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| --- | --- |
| **Research Terms of Reference**  **SMART+ in Arsi Zone, Oromia Region, Ethiopia**  **ETH2402**  **Ethiopia** | |
| **[February 2024]**  **[Version 01]** | **C:\Users\Megan\AppData\Local\Microsoft\Windows\INetCache\Content.Word\REACH logo white (for a coloured background).jpg** |

# Executive Summary

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Country of intervention** | Ethiopia | | | | | | | |
| **Type of Emergency** | X | Natural disaster | □ | Conflict | | | | | |
| **Type of Crisis** | □ | Sudden onset | □ | Slow onset | | | X | Protracted | |
| **Mandating Body/ Agency** | *REACH* | | | | | | | |
| **Project Code** | *29BAP* | | | | | | | |
| **Overall Research Timeframe** *(from research design to final outputs / M&E)* | *01/02/2022 -25/04/2024* | | | | | | | |
| **Research Timeframe** | 1. Start collect data: March 10, 2024 | | | | 5. Preliminary presentation: April 05, 2024 | | | |
| *Add planned deadlines (for first cycle if more than 1)* | 2. Data collected for household survey: March 22, 2024 | | | | 6. Outputs sent for validation: April 12, 2024 | | | |
| 3. Data analysed: March 24, 2024 | | | | 7. Outputs published: April 22, 2024 | | | |
| 4. Data validation: April 01 , 2024 | | | | 8. Final presentation: April 25, 2024 | | | |
| **Number of assessments** | X | Single assessment (one cycle) | | | | | | |
| □ | Multi assessment (more than one cycle)  *As partners have funding and collaborate with REACH for technical support.* | | | | | | |
| **Humanitarian milestones**  *Specify* ***what*** *will the assessment inform and* ***when***  *e.g. The shelter cluster will use this data to draft its Revised Flash Appeal;* | **Milestone** | | | | **Deadline** | | | |
| X | Donor plan/strategy | | | FCDO 2024 strategy, with financial year starting in April | | | |
| □ | Inter-cluster plan/strategy | | | \_ \_/\_ \_/\_ \_ \_ \_ | | | |
| X | Cluster plan/strategy | | | Nutrition cluster priorisation exercise | | | |
| □ | NGO platform plan/strategy | | | \_ \_/\_ \_/\_ \_ \_ \_ | | | |
| □ | Other (Specify): | | | \_ \_/\_ \_/\_ \_ \_ \_ | | | |
| **Audience Type & Dissemination** *Specify* ***who*** *will the assessment inform and* ***how*** *you will disseminate to inform the audience* | **Audience type** | | | | **Dissemination** | | | |
| X Strategic  X Programmatic  □ Operational  □ [Other, Specify]  Nutrition program partners monitoring the nutrition situation in their program areas. REACH will disseminate upon validation by in-country NIWG[[1]](#footnote-2) | | | | **□** General Product Mailing (e.g. mail to NGO consortium; HCT participants; Donors)  X Cluster Mailing (Education, Shelter and WASH) and presentation of findings at next cluster meeting  □ Presentation of findings (e.g. at HCT meeting; Cluster meeting)  □ Website Dissemination (Relief Web & REACH Resource Centre)  □ [Other, Specify] | | | |
| **Detailed dissemination plan required** | □ | Yes | | | X | No | | |
| **General Objective** | *The overall objective of the SMART Survey is to assess the nutritional situation and retrospective mortality rates and the possible factors contributing to acute malnutrition in Arsi Zone. The results will be used to provide information management support to the nutrition cluster and partners to support evidence-based decision-making.* | | | | | | | |
| **Specific Objective(s)** | * To estimate the prevalence of acute malnutrition, stunting and underweight among children (boys and girls) aged 6 – 59 months and women of reproductive age (WRA) in **Arsi zone of Oromia region**. * To estimate skilled delivery coverage * To estimate retrospective Crude Mortality Rate (CMR) and Under 5 Mortality Rate (U5MR) in **Arsi zone of Oromia region.** * To estimate the coverage of measles vaccination for children 9-59 months in **Arsi zone of Oromia region.** * To estimate the coverage of Vitamin A supplementation for children 6-59 months in **Arsi zone of Oromia region.** * To estimate the coverage of deworming treatment for children 12-59 months in **Arsi zone of Oromia region.** * To assess childhood morbidity and health seeking behaviors among children aged 6-59 months in **Arsi zone of Oromia region**. * To assess the WASH situation in **Arsi zone of Oromia region**. (Main water source, access to latrine) * To assess food security and livelihoods situation **in Arsi zone of Oromia region**. [Food Consumption Scores (FCS), Household Hunger Scale (HHS), main livelihoods, and Livelihood Coping Strategies (LCS) * To formulate practical interventions and recommendations. | | | | | | | |
| **Research Questions** | RQ1: What is the prevalence of Global Acute Malnutrition (GAM) among children 6 to 59 months in the population?   1. What is the GAM by weight-for-height (WFH)? 2. What is the proxy GAM by mid-upper arm circumference (MUAC)? 3. What is the combined GAM by WFH and/or MUAC?   RQ2: What is the crude death rate (CDR) and under-five death rate (U5DR) for the population?   1. What are the CDR and U5DR calculated from the retrospective household survey method in the population?   RSQ3. What is the prevalence of malnutrition among women of reproductive age (15-49 years)?   1. What is the malnutrition level by MUAC? 2. What is the coverage of the skilled delivery?   RQ4: What is the food security situation in the population?   1. What are proxy levels of dietary diversity, as shown by food consumption scores (FCS)? 2. What are the proxy levels of quantity food consumed, as shown by household hunger scale (HHS) and reduced coping strategies index (rCSI)?   