduction of malnutrition, morbidity and mortality of children. ✓ Increased availability of, and access to, high-quality nutrition-specific services and commodities are essential to address the immediate determinants of malnutrition and ensure optimal child growth and development and women's nutrition ✓ Support and establish systems for community mobilization and identification and referral of acute malnutrition cases.	MOPH, Nutrition Cluster BPHS and EPHS implementers
Low Immunization and supplementation	✓ Support ongoing education and quality-improvement programs for pediatricians and other child health care professionals about important vaccine-related issues, including the dissemination of peer-reviewed evidence for more effective immunization delivery ✓ Promote vaccinations involves providing face-to-face services to clients in their homes. Services can include education, assessment of need, referral and provision of vaccinations. Home visiting Interventions can also involve telephone and CWHs fallow up systems.	MOPH , WHO, BPHS and EPHS implementers
Childhoods illness (Child illness =25 %)	✓ Importance of disease control interventions linked to complementary feeding as the two primary immediate causes of child under nutrition. ✓ Improve awareness and investigate more on barriers	MOPH, Community

	for improved health care seeking by families for management of children's infections and strength health education.	, BPHS and EPHS implementer
Maternal Nutrition status (MUAC base = 18.4 %) and Iron folate supplementation for PLWs= 37.1%	✓ Community sensitization on importance of micronutrient supplementation. ✓ To increase the Maternal Health Care activities to improve the pregnant and lactating women nutrition status and folate supplementation. ✓ Strengthening of community component and provide FHAG (family Health Action Groups) to improve the maternal nutrition status. ✓ The house hold food security should also be promoted in order to contribute to the nutrition status of the population in need. ✓ Improve women's nutrition services and counseling during reproductive, antenatal, and postpartum care especially in relation to anemia prevention and treatment, adequate dietary quality and weight gain during pregnancy, maternal nutrition during lactation, and address the special challenges of adolescent pregnancies and pregnancy and lactation.	MOPH, WFP, BPHS and EPHS implementers
IYCF (exclusive breast feeding = 46 % complementary feeding =73 %)	✓ It is really important to strength and promotes IYCF counselling and food demonstration in health facilities and community level. ✓ To strength and Improved food diversification during weaning and complementary period, increase of meal frequencies that are age-specific	MOPH, BPHS and EPHS implementers
WASH (hand washing practice at 4 critical point= 85 and mothers soap hand washing practice=32 %	✓ The component of water and sanitation (WASH) should be taken in to account as a vertical intervention or integrated it to the health promoting programs. ✓ Ensure access to safe drinking water through WASH interventions that are sustainable and easy to maintain to address low water access rates in rural areas ✓ Intervention programmers for improving water, sanitation and hygiene practices including health education to educate the community on domestic treatment of drinking water ✓ Integrate key hygiene actions (safe drinking water, hand-washing with soap, safe disposal of excreta, and food hygiene) as essential components in all targeted nutrition programs.	MOPH, BPHS and EPHS implementers

Other key programmatic recommendations are:

- Strength regular supervisions, Monitoring and Surveillance systems on health facilities and community level
- To strength active and passive case finding and timely reporting systems
- Advocate at the national level for acceptance of a standardized SMART methodology as Regular monitoring tool for under nutrition levels.
- To survey districts which were not included in this survey. Should be assessed at a later date depending on security access.
- Another survey should be conducted within one year interval in order to assess the existence of changes regarding the nutrition status of the province, moreover some additional indicators like food security should also be consider.

14. ANNEX

Annex 1: Cluster sampling

No	Province	District	Population	Community/village Name	Cluster
1	Kunar	Sarkani	1306	Baharabad	1
2	Kunar	Sarkani	630	Koz Daman	2
3	Kunar	Sarkani	619	Bar daman	3
4	Kunar	Sarkani	1440	Muslimabad	4
5	Kunar	Sarkani	2880	Donai	5
6	Kunar	Sarkani	1351	Koza bila	6
7	Kunar	Sarkani	1440	Bara bila	7
8	Kunar	Sarkani	590	Arbab Dara	8
9	Kunar	Sarkani	2390	Sarkano kali	9
10	Kunar	Sarkani	2500	Tango Camp	10
11	kunar	Narang	980	Ghondo	11
12	kunar	Narang	1050	karwanda	12
13	kunar	Narang	1050	kotki bar cham	13
14	kunar	Narang	800	kotki dag	14
15	kunar	Narang	1064	Bar narang pass kali	15
16	kunar	Narang	400	Mazar	16
17	kunar	Narang	1050	Lamatak landi kali	RC
18	kunar	Narang	780	Chahar kala	17
19	kunar	Narang	800	sharalo	18
20	kunar	Narang	2740	Spin karr	19
21	kunar	Narang	360	Shana gondai	20
22	kunar	Narang	1340	Barlachgali	21
23	kunar	Narang	1230	Bardandona	22
24	kunar	Narang	1005	kozdandona	23
25	Kunar	Asmar	1100	Jajah	RC
26	Kunar	Asmar	1043	Seor dag	24
27	Kunar	Asmar	1350	Hussai	25
28	Kunar	Asmar	1132	Chapako	26

29	Kunar	Asmar	400	Shir kass	27
30	Kunar	Asmar	763	Bar shangar	28
31	Kunar	Shigal	434	Lachi 1	29
32	Kunar	Shigal	912	Barkarborai	30
33	Kunar	Shigal	833	Paloso naw	31
34	Kunar	Shigal	843	Dagseer	32
35	Kunar	Shigal	820	Sorano dwaro kali	33
36	Kunar	Shigal	1025	Mala alam Kali	34
37	Kunar	Shigal	1568	Bar Moni	35
38	Kunar	Shigal	983	Mizara	RC
39	Kunar	Shigal	1671	Hilalzo	36
40	Kunar	Shigal	689	Chakorai	37
41	Kunar	Shigal	1358	Shangar gal	38
42	Kunar	Shigal	1225	Shinkorak lar Kali	39
43	Kunar	Shigal	1460	Shimkor bar kali	40
44	Kunar	Shigal	745	Markazi Sagi	41
45	Kunar	Watapoor	737	Managai	42
46	Kunar	Watapoor	2060	Dagg	43
47	Kunar	Watapoor	1710	Bara Qamchai	RC
48	Kunar	Watapoor	675	Koza Qamchai	44
49	Kunar	Watapoor	550	Bara shagai	45
50	Kunar	Watapoor	720	Sharalo kali	46
51	Kunar	Watapoor	639	Mashogal	47
52	Kunar	Watapoor	1302	Seem tam	RC

Annex 2: Plausibility check

Plausibility check for: Kunar data collection Sep 2015+ cloths weight.as

Standard/Reference used for z-score calculation: WHO standards 2006
(If it is not mentioned, flagged data is included in the evaluation. Some parts of this plausibility report are more for advanced users and can be skipped for a standard evaluation)

Overall data quality

Criteria Flags* Unit Excel. Good Accept Problematic **Score**

Flagged data Incl % 0-2.5 >2.5-5.0 >5.0-7.5 >7.5
(% of out of range subjects) 0 5 10 20 **0** (1.4 %)

Overall Sex ratio Incl p >0.1 >0.05 >0.001 <=0.001
(Significant chi square) 0 2 4 10 **0** (p=0.201)

Age ratio(6-29 vs 30-59) Incl p >0.1 >0.05 >0.001 <=0.001
(Significant chi square) 0 2 4 10 **10** (p=0.000)

Dig pref score - weight Incl # 0-7 8-12 13-20 > 20
0 2 4 10 **0** (2)

Dig pref score - height Incl # 0-7 8-12 13-20 > 20
0 2 4 10 **0** (7)

Dig pref score - MUAC Incl # 0-7 8-12 13-20 > 20
0 2 4 10 **0** (5)

Standard Dev WHZ Excl SD <1.1 <1.15 <1.20 >=1.20
. and and and or
. Excl SD >0.9 >0.85 >0.80 <=0.80
0 5 10 20 **0** (0.94)

Skewness WHZ Excl # <±0.2 <±0.4 <±0.6 >=±0.6
0 1 3 5 **1** (-0.28)

Kurtosis WHZ Excl # <±0.2 <±0.4 <±0.6 >=±0.6
0 1 3 5 **1** (0.23)

Poisson dist WHZ-2 Excl p >0.05 >0.01 >0.001 <=0.001
0 1 3 5 **3** (p=0.006)

OVERALL SCORE WHZ = 0-9 10-14 15-24 >25 **15** %

The overall score of this survey is 15 %, this is acceptable.

