

Needs assessment survey of older people in Kolfe Keranyio, Addis Ababa, February 2014



VALID

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HelpAge International helps older people claim their rights, challenge discrimination and overcome poverty, so that they can lead dignified, secure, active and healthy lives.

Acknowledgements

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Most importantly, thanks to the 889 older women and men in Kolfe Keranyio sub-city, who agreed to be interviewed, measured and sometimes photographed for this survey.

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Front and back cover photos: Interviewing older people in Kolfe Keranyio, 2014
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Contents

List of figures and tables.....	5
Abbreviations and acronyms.....	6
1 Executive summary.....	7
Key findings.....	7
Recommendations.....	7
2 Context.....	8
2.1 Demographic data.....	8
Population.....	8
Mortality.....	9
2.2 Existing data on nutrition and food security.....	9
Anthropometry.....	9
Micronutrients.....	9
3 Objectives and methodology.....	10
3.1 Objectives of the survey.....	10
3.2 Sampling procedures.....	10
3.3 Training and supervision.....	10
4 Data analysis.....	11
4.1 Software used.....	11
4.2 Data management and data analysis: complex sample for RAM-OP.....	11
4.3 Data management: mid-upper arm circumference (MUAC).....	11
4.4 Data management: dietary diversity.....	12
4.5 Data management: hunger scale.....	13
4.6 Data management: Katz Index of Independence in Activities of Daily Living.....	14
4.7 Data Management: Kessler Psychological Distress Scale.....	15
4.8 Case definitions.....	16
5 Results of the survey.....	17
5.1 Demographic information.....	17
5.2 Nutritional status of the population aged 50 and above.....	18

5.3 Health status	18
Morbidity	18
Activities of daily living (ADL) and dependency	18
Disability and impairment	18
Mental health	19
5.4 Marital and social status	19
5.5 Access to basic services	22
Food	22
Water and sanitation.....	25
Healthcare	25
5.6 Assessing nutritional vulnerability (risk factors)	26
6 Discussion and recommendations	28
Findings from the survey	28
Food and nutrition	28
Health status and access to health services.....	28
Socio-economic status.....	29
Water and sanitation.....	29
Recommendations	29
Annex 1: map of Kolfe Keranyio sub-city	30
References	31

List of figures and tables

Figure 1: Distribution of MUAC in the sample

Figure 2: Distribution of the dietary diversity score in the sample

Figure 3: Distribution of the hunger scale score in the sample

Figure 4: Distribution of the Katz Index of independence in ADL in the sample, by sex

Figure 5: Distribution of the K6 in the sample, by sex

Figure 6: Distribution of respondents' age by sex

Figure 7: Household size among the respondents

Figure 8: Declared source of income by sex

Figure 9: Meal frequency among the respondents

Table 1: Total population and population aged 50 and above in Addis Ababa and its sub-cities

Table 2: Categorical indicator of Household Hunger Scale

Table 3: Indicators for nutritional status

Table 4: Person answering the questionnaire

Table 5: Nutritional status of older people (MUAC-based case definitions)

Table 6: Levels of dependence by sex in the respondents

Table 7: Frequency of disabilities among the respondents

Table 8: Frequency of number of disabilities among the respondents

Table 9: Levels of psychological stress among the respondents by sex

Table 10: Marital status of the respondents by sex

Table 11: Declared source of income by sex

Table 12: Type of food consumed by the respondents

Table 13: Distribution of respondents by hunger class

Table 14: Reasons for taking drugs on a regular basis among the respondents

Table 15: Risk factors and markers collected in the survey

Abbreviations and acronyms

ADL	activities of daily living
AIDS	Acquired Immunodeficiency Syndrome
BMI	Body-mass Index
CI	confidence interval
DDS	dietary diversity score
DEFF	design effect
EA	enumeration area
EOS	Extended Outreach Strategy
FANTA	Food and Nutrition Technical Assistance
FAO	Food and Agriculture Organization of the United Nations
GAM	global acute malnutrition
HIF	Humanitarian Innovation Fund
HIV	Human Immunodeficiency Virus
K6	Kessler psychological distress scale
MAM	moderate acute malnutrition
MD	mean difference
MUAC	mid-upper arm circumference
OR	odds ratio
PPS	population proportion sampling
PSUs	primary sampling units
RAM	rapid assessment method
RAM-OP	rapid assessment method for older people
RR	risk ratio
SAM	severe acute malnutrition
SMART	standardized monitoring and assessment of relief and transitions
TALC	Teaching-aids At Low Cost
TSDA	Tesfa social and development association
TSF	Targeted Supplementary Feeding
UNICEF	United Nations Children's Fund
WFP	World Food Programme