RQ5: What is the water, sanitation and hygiene situation in the population?   1. What are the main sources of drinking water? To what extent are households relying on unimproved water sources? 2. What percentage of households have access to latrines?   RQ6: What are the health needs and conditions for under-5 children in the population?   1. To what extent have children under-5 accessed preventative health services including vaccinations, vitamin A supplementation, and deworming treatment? 2. What illnesses have children under-5 had in the past 2 weeks? 3. How have caregivers sought treatment for illnesses in the past 2 weeks?   RQ7: What are the infant and young child feeding practices for under-two children in the population?   1. Are children 0-23 months appropriately breastfeeding? 2. Are children 6-23 months appropriately given complementary foods in terms of quantity, diversity and time of introduction? | | | | | | | |
| **Geographic Coverage** | The SMART survey will be implemented in Arsi zone of the Oromia Region, which covers Robe, Chole, Seru, Bele, Amigna, Sude, Ziway-Dugeda, Dodota, Sire, Jeju, Aseko, Merti, Gololcha, and Shanan Kolu districts. | | | | | | | |
| **Secondary data sources** | SMART Methodology Manual v2.0. 2017.  <https://smartmethodology.org/survey-planning-tools/smart-methodology/smart-methodology-manual/?doing_wp_cron=1709296857.7301549911499023437500>  Population Size by Sex, Area and Density by Region, Zone and Wereda: July 2022. <https://www.statsethiopia.gov.et/wp-content/uploads/2023/08/Population-of-Zones-and-Weredas-Projected-as-of-July-2023.pdf>  Ethiopian Statistics Service. 2022.  <https://www.statsethiopia.gov.et/>  [Ethiopia Livelihood Baseline: Oromia Region, 2017](https://acted.sharepoint.com/sites/IMPACTETH/Shared%20Documents/General/02_Research/SMART+/5.%20SDR/CGC%20livelihood%20profile%202017.pdf)  [DRMC Woreda Hotspot Classification approved in August 2023](https://acted.sharepoint.com/sites/IMPACTETH/Shared%20Documents/General/02_Research/SMART+/5.%20SDR/August%202023%20Hotspot%20Woredas%20Classification.pdf)  FEWsNET  <https://fews.net/east-africa/ethiopia>  ETHIOPIA Situation Report, OCHA. February 2024.  <https://reports.unocha.org/en/country/ethiopia/>  [Oromia Region Meher 2023 Multi Agency Assessment Report](https://acted.sharepoint.com/sites/IMPACTETH/Shared%20Documents/General/02_Research/SMART+/5.%20SDR/Oromia%20Region%20Meher%202023%20UPDATE%20TG%20-%20Copy.docx)  [Standard Operating Procedure (SOP) for SMART/SMART+ Surveys in Ethiopia, 2023](https://acted.sharepoint.com/sites/IMPACTETH/Shared%20Documents/General/02_Research/SMART+/5.%20SDR/2023%20SMART%20SOP%20July.pdf)  [Standard Operating Procedure (SOP) for SMART surveys in Ethiopia, 2020](https://acted.sharepoint.com/sites/IMPACTETH/Shared%20Documents/General/02_Research/SMART+/5.%20SDR/Ethiopia_SOP%20for%20SMART%20surveys%20February%202020%20Final%20with%20covid%20(1).docx)  Institute for Health Metrics and Evaluation Health Data- <https://vizhub.healthdata.org/lbd/dbm>  National Food and Nutrition Strategy Baseline Survey, 2023  <https://reliefweb.int/attachments/6317e37b-4cfa-4494-8b47-add4745718dd/FNS_baseline_survey_preliminary_findings.pdf>  [Arsi Health Facilities SAM admission data (Jan-Dec 2023)](https://acted.sharepoint.com/sites/IMPACTETH/Shared%20Documents/General/02_Research/SMART+/5.%20SDR/Admission%20Data%20of%2014%20Woredas%20in%202023.xlsx) | | | | | | | |
| **Population(s)** | □ | IDPs in camp | | | □ | IDPs in informal sites | | |
| *Select all that apply* | □ | IDPs in host communities | | | □ | IDPs [Other, Specify] | | |
|  | □ | Refugees in camp | | | □ | Refugees in informal sites | | |
|  | □ | Refugees in host communities | | | □ | Refugees [Other, Specify] | | |
|  | X | Host communities | | | □ | [Other, Specify] | | |
| **Stratification**  *Select type(s) and enter number of strata* | □ | Geographical #:\_ \_  Population size per strata is known? X Yes □ No | □ | Group #: \_ \_ \_  Population size per strata is known?  □ Yes X No | | | □ | *[Other Specify]* #: \_ \_  Population size per strata is known?  □ Yes □ No |
| **Data collection tool(s)** | X | Structured (Quantitative) | | | □ | Semi-structured (Qualitative) | | |
|  | **Sampling method** | | | | **Data collection method** | | | |
| **Structured data collection tool # 1**  *Select sampling and data collection method and specify target # interviews* | □ Probability / Simple random  X Probability / Cluster sampling (Two stage cluster sampling) | | | | X Household interview (921 HHs):See sampling section in methodology | | | |
| **Target level of precision if probability sampling** | 95% level of confidence | | | | TBD +/- % margin of error (See sampling section in methodology) | | | |
| **Data management platform(s)** | X | IMPACT | | | □ | UNHCR | | |
|  | X | SMART+ | | | | | | |
| **Expected ouput type(s)** | □ | Situation overview #: \_ \_ | X | Preliminary Report #: 1 | | | X | Profile #: 1 |
|  | X | Presentation (Preliminary findings) #: 1 | □ | Presentation (Final) #: \_ \_ | | | X | Factsheet #:1 \_ \_ |
|  | □ | Interactive dashboard #:\_ | □ | Webmap #: \_ \_ | | | □ | Map #: \_ \_ |
|  | □ | [Other, Specify] #: \_ \_ | | | | | | |
| **Access** | X | Public (available on REACH resource center and SMART+ platform) | | | | | | |
| □ | Restricted (bilateral dissemination only upon agreed dissemination list, no publication on REACH or other platforms) | | | | | | |
| **Visibility** *Specify which* ***logos*** *should be on outputs* | *FCDO, ENCU, REACH* | | | | | | | |