There were no duplicate entries detected.

Percentage of children with no exact birthday: 47 %

Anthropometric Indices likely to be in error (-3 to 3 for WHZ, -3 to 3 for HAZ, -3 to 3 for WAZ, from observed mean - chosen in Options panel - these values will be flagged and should be excluded from analysis for a nutrition survey in emergencies. For other surveys this might not be the best procedure e.g. when the percentage of overweight children has to be calculated):

Line=4/ID=4: HAZ (1.202), Age may be incorrect
Line=13/ID=13: HAZ (-11.140), WAZ (-7.177), Age may be incorrect
Line=18/ID=18: HAZ (1.092), Age may be incorrect
Line=21/ID=21: HAZ (-7.060), Age may be incorrect
Line=65/ID=65: HAZ (3.801), Age may be incorrect
Line=69/ID=69: HAZ (-8.520), WAZ (-5.826), Age may be incorrect
Line=86/ID=86: **WHZ (-5.629)**, Weight may be incorrect
Line=110/ID=110: HAZ (-5.238), WAZ (-4.863), Age may be incorrect
Line=120/ID=120: HAZ (3.780), Age may be incorrect
Line=122/ID=122: **WHZ (-4.047)**, WAZ (-4.783), Weight may be incorrect
Line=127/ID=127: HAZ (4.033), Age may be incorrect
Line=130/ID=130: HAZ (-5.736), Age may be incorrect

Line=174/ID=174: HAZ (-5.644), Age may be incorrect
Line=176/ID=176: HAZ (-5.784), Age may be incorrect
Line=184/ID=184: HAZ (-5.774), Age may be incorrect
Line=224/ID=224: HAZ (2.584), WAZ (1.435), Age may be incorrect
Line=241/ID=241: HAZ (2.258), Age may be incorrect
Line=263/ID=263: HAZ (3.425), Age may be incorrect
Line=271/ID=271: **WHZ (2.165)**, Weight may be incorrect
Line=298/ID=298: HAZ (-6.742), Height may be incorrect
Line=299/ID=299: HAZ (1.159), Height may be incorrect
Line=300/ID=300: HAZ (-6.902), Age may be incorrect
Line=333/ID=333: HAZ (-6.924), Age may be incorrect
Line=367/ID=367: HAZ (-5.604), Age may be incorrect
Line=380/ID=380: **WHZ (2.438)**, HAZ (-4.972), Height may be incorrect
Line=391/ID=391: HAZ (-5.716), Height may be incorrect
Line=398/ID=398: HAZ (2.392), Age may be incorrect
Line=402/ID=402: HAZ (3.207), Age may be incorrect
Line=403/ID=403: **WHZ (-6.370)**, HAZ (6.822), Height may be incorrect
Line=405/ID=405: HAZ (1.560), Age may be incorrect
Line=414/ID=414: HAZ (1.546), Age may be incorrect
Line=444/ID=444: **WHZ (3.429)**, WAZ (1.882), Weight may be incorrect
Line=456/ID=456: HAZ (2.411), Height may be incorrect
Line=458/ID=458: **WHZ (-6.056)**, HAZ (7.148), Height may be incorrect
Line=472/ID=472: HAZ (1.438), WAZ (1.405), Age may be incorrect
Line=508/ID=508: HAZ (-5.173), Age may be incorrect
Line=512/ID=512: HAZ (-5.738), Age may be incorrect
Line=546/ID=546: HAZ (1.101), Age may be incorrect
Line=551/ID=551: HAZ (1.618), Height may be incorrect
Line=553/ID=553: HAZ (5.039), Age may be incorrect
Line=557/ID=557: HAZ (-5.601), Height may be incorrect
Line=579/ID=579: **WHZ (2.277)**, HAZ (-5.905), Height may be incorrect
Line=585/ID=585: HAZ (-5.820), Age may be incorrect
Line=587/ID=587: HAZ (1.414), Age may be incorrect
Line=599/ID=599: HAZ (-5.652), WAZ (-4.822), Age may be incorrect
Line=605/ID=605: HAZ (4.141), Age may be incorrect
Line=608/ID=608: WAZ (-4.832), Weight may be incorrect
Line=629/ID=629: HAZ (1.104), Age may be incorrect
Line=631/ID=631: HAZ (1.181), Age may be incorrect
Line=637/ID=637: WAZ (-4.791), Age may be incorrect
Line=641/ID=641: HAZ (1.387), Height may be incorrect
Line=659/ID=659: HAZ (1.216), Age may be incorrect
Line=670/ID=670: HAZ (-6.086), Age may be incorrect
Line=684/ID=684: HAZ (5.110), WAZ (2.606), Age may be incorrect
Line=707/ID=707: HAZ (-5.972), Age may be incorrect
Line=709/ID=709: HAZ (-5.539), Age may be incorrect
Line=720/ID=720: HAZ (-4.965), Age may be incorrect
Line=732/ID=732: **WHZ (-5.364)**, HAZ (5.838), Height may be incorrect
Line=733/ID=733: HAZ (3.167), Age may be incorrect
Line=734/ID=734: **WHZ (-3.901)**, HAZ (-5.507), WAZ (-6.044)
Line=738/ID=738: HAZ (4.263), WAZ (1.380), Age may be incorrect
Line=778/ID=778: **WHZ (4.489)**, HAZ (-7.884), Height may be incorrect
Line=846/ID=846: HAZ (1.305), Age may be incorrect

Line=874/ID=874: **WHZ (-3.937)**, Weight may be incorrect
Line=948/ID=948: **WHZ (-4.135)**, Weight may be incorrect
Line=992/ID=992: HAZ (1.423), Age may be incorrect
Line=1007/ID=1007: **WHZ (2.917)**, Height may be incorrect
Line=1046/ID=1046: **WHZ (2.486)**, WAZ (1.563), Weight may be incorrect
Line=1080/ID=1080: HAZ (1.061), Age may be incorrect
Line=1096/ID=1096: HAZ (3.957), WAZ (1.397), Age may be incorrect
Line=1112/ID=1112: **WHZ (2.616)**, Weight may be incorrect
Line=1213/ID=1213: **WHZ (2.973)**, WAZ (1.749), Weight may be incorrect
Line=1318/ID=1320: HAZ (-5.309), WAZ (-5.191), Age may be incorrect

Percentage of values flagged with SMART flags:WHZ: 1.4 %, HAZ: 5.2 %, WAZ: 1.4 %

Age distribution:

Month 6 : ##############
Month 7 : ##########################
Month 8 : ################################
Month 9 : ##########################
Month 10 : ##########################
Month 11 : ##########################
Month 12 : ################################
Month 13 : ####################
Month 14 : ########################
Month 15 : ####################
Month 16 : ################################
Month 17 : ##################
Month 18 : ########################
Month 19 : ##############################
Month 20 : ########################
Month 21 : ####################
Month 22 : ########################
Month 23 : ##################
Month 24 : ##
Month 25 : ############################
Month 26 : ############################
Month 27 : ################
Month 28 : ################################
Month 29 : ##################
Month 30 : ############################
Month 31 : ##################
Month 32 : ####################
Month 33 : ################################
Month 34 : ######################
Month 35 : ####################
Month 36 : ##
Month 37 : ##########################
Month 38 : ################
Month 39 : ##############
Month 40 : ###############