1 Executive summary

From 18 February to 4 March 2014, HelpAge International, in partnership with Valid International and Brixton Health, conducted the first field test of the Rapid Assessment Method for older people (RAM-OP) in Kolfe Keranyio, a sub-city of Addis Ababa, Ethiopia. RAM-OP is an innovative method of assessing the nutritional needs of older people in emergencies that could offer a quicker, less expensive alternative to the SMART (Standardized Monitoring and Assessment of Relief and Transitions) methodology, which is in wide use in the humanitarian sector. The objectives of the field test were:

- To assess the nutritional status of women and men aged 50 and above in Kolfe Keranyio, and carry out a baseline survey about their health and social status.
- To compare RAM and SMART methods for the assessment of the nutritional, health and socio-economic status of older people in Kolfe Keranyio.
- To use the survey to raise awareness of the nutrition and health needs of older people.

A total of 889 older people in 50 enumeration areas were interviewed, and their mid-upper arm circumference (MUAC) measured. The team used questionnaires to collect data on eating habits, hunger scale, activities of daily living, psychological distress, social and health status, and access to water and sanitation.

Key findings

The prevalence of malnutrition found among older people in Kolfe Keranyio, using MUAC-based case definitions for global acute malnutrition (GAM), moderate acute malnutrition (MAM) and severe acute malnutrition (SAM) is as follows:

Class	Case definition	Prevalence	
GAM	MUAC <210mm or oedema	5.17%	(95% CI = 3.39 ; 7.01)
MAM	185mm ≤ MUAC <210mm	4.69%	(95% CI = 2.87 ; 6.55)
SAM	MUAC <185mm	0.47%	(95% CI = 0.13 ; 1.00)

This indicates that, in Kolfe Keranyio, between 1,100 and 2,200 people aged 50 and above (using the 2007 census figures) are in need of nutrition support.

Around one quarter of the older people in Kolfe Keranyio (25.6 per cent, 95% CI: 22.6 ; 28.8) are regularly treated for a chronic disease such as chronic pain, hypertension or diabetes.

Mental health is an important issue in older people: around 12.7 per cent of them (95% CI = 8.7 ; 17.7) have a serious psychological distress (measured by the Kessler index) while there is very limited psycho-social support available.

The risk factor analysis shows that, as they get older, people are more likely to be malnourished. This supports HelpAge's strategy to provide special attention to "the oldest of the old", particularly people aged 80 and more.

Recommendations

- Malnourished older people should have access to community management of acute malnutrition (CMAM) services, which are available in Ethiopia for children, as well as pregnant or lactating women. The oldest of the older people and older people with disabilities, could be specifically targeted by Extended Outreach Strategy/Targeted Supplementary Feeding programmes.
- Consumers' associations should allow families to purchase food items at subsidised prices. Community-based associations could ensure that older people are included in these distributions, and help identify and target older people with vulnerabilities.
- The management of chronic diseases should be developed with early screening of risk factors, and availability of cheap essential drugs for all the people affected.
- Psychosocial services are needed at community level, in order to support older people with serious psychological distress, as well as their families. Some community-based associations are already providing these kinds of service, but they are needed on a larger scale, and specific services should be integrated into the primary health care package.

2 Context

Older people are a forgotten group in humanitarian situations. Their needs are rarely assessed, and they are seldom targeted by governments, United Nations agencies, and non-governmental organisations for specific projects. This is particularly obvious in the nutrition sector, where interventions prioritise children and women of childbearing age, and where the nutritional status of older people is almost never assessed, despite their vulnerability.