# Rationale

2.1. Background

**Background Information**

Arsi is in the southern part of Ethiopia, bordered by Bale Zone to the south, West Arsi Zone to the southwest, East Shewa Zone to the northwest, Afar Region to the north, and West Hararghe Zone to the east. It has an area of 19,825.22 km2 and is divided into 25 districts (woredas). As of mid-2022, the population was estimated to be 3,894,248[[2]](#footnote-3). The two largest ethnic groups in the region are the Oromo (84.15%) and the Amhara (14.3%). All other ethnic groups make up 1.55% of the population. Most of the people in Arsi speak Oromiffa as their first language (81.38%), followed by Amharic (17.76%). The remaining 0.86% speak various other primary languages. The dominant religions in the region are Islam (58.1%), Ethiopian Orthodox Christianity (40.01%), and Protestantism (1.43%)[[3]](#footnote-4).

The Arsi zone is divided into four livelihood zones, in both lowland and highland areas. The Robe, Chole, Seru and Sude (RCS) zone, situated in the lowlands, is characterized by rolling plains and a self-sufficient economy. It experiences two rainy seasons: afrasa, from March to May, and gana, from June to August. Both seasons are utilized for cultivating cereal crops and pulses. The gana harvest is generally larger than the afrasa harvest, although the production of pulses is higher during afrasa. Households across all wealth groups grow and sell maize, wheat, barley, sorghum, teff, beans, and peas[[4]](#footnote-5).

The Rift Valley Maize & Haricot Bean (RVM) zone is situated in the central Rift Valley and is known for its food crop production and livestock rearing. It is a food deficit zone but has good market access. The primary food crops grown in this zone are maize, wheat, and teff, with wealthier households also growing small amounts of haricot beans for sale. Crop production in this zone is entirely rain-fed and relies on the gana rains from June to September[[5]](#footnote-6).

The Charcher/Gololcha Coffee, Chat & Maize (CGC) zone is primarily a subsistence economy centered around coffee, chat, and maize. This zone consistently faces chronic food deficits, and all households rely on the market. Poorer households purchase about half of their food requirements, with sorghum and maize being the main cereals bought. For income, poorer households engage in local labor, sell small amounts of cash crops (such as chat), sell food crops (especially maize), and sell sheep and eggs. Wealthier households rely on income from selling sheep and cattle, as well as selling food and cash crops (coffee and chat), and butter[[6]](#footnote-7).

Arsi-Bale Wheat, Barley, and Potato (ABW) is one of the most fertile areas in the Oromia region and has no history of food insecurity. Due to its surplus production, there has been no need for emergency food assistance or the Productive Safety-net Program (PSNP). Even poorer households in this zone can rely more on their own crop production to meet their annual food needs. The optimal annual rainfall in this zone allows for the cultivation of various crops including wheat, barley, Irish potato, beans, and peas. This livelihood zone is one of the few areas in the Oromia Region where mechanized agriculture is practiced alongside traditional ox-plow cultivation. Middle and wealthier households rent land from poorer households to maximize their crop production. The main livestock in this zone are cattle and sheep, and poorer households work on the land of wealthier households[[7]](#footnote-8).

The Meher seasonal assessment and joint prioritization process have determined that 10.4 million people will require food assistance on an annual basis in Ethiopia. Most of these individuals, around 80 percent, reside in highland areas, while the remaining 20 percent are in lowland areas. The current drought in the highlands of Ethiopia, exacerbated by the El-Niño phenomenon, has had a significant impact on agricultural output, resulting in poor harvests and production losses. As a result, millions of people and livestock are now facing severe food insecurity and an alarming rise in malnutrition[[8]](#footnote-9). In the Arsi zone, the Meher 2023 season was marked by normal to above-normal rainfall that evenly spread out. Specifically, Chole and Golocha have reported instances of flooding and landslides, whereas Shanan-kolu has experienced prolonged periods of drought. As of December 2023, there are 213,312 individuals benefiting from the PNSP program, and emergency food assistance has been provided to 59,062 internally displaced persons (IDPs)[[9]](#footnote-10).

**Planned Actions**

In order to address the information gaps in the Arsi zone, REACH plans to conduct a SMART survey. The purpose of this survey is to assess levels of malnutrition, mortality, infant, and young child feeding (IYCF) practices, health, water, sanitation, and hygiene (WASH), and food security in the zone. The data collected will include information on malnutrition, mortality rates, vaccination and supplementation coverage, WASH conditions, childhood morbidity, health-seeking behaviors, skilled delivery, IYCF practices, and food security. This data will be used to support the nutrition cluster and partners in making evidence-based decisions. The selection of specific woredas (districts) for the survey is crucial, especially considering the lack of recent surveys on nutrition, mortality, food security, health, and WASH in the Arsi zone, despite some districts being affected by drought. The current SMART+ survey is expected to address these information gaps by providing essential data to inform decision-making for the nutrition cluster and partners. The survey is scheduled to take place from March 10 to March 22 2024.A screenshot of a chart

Description automatically generated

Figure 1: Seasonal Calendar for Arsi Zone (Source: Ethiopia Livelihood Baseline: Oromia Region)

# Methodology

* 1. Methodology Overview

The Standardized Monitoring and Assessment of Relief and Transition (SMART) methodology will be used for this survey. This survey will apply a two-stage cluster sampling using the SMART methodology with the clusters being selected using the probability proportional to population size (PPS). Stage one sampling will involve the sampling of the clusters to be included in the survey while the second stage sampling will involve the selection of the households from the sampled clusters.

