Nutrition and Mortality Survey using the SMART Methodology

Kelafo Woreda, Shebelle Zone, Somali Region

April 2018

Implementation Partners: RENCU/DPPB, and technical support provided by Tech RRT

Table of Contents

1. Background

Shabelle Zone is one of the eleven zones of Somali regional State, which is located in the southern and southeastern part of the region and country. Shabelle zone has 10 rural woredas and one urban town. The climate of Shabelle zone varies from hot tropical to warm temperate and has two rainy seasons in the spring and autumn (locally known as 'Gu', and 'Deyr' rains). Spring season lasts from approximately April to June while autumn season occurs October to December. Lowland areas of the zone (Southeastern portion) experience high temperature of 20^0C– 25^0C and low rainfall (up to 820mm). In contrast, the northern and northwestern portions of the zone (warm temperate areas) experience mean annual temperatures of 15^0C – 20^0C and 1200-2000mm of annual rainfall.

The livelihood of Shebelle zone communities mainly rely on mixed farming and semi-nomadic economic activities such as livestock rearing that are dependent on the level of rain. Crop production is the main source of food and income for agro-pastoral woredas of Shebelle zone; namely Gode, Mustahil, Kalafo, Adadle, Ferfer, Bercano, Danan, Elele, East-Imay and Abaqorow. Major crops grown in the zone are maize, sorghum, sesame, pulses (cowpea) and vegetable crops such as onions and tomato. Typical livestock include cattle, goat, sheep, camel and donkey.

Although Shebelle zone receives two seasonal rainfalls and is favorable for many types of crops and livestock production, the zone is suffering from natural and manmade hazards, like drought. The main challenge of crop production in the area is the distribution of rain being erratic and low in terms of both time and place, while extended drought remains the main challenge to livestock. According to the zonal health department report, the health situation of the zone is relatively stable, but Severe Acute Malnutrition (SAM) is anticipated as a major public health problem in the zone.

The planned SMART Nutrition and Mortality survey is to take place in Kelafo Woreda from approximately April 2 -10, 2018. Kelafo is one of nine woredas in Shabele Zone. Kelafo Woreda demographic information indicates that the woreda consists of 15 kebeles and the total population of Kelafo is approximately 103 686. It should be noted that the exact date of this information is not known and that this information has likely not been updated for a significant amount of time.

Table 1: Kalafo woreda population profile

Kalafo Woreda Profile		
No.	Name OF kebelle	Total Population
1	Hilo-Ba,ad	9785
2	Addis Katama	9511
3	Dariko	7210
4	Bargun	5622
5	Boholo-Awis	6015
6	Jaaq-Dhawr	4633
7	Gan	4037
8	Dabakatur	5512
9	Buurgabo	5824

10	LuQ-Dere	4575
11	Burdedi	3815
12	AF-dub	11,202
13	Niiri	7995
14	Omerdoon	10,033
15	Allaw-Igarsii	7917
		103,686

2. Survey Justification

The 2016 Ethiopia Demographic Health Survey report indicated that the Somali region had a GAM point prevalence of 22.7% (C.I not provided). Kelafo woreda has consistently been the woreda with the highest estimated prevalence of GAM as well as highest levels of malnutrition related admissions.