HelpAge International (HelpAge), Brixton Health and Valid International (Valid) have received funds from the Humanitarian Innovation Fund (HIF) in order to develop a rapid assessment method (RAM) to carry out nutritional and multi-indicators surveys targeting older people (RAM-OP). This method is based on using smaller samples than the traditional SMART-based (Standardized Monitoring and Assessment of Relief and Transitions) surveys, with rapid field procedures, and using bootstrap estimators for all indicators with a PROBIT estimator for the analysis of nutritional anthropometry.

It is hoped that by providing evidence that the RAM-OP will generate results comparable to and richer than the SMART method while being both faster and cheaper to implement and encourage humanitarian actors to pay greater attention to the needs of older people and include them in their response.

RAM-OP was first tested from 24 February to 4 March 2014, in an urban area, a sub-city of Addis Ababa called Kolfe Keranyio, where HelpAge has been working for several years with a local partner, Tesfa Social and Development Association (TSDA). Two simultaneous surveys were conducted in the area, one using the SMART methodology and one using the RAM methodology, targeting people aged 50 and above. This report presents the results of these two surveys combined in order to provide valuable information on the older people of Kolfe Keranyio. Combining the survey datasets gives the results greater precision (due to a larger sample size) than if one survey dataset were used alone. A separate report will compare SMART and RAM-OP results.

2.1 Demographic data

Population

The latest population figures are from the 2007 Population and Housing Census of Ethiopia. *The 2007 Population and Housing Census of Ethiopia: Statistical Report for Addis Ababa City Administration* provides information at sub-city level. People aged 60 and above represent 3.48 per cent of the Kolfe Keranyio population, and people 50 and above 7.36 per cent. Table 1 shows the population figures in Addis Ababa and its sub-city, according to the 2007 census.

Table 1: Total population and population aged 50 and above in Addis Ababa and its sub-cities (2007)

	Total population	People aged 50 and above	
		Number	%
Addis Ketema	255,372	29,895	11.71
Akaki Kaliti	181,270	17,583	9.70
Arada	211,501	26,095	12.34
Bole	308,995	27,013	8.74
Gulele	267,624	29,197	10.91
Kirkos	221,234	26,585	12.02
Kolfe Keraniyo	428,895	31,572	7.36
Lideta	201,713	24,357	12.08
Nefas Silk-Lafto	316,283	27,904	8.82
Yeka	346,664	35,092	10.12
Total Addis Ababa	2,739,551	275,293	10.05

Source: Central Statistical Authority, 2012

Kolfe Keranyio is the largest sub-city in Addis Ababa, with some of the poorest areas next to the newest and richest ones. It is also a mix of highly urbanised and quasi-rural areas. As it includes newly developed areas, it has the lowest proportion of people aged over 50 years in the city.

We decided to target people aged 50 and above as it is culturally accepted that people in Ethiopia are “old” when they reach 50.

Mortality

Non communicable diseases are the leading cause of death among adults in Addis Ababa, where the healthcare system is geared toward addressing communicable diseases (Misganaw A et al., 2012). From 2006 to 2009, 51 per cent (49.7%-52.9%, 95% confidence interval [CI],) of adults’ deaths were attributed to non-communicable diseases, 42 per cent (40.6%-43.8%, 95% CI) to communicable diseases, and 6 per cent (5.5%-7.0%, 95% CI) to injuries.

2.2 Existing data on nutrition and food security

Anthropometry

Data from welfare monitoring surveys from 1983 to 2004 show that Addis Ababa has the lowest child malnutrition prevalence in the country: wasting prevalence at about 5 per cent, and stunting prevalence at about 22 per cent (Sunil Rajkumar A et al, 2012).

There is no routinely collected data on the nutritional status of older adults. A 2011 Demographic and Health Survey measured the height and weight of women age 15-49 years and men age 15-59 years (Central Statistical Agency, 2011), but excluded older people.