* 1. Population of interest

The target population for this survey will be the children for the anthropometric and child health seeking behaviors components, and the general population for the Mortality, FSL and WASH components.

**Nutrition status for Under five:** All children 6 – 59 months old (OR using calendar of events when age is not known) in households selected for anthropometric survey will be included. Anthropometric measurements will be measured, and oedema will be checked from these children.

**Infant and young child feeding practice:** All children aged 0-23 months (OR using calendar of events when age is not known) in households selected for anthropometric survey will be included.

***Nutrition Status of Pregnant and Lactating Mothers***: All women of reproductive age (15-49 years) in the sampled households will be included to determine level of acute malnutrition among pregnant and lactating mothers.

***Morbidity: Data*** on illness for children 6-59 months and health seeking behavior will be collected from mothers/caretakers of children 6-59 months in the sampled households.

***Mortality rate*:** all household members in all sampled households will be included in the mortality component of the survey.

***Food security and Livelihood factors:*** FSL specific contextual data will be collected from respondents in all the sampled households that will be included in the survey.

***WASH Practices***: All household holds in the sampled households will form the target group to determine the key handwashing and proper water storage practices.

* 1. Secondary data review

|  |  |
| --- | --- |
| **Key Secondary Data Sources** | |
| *Key Methodology References* | SMART Methodology Manual v2.0. 2017.  <https://smartmethodology.org/survey-planning-tools/smart-methodology/smart-methodology-manual/?doing_wp_cron=1709296857.7301549911499023437500>  [Standard Operating Procedure (SOP) for SMART/SMART+ Surveys in Ethiopia, 2023](https://acted.sharepoint.com/sites/IMPACTETH/Shared%20Documents/General/02_Research/SMART+/5.%20SDR/2023%20SMART%20SOP%20July.pdf)  [Standard Operating Procedure (SOP) for SMART surveys in Ethiopia, 2020](https://acted.sharepoint.com/sites/IMPACTETH/Shared%20Documents/General/02_Research/SMART+/5.%20SDR/Ethiopia_SOP%20for%20SMART%20surveys%20February%202020%20Final%20with%20covid%20(1).docx) |
| *Secondary Data for Context and Sampling decisions* | Population Size by Sex, Area and Density by Region, Zone and Wereda: July 2022. <https://www.statsethiopia.gov.et/wp-content/uploads/2023/08/Population-of-Zones-and-Weredas-Projected-as-of-July-2023.pdf>  Ethiopian Statistics Service. 2022.  <https://www.statsethiopia.gov.et/>  [Ethiopia Livelihood Baseline: Oromia Region, 2017](https://acted.sharepoint.com/sites/IMPACTETH/Shared%20Documents/General/02_Research/SMART+/5.%20SDR/CGC%20livelihood%20profile%202017.pdf)  [DRMC Woreda Hotspot Classification approved in August 2023](https://acted.sharepoint.com/sites/IMPACTETH/Shared%20Documents/General/02_Research/SMART+/5.%20SDR/August%202023%20Hotspot%20Woredas%20Classification.pdf)  FEWsNET  <https://fews.net/east-africa/ethiopia>  ETHIOPIA Situation Report, OCHA. February 2024.  <https://reports.unocha.org/en/country/ethiopia/>  [Oromia Region Meher 2023 Multi Agency Assessment Report](https://acted.sharepoint.com/sites/IMPACTETH/Shared%20Documents/General/02_Research/SMART+/5.%20SDR/Oromia%20Region%20Meher%202023%20UPDATE%20TG%20-%20Copy.docx)  Institute for Health Metrics and Evaluation Health Data  <https://vizhub.healthdata.org/lbd/dbm>  National Food and Nutrition Strategy Baseline Survey, 2023  <https://reliefweb.int/attachments/6317e37b-4cfa-4494-8b47-add4745718dd/FNS_baseline_survey_preliminary_findings.pdf>  [Arsi Health Facilities SAM admission data (Jan-Dec 2023)](https://acted.sharepoint.com/sites/IMPACTETH/Shared%20Documents/General/02_Research/SMART+/5.%20SDR/Admission%20Data%20of%2014%20Woredas%20in%202023.xlsx) |

* 1. Primary Data Collection
     1. **Sampling Procedure: Selection of Clusters**

The survey will use a two-stage cluster sampling method, with villages being the primary sampling unit. The household will be the main unit of analysis as various variables such as IYCF and care practices, household food security, health, WASH, and mortality will be collected at the household level. Using the SMART+ platform, 84 clusters will be randomly selected based on the Probability to Population Size (PPS) method. This technique ensures that every household in the selected clusters has an equal chance of being chosen, regardless of the size of the village. Reserved clusters will only be included if 10% or more of the clusters cannot be surveyed, and if less than 80% of the sampled children can be surveyed. In cases where individuals or children are absent, the team will revisit the houses at the end of the day before leaving the village.

**Sampling Procedure: Selection of Households:**

In the second stage, households will be selected using simple random sampling within the cluster. In each area, the households list will be updated during data collection in collaboration with kebele leaders. The team will select households to be interviewed using a random number generator mobile app (RGN), according to the target number of households per cluster, which is 11 households. If dealing with a large area or more than 250 households, a segmentation method will be employed. The survey aims to include 921 households and 591 children under the age of five. The targeted number of households in each cluster is 11, regardless of the number of children interviewed.