Table 2: Top 20 New OTP Admission per Woeda December 2017 (RENCU)
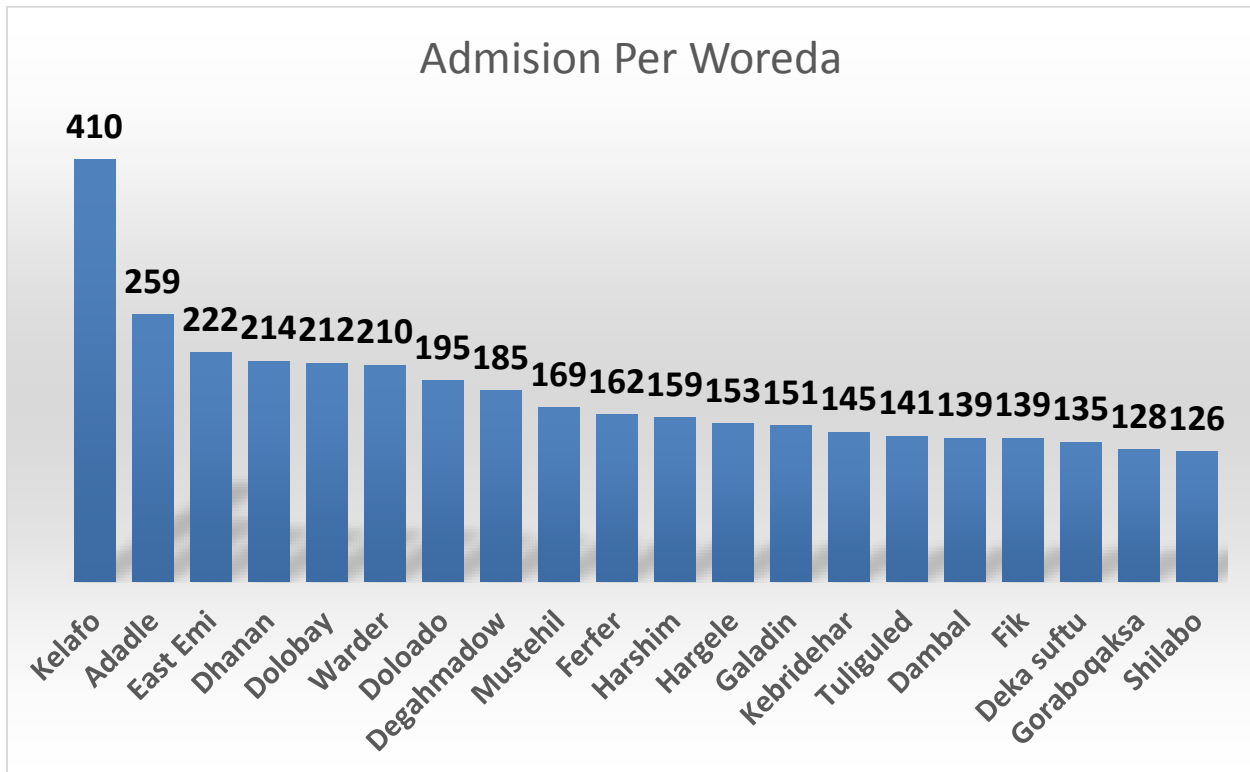
Based on the Ethiopian Somali Regional State ENCU data, Kelafo had the highest SAM cases, 793 (including 433 new in December, 2017), from October to December, 2017, in Shebelle zone.

Table 3: SAM (OTP + SC) children admission trend 2017

Year	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
2017	273	331	461	504	330	615	551	775	557	793	628	433

Although there has been an overall moderate reduction of SAM cases in the zone due to the current ongoing humanitarian response by government, partners and donors the situation is expected to get worse as a significant portion of funding is expected to expire by the end of March, 2018. This will have a negative impact on communities and vulnerable population who have been dependent on this humanitarian aid. For these reasons, along with the fact that a SMART survey has not been conducted in a significant amount of time, the current SMART survey has been planned to determine the current nutrition situation in Kelafo.

2. Survey Objectives

Main Objectives
The overall objective of the Kelafo SMART survey is to estimate the nutrition situation among children of age 6-59 months and mortality along with some underlying factors that may contribute to the prevalence of malnutrition found in Kelafo woreda, Shabelle zone Somali region.

Specific Objectives
1. To estimate the prevalence of global and severe acute malnutrition among children aged 6 – 59 months.
2. To estimate the prevalence of global and severe chronic malnutrition among children aged 6 – 59 months.
3. To estimate the proxy prevalence of acute malnutrition in pregnant and lactating women
4. To determine retrospective crude mortality rates (CMR) for entire population and under five mortality rates.
5. To estimate the retrospective morbidity rate of children 6-59 months two weeks prior to commencement of survey.
6. To estimate the percentage of children that have received 3rd dose of Penta vaccine (6-59 months), measles vaccination (6-59 months) and Vitamin A supplementation (6-59 months) in the last 6 months.
7. To determine the percentage of children included in the survey that are malnourished and not included in either a TRP, OTP or SFP appropriate program.
8. To assess the contextual factors associated with nutrition situation in the Woreda, including FSL, WASH and others.