Month 41 : ############
Month 42 : ####################
Month 43 : ###################
Month 44 : ####################
Month 45 : ################
Month 46 : ##################
Month 47 : #############
Month 48 : ###############################
Month 49 : ####################
Month 50 : ######
Month 51 : ##
Month 52 : #############
Month 53 : ##########
Month 54 : ############
Month 55 : ########
Month 56 : ###################
Month 57 : #############
Month 58 : ##########################
Month 59 : ############################
Month 60 : ##

Age ratio of 6-29 months to 30-59 months: 1.10 (The value should be around 0.85).:
p-value = 0.000 (significant difference)

Statistical evaluation of sex and age ratios (using Chi squared statistic):

Age cat.	mo.	boys	girls	total	ratio boys/girls
6 to 17	12	152/142.5 (1.1)	156/132.3 (1.2)	308/274.7 (1.1)	0.97
18 to 29	12	162/138.9 (1.2)	150/128.9 (1.2)	312/267.8 (1.2)	1.08
30 to 41	12	137/134.6 (1.0)	127/125.0 (1.0)	264/259.6 (1.0)	1.08
42 to 53	12	101/132.5 (0.8)	92/123.0 (0.7)	193/255.5 (0.8)	1.10
54 to 59	6	62/65.5 (0.9)	45/60.8 (0.7)	107/126.4 (0.8)	1.38
6 to 59	54	614/592.0 (1.0)	570/592.0 (1.0)		1.08

The data are expressed as observed number/expected number (ratio of obs/expect)

Overall sex ratio: p-value = 0.201 (boys and girls equally represented)
Overall age distribution: p-value = 0.000 (significant difference)
Overall age distribution for boys: p-value = 0.016 (significant difference)
Overall age distribution for girls: p-value = 0.001 (significant difference)
Overall sex/age distribution: p-value = 0.000 (significant difference)

Digit preference Weight:

Digit .0 : ##
Digit .1 : ###
Digit .2 : ##
Digit .3 : ##

Digit .4 : ##
Digit .5 : ##
Digit .6 : ##
Digit .7 : ##
Digit .8 : ##
Digit .9 : ##

Digit preference score: **2** (0-7 excellent, 8-12 good, 13-20 acceptable and > 20 problematic)
p-value for chi2: 0.884

Digit preference Height:

Digit .0 : ##################################
Digit .1 : ####################################
Digit .2 : ##
Digit .3 : ##
Digit .4 : ##
Digit .5 : ##
Digit .6 : ##
Digit .7 : ##
Digit .8 : ############################
Digit .9 : ##############################

Digit preference score: **7** (0-7 excellent, 8-12 good, 13-20 acceptable and > 20 problematic)
p-value for chi2: 0.000 (significant difference)

Digit preference MUAC:

Digit .0 : ########################
Digit .1 : ##
Digit .2 : ######################################
Digit .3 : ##################################
Digit .4 : ##
Digit .5 : ##
Digit .6 : ##
Digit .7 : ##################################
Digit .8 : ######################################
Digit .9 : ##

Digit preference score: **5** (0-7 excellent, 8-12 good, 13-20 acceptable and > 20 problematic)
p-value for chi2: 0.001 (significant difference)

Evaluation of Standard deviation, Normal distribution, Skewness and Kurtosis using the 3 exclusion (Flag) procedures

.	**no exclusion**	**exclusion from reference mean (WHO flags)**	**exclusion from observed mean (SMART flags)**

WHZ

Standard Deviation SD:	1.04	1.01	0.94
(The SD should be between 0.8 and 1.2)			
Prevalence (< -2)			
observed:	12.3%	12.0%	
calculated with current SD:	14.5%	13.2%	
calculated with a SD of 1:	13.4%	13.1%	

HAZ

Standard Deviation SD:	1.60	1.48	1.21
(The SD should be between 0.8 and 1.2)			
Prevalence (< -2)			
observed:	50.0%	49.7%	50.3%
calculated with current SD:	48.6%	47.8%	49.5%
calculated with a SD of 1:	47.7%	46.8%	49.4%

WAZ

Standard Deviation SD:	1.12	1.11	1.04
(The SD should be between 0.8 and 1.2)			
Prevalence (< -2)			
observed:	37.9%	37.8%	37.7%
calculated with current SD:	40.3%	39.8%	39.4%
calculated with a SD of 1:	39.1%	38.8%	38.9%

Results for Shapiro-Wilk test for normally (Gaussian) distributed data:

WHZ	p= 0.000	p= 0.000	p= 0.000
HAZ	p= 0.000	p= 0.000	p= 0.004
WAZ	p= 0.000	p= 0.012	p= 0.056

(If $p < 0.05$ then the data are not normally distributed. If $p > 0.05$ you can consider the data normally distributed)

Skewness

WHZ	-0.27	0.06	-0.28
HAZ	0.46	0.64	0.01
WAZ	-0.18	-0.06	-0.11

If the value is:

-below minus 0.4 there is a relative excess of wasted/stunted/underweight subjects in the sample

-between minus 0.4 and minus 0.2, there may be a relative excess of wasted/stunted/underweight subjects in the sample.

-between minus 0.2 and plus 0.2, the distribution can be considered as symmetrical.

-between 0.2 and 0.4, there may be an excess of obese/tall/overweight subjects in the sample.

-above 0.4, there is an excess of obese/tall/overweight subjects in the sample

Kurtosis

WHZ	2.70	1.56	0.23
HAZ	4.38	2.43	-0.42
WAZ	0.93	0.49	-0.05

Kurtosis characterizes the relative size of the body versus the tails of the distribution. Positive kurtosis indicates relatively large tails and small body. Negative kurtosis indicates relatively large body and small tails.

If the absolute value is:
-above 0.4 it indicates a problem. There might have been a problem with data collection or sampling.
-between 0.2 and 0.4, the data may be affected with a problem.
-less than an absolute value of 0.2 the distribution can be considered as normal.

Test if cases are randomly distributed or aggregated over the clusters by calculation of the Index of Dispersion (ID) and comparison with the Poisson distribution for:

WHZ < -2: ID=1.60 (p=0.006)
WHZ < -3: ID=1.18 (p=0.191)
GAM: ID=1.60 (p=0.006)
SAM: ID=1.18 (p=0.191)
HAZ < -2: ID=1.71 (p=0.002)
HAZ < -3: ID=1.69 (p=0.003)
WAZ < -2: ID=2.31 (p=0.000)
WAZ < -3: ID=1.59 (p=0.007)

Subjects with SMART flags are excluded from this analysis.

The Index of Dispersion (ID) indicates the degree to which the cases are aggregated into certain clusters (the degree to which there are "pockets"). If the ID is less than 1 and p > 0.95 it indicates that the cases are UNIFORMLY distributed among the clusters. If the p value is between 0.05 and 0.95 the cases appear to be randomly distributed among the clusters, if ID is higher than 1 and p is less than 0.05 the cases are aggregated into certain cluster (there appear to be pockets of cases). If this is the case for Oedema but not for WHZ then aggregation of GAM and SAM cases is likely due to inclusion of oedematous cases in GAM and SAM estimates.

Are the data of the same quality at the beginning and the end of the clusters?
Evaluation of the SD for WHZ depending upon the order the cases are measured within each cluster (if one cluster per day is measured then this will be related to the time of the day the measurement is made).