Micronutrients

According to a 2005 Health and Demographic survey, about 20 per cent of Ethiopian households are using adequately iodised salt (17.9 per cent in Addis Ababa) (Sunil Rajkumar A et al, 2012).

Men residing in Addis Ababa have the lowest anaemia prevalence (3 per cent) of any region, and women in Addis Ababa have relatively low prevalence of anaemia (9 per cent) (Central Statistical Agency, 2011).

3 Objectives and methodology

3.1 Objectives of the survey

The objectives of the survey were:

- To assess the nutritional status (prevalence of acute malnutrition) in women and men 50 years of age and above, in Kolfe Keranyio.
- To carry out a baseline survey about the health and social status of women and men 50 and above, in Kolfe Keranyio (access to basic services, size of household, mobility, general health status, living conditions...).
- To use the survey to raise awareness of the nutrition and health needs of older people. The main targets for this awareness raising are: in Ethiopia, the Ministry of Public Health, the health offices in Kolfe Keranyio and Addis Ababa, UNICEF, WFP, and the Global Nutrition Cluster.

3.2 Sampling procedures

The results presented here are for two surveys combined:

- The first survey followed the SMART approach. Thirty (30) primary sampling units (PSUs) were selected from a list of census enumeration areas (EAs) ordered by kebele (district) using population proportional sampling (PPS). Households were selected from each PSU using systematic household sampling. Every second household was visited. This sampling interval was calculated so as to select about 23 respondents from each PSU. The target sample size was, therefore, $n = 690$. This sample size was calculated to estimate a prevalence of 5 per cent with a 95% confidence interval of $\pm 2\%$ assuming a design effect (DEFF) of 1.5.
- The second survey followed the RAM approach. Twenty (20) PSUs were selected systematically from a list of EAs sorted by kebele (district) within the sub-city. The intention was to take a spatially representative sample of the sub-city. Households were selected from each PSU using systematic household sampling. Every fourth household was visited. This sampling interval was calculated so as to select about 12 respondents from each PSU. The target sample size was, therefore, $n = 240$. Previous use of the RAM method for children (e.g. UNICEF in Sierra Leone: Ellie M et al 2013) and computer-based simulations (Myatt M and Valid International 2011, Dale NM et al 2012) had found that $n = 192$ provided useful precision. This sample size was increased by 25% because we had no experience with RAM with older people or in urban areas.

The use of census enumeration areas which were of similar volume in terms of population size meant that the SMART and RAM samples were not radically different from each other. Both samples were spread relatively evenly across the survey area. The mean sizes (in terms of total population) of EAs selected for the SMART and RAM samples were $N = 871$ and $N = 797$ respectively.

The two samples were combined during data analysis. The results presented here are for the combined sample. The combined sample was used because the results of the two surveys were comparable and a combined sample resulted in a larger sample size and better precision.

3.3 Training and supervision

We recruited seven teams of two enumerators, three teams for RAM, four teams for SMART.

The survey questionnaire was not translated into local languages, but each team was able to translate the questionnaire from English to Amharic. This was extensively practised during the four-day training course for team members (using role-play between team members or with volunteers).

The survey teams were supervised by HelpAge's Emergency Health and Nutrition Adviser, assisted by two experienced epidemiologists from Brixton Health and Valid International.

The four-day training course took place in Addis Ababa, from 18 to 21 February 2014, as follows:

- Day 1: presentation of HelpAge International, HelpAge code of conduct, rationale and objectives of the survey, sampling method, and questionnaire (explanation, translation, testing).
- Day 2: field procedures, MUAC measurements, questionnaire testing and translation practice.
- Day 3: standardisation exercise (10 older people volunteered to have their MUAC taken), questionnaire testing and translation.
- Day 4: field test in Kolfe Keranyio.

The survey was carried out from 24 February to 4 March 2014.

4 Data analysis

4.1 Software used

The data were entered using EpiData 3.1™. Double data entry was done by two data entry clerks to maintain quality assurance. Interactive data checking for range and legal values was also applied. Data analysis was done using the R Language for Data Analysis and Graphics (R Core Team 2012) and the R AnalyticFlow scientific workflow system (ef-prime, inc.).