3. Methodology

3.1 Survey size determination

The following assumptions (based on the given context) were used to calculate the sample size of number of children (population for mortality), which were then converted into number of households to survey. All calculations were made using the most recent version of ENA Software for SMART (July 9, 2015).

Table 3: Sample Size Anthropometry

Parameters for Anthropometry	Value	Assumptions based on context
Estimated Prevalence of GAM (%)	23	1. Bi-annual Seasonal Nutrition Surveys conducted in Ethiopia by regional DPP Bureaus/RENCU until July 2015. Somali Region, Kelafo (Dec 28, 2014- Jan 7 2015, SDPPB) GAM 21.7% (17.6-26.4) 2. Ethiopia DHS 2016. Somali Region 22.7% point prevalence (no C.I's) 3. SAVE End line Nut and Mortality Survey Final Report, Gode, May 2016: GAM 17.6% (14.2-21.4). Gode is the capital of Shebelle Zone and is approx. 2.5 hours from Kelafo. This survey is referenced because it is in the same Zone as Kelafo and is the most recent SMART survey in the zone that could be accessed. Based on existing information it is highly likely that the GAM prevalence in Kelafo is higher than in Gode. 4. Screening Report of 62 EOS Woredas July-August 2017: Kalafo MUAC screening included 14049 under 5 children. A total of 49% of children (6884) had a MUAC less than 120mm. 5. RENCU SAM (OTP + SC) children admission trend 2017 indicates that Kelafo has the highest SAM cases in the Zone from Sept-Dec 2017. This is a trend that has continued for a long time. Based on the information above and the current drought context it is likely that the GAM prevalence has not improved since the Dec 2015-Jan 2016 Bi-Annual Seasonal Nutrition Surveys and the 2016 Ethiopia DHS; therefore, and est GAM of 23% was decided
± Desired precision	5.2	1. Guidelines for Emergency Nutrition Surveys in Ethiopia (Sept, 2008) suggests a range of desired precision of ± % 5 to 7.5 for Est GAM of between 20%-30%. A precision of 5.2 will still be a high enough level of precision to base programmatic decisions.

Design Effect (DEFF)	1.5	There is not a lot of information available for DEFF for GAM in the zone. 1. The SAVE End line Nut and Mortality Survey Final Report, Gode, May 2016 found a WHZ DEFF of 1.04. Based on several discussions with individuals familiar with Gode and Kelafo it was determined that Kelafo likely has a higher DEFF then Gode due to the higher levels of GAM noted by admissions in agricultural areas along the Shebele river compared to the pastoral areas. In addition, due to the lack of information pertaining to WHZ DEFF 1.5 is the SMART Global recommendation for baseline surveys (areas where there is not a lot of known information pertaining to DEFF)
Children to be included	**411**	
Average HH Size	6.6	1. Government Conversion Factors All Regions (No Date). Somalia Region 6.6 2. Kalafo Woreda Atlas Map Ethiopian Somali Regional State Bureau of Finance & Economic Dev't (no date). This document states average HH size is 5.99 but only lists 10 woredas (pop 92 692) indicating that this document is at least a few years old. After discussions with the team it was decided to use 6.6 average HH size.
% Children under-5	15	1. Government Conversion Factors All Regions (No Date). Somalia Region 10.1% 2. Screening Report of 62 EOS Woredas July-August 2017: Kelafo had an under 5 population of approximately 14.2% After discussion with individuals that are working in Kelafo it was noted that the % of children under 5 would likely be at least 15% and that Kelafo almost certainly has a much higher % of U5 population than the Somali region on average (10.1%) Based of the above information 15% was decided.
% Non-response Households	10%	After discussion with individuals with knowledge about Kelafo a relatively high non-response % was selected because in some clusters there may be a chance of high levels of absent households and also people may refuse to take part in the survey.
Households to be included	**512**	