Time SD for WHZ
point 0.8 0.9 1.0 1.1 1.2 1.3 1.4 1.5 1.6 1.7 1.8 1.9 2.0 2.1 2.2 2.3
01: 1.07 (n=46, f=0) ###########
02: 0.89 (n=41, f=0) ####
03: 0.95 (n=43, f=0) ######
04: 0.85 (n=40, f=0) ##
05: 1.08 (n=43, f=1) ############
06: 1.32 (n=39, f=1) ######################
07: 0.90 (n=42, f=0) ####
08: 1.05 (n=38, f=0) ###########
09: 1.01 (n=43, f=1) #########
10: 1.24 (n=39, f=1) ###################
11: 0.79 (n=38, f=0)
12: 0.94 (n=44, f=1) ######
13: 1.07 (n=44, f=1) ############

14: 0.95 (n=39, f=0) ######
15: 0.97 (n=43, f=1) #######
16: 0.82 (n=37, f=0) #
17: 1.07 (n=41, f=1) ##########
18: 1.40 (n=38, f=3) ########################
19: 0.96 (n=43, f=0) #######
20: 1.13 (n=44, f=0) ##############
21: 0.90 (n=43, f=0) ####
22: 1.25 (n=39, f=1) ##################
23: 1.45 (n=35, f=2) ############################
24: 0.95 (n=37, f=0) ######
25: 0.92 (n=28, f=0) #####
26: 0.66 (n=27, f=0)
27: 1.58 (n=23, f=2) ##################################
28: 1.13 (n=21, f=1) OOOOOOOOOOOOO
29: 0.96 (n=18, f=0) OOOOOOO
30: 0.82 (n=18, f=0) O
31: 0.87 (n=13, f=0) OOO
32: 0.81 (n=12, f=0)
33: 0.91 (n=08, f=0) ~~~~~
34: 1.12 (n=08, f=0) ~~~~~~~~~~~~~
35: 1.13 (n=07, f=0) ~~~~~~~~~~~~~
36: 0.56 (n=06, f=0)
37: 0.69 (n=03, f=0)
38: 0.74 (n=04, f=0)
39: 0.39 (n=04, f=0)
40: 0.57 (n=03, f=0)

(when n is much less than the average number of subjects per cluster different symbols are used: 0 for n < 80% and ~ for n < 40%; The numbers marked "f" are the numbers of SMART flags found in the different time points)

Analysis by Team

Team	**1**	**2**	**3**	**4**	**5**
n =	227	209	201	288	259
Percentage of values flagged with SMART flags:					
WHZ:	1.3	1.9	2.0	1.4	0.8
HAZ:	6.6	5.3	5.0	4.9	4.2
WAZ:	1.3	1.0	2.0	1.4	1.5
Age ratio of 6-29 months to 30-59 months:					
	1.01	1.09	1.36	1.09	1.02
Sex ratio (male/female):					
	1.06	0.97	1.18	1.46	0.79
Digit preference Weight (%):					
.0 :	10	11	8	11	7
.1 :	9	7	6	8	12
.2 :	11	11	8	11	11
.3 :	8	11	10	8	11

.4 :	11	10	13	9	10
.5 :	9	11	12	12	10
.6 :	13	12	8	10	9
.7 :	10	9	11	12	8
.8 :	9	8	9	10	11
.9 :	10	11	12	9	10
DPS:	4	5	7	5	5

Digit preference score (0-7 excellent, 8-12 good, 13-20 acceptable and > 20 problematic)

Digit preference Height (%):

.0 :	11	6	5	9	12
.1 :	11	13	5	6	10
.2 :	12	11	12	11	17
.3 :	12	11	19	15	10
.4 :	9	10	10	11	9
.5 :	7	13	15	8	12
.6 :	10	12	11	13	9
.7 :	11	9	11	10	9
.8 :	7	8	4	9	6
.9 :	9	6	8	8	7
DPS:	6	9	15	8	10

Digit preference score (0-7 excellent, 8-12 good, 13-20 acceptable and > 20 problematic)

Digit preference MUAC (%):

.0 :	5	3	12	6	9
.1 :	13	14	8	10	10
.2 :	14	11	11	7	8
.3 :	8	6	11	11	8
.4 :	11	9	9	11	12
.5 :	8	12	16	12	11
.6 :	15	11	12	12	12
.7 :	7	10	7	11	8
.8 :	8	9	9	9	12
.9 :	11	14	7	13	10
DPS:	10	11	9	7	6

Digit preference score (0-7 excellent, 8-12 good, 13-20 acceptable and > 20 problematic)

Standard deviation of WHZ:

SD	0.99	1.09	1.02	1.08	1.01

Prevalence (< -2) observed:

%		10.0	12.4	15.3	12.0

Prevalence (< -2) calculated with current SD:

%		12.7	17.2	18.0	13.6

Prevalence (< -2) calculated with a SD of 1:

%		10.6	16.7	16.2	13.5

Standard deviation of HAZ:

SD	1.62	1.53	1.60	1.68	1.52

observed:

%	50.2	46.9	44.3	49.3	57.5

calculated with current SD:

%	47.6	46.9	43.1	49.0	54.9

calculated with a SD of 1:

%	46.1	45.2	39.1	48.4	57.4

Statistical evaluation of sex and age ratios (using Chi squared statistic) for:

Team 1:

Age cat.	mo.	boys	girls	total	ratio boys/girls
6 to 17	12	27/27.1 (1.0)	33/25.5 (1.3)	60/52.7 (1.1)	0.82
18 to 29	12	25/26.5 (0.9)	29/24.9 (1.2)	54/51.4 (1.1)	0.86
30 to 41	12	27/25.7 (1.1)	24/24.1 (1.0)	51/49.8 (1.0)	1.13
42 to 53	12	23/25.2 (0.9)	14/23.7 (0.6)	37/49.0 (0.8)	1.64
54 to 59	6	15/12.5 (1.2)	10/11.7 (0.9)	25/24.2 (1.0)	1.50
6 to 59	54	117/113.5 (1.0)	110/113.5 (1.0)		1.06

The data are expressed as observed number/expected number (ratio of obs/expect)

Overall sex ratio: p-value = 0.642 (boys and girls equally represented)
Overall age distribution: p-value = 0.387 (as expected)
Overall age distribution for boys: p-value = 0.930 (as expected)
Overall age distribution for girls: p-value = 0.130 (as expected)
Overall sex/age distribution: p-value = 0.091 (as expected)

Team 2:

Age cat.	mo.	boys	girls	total	ratio boys/girls
6 to 17	12	32/23.9 (1.3)	25/24.6 (1.0)	57/48.5 (1.2)	1.28
18 to 29	12	24/23.3 (1.0)	28/24.0 (1.2)	52/47.3 (1.1)	0.86
30 to 41	12	26/22.6 (1.2)	28/23.2 (1.2)	54/45.8 (1.2)	0.93
42 to 53	12	15/22.2 (0.7)	19/22.9 (0.8)	34/45.1 (0.8)	0.79
54 to 59	6	6/11.0 (0.5)	6/11.3 (0.5)	12/22.3 (0.5)	1.00
6 to 59	54	103/104.5 (1.0)	106/104.5 (1.0)		0.97

The data are expressed as observed number/expected number (ratio of obs/expect)

Overall sex ratio: p-value = 0.836 (boys and girls equally represented)
Overall age distribution: p-value = 0.028 (significant difference)
Overall age distribution for boys: p-value = 0.095 (as expected)
Overall age distribution for girls: p-value = 0.308 (as expected)
Overall sex/age distribution: p-value = 0.013 (significant difference)

Team 3:

Age cat.	mo.	boys	girls	total	ratio boys/girls
6 to 17	12	24/25.3 (0.9)	33/21.3 (1.5)	57/46.6 (1.2)	0.73
18 to 29	12	36/24.7 (1.5)	23/20.8 (1.1)	59/45.5 (1.3)	1.57
30 to 41	12	28/23.9 (1.2)	19/20.2 (0.9)	47/44.1 (1.1)	1.47
42 to 53	12	18/23.5 (0.8)	13/19.9 (0.7)	31/43.4 (0.7)	1.38

54 to 59	6	3/11.6 (0.3)	4/9.8 (0.4)	7/21.5 (0.3)	0.75
6 to 59	54	109/100.5 (1.1)	92/100.5 (0.9)		1.18

The data are expressed as observed number/expected number (ratio of obs/expect)

Overall sex ratio: p-value = 0.230 (boys and girls equally represented)
Overall age distribution: p-value = 0.001 (significant difference)
Overall age distribution for boys: p-value = 0.008 (significant difference)
Overall age distribution for girls: p-value = 0.014 (significant difference)
Overall sex/age distribution: p-value = 0.000 (significant difference)

Team 4:

Age cat.	mo.	boys	girls	total	ratio boys/girls
6 to 17	12	41/39.7 (1.0)	39/27.1 (1.4)	80/66.8 (1.2)	1.05
18 to 29	12	44/38.7 (1.1)	26/26.5 (1.0)	70/65.2 (1.1)	1.69
30 to 41	12	31/37.5 (0.8)	24/25.7 (0.9)	55/63.1 (0.9)	1.29
42 to 53	12	30/36.9 (0.8)	19/25.2 (0.8)	49/62.1 (0.8)	1.58
54 to 59	6	25/18.3 (1.4)	9/12.5 (0.7)	34/30.7 (1.1)	2.78
6 to 59	54	171/144.0 (1.2)	117/144.0 (0.8)		1.46

The data are expressed as observed number/expected number (ratio of obs/expect)

Overall sex ratio: p-value = 0.001 (significant excess of boys)
Overall age distribution: p-value = 0.129 (as expected)
Overall age distribution for boys: p-value = 0.224 (as expected)
Overall age distribution for girls: p-value = 0.099 (as expected)
Overall sex/age distribution: p-value = 0.000 (significant difference)

Team 5:

Age cat.	mo.	boys	girls	total	ratio boys/girls
6 to 17	12	28/26.5 (1.1)	26/33.6 (0.8)	54/60.1 (0.9)	1.08
18 to 29	12	33/25.8 (1.3)	44/32.8 (1.3)	77/58.6 (1.3)	0.75
30 to 41	12	25/25.0 (1.0)	32/31.8 (1.0)	57/56.8 (1.0)	0.78
42 to 53	12	15/24.6 (0.6)	27/31.3 (0.9)	42/55.9 (0.8)	0.56
54 to 59	6	13/12.2 (1.1)	16/15.5 (1.0)	29/27.6 (1.0)	0.81
6 to 59	54	114/129.5 (0.9)	145/129.5 (1.1)		0.79

The data are expressed as observed number/expected number (ratio of obs/expect)

Overall sex ratio: p-value = 0.054 (boys and girls equally represented)
Overall age distribution: p-value = 0.042 (significant difference)
Overall age distribution for boys: p-value = 0.206 (as expected)
Overall age distribution for girls: p-value = 0.187 (as expected)
Overall sex/age distribution: p-value = 0.003 (significant difference)

Evaluation of the SD for WHZ depending upon the order the cases are measured within each cluster (if one cluster per day is measured then this will be related to the time of the day the measurement is made).

Team: 1

```
Time                              SD for WHZ
point          0.8 0.9 1.0 1.1 1.2 1.3 1.4 1.5 1.6 1.7 1.8 1.9 2.0 2.1 2.2 2.3
01: 1.11 (n=09, f=0)  #############
02: 1.21 (n=08, f=0)  ################
03: 0.98 (n=09, f=0)  #######
04: 0.47 (n=08, f=0)
05: 0.51 (n=08, f=0)
06: 0.88 (n=08, f=0)  ###
07: 1.11 (n=07, f=0)  #############
08: 1.15 (n=09, f=0)  ##############
09: 1.29 (n=09, f=1)  ####################
10: 0.92 (n=07, f=0)  #####
11: 0.59 (n=07, f=0)
12: 1.39 (n=09, f=1)  ########################
13: 0.49 (n=08, f=0)
14: 0.80 (n=05, f=0)
15: 1.00 (n=09, f=0)  ########
16: 0.93 (n=08, f=0)  #####
17: 0.84 (n=08, f=0)  ##
18: 1.13 (n=08, f=0)  ##############
19: 1.13 (n=09, f=0)  ##############
20: 1.01 (n=08, f=0)  #########
21: 0.90 (n=09, f=0)  ####
22: 0.69 (n=09, f=0)
23: 0.69 (n=07, f=0)
24: 0.80 (n=09, f=0)
25: 0.78 (n=07, f=0)
26: 0.35 (n=05, f=0)
27: 1.66 (n=06, f=1)  ####################################
28: 0.76 (n=04, f=0)
29: 0.97 (n=02, f=0)  ~~~~~~~
30: 1.09 (n=02, f=0)  ~~~~~~~~~~~~
31: 0.52 (n=02, f=0)
```

(when n is much less than the average number of subjects per cluster different symbols are used: 0 for n < 80% and ~ for n < 40%; The numbers marked "f" are the numbers of SMART flags found in the different time points)

Team: 2

```
Time                              SD for WHZ
point          0.8 0.9 1.0 1.1 1.2 1.3 1.4 1.5 1.6 1.7 1.8 1.9 2.0 2.1 2.2 2.3
01: 1.60 (n=09, f=1)  ##################################
```

02: 0.81 (n=08, f=0)
03: 0.71 (n=08, f=0)
04: 0.93 (n=07, f=0) ######
05: 1.58 (n=09, f=1) ##################################
06: 2.08 (n=08, f=1) ##
07: 1.21 (n=09, f=0) ##################
08: 0.98 (n=07, f=0) ########
09: 1.31 (n=08, f=0) ######################
10: 0.63 (n=09, f=0)
11: 0.86 (n=06, f=0) ###
12: 0.84 (n=09, f=0) ##
13: 0.70 (n=08, f=0)
14: 0.94 (n=08, f=0) ######
15: 0.45 (n=09, f=0)
16: 0.80 (n=08, f=0)
17: 1.13 (n=07, f=1) ###############
18: 1.34 (n=08, f=1) ########################
19: 0.77 (n=09, f=0)
20: 1.20 (n=09, f=0) ##################
21: 0.98 (n=07, f=0) ########
22: 1.06 (n=09, f=0) ############
23: 0.76 (n=08, f=0)
24: 0.82 (n=06, f=0) #
25: 0.79 (n=05, f=0)
26: 0.45 (n=04, f=0)
28: 0.34 (n=02, f=0)
30: 0.12 (n=02, f=0)

(when n is much less than the average number of subjects per cluster different symbols are used: 0 for n < 80% and ~ for n < 40%; The numbers marked "f" are the numbers of SMART flags found in the different time points)

Team: 3

Time SD for WHZ
point 0.8 0.9 1.0 1.1 1.2 1.3 1.4 1.5 1.6 1.7 1.8 1.9 2.0 2.1 2.2 2.3
01: 0.80 (n=09, f=0)
02: 0.88 (n=08, f=0) ###
03: 1.28 (n=09, f=0) ####################
04: 0.52 (n=07, f=0)
05: 1.34 (n=08, f=0) ########################
06: 0.76 (n=07, f=0)
07: 0.66 (n=08, f=0)
08: 0.67 (n=09, f=0)
09: 0.38 (n=09, f=0)
10: 1.40 (n=08, f=0) ############################
11: 0.80 (n=07, f=0)
12: 0.50 (n=09, f=0)
13: 1.71 (n=09, f=1) ##
14: 1.07 (n=08, f=0) ############
15: 1.30 (n=07, f=0) ######################

16: 0.46 (n=08, f=0)
17: 0.80 (n=09, f=0)
18: 1.05 (n=06, f=0) ##########
19: 0.90 (n=07, f=0) ####
20: 0.87 (n=08, f=0) ###
21: 0.82 (n=08, f=0) #
22: 2.04 (n=07, f=1) ##
23: 1.59 (n=04, f=0) OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOO
24: 0.80 (n=06, f=0)
25: 0.90 (n=02, f=0) ~~~~
26: 0.86 (n=04, f=0) OOO
27: 1.57 (n=03, f=0) OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOO
28: 1.31 (n=02, f=0) ~~~~~~~~~~~~~~~~~~~~~~
29: 1.36 (n=02, f=0) ~~~~~~~~~~~~~~~~~~~~~~~~

(when n is much less than the average number of subjects per cluster different symbols are used: 0 for n < 80% and ~ for n < 40%; The numbers marked "f" are the numbers of SMART flags found in the different time points)