* + 1. **Sample Size Calculations**

Sample size calculation for the survey will be based on the expected prevalence of Global Acute Malnutrition (GAM) and Mortality Rate in the survey areas. The parameters used have been extracted from the previous survey reports conducted in March 2023 and in 2019. Anthropometric and Mortality Sample sizes have been calculated using the SMART+ platform.

Table 1: Sample Size (Anthropometric)

|  |  |  |
| --- | --- | --- |
| **Parameter** | **Arsi zone** | **Justification** (cite source you are pulling the parameter from) |
| Estimated Prevalence (%) | 11.5 | The March 2023 national food and nutrition strategy baseline survey for the Oromia region indicated a 9% prevalence of wasting, while a 2019 IHME\* estimate for the Arsi Zone was slightly lower at 8.9% (CI: 6.4-12.4%). To account for possible deterioration, we have cross-referenced these sources and set a cautious estimate at 11.5%. |
| Desired Precision | 3.5 | Based on Standard Operating Procedure (SOP) for SMART Surveys in Ethiopia (Nov 2020). Recommends a desired precision of ±3.5% for estimated GAM of 10-15% |
| Design Effect | 1.7 | The woredas included in the survey spread across three different livelihood zones. |
| **Children to be Included** | **591** | **Estimated by the SMART+ based on the above given parameters** |
| Average Household Size | 5 | Recommended by Arsi zone and projected from Census 2007. |
| % children Under-Five | 15 | Oromia regional health bureau 2021 conversion factor |
| % Non-Respondents | 5 | Anticipated non-response rate based on the recent surveys conducted in Oromia region |
| **Households to be Included** | **921** | **Estimated by the SMART+ based on the above given parameters** |
| **\* Institute for Health Metrics and Evaluation** |  |  |

### 2.3.2 Mortality Sample Size

Table 2: Sample Size (Mortality)

|  |  |  |
| --- | --- | --- |
| **Parameter** | **[AFP Livelihood zone/ Somali region]** | **Justification** |
| Estimated death rate per 10,000/day | 0.5 | Assumed a baseline CMR of 0.5 deaths/10,000/day as there are no data on mortality |
| Desired Precision | 0.3 | Based on 2022 Ethiopia SOP for SMART Surveys |
| Design Effect | 1.7 | The woredas included in the survey spread across three different livelihood zones |
| Recall Period | 93 | The default value is used. To be adjusted during training |
| **Population to be Included** | **4247** |  |
| Average Household Size | 5 | Recommended by Arsi zone and projected from Census 2007 |
| % Non-Respondents | 5% | Anticipated non-response rate based on the recent surveys conducted in the Oromia regions |
| **Households to be Included** | **894** | Estimated by the SMART+ based on the above given parameters |

The maximum sample size is returned by the **ANTHROPOMETRY** sample size calculation, and this will be considered the final sample size, with 921 households.

* + 1. **Calculating Number of Clusters**

To determine the number of clusters required, the number of households that a team can comfortably survey in a day was estimated using the parameters found in the Table 3 below:

**Table 3: Number of Households a Team can Sample in a Day**

|  |  |
| --- | --- |
| Parameter | Value (minutes) |
| Total time per day for field work | 630 |
| Travel time to cluster location | 90 |
| Duration for initial introduction and selection of household | 30 |
| Total duration of breaks | 30 |
| Travel time from one household to another | 12 |
| Average time in the household | 30 |
| Number of HH planned/day/team | 11 |

Given the above, the number of clusters per survey area is presented in the table below:

|  |  |
| --- | --- |
|  | STRATA |
| Total number of HH based on sample size calculation | 921 |
| Total number of HH to be assessed per day per team | 11 |
| Clusters Needed | 84 |
| Rounded up | 84 Clusters |

* + 1. **Survey Teams, Training, Data Collection and Data Management**

Survey Teams: Seven teams with four members (1 Team Leader, 1 interviewer, 1 measurer, 1 assistant) will be involved in the survey's execution. The seven teams will be supervised by a SMART certified supervisor and the SMART manager.At each cluster, a local guide will be employed to facilitate data collection at the household level. The survey teams will be recruited by REACH and as possible, the team members will be a mix of both males and females and will be recruited from the local communities.

**Training**: The survey teams will be trained for five days with the training planned to start on 4th March 2024. The training will cover various components including taking anthropometric measurements, sampling of households, data collection tools, digital data collection, data quality checks, standardization exercise among other themes. The training of the enumerators will be facilitated by SMART certified smart manager.

**Supervision:** The overall management of the survey will be done by REACH. Maximum supervision of the survey teams will be ensured to facilitate quality data.

**Data Entry and Management:** Data will be collected through REACH tablets using SMARTcollect. The SMARTcollect will be programmed and uploaded onto the tablets which will be used by the survey teams. The teams will upload the collected data to SMART Platform daily to allow the Survey Manager to review the data collected each day and give feedback every morning to the teams.

* + 1. **Data Quality**

To ensure optimal and high data quality, several measures will be put in place which includes:

1. The survey will be done in accordance with the submitted protocol, and that the following will be ensured:
   1. Ensure that training of survey teams is done using standardised material as recommended by SMART Methodology
   2. Undertake standardisation test as part of the training; taking appropriate steps thereafter based on performance of the survey teams.
   3. Appropriate calibration of survey equipment, during the training and on every morning before proceeding to the field for data collection
   4. Plausibility checks will be conducted on daily basis and inform the daily debriefing sessions which will be conducted every day.
2. Data will be collected through SMARTcollect, and everything is automated.
3. Anthropometry data will be auto analysed by SMART+ platform. The same platform will be used to analyse the mortality data, health, WASH and food security.
   * 1. **Questionnaire**

The survey will adopt the data collection tools which have been developed by the Global SMART Team for both anthropometric and mortality surveys. Other indicators will be collected using the modules in line with current FSNMS questionnaires as much as possible.