Table 4: Sample Size Mortality

Parameters for Mortality	Value	Assumptions based on context
Estimated prevalence (CMR)	0.6	There is not a lot of available information for mortality rates in Kelafo using deaths/10 000/day 1. Bi-annual Seasonal Nutrition Surveys conducted in Ethiopia by regional DPP Bureaus/RENCU until July 2015. Somali Region, Kelafo (July 29-Aug 6, 2015, RENCU) CMR 0.46 (0.27-0.77) 2. The SAVE End line Nut and Mortality Survey Final Report, Gode Woreda (May,2016) found a CMR of 0.23 (0.09-0.58) and an under 5 CMR of 0.33 (0.08-1.34). Based on the ongoing drought since this report along with the available health and nutrition information from Kelafo and Gode it is highly likely that the CMR in Kelafo is higher than Gode. 2. CMR of 0.41 is the assumed baseline for Sub-Sahara Africa and the Emergency thresholds is 0.8 (Sphere 2011) Based on the above information 0.6 was selected as this number is higher than the 2015 Bi-annual Seasonal Nutrition Survey and the SAVE 2016 Gode survey, as well as higher than the normal Sub-Sahara baseline due to the ongoing drought.
± Desired precision	0.3	1. Guidelines for Emergency Nutrition Surveys in Ethiopia (Sept, 2008) National Guidelines recommendations. 2. Global SMART Guidelines which states that 0.3 precision is sufficient for est prev CMR from 0.3 up to 1 death/10 000/ day
Design Effect (DEFF)	1.3	Information could not be found regarding DEFF related to CMR in Kelafo or the region. After discussions it was determined that unlike the Anthropometry Survey sample size, there is no justification to increase the mortality DEFF up to 1.5; therefore, 1.3 was used and is still likely to be a conservative estimate (increasing sample size a little bit more than needed)
Recall period in days	127	Mowlid Nov 30, 2017 was chosen as the Recall period event Nov 2017 (1 day), Dec 2017 (31 days), Jan 2018 (31 days), Feb 218 (28 days), March 2018 (31 days), April data collection April 2-10; therefore mid-point of data collection April 5 (April 5 days)

		1+31+31+28+31+5=127 days
Population to be included	**2854**	
Average HH Size	6.6	1. Government Conversion Factors All Regions (No Date). Somalia Region 6.6
		2. Kalafo Woreda Atlas Map Ethiopian Somali Regional State Bureas of Finance & Economic Dev't (no date). This document states average HH size is 5.99 but only lists 10 woredas (pop 92 692) indicating that this document is at least a few years old.
		After discussions with the team it was decided to use 6.6 average HH size.
% Non-response Households	10%	After discussion with individuals with knowledge about Kelafo a relatively high non-response % was selected because in some clusters there may be a chance of high levels of absent households and also people may refuse to take part in the survey.
Households to be included	**480**	

Since both the anthropometry (512 HH) and mortality (480 HH) sample sizes are similar the larger anthropometry sample size will be used for both surveys.

3.2 Number of Households per Day, number of clusters, and total days of data collection

The number of households to be completed per day was determined based on the following approximate assumptions.

1. Total length of workday: Leave 8am return 5pm (9 hours, 540min)
2. Travel time: average 30 min to get to cluster and 30 min return (60min)
3. Time spent introductions, households selection, village leader interviews (60min)
4. Average time for breaks (60 min)
5. Average time per HH + time to get from one HH to another (30 min)

540 min – 60 min – 60 min – 60 min = 360 working minutes per day (5.75h)

360 min / 30 min = 12

Each team will complete 12 HH/ day; therefore, each cluster will include 12 HH's.

Number of Clusters

Sample size 512 HH/ 12 HH/day = 42.6

The survey will include 43 clusters.

Total number of days of Data Collection

12 HH/ team/ day x 6 teams = 72 HH/ day

512 HH (sample size) / 72 HH per day = 7.1 days (8 days)

Data collection will be completed in approximately 9 days (including one day of rest)

3.3 Sampling Strategy

A two-stage cluster sampling methodology will be implemented.

First Stage Sampling

The first stage of sampling will be the selection of clusters. Kelafo consists of 15 kebeles. The next smallest geographical unit is the sub-kebele (rural areas) or village (urban area). For this protocol the term 'sub-kebele' will also include the term 'village'. Sub-kebeles will be the primary sampling unit for the survey.