Team: 4

Time SD for WHZ
point 0.8 0.9 1.0 1.1 1.2 1.3 1.4 1.5 1.6 1.7 1.8 1.9 2.0 2.1 2.2 2.3
01: 0.65 (n=09, f=0)
02: 0.69 (n=08, f=0)
03: 0.70 (n=08, f=0)
04: 0.78 (n=09, f=0)
05: 0.93 (n=09, f=0) ######
06: 0.88 (n=08, f=0) ####
07: 0.77 (n=09, f=0)
08: 1.45 (n=07, f=0) ############################
09: 0.90 (n=08, f=0) ####
10: 2.00 (n=07, f=1) ##
11: 0.59 (n=09, f=0)
12: 0.82 (n=08, f=0) #
13: 1.30 (n=09, f=0) ######################
14: 1.19 (n=09, f=0) ################
15: 0.80 (n=09, f=0)
16: 1.15 (n=08, f=0) ################
17: 0.87 (n=08, f=0) ###
18: 1.54 (n=07, f=1) ################################
19: 0.99 (n=08, f=0) ########
20: 1.09 (n=09, f=0) ############
21: 1.37 (n=09, f=0) ########################
22: 1.54 (n=06, f=0) ################################
23: 1.39 (n=08, f=0) ########################
24: 1.08 (n=09, f=0) ############
25: 0.59 (n=09, f=0)
26: 0.62 (n=09, f=0)
27: 2.22 (n=06, f=1) ##
28: 1.42 (n=07, f=1) ########################

29: 0.61 (n=06, f=0)
30: 0.64 (n=07, f=0)
31: 0.42 (n=05, f=0)
32: 0.81 (n=06, f=0)
33: 1.30 (n=04, f=0) OOOOOOOOOOOOOOOOOOOO
34: 1.03 (n=05, f=0) OOOOOOOOOO
35: 1.26 (n=05, f=0) OOOOOOOOOOOOOOOOOO
36: 0.62 (n=05, f=0)
37: 0.69 (n=03, f=0)
38: 0.74 (n=04, f=0)
39: 0.39 (n=04, f=0)
40: 0.57 (n=03, f=0)

(when n is much less than the average number of subjects per cluster different symbols are used: 0 for n < 80% and ~ for n < 40%; The numbers marked "f" are the numbers of SMART flags found in the different time points)

Team: 5

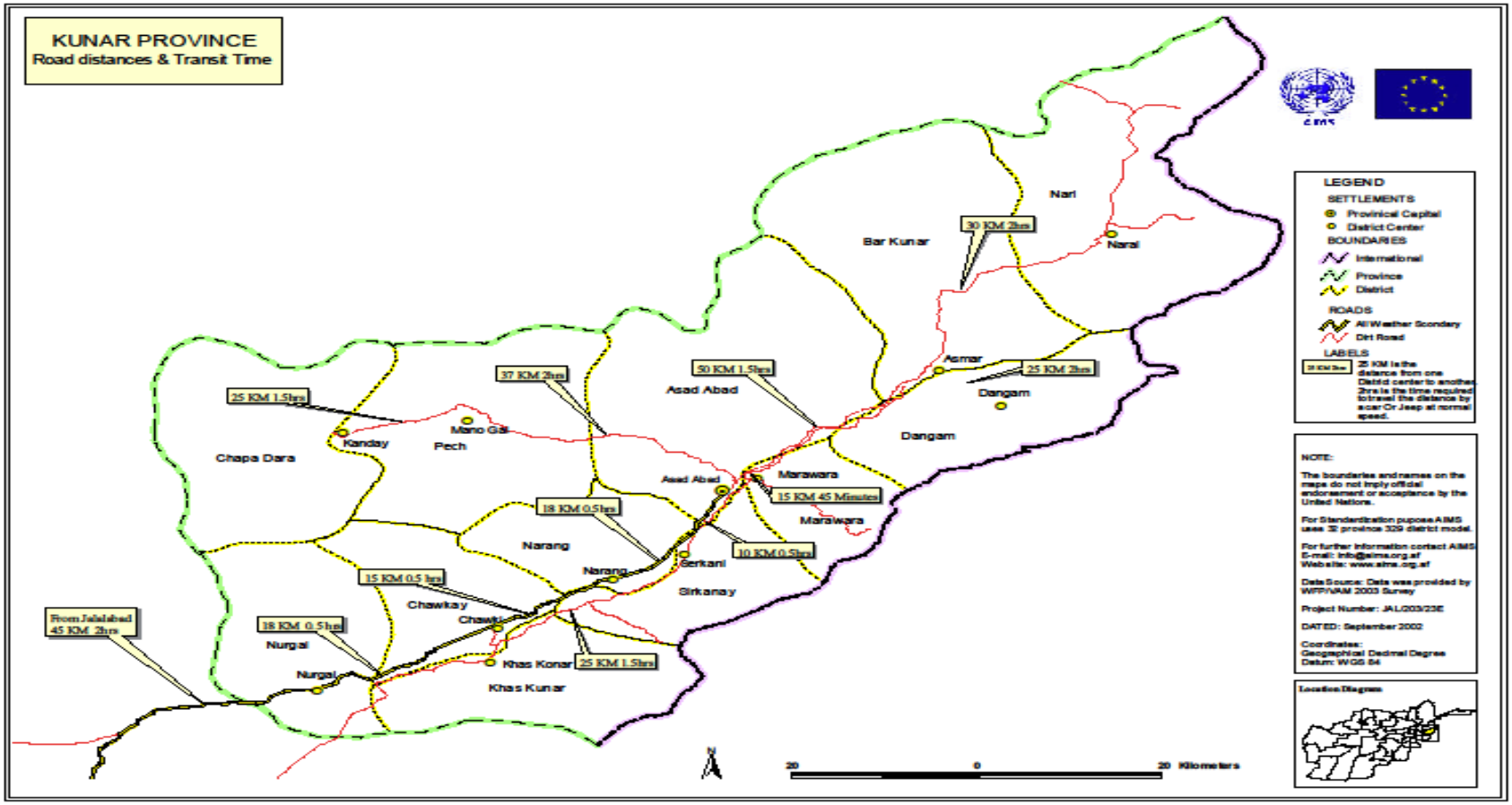
Time SD for WHZ
point 0.8 0.9 1.0 1.1 1.2 1.3 1.4 1.5 1.6 1.7 1.8 1.9 2.0 2.1 2.2 2.3
01: 1.12 (n=10, f=0) ##############
02: 0.93 (n=09, f=0) ######
03: 0.98 (n=09, f=0) ########
04: 0.86 (n=09, f=0) ###
05: 0.77 (n=09, f=0)
06: 1.53 (n=08, f=0) ################################
07: 0.81 (n=09, f=0)
08: 1.06 (n=06, f=0) ############
09: 0.66 (n=09, f=0)
10: 0.80 (n=08, f=0)
11: 1.03 (n=09, f=0) #########
12: 0.51 (n=09, f=0)
13: 0.74 (n=10, f=0)
14: 0.68 (n=09, f=0)
15: 1.05 (n=09, f=0) ##########
16: 0.61 (n=05, f=0)
17: 1.27 (n=09, f=0) ####################
18: 1.36 (n=09, f=1) ########################
19: 1.04 (n=10, f=0) ##########
20: 1.24 (n=10, f=0) ##################
21: 0.41 (n=10, f=0)
22: 0.99 (n=08, f=0) ########
23: 2.07 (n=08, f=1) ##
24: 0.93 (n=07, f=0) ######
25: 1.47 (n=05, f=0) OOOOOOOOOOOOOOOOOOOOOOOOOO
26: 0.45 (n=05, f=0)
27: 0.57 (n=07, f=0)
28: 1.16 (n=06, f=0) ################
29: 0.60 (n=07, f=0)
30: 1.13 (n=06, f=0) ###############

31: 1.42 (n=04, f=0) OOOOOOOOOOOOOOOOOOOOOOOOO
32: 0.59 (n=04, f=0)
33: 0.52 (n=03, f=0)
34: 1.31 (n=02, f=0) ~~~~~~~~~~~~~~~~~~~~~