4.2 Data management and data analysis: complex sample for RAM-OP

The sample is complex in the sense that a two-stage cluster sample design was used. Primary sampling units (PSUs) – that is, enumeration areas – were selected systematically from a comprehensive list sorted by kebeles.

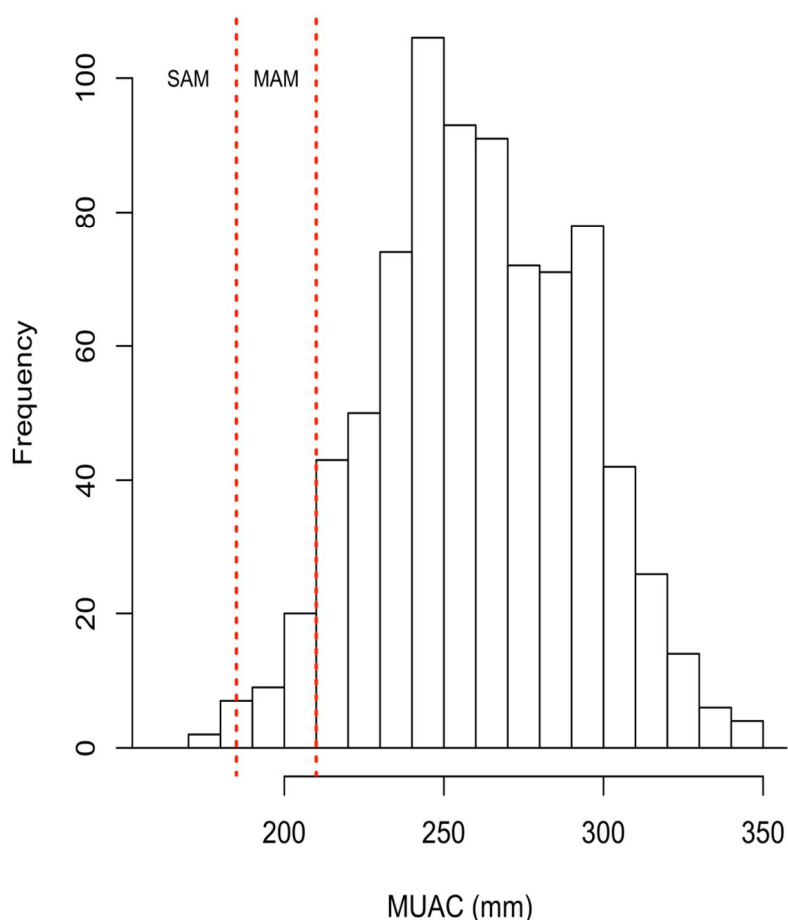
A weighted blocked bootstrap technique was employed to account for population size and cluster sampling. Bootstrap replicates were drawn by sampling entire clusters (with replacement) from the survey dataset (rather than single observations) with probability proportion to size. A percentile bootstrap with $r = 3,999$ replicates was used to estimate indicator proportions and means.

4.3 Data management: mid-upper arm circumference (MUAC)

The team measured the MUAC of each older person, to the nearest 0.1cm using a non-stretch MUAC tape (designed by TALC).

The distribution of MUAC in the survey sample is shown in Figure 1.

Figure 1: Distribution of MUAC in the sample



MUAC data were used to identify cases of global acute, moderate and severe malnutrition (GAM, MAM and SAM) using the following case definitions:

GAM	MUAC <210mm
MAM	185mm ≤ MUAC <210mm
SAM	MUAC <185mm

4.4 Data management: dietary diversity

Respondents were asked whether the previous day was a “special day”, where the food intake could be different from a normal day, i.e. either a fasting day or a celebration day.