On March 14-15, 2017 an updated sampling frame was created in Kelafo. During this time the four supervisors and survey manager split up and went to each of the 15 kebeles and met with each kebele leader. The kebele leader provided each of the survey staff with the names of all of the sub kebeles in their kebele along with the number of households. The number of households was more commonly available and will therefore be used in the sampling frame as opposed to population (both methods are acceptable as probability proportional to size will be performed by ENA for SMART to randomly select clusters). All sub kebeles that pose a security risk will be eliminated from the sampling frame and will be detailed in the final report. This process will take place after consultation with Kelafo based staff around March 30th. ENA for SMART will be used to randomly select 43 clusters.

Second stage sampling

The second stage of sampling will be the selection of 12 households for each of the 43 clusters. Each team will randomly select the households when at the cluster. Each day when a team arrives at a cluster (sub-kebele) they will meet with the sub-kebele leader and walk around the sub-kebele and create or update the sub-kebele household list. The method used for randomly selecting households from the list will be systematic random sampling. The sub-kebele leader will be asked to assist the team by using a random number table to randomly select the first household (HH1 to the sampling interval).

When entering a randomly selected household, if there are not any eligible children to be included in the survey the household sections of the survey (mortality, wash) will still be completed. If the household is absent or if an eligible 6-59 months child is absent the team leader will make a note on the cluster control form and the team will come back to the house later in the day. Absent household will not be replaced. In the event that an abandoned household was accidently included in the sub-kebele household list the household will be replaced with the next household on the list as per proper procedures when implementing systematic random sampling.

Household Definition

The household definition for the survey is based on feedback from sub kebele leaders when information for the survey sampling frame was being collected mid-March, 2017. It should be noted that in Kelafo the vast majority of the population live in compounds and include several relatively small huts (some

used for sleeping). It is common to have one kitchen/cooking area but the compound may include multiple households that cook for their own families (do not share the food cooked with other families).

Household Definition: People who are currently living in the same compound (dwelling if no compound) and eat from the same cooking pot. Note that it is possible for multiple HH's to share the same kitchen in a compound but do not share the food cooked.

Examples based on observations in Kelafo and feedback from Kebele leaders and Kelafo based survey staff

Example 1: In one compound there is a husband and wife (1 dwelling) and their two children (1 dwelling) and one kitchen. **(1 HH)**

Example 2: In one compound there is husband and wife (1 dwelling), their two children (1 dwelling) and the wife's elderly parents. The wife cooks for all 6 people. **(1 HH)**

Example 3: In one compound there is husband and wife (1 dwelling), their two children (1 dwelling), and the wife's parents. The wife cooks only for her family of 4. The grandmother usually cooks for herself and the grandfather. **(2 HH)**

Example 4: There is a husband who has multiple wives that live in separate compounds. In this compound there is the husband and wife and infant child (1 shelter) and 3 children that live in another shelter and one kitchen. **(1 HH)**

4. Survey Team and Training

The Survey Manager will be from the Technical Rapid Response Team (Tech RRT), seconded to UNICEF, and the 4 supervisors will be from Regional Government Departments including RENCU/DPPB and RHB. The team leaders and enumerators (team leaders, measurers) will include a minimum of 10 staff from various Kelafo Woreda level government departments along with NGO partners from SAVE, Action Against Hunger, Concern, Islamic Relief, and Mercy Corps. The data entry people will come from RDPPB.

Survey Manager (1)
- Responsible for overseeing all phases of the survey from planning to final report

Supervisors (4)
- Responsible for assisting with planning, overseeing assigned teams (will rotate) throughout data collection, provide oversight when required for data entry and report writing. Supervisors are required to be engaged and at the end of the survey process, including supplemental training before the conclusion of the final report supervisors are expected to have the knowledge required to manage future SMART surveys. Some additional remote support may be required for 1 or 2 surveys.

Teams (6)
- The assessment will consist of 6 teams. Each team will consist of 3 people; including, 1 team leader and 2 measurers. A local guide (likely sub-kebele leader) will also accompany the teams for each cluster.

Team Leaders (6)
- Responsible for household selection, implementation of questionnaire, quality measurement are taken and overall day to day operations of the team.

Measurer (12)
- Responsible for taking anthropometric measurements (edema, height, weight, MUAC) and taking care of the anthropometric equipment.