(when n is much less than the average number of subjects per cluster different symbols are used: 0 for n < 80% and ~ for n < 40%; The numbers marked "f" are the numbers of SMART flags found in the different time points)

(for better comparison it can be helpful to copy/paste part of this report into Excel)

Annex 3: Kuner Physical Map



Annex4: Questionaries

1.IDENTIFICATION (هویت) **1.1 Data Collector**(ارقام جمع کونکی) _____ **1.2 Team Leader**(تیم لیدر)_____ **1.3 Survey date (dd/mm/yy)** (سروی تاریخ) **/___/___/___/**								
1.4 Province(ولایت)	1.5 District,ولسوالی	1.6 Division ناحیه	1.7 Location محل	1.8 Sub-Location محل فرعی	1.9 Village قریه	1.10 Cluster No کلستر نمبر	1.11 HH No دکورنی نمبر	1.12 Team No. دتیم نمبر

2. HOUSEHOLD STRUCTURE (دکورنی جوړښت)	
2.1	**How many people live together in this household & share meals** |____| **پدی کورنی کی څومره کسان یوځای ژوند کوی او په شریکه غذا خوری ؟**
2.2	**Who is the Head of the Household?** |____| [1=Husband, 2=Mother, 3=My parents, 4=others , specify] **د دی کورنی مشر څوک دی ؟** **[مشخص یی کړی ، نور =۴ ، مور اوپلار =۳ ، مور =۲ ، خاوند =۱]**
2.3	**What is the structure of your family**? |____| [1=monogamy, 2=polygamy,3=single parent] **ستاسی کورنی جوړښت څه دول دی ؟** **[بواځی مور یا پلار =۳ ، څو ښځو خاوند =۲ ، یوی ښځی خاوند =۱** *If 2 go to 2.4 else, skip to 2.5* **ک چیرته ۱ او یا ۳ انتخاب شو نو ۲,۴ سوال نه تیر شی**
2.4	**If polygamous, how many wives does your husband have?** |____| **که چیرته څو ښځیو خاوند وی ، تعداد د ښځو یی وپوښتی ؟**

2.5	**What is the main occupation of the household head** **ستاسی د کور د مشر عمده وظیفه څه شی ده ؟** 1. Livestock herding **شپون** 2. Farmer/own farm labor **دهقان یا خپل فارم لری** 3. Employed (salaried) **وظیفه (معاش)** 4. Daily labor/Wage labor **روزمره مزدوری کوی** 5. Small business/Petty trade **وړوکی تجارت لری** 6. Firewood/charcoal **لرګی ټولوی او خرڅوی** 7. Other (Specify **نور مشخص یی کړی** _____	|____|

3. CHILD HEALTH AND NUTRITION (ONLY FOR CHILDREN 0-59 MONTHS OF AGE; IF N/A SKIP TO SECTION 3.3) د ماشوم صحت او **N/A**وی نو ۳،۶ برخی ته مراجعه وکړی
تغذیه (یوائی ۰- ۵۹ میاشتو ماشومانو لپاره) که جواب

Instructions دستور العمل: *The caregiver of the child should be the main respondent for this section*دماشوم مور یا پایواز عام وتام مسولیت لری پدی برخه کی

***3.1 CHILD ANTHROPOMETRY* دماشوم اندازه گیری**

*(**Please** fill in **ALL REQUIRED** details below.)*مهربانی وکړی ټول ضروری معلومات چی لاندی ذکر شوی دی ډک کړی

A	B	C	D	E	F	G	H	I	J
Child No. دماشوم نمبر	SEX جنس F/M	Exact Birth Date د تولد تاریخ دقیق شکل سره	Age in months عمر په میاشت	Weight (KG) XX.X وزن په کیلوګرام	Height (CM) XXX.X قد په سانتی متر	Oedema پرسوب Y= Yes N= No N = نخیر بلی =Y	MUAC (mm) XXX موک په ملی متر	Has your child (NAME) been ill in the past two weeks? If No, please skip part J and K proceed to 3.4 ایاستاسی ماشوم (نوم یی) په تیرو دوه هفتو کی ناروغ شوی که جواب نه وی د J نه تیر شی او 3.3 ته مراجعه وکړی 1=Yes (بلی) 2=No (نه)	If YES, what type of illness (multiple responses possible) که جواب بلی وی کومه نوعه ناروغی لری (امکان لری چی زیات جوابات ولری) 1 = Fever malaria تبه د لرزی سره 2 = ARI /Cough توخی / تنفسی مشکلات 3 = Watery diarrhoea اوبلن اسهال 4 = Bloody diarrhoea وینه لرونکی اسهال 5 = Other (specify) نور مشخص یی کړی *See case definitions below* لاندی تعریف ته وګوری
01									
02									
03									
04									

Fever تبه دملاریا سره : High temperature لوړه درجه تبه د لړزی سره	**Cough/ARI** (توخی / تنفسی مشکلات (: Any episode with severe, persistent cough or difficulty breathing دوامداره توخی یا په ساه اخسیتنه کی	**Watery diarrhoea(اوبلن اسهال) :** Any episode of three or more watery stools per day که اوبلن غایطه مواد په ورځ کی دری یا د دری ځلو نه زیات ولری	**Bloody diarrhoea (وینه لرونکی اسهال):** Any episode of three or more stools with blood per day که چیری په ورځ کی دری یا د دری ځلو نه زیات وینه لرونکی غایطه مواد ولری

	مشکلات		

3.3 Kindly maintain the same child number as part 2 and 3.1 above د ۲ او ۳,۱ برخی دماشوم سره مشابه وی					
	A	**B**	**C**	**D**	**E**
Child No. دماشوم نمبر	Has the child received Vitamin A in the past 6 months? (show sample) ایا ستاسی ماشوم دتیرو شپږو میاشتو راهیسی ویتامین ای کپسول اخیستی دی (نمونه ورته وښایی) 1= Yes 2= No	Has the child received drugs for worms in the past 6 months? **(12-59 Months)** *(show Sample)* ایا ستاسی ماشوم د تیرو شپږو میاشتو راهیسی د چنجو دوا اخیستی ده (**۱۲ – ۵۹ میاشتنی عمرلرونکی ماشومان)** (نمونه ورته وښایی) *1= Yes* *2= No*	Has the child received BCG vaccination? ایا ستاسی ماشوم د بی سی جی واکسین اخیستی دی **1 = scar (ندبه لری** **2=No scar (ندبه نلری)**	Has the child received Polio vaccination (please for all polio vaccinations) ایا ستاسی ماشوم د پولیوواکسین اخیستی دی (دټولو پولیو واکسینونو لپاره) **1=Yes, Card بلی کارد** **2=Yes, Recall بلی مګر کارد نلری** **3 = No نه** **4 = Do not know نه پوهیږم**	Has the child received measles vaccination *(On the upper right shoulder)?* (**9 months and above)** ایا ستاسی ماشوم د شری واکسین اخیستی (بنی لاس پورتنی برخه)(**۹ میاشتی یا زیات عمر** **1=Yes, Card** بلی ، کارد لری **2=Yes, Recall** بلی کارد نلری **3 = No** نه **4 = Do not know** نه پوهیږم
01					
02					
03					
04					

MATERNAL NUTRITION FOR MOTHERS OF REPRODUCTIVE AGE (15-49 YEARS)*(Please insert appropriate number in the box)* **هغه ښځی چی د تولد اوتناسل عمر ولری (۱۵ – ۴۹ کلنی عمر لرونکی ښځی)** (لطفآ مناسب عدد په بکس کی ولیکی)			
3.4	**3.5**	**3.6**	**3.7**
Woman ID. نمبر دزنانه **(all ladies in the HH aged 15-49 years** **تولی هغه ښځی چی په کورنی کی د ۱۵ تر ۴۹ کالو عمر ولری)**	What is the mother's / caretaker's physiological status د مور یا پایواز فزیالوژیک حالت څه شی دی 1. **Pregnant** (حامله) 2. **Lactating**(شیدی ورکونکی) 3. **Pregnant and Lactating** حامله او شیدی ورکونکی) 4. **None of the above** یو هم نه	Mother/ caretaker's MUAC reading: **XXX mm** مور یا پایواز د موک اندازه په ملی متر	Have you been taking iron-folate tablets? (Only for pregnant women) ایا تاسی اوسپنی یا د کم خونی گولی اخیستی (یواځی د حامله ښځو لپاره) (نمونه وښایی) 1. **Yes** بلی 2. **No** نه 3. **Don't know** نه پوهیږم
1			
2			
3			
4			