The following dietary data were collected:

- Number of meals eaten within an approximate 24-hour recall period
- Whether or not these meals included any of the following:
 - Tinned, powdered or fresh milk
 - Sweetened or flavoured water, “soda” drink, alcoholic drink, tela, beer, tea or infusion, coffee, soup, or broth
 - Any food made from grain such as millet, wheat, barley, sorghum, rice, teff, maize, pasta, noodles, bread, pizza, porridge
 - Any food made from fruits or vegetables that have yellow or orange flesh such as carrots, pumpkin, red sweet potatoes, mangoes, and papaya
 - Any food made with red palm oil or red palm nuts
 - Any dark green leafy vegetables such as cabbage, broccoli, spinach, moringa leaves, cassava leaves
 - Any food made from roots or tubers such as white potatoes, white yams, false banana, cassava, manioc, onions, beets, turnips, and swedes
 - Any food made from lentils, beans, peas, groundnuts, nuts, or seeds
 - Any other fruits or vegetables such as banana, plantain, avocado, cauliflower
 - Liver, kidney, heart, or other organ meats
 - Any meat such as beef, pork, goat, lamb, mutton, veal, chicken, camel, or bush meat
 - Fresh or dried fish, shellfish, or seafood
 - Cheese, yoghurt, or other milk products
 - Eggs
 - Sugary foods such as sweets, candies, chocolate, cakes, and biscuits
 - Any food made with oil, fat, butter, or ghee.

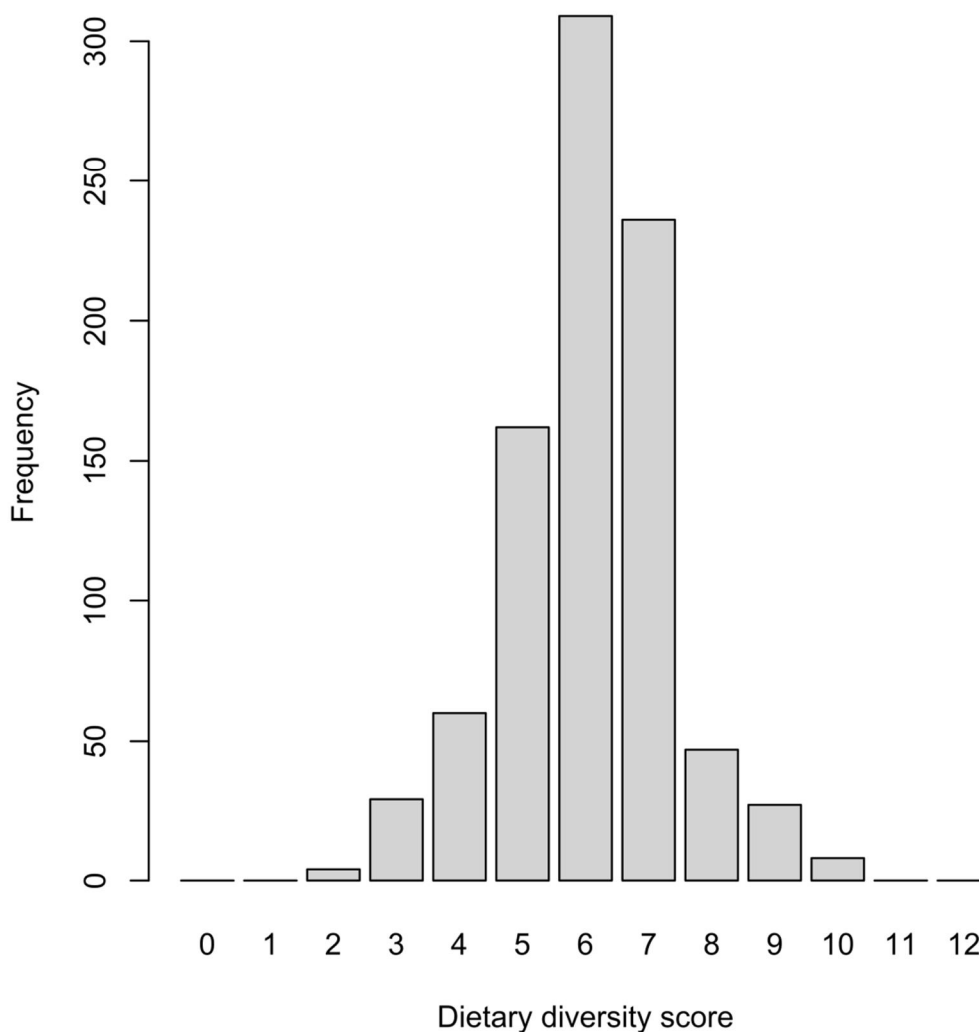
The information can be combined in order to gather information on the diet’s content in micronutrients:

- Sources of vitamin A: fruits or vegetables that have yellow or orange flesh, red palm oil or red palm nuts, dark green leafy vegetables, milk and milk products, liver or other organ meats
- Sources of iron: dark green leafy vegetables, any meat, including organ meats
- Sources of calcium: tinned, powdered or fresh milk, cheese, yoghurt, or other milk products.

The data were combined into a dietary diversity score (DDS), following the Food and Agriculture Organization (FAO) guidelines (Kennedy et al 2012). The score ranges between 0 (low diversity) and 12 (high diversity).

The distribution of the DDS is shown in Figure 2.

Figure 2: Distribution of the dietary diversity score in the sample



4.5 Data management: hunger scale

The questionnaire included three questions aiming to calculate the individual hunger scale score based on the FANTA guidelines (Ballard T et al. 2011):

- In the past four weeks/30 days:
 - Was there ever no food to eat of any kind in your house because of lack of resources to get food?
 - Did you or any household member go to sleep at night hungry because there was not enough food?
 - Did you or any household member go a whole day and night without eating anything at all because there was not enough food?
- How often did each of these things happen in the past four weeks/30 days?

The score ranges between 0 and 6 with increasing probability of hunger, as shown in Table 2.

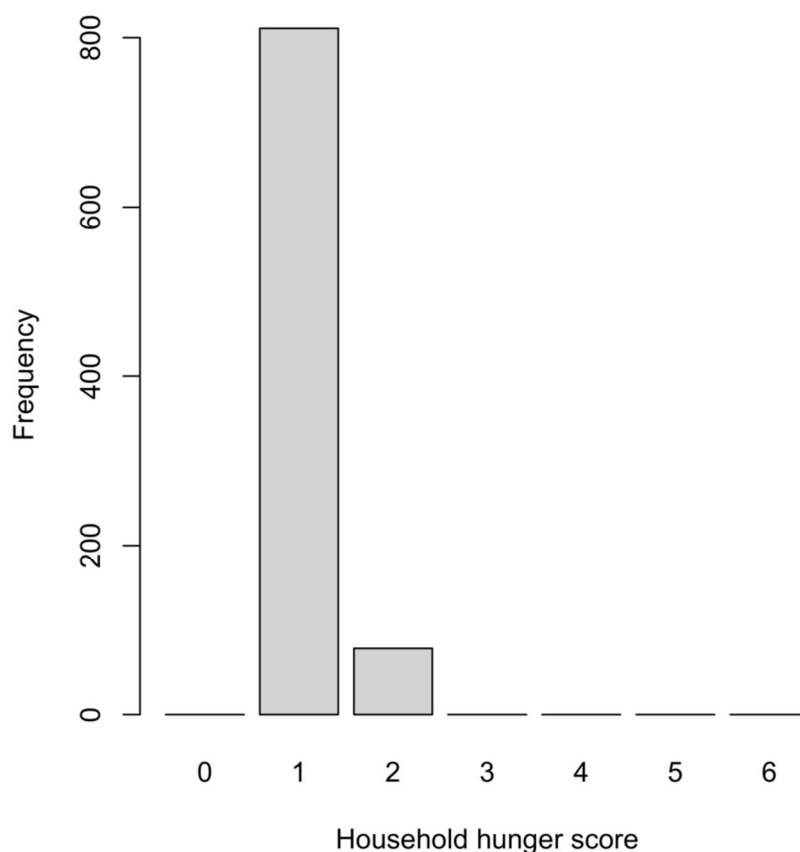
Table 2: Categorical indicator of Household Hunger Scale

Indicator	Household Hunger categories
0–1	Little or no hunger in the household
2–3	Moderate hunger in the household
4–6	Severe hunger in the household

Source: Ballard T et al. 2011

The distribution of the hunger scale score in the sample is shown in Figure 3.

Figure 3: Distribution of the hunger scale score in the sample



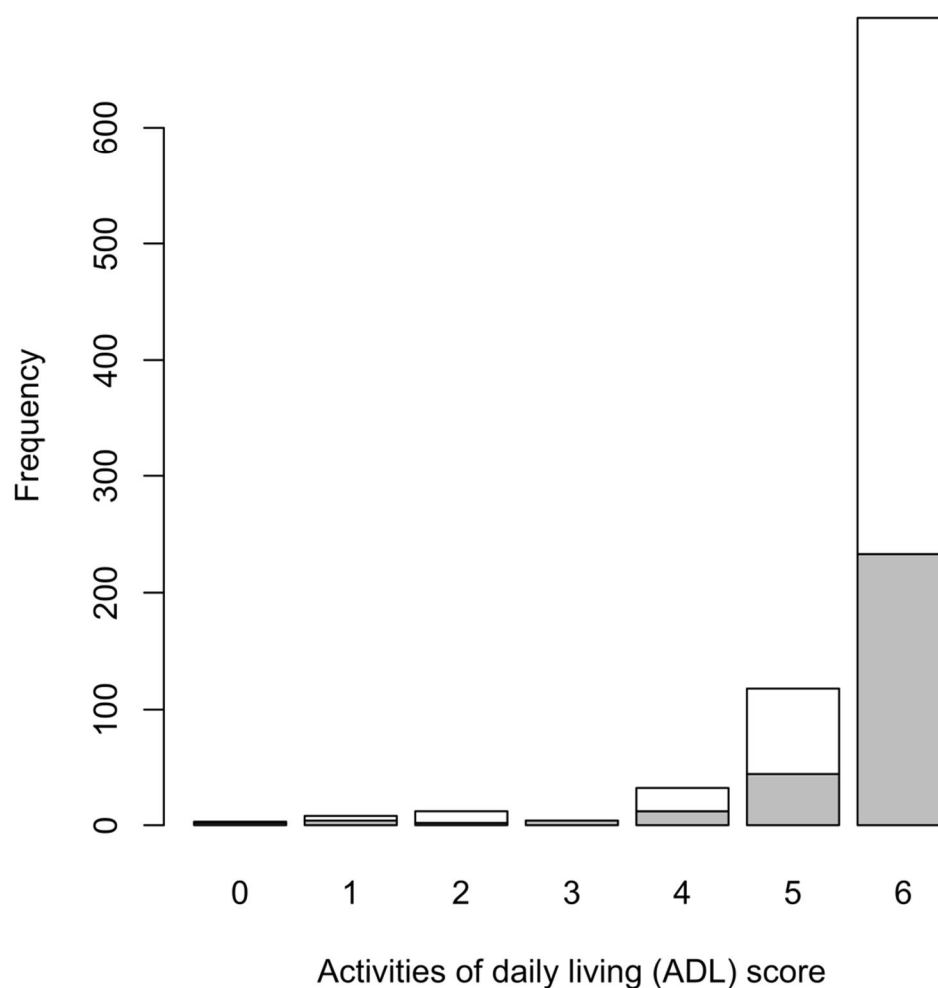
4.6 Data management: Katz Index of Independence in Activities of Daily Living

Data were collected using the Katz Index of Independence in Activities of Daily Living (ADL):

- Do you need help with bathing more than one part of your body or getting in or out of the tub or shower?
- Do you need help getting dressed partially or completely (not including tying of shoes)?
- Do you need help going to the toilet or cleaning yourself after using the toilet or do you use a commode or bed-pan?
- Do you need someone to help you move from a bed to a chair?
- Are you partially or totally incontinent of bowel or bladder?
- Do you need partial or total help with eating?

The Katz index varies from 6 (patient independent) to 0 (patient very dependent). The distribution of the Katz index by sex in the sample is shown in Figure 4.

Figure 4: Distribution of the Katz Index of independence in ADL in the sample, by sex



Women are shown in the white upper bars, men are shown in the grey lower bars.