Data Entry Personnel (3)
- Data entry personnel will be trained to use Epi Info 7.2 to enter data into a questionnaire template created by the survey manager. Data entry will start on day 2 of data collection. Anthropometry (double data entry) and mortality data will be prioritized to be entered so that individual team feedback can be provided to the teams after each day of data collection. The data entry process will likely be completed 2-4 working days after the end of data collection depending on the speed of the two data entry people.

The enumerator training will take place in Gode from March 26-31. The content of the training is in accordance to the Guidelines for Emergency Nutrition Surveys in Ethiopia (2008) and will include a mandatory standardization test and field test. The main topics in the training include anthropometric measurements, implementing the questionnaire, and maintaining a representative sample at the household level.

5. Field Supervision and Quality Checks

Survey Manager

Throughout data collection the Survey Manager will:

- Conduct daily ENA plausibility checks starting on day 2 of data collection to ensure quality of anthropometric measurements.
- Provide daily briefings to all teams as a whole and each of the 6 individual teams.
- Speak to each supervisor daily to receive feedback from the field
- The Survey Manager will join teams in the field for the first and last day of data collection and will be available at any time throughout data collection to accompany teams at the request of the supervisors.

Supervisors

Throughout data collection the Supervisors will:

- 4 supervisors will be responsible for overseeing assigned teams throughout data collection.
- For larger clusters if segmentation is required, these clusters will be identified ahead of time and supervisors will conduct segmentation in the field.
- At the end of each day of data collection supervisors will review all completed questionnaires of the teams which they are responsible for, provide feedback to the teams the following morning and then submit the completed questionnaires to the data entry people.

- If the data collection runs smoothly, in the second half of data collection, each day 1 or 2 supervisors will be removed from the field and job shadow the survey manager to learn about daily results analysis and interpretation as well as interpreting the daily plausibility checks.

6. Survey Timeline

Dates	Activity
March 26-April 1	Enumerator training in Gode
April 2 - 10	Data collection (could be delayed pending weather)
April 16	Finish data entry
April 16-22	Data analysis and report writing
April 23-29	Presentation of survey results at regional and national level

7. Survey Equipment

- New UNICEF height boards
- New UNICEF salter scales using basins to hold children
- New WFP adult MUAC tapes
- New UNICEF MUAC tapes

8. Ethical Considerations

During data collection, any malnourished child identified and who is not already enrolled in the appropriate nutrition program will be referred to the nearest health facility using a referral slip. At household level, each team will explain the overall objectives of the survey to the household head/care givers and will request their willingness to give information and/or allow the team to measure their children [6-59 months]. The team will also clearly explain to the household/care giver that there will not be any immediate benefit because of their enrolment for the survey.

The team will confirm to the households head/cares giver that their children will not be at risk of harm while being measured and ensure the confidentiality of the information they provide to the team. The household head/care givers will receive advice as they have the right to withdraw from the process before the start of the data collection or, when they feel uncomfortable at any time in the process. The team will also confirm to the household head/care giver that they will remain anonymous throughout the survey.

Annex 1: Kelafo Sampling Frame

*Note any sub-kebele that may be a security risk will be removed from the sampling frame before the selection of clusters and will be noted in the final report

Kebele Number	Kebele	*Sub-kebele/Village	Total Number of HH	Total Number Sub-Kebele's
1	Kab-hanle	mayko	200	1
1	Kab-hanle	anole	300	2
1	Kab-hanle	dhirfan	210	3
1	Kab-hanle	dabagadon	230	4
1	Kab-hanle	control	200	5
1	Kab-hanle	hirsowdon	49	6
1	Kab-hanle	dariko	50	7
1	Kab-hanle	kamadi	28	8
1	Kab-hanle	ashatag	51	9
1	Kab-hanle	marayle	190	10
1	Kab-hanle	las'ano	30	11
1	Kab-hanle	abayle	35	12
1	Kab-hanle	gol'usbo	89	13
1	Kab-hanle	alindon	71	14
1	Kab-hanle	omardon	350	15
1	Kab-hanle	Rebo	280	16
1	Kab-hanle	Bakaaraha	200	17
1	Kab-hanle	iskutasho	70	18
1	Kab-hanle	Bulo-aariye	90	19
1	Kab-hanle	Nim'aan	295	20
1	Kab-hanle	Afweyn	250	21
1	Kab-hanle	Ambole	190	22
1	Kab-hanle	Lih-danka	50	23
1	Kab-hanle	Sigamalud	185	24
1	Kab-hanle	Kaysan	180	25
1	Kab-hanle	jido	175	26
1	Kab-hanle	Wak-ladon	62	27
1	Kab-hanle	Du'aaladon	70	28
1	Kab-hanle	Adeyslabe	48	29
1	Kab-hanle	Shirqol	70	30
1	Kab-hanle	Busle	61	31
1	Kab-hanle	Bardoley	38	32
1	Kab-hanle	Bardale	43	33
1	Kab-hanle	Goblow	170	34