* + 1. **Data to be Collected.**

1. **Anthropometry**

* **Age:** Will be determined using birth/health cards/ records if available and local calendar of events which will be jointly developed by local leaders and survey enumerators.
* **Sex:** Male or female
* **Weight:** Children’s weights will be taken without clothes using mother and child digital weighing scales (SECA scales with precision of 100gm).
* **Height/length:** Children will be measured using the wooden UNICEF measuring boards (precision of 0.1cm). Children less than 2 years of age will be measured lying down, while those greater than or equal to 2 years of age will be measured standing up.
* **Mid-upper arm circumference:** MUAC measurements will be taken at the mid-point of the left upper arm using both the child and adult MUAC tapes (precision of 0.1cm) for children 6-59 months and for adult women 15-49 years of age.
* **Bilateral pitting oedema:** Will be assessed by the application of normal thumb pressure on both feet for 3 seconds.
* **Referral:** All children with acute malnutrition and not already enrolled in treatment will be referred using referral forms to existing TSFP and OTP programs in the county.

1. **Demographics and Mortality:** The following information will be collected for all current household members: age in years, sex, whether they were born, or had joined the household during the recall period. For household members that left during the recall period, will collect the age in years, sex, and whether they had joined or born into the household during the recall period. For persons who have died during the recall period, will collect age in years, sex, whether born or joined the household during the recall period, as well as estimated cause and location of death.
2. **Health Interventions Data:** Vitamin A supplementation, Deworming, Measles immunization and skilled delivery data will be collected through health cards or recall.
3. **Morbidity**: Two-week retrospective morbidity data will be collected from mothers/caregivers of all children (6-59 months) included in the anthropometric survey.
4. **IYCF**: the following indicators will be collected for IYCF particulary children aged 0-23 months;IEvBF, EIBF, EBF2D, EBF, MixMF, CBF, ISSSF, MDD, MMF, MMFF, MAD, EFF, SwB, UFC, ZVF, BoF
5. **Food Security Indicators**:
   1. **Food Consumption Scores (FCS):** is an indicator of the general quantity and quality of foods being consumed in a household, based on how many days any household members have consumed 9 distinct food groups within a 7-day recall period. Households are categorized into categories of severity based on their responses. FCS is often used as a proxy for quality of food consumed. Standard FCS thresholds are <21 for ‘poor’, 21-<=35 for ‘borderline’ and 35+ for ‘acceptable’.
   2. **Household Hunger Scale (HHS):** measures the perceived hunger by asking the frequency a household has experienced three common experiences associated with hunger in the past 30 days (no food in the house, slept hungry, gone whole day and night without food). HHS is often used as a proxy for quantity of food consumed. Thresholds and categories used for analysis are those used for IPC AFI in South Sudan.
   3. **Livelihood Coping Strategies (LCSi)** – measures what behaviours or actions that household are taking to cope with not having enough food or resources to get food. Ten coping strategies are asked about which are categorized as Emergency, Crisis, or Stress strategies.
6. **WASH** – indicators on main water source, access to latrines will be asked.
   * 1. **Data Cleaning and Analysis**

The anthropometric and mortality data will be auto analysed using SMART+ platform. Various statistics will be used to summarize the data including percentages, means, and median among others. The analysed data will be presented in both tabular and graphical presentations. The preliminary datasets will be available within 2 days after the last day of data collection, and the preliminary report within 7 days. The preliminary report will get feedback from REACH, before submission to the Nutrition Information Working Group (NIWG) for validation. The data collected in the field via the SMARTcollet is automatically uploaded to the platform, the survey manager will continuously supervise their teams and track results in real-time.

# Ethical considerations

The proposed research design meets / does not meet the following criteria:

|  |  |  |
| --- | --- | --- |
| ***The proposed research design…*** | ***Yes/ No*** | ***Details if no (including mitigation)*** |
| … Has been coordinated with relevant stakeholders to **avoid unnecessary duplication** of data collection efforts? | Yes |  |
| … **Respects respondents, their rights and dignity** (*specifically by: seeking informed consent, designing length of survey/ discussion while being considerate of participants’ time, ensuring accurate reporting of information provided*)? | Yes |  |
| … Does not **expose data collectors to any risks as a direct result**  of participation in data collection? |  |  |
| … Does not **expose respondents / their communities to any risks as a direct result** of participation in data collection? |  |  |
| … Does not involve **collecting information on specific topics which may be stressful and/ or re-traumatizing** for research participants (both respondents and data collectors)? |  |  |
| … Does not involve **data collection with minors** i.e. anyone less than 18 years old? | No | No minors are interviewed, however, children in each household are measured by the data collection team. |
| … Does not involve **data collection with other vulnerable groups**  e.g. persons with disabilities, victims/ survivors of protection incidents, etc.? | Yes |  |
| … Follows IMPACT SOPs for management of **personally identifiable information**? | Yes |  |
| … Plans to make **appropriate referrals to nutrition services for children identified as malnourished** in the field and are not currently enrolled in nutrition programs? | Yes |  |

* + 1. **Survey plan**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Activity** | **March 1** | **March** | **March** | **March 4** | **March** | **March** | **March** | **March** | **March 9** | **March 10** | **March** | **March** | **March** | **March** | **March** | **March** | **March** | **March** | **March** | **March 22** | **March** | **March** | **March** | **March** | **March** | **March** | **March** | **March** | **March** | **May** |
| Travel to Asella from Addis |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Field Meetings (final sampling) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Training of enumerators |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Pilot test |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Data collection |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Data collection "Flex" Days |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Debrief with Teams |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Travel to Addis |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Prepare and submit preliminary datasets |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| submit preliminary presentation and Report |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

# Data Analysis Plan

Tool 1: SMART Household Survey Tool (Mandatory Indicators Only)

Indicators and questions in SMART plus are pre-populated in the platform, and we are just selecting them in the platform, and they are not downloadable externally.