3.8	3.9
Yesterday (within last 24 hours) at what instances did you wash your hands? (MULTIPLE RESPONSE- (Use 1 if "Yes" and 2 if "No") **پرون (تیرو ۲۴ ساعتو کی) کی مو لاسونه وینځلی دی (امکان لری چی زیات جوابونه ولری) که بلی نو ۱ او که نه خیر وی نو ۲ انتخاب کړی ؟** 1. After toilet **(وروسته د کناراب نه** |____| 2. Before cooking **مخکی د اشپزی نه** |____| 3. Before eating **مخکی د خوړو نه** |____| 4. After taking children to the toilet **وروسته له دی نه چی ماشوم کناراب ته بوزم** |____| 5. Others **نور** |____|	**If the caregiver washes her hands, then probe further; what did you use to wash your hands?** **که چیرته پایواز یا مور خپل لاسونه وینځي ، بیا پوښتنه وکړی چی لاسونه په څه شی وینځی ؟** 1. Only water **یواځی په اوبو باندی** 2. Soap and water **صابون او اوبو باندی** 3. Soap when I can afford it **صابون باندی که چیرته په لاس راشی یا موجود وی** 4. traditional herb **محلی یا سنتی گیاه گانو باندی** 5. Any other specify **نور مشخص یی کړی** |____|

Kindly maintain the same child number as part 2 and 3.1 above د ۲ او ۳,۱ برخی دماشوم سره مشابه وی	**To be conducted in Households with children aged 0 - 23 months** په هغه کورنی که ډک کړی چې د ۰ – ۲۳ میاشتو ماشوم ولری

Date (D/M/Y)تاریخ: ..... /...../..... Division ناحیه: _____ Sub locationفرعی موقیعت: _____ قریه Village Name: _____ Cluster No کلستر نمبر_____Team No تیم نمبر:_____

3.10	A	B	C	D	E	F	G	H	I	J
Child No. دماشوم نمبر	**Number of people in the household** په کورنی کی دافرادو تعداد	**HH Ref-No** د کور نی نمبر	**Age (in months)** عمر په میاشت	**Has this child ever been breastfed?** ایا دی ماشوم کله دمور شیدی رودلی **1 = Yes** بلی **2 = No** نه ***If no go to question I*** که چیرته جواب نه وی نو سوال ته مراجعه وکړی	**How long after birth did you first put the child to the breast** وروسته دولادت نه څومره وخت بعد دی ماشوم خپلی سینی ته واچوو **1 = Within one hour** په یو ساعت کی **2 = In first day (within 24 hours)** په لومړی ورځ کی **3 = After first day** وروسته دیوی ورځی نه **(>24 hours)**	**Did you feed your child with fluid or liquid that came from breasts in the first 3 days after birth COLOSTRUM ایا کوم مایعات چی د ستاسی سینی راوخی یعنی اورگه بعد له ولادت نه په لومړیو دری ورځو کی مو خپل ماشوم ته ورکړی**	**Is this child still breastfeeding now?** یا تراوسه هم خپل ماشوم ته خپلی شیدی ورکوی **1 = Yes** بلی **2= No** نه	**Exclusive breast feeding: Other than breast milk, what other foods did you give the child before the age of 6 months** خالص دمور شیدو باندی تغذیه : مخکی د ۶ میاشتو نه مو بغیر دمور دشیدو نه کومه غذا ماشوم ته ورکړی ؟ **1 =None other than breast milk** بغیر دمور دشیدو نه می هیڅ نه دی ورکړی **2 = Powder/animal milk/yogurt** پودری ، حیوانی شیدی یا ماستی **3 = Cereals based diet** سیریلاک **4 = Plain water** ساده اوبه **5 = Fruit Juice** د میوی جوس **6 = Sugar water** دبوری اوبه **7 = Vegetables** ترکاری	**What foods were given to the child yesterday during the day and night?** کومه نوعه خواړه مو پرون د شپی او ورځی له خوا نه ورکړی **1 =Grains, roots and tubers** حبوبات ، دانی او هغه غذای مواد چی زمکی لاندی کیږی لکه کچالو ،الو پشمک او نو ر **2 = Flesh foods (Meat/Fish/Poultry/Organ meats)** د غوښی غذا (ماهی ، غوښه ، مرغی و چرگان ، جگر او توری پښتورگی او نور **3 = Legumes and Nuts** سبزی او مغذی مواد **4 = Dairy products (milk, yoghurt, chees e)** لبنیات (شیدی ، مستی ، کوچ) **5 = Eggs** هگی **6= Vitamin A rich fruits & Vegetables** د ویتامین ای نه غنی میوه او ترگاری **7 = Other Fruits and vegetables** نوره میوه او ترکاری واضح **(specify___)**ن یی کړی **8. Nothing** هیڅ شی **9. Others (specify)** نور مشخص یی کړی ***(Multiple responses are possible)*** شاید دیر ځوابونه انتخا ب شی	**Yesterday (During the day and at night). How many times did you feed [Name] solid and semi-solid foods? No. of times child was given food to make it full.** پرون په شپه او ورځ کی څو ځلی ماشوم مو په جامدو او نیمه جامدو موادو تغذیه کړی؟ چی ماشوم یی مور کړی وی

						1 = Yes 2= No					
1											
2											
3											
4											

Questionnaire for mortality rate calculation (one sheet/cluster) دمرګ او میر د معلومولو لپاره پوښتنې (یو ورق /کلستر)

District _____ ولسوالی Village /_____ قریه Date:_____ تاریخ Cluster number:_____ کلستر نمبر Team number:_____ تیم نمبر

HH No د کور نمبر.	Total in HH ټول هغه افراد چې په کې ژوند کوي	Total under 5 in HH د ۵ کالو نه ښکته ماشومان په کورنۍ کې	Joined HH Total تعداد دافرادو چې کورنۍ سره یوځای شوی	Joined HH under 5 د ۵ کلونه ښکته چې کورنۍ سره یوځای شوی	Left HH Total تعداد دافرادو چې کورنۍ یې پریښې وی	Left HH under 5 دپنځو کالو نه ښکته ماشومان چې کورۍ پریښې وی	No. of births in recall period د ولادتونو تعداد په یاده شوی دوره کې	Total deaths in recall period دمړو تعداد په یاده شوی دوره کې	No. < 5 deaths in recall period د ۵ کالو نه ښکته مړو ماشومانو تعداد شوو	Where do you store water for drinking? تاسی چیرته اوبه ذخیره کوی ؟ 1= Closed jerricans/containers. سربند ذخیره 2=Open jerricans	How much water did your household use YESTERDAY (excluding for animals)? پرون مو څومره اوبه مصرف کړی دی (په استثنی د حیواناتو نه)

										سر /container خلاص ذخیره	پوښتنه *Note :* وکړی چې څومره ۲۰ لیتره بوشکی بیا یې مجموعی کړی او ویې لیکی ()
1											
2											
3											
4											
5											
6											
7											
8											
9											
10											
11											
12											
13											
14											
15											
16											

15. REFERENCES

- National Risk and Vulnerability Assessment (NRVA), Afghanistan, 2013
- Extended Program for Immunization (EPI) village data, 2013
- National Risk and Vulnerability Assessment (NRVA), Afghanistan, 2007/08

- Kuner Mortality and Nutrition SMART survey 2012
- National nutrition survey 2013 GAM calculated with SD of 1
- Afghanistan Mortality survey, 2010
- National vulnerability assessment of Afghanistan -2014