1	Kab-hanle	Mahad'ale	30	35
1	Kab-hanle	Siimole	35	36
1	Kab-hanle	kunaso	32	37
1	Kab-hanle	marayle 2	30	38
1	Kab-hanle	wedo-waro	28	39
1	Kab-hanle	har-ad	310	40
1	Kab-hanle	dayah	45	41
1	Kab-hanle	Egley	240	42
1	Kab-hanle	tulo-aroselo	64	43
1	Kab-hanle	Egley-weyn	105	44
1	Kab-hanle	tulo-badal	38	45
1	Kab-hanle	ada'imaandona	270	46
1	Kab-hanle	Bahar-isak	70	47
1	Kab-hanle	Shubo	360	48
1	Kab-hanle	Biyo-ad	80	49
1	Kab-hanle	Ar'igoye	87	50
1	Kab-hanle	Elbaar	68	51
1	Kab-hanle	Ari'adeys	72	52
1	Kab-hanle	Marodi'ade	40	53
1	Kab-hanle	Wayane	42	54
2	Niiri	gob-yal	220	55
2	Niiri	mahad-igagoysay	80	56
2	Niiri	laas	35	57
2	Niiri	kolodow	140	58
2	Niiri	paris	62	59
2	Niiri	malkamed	81	60
2	Niiri	tuulo-kule	50	61
2	Niiri	wardhere	42	62
2	Niiri	dhur-dere	315	63
2	Niiri	bus'ad 1	65	64
2	Niiri	baar-bajimal	145	65
2	Niiri	ba'adley	25	66
2	Niiri	bus'ad 2	40	67
2	Niiri	helo-goranyo	85	68
2	Niiri	alosha-igaka	43	69
2	Niiri	rob'aday	92	70
2	Niiri	buunley	38	71
2	Niiri	kahiro	84	72
2	Niiri	haji-husien	45	73
2	Niiri	darasalam	40	74
2	Niiri	niiri-1	72	75

2	Niiri	niiri-2	104	76
2	Niiri	niiri-3	85	77
2	Niiri	niiri-4	75	78
2	Niiri	labo-baal	32	79
2	Niiri	garab-ror	61	80
2	Niiri	ba'ad	25	81
2	Niiri	kabub	45	82
2	Niiri	kalabeyr	62	83
2	Niiri	buurta	45	84
3	Afdud	afdub	500	85
3	Afdud	aware	115	86
3	Afdud	gafar	110	87
3	Afdud	guhadon	65	88
3	Afdud	kumisar	320	89
3	Afdud	kolodow	45	90
3	Afdud	kabobe	25	91
3	Afdud	gutow	230	92
3	Afdud	dalhiis	45	93
3	Afdud	Afgoye	41	94
3	Afdud	tinish	55	95
3	Afdud	ashirdon	20	96
3	Afdud	tulo-sh-mohammed	45	97
3	Afdud	laweytile	200	98
3	Afdud	gadudo	21	99
3	Afdud	joofle	21	100
3	Afdud	jagi	20	101
3	Afdud	adile	33	102
3	Afdud	dib-udajinta	120	103
3	Afdud	huud	65	104
3	Afdud	barkulan	15	105
3	Afdud	ar'isooday	29	106
3	Afdud	shakab	160	107
3	Afdud	shan'ad	25	108
3	Afdud	buulo-kashey	55	109
3	Afdud	dure	75	110
3	Afdud	toosh	50	111
3	Afdud	da'are	18	112
3	Afdud	dorale	154	113
3	Afdud	muminatagan	30	114
3	Afdud	tay	60	115
3	Afdud	waag-bari	40	116