# 5. Data Management Plan

|  |  |
| --- | --- |
| **Administrative Data** | |
| Research Cycle name | *SMART Survey in Arsi zone, Oromia region, Ethiopia* |
| Project Code | *ETH2402* |
| Donor | *FCDO* |
| Project partners | Nutrition Information Working Group, Nutrition partners, RENCU |

|  |  |  |
| --- | --- | --- |
| Research Contacts | *Alinoor Mohamed Farah, alinoor.mohamed@reach-initiative.org*  *Julian Formica, julian.formica@impact-initiatives.org* | |
| Data Management Plan Version | *Date: 22/02/2024* | *Version: 01* |

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Related Policies | | *Impact Initiatives policies on data management* | | | | | | | | | |
| **Documentation and Metadata** | | | | | | | | | | | |
| What documentation and metadata will accompany the data?  *Select all that apply* | | X | Data analysis plan | | | | X | Data Cleaning Log, including:  □ Deletion Log  □ Value Change Log | | | | |
| X | Code book | | | | □ | Data Dictionary | | | | |
| □ | Metadata based on HDX Standards | | | | □ | [Other, SMART+ raw data] | | | | |
| **Ethics and Legal Compliance** | | | | | | | | | | | |  |
| Which ethical and legal measures will be taken? | | X | Consent of participants to participate | | | | □ | Consent of participants to share personal information with other agencies | | | | |
| X | No collection of personally identifiable data will take place | | | | X | Gender, child protection and other protection issues are considered | | | | |
| X | All participants reached age of majority | | | |  | [Other, Specify] | | | | |
| Who will own the copyright and Intellectual Property Rights for the data that is collected? | | *Impact Initiatives* | | | | | | | | | |  |
| **Storage and Backup** | | | | | | | | | | | |  |
| Where will data be stored and backed up during the research? | | □ | IMPACT/REACH Kobo Server | | | | □ | Other Kobo Server: *[specify]* | | | | |
| □ | IMPACT Global Physical / Cloud Server | | | | □ | Country/Internal Server | | | | |
| □ | On devices held by REACH staff | | | | □ | Physical location *[specify]* | | | | |
| X | [Other,SMART+ Plaftorm] | | | | | | | | | |
| Which data access and security measures have been taken? | | X | Password protection on devices/servers | | | | □ | Data access is limited to *[specify, e.g. REACH staff]* | | | | |
| □ | Form and data encryption on data collection server | | | | □ | Partners signed an MoU if accessing raw data | | | | |
| □ | [Other, Specify] | | | | | | | | | |
| **SMART+ Platform Access Rights** | | | | | | | | | | | |  |
| Account Name(s) | | Person(s) | | | | Type of Kobo access | | | | | |  |
| *[Insert account name(s)]*  *[Add relevant number of rows for access rights]* | | *Alinoor Mohamed, Senior Assessment Officer-alinuriana* @yahoo.com | | | | X View  X Edit | | | | X Submit Data  XDownload Data | |  |
| *[Example for enumerators]*    enumeratorsaccount@impact-initiatives.org | | *Scanned using barcodes* | | | | X View  □ Edit | | | | X Submit Data  □ Download Data | |  |
|  | |  | | | |  | | | |  | |  |
| **Raw Data Access Rights** | | | | | | | | | | | |  |
| Raw Data Access | | Reason | | | | Person | | | | | |  |
| Accountable | | Accountable | | | | *Alinoor Mohamed* | | | | | |  |
| Access | |  | | | | *Getu Gari*  *Julian Formica*  *Alinoor Mohamed*  Martin N | | | | | |  |
| *[Add relevant number of rows for access rights]* | | *…* | | | | *[Insert name]* | | | | | |  |
| **Preservation** | | | | | | | | | | | |  |
| Where will data be stored for long-term preservation? | | X | IMPACT / REACH Global Cloud / Physical Server | | | | □ | OCHA HDX | | | | |
| □ | REACH Country Server | | | | □ | [Other, SMART+ platform] | | | | |
| **Data Sharing** | | | | | | | | | | | |  |
| Will the data be shared publicly? | | X | Yes | | | | □ | No, only with mandating agency / body | | | | |
| Will all data be shared? | | □ | Yes | | | | X | No, only anonymized/ cleaned/ consolidated *[delete what does not apply]* data will be shared | | | | |
| □ | No, [Other, Specify] | | | | | | | | | |
| Where will you share the data? | | X | REACH Resource Centre | | | | □ | OCHA HDX | | | | |
| □ | Humanitarian Response | | | | □ | [Other, Specify] | | | | |
| **Data protection risk assessment** | | | | | | | | | | | |  |
| Have you completed the Indicators Risk Assessment table below? | |  | Yes | | | | X | No, no information that potentially allows identification of individuals is to be collected. | | | | |
| [Please complete the first 4 columns in the Indicators Risk Assessment table below] | | | | | | | | | |  |
| Risk indicator (including direct and indirect identifiers) | Type of identification risk | | | Disclosure implications | Benefits | | | | **Class** | | **Required mitigation** |  |
| *[Specify indicator, e.g. KI\_phone number]* | *[Specify identification risk, e.g. Direct contact/identification of KI]* | | | *[Specify implications, e.g. loss of privacy/potential target of armed actors]* | *[Specify benefits, e.g. follow up for data cleaning]* | | | | *[To be completed by IMPACT HQ]* | | *[To be specified by IMPACT HQ]* |  |
| *[Add relevant number of rows for risk indicators]* |  | | |  |  | | | |  | |  |  |
| **Responsibilities** | | | | | | | | | | | |  |
| Data collection | | *Julian Formica, julian.formica@impact-initiatives.org*  *Alinoor Mohamed, Alinoor.Mohamed@reach-onitiattive.org* | | | | | | | | | |  |
| Data cleaning | | *[Getu, getu.gari@reach-initiative.org* | | | | | | | | | |  |
| Data analysis | | *[Getu, getu.gari@reach-initiative.org* | | | | | | | | | |  |
|  | | *Alinoor, Alinoor.Mohamed@reach* | | | | | | | | | |  |