3	Afdud	dirdhow	81	117
3	Afdud	kabub	70	118
3	Afdud	tun-dhow	260	119
3	Afdud	jeerey	165	120
3	Afdud	tulo-sh-nour	31	121
3	Afdud	dak-suge	155	122
3	Afdud	galka'yo	175	123
3	Afdud	sanka-kudufo	180	124
3	Afdud	ba'adley	145	125
3	Afdud	tulo-warkey	80	126
3	Afdud	tur-turka	25	127
3	Afdud	kuso-hiro	101	128
4	Helo'ba'ad	village-1	200	129
4	Helo'ba'ad	village-2	235	130
4	Helo'ba'ad	village-3	230	131
4	Helo'ba'ad	village-4	243	132
4	Helo'ba'ad	village-5	220	133
4	Helo'ba'ad	village-6	370	134
5	Adi-katama	village-1	127	135
5	Adi-katama	village-2	155	136
5	Adi-katama	village-3	150	137
5	Adi-katama	village-4	170	138
5	Adi-katama	village-5	280	139
5	Adi-katama	village-6	195	140
5	Adi-katama	village-7	225	141
6	Jakdawr	Jakdawr	456	142
6	Jakdawr	Abore	50	143
6	Jakdawr	Guhweyn	50	144
6	Jakdawr	Dakalsalamo	320	145
7	Gan	Gan	701	146
7	Gan	Agaweyne	110	147
7	Gan	Dakalsalamo	90	148
7	Gan	Budle	100	149
8	Boholaways	Boholaways	538	150
8	Boholaways	Bardumay	150	151
8	Boholaways	God,dere	600	152
8	Boholaways	Dawa,ale	200	153
8	Boholaways	Tulo,kosal	150	154
8	Boholaways	Bardumay	100	155
8	Boholaways	Badil	250	156
8	Boholaways	Raydab	350	157

8	Boholaways	Washako	250	158
9	Dabakatur	Dabakatur	400	159
9	Dabakatur	Hargududi	150	160
9	Dabakatur	faftaboya	120	161
9	Dabakatur	Antalale	130	162
9	Dabakatur	Agawayne	25	163
10	Alow igarsii	alow igarsii	1316	164
10	Alow igarsii	Jabole	596	165
10	Alow igarsii	Kodahlay	688	166
10	Alow igarsii	Balanbale	815	167
10	Alow igarsii	Musadon	723	168
10	Alow igarsii	Hilo-weyn	603	169
10	Alow igarsii	Golyo	423	170
11	Jakdawr	Jakdawr	456	171
11	Jakdawr	Abore	50	172
11	Jakdawr	Guhweyn	50	173
11	Jakdawr	Dakalsalamo	320	174
12	Gan	Gan	701	175
12	Gan	Agaweyne	110	176
12	Gan	Dakalsalamo	90	177
12	Gan	Budle	100	178
13	Boholaways	Boholaways	538	179
13	Boholaways	Bardumay	150	180
13	Boholaways	God,dere	600	181
13	Boholaways	Dawa,ale	200	182
13	Boholaways	Tulo,kosal	150	183
13	Boholaways	Bardumay	100	184
13	Boholaways	Badil	250	185
13	Boholaways	Raydab	350	186
13	Boholaways	Washako	250	187
14	Dabakatur	Dabakatur	400	188
14	Dabakatur	Hargududi	150	189
14	Dabakatur	faftaboya	120	190
14	Dabakatur	Antalale	130	191
14	Dabakatur	Agawayne	25	192
15	Alow igarsii	alow igarsii	1316	193
15	Alow igarsii	Jabole	596	194
15	Alow igarsii	Kodahlay	688	195
15	Alow igarsii	Balanbale	815	196
15	Alow igarsii	Musadon	723	197
15	Alow igarsii	Hilo-weyn	603	198

| 15 | Alow igarsii | Golyo | | 423 | 199 |