# 6. Monitoring & Evaluation Plan

* *Please complete the M&E Plan column in the table and use the corresponding Tools in the Monitoring & Evaluation matrix to implement the plan during the research cycle.*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **IMPACT Objective** | **External M&E Indicator** | **Internal M&E Indicator** | **Focal point** | **Tool** | **Will indicator be tracked?** |
| **Humanitarian stakeholders are accessing IMPACT products** | Number of humanitarian organisations accessing IMPACT services/products  Number of individuals accessing IMPACT services/products | # of downloads of x product from Resource Center | Country request to HQ | User\_log | X Yes |
| # of downloads of x product from Relief Web | Country request to HQ | X Yes |
| # of downloads of x product from Country level platforms | Country team | □ Yes |
| # of page clicks on x product from REACH global newsletter | Country request to HQ | □ Yes |
| # of page clicks on x product from country newsletter, sendingBlue, bit.ly | Country team | □ Yes |
| # of visits to x webmap/x dashboard | Country request to HQ | □ Yes |
| **IMPACT activities contribute to better program implementation and coordination of the humanitarian response** | Number of humanitarian organisations utilizing IMPACT services/products | # references in HPC documents (HNO, SRP, Flash appeals, Cluster/sector strategies, IPC AMN) | Country team | Reference\_log | *[List here relevant HPC-documents to be monitored:*  *E.g. Iraq HNO 2018, Iraq Flash Appeal Mosul, Shelter Cluster strategy]* |
| # references in single agency documents | *[List here relevant agency-documents to be monitored:*  *E.g. UNHCR Country Strategy, UNICEF WASH Response Strategy]* |
| **Humanitarian stakeholders are using IMPACT products** | Humanitarian actors use IMPACT evidence/products as a basis for decision making, aid planning and delivery  Number of humanitarian documents (HNO, HRP, cluster/agency strategic plans, etc.) directly informed by IMPACT products | Perceived relevance of IMPACT country-programs | Country team | Usage\_Feedback *and* Usage\_Survey template | *[Outline here the usage survey to be implemented for this research cycle* |
| Perceived usefulness and influence of IMPACT outputs | *E.g. Usage survey to be conducted in November 2017, following the release of x outputs, targeting at least 10 partners* |
| Recommendations to strengthen IMPACT programs |
| Perceived capacity of IMPACT staff | *E.g. Usage survey to be conducted at the end of the research cycle related to all outputs, targeting at least 20 partners]* |
| Perceived quality of outputs/programs |
| Recommendations to strengthen IMPACT programs |
| **Humanitarian stakeholders are engaged in IMPACT programs throughout the research cycle** | Number and/or percentage of humanitarian organizations directly contributing to IMPACT programs *(providing resources, participating to presentations, etc.)* | # of organisations providing resources (i.e.staff, vehicles, meeting space, budget, etc.) for activity implementation | Country team | Engagement\_log | X Yes |
| # of organisations/clusters inputting in research design and joint analysis | X Yes |
| # of organisations/clusters attending briefings on findings; | X Yes |

1. Nutrition Information Working Group, a technical working group of the Nutrition Cluster. [↑](#footnote-ref-2)
2. Population Size by Sex, Area and Density by Region, Zone and Wereda: July 2022. Ethiopian Statistics Service. 2022. [↑](#footnote-ref-3)
3. Census 2007 Tables: Oromia Region Archived November 13, 2011, at the Wayback Machine, Tables 2.1, 2.4, 2.5, 3.1, 3.2 and 3.4. [↑](#footnote-ref-4)
4. Ethiopia Livelihood Baseline: Oromia Region. Robe, Chole, Seru and Sude (RCS) Livelihood Zone. October 2017. [↑](#footnote-ref-5)
5. Ethiopia Livelihood Baseline: Oromia Region. Rift Valley Maize & Haricot Bean (RVM) Livelihood Zone. September 2017 [↑](#footnote-ref-6)
6. Ethiopia Livelihood Baseline: Oromia Region. Charcher/Gololcha Coffee, Chat & Maize (CGC) LZ November 2017. [↑](#footnote-ref-7)
7. Ethiopia Livelihood Baseline: Oromia Region. Arsi-Bale Wheat, Barley and Potato Livelihood Zone (ABW). September 2017 [↑](#footnote-ref-8)
8. ETHIOPIA Situation Report, OCHA. February 2024. [↑](#footnote-ref-9)
9. Oromia Region Meher 2023 Multi Agency Assessment Report [↑](#footnote-ref-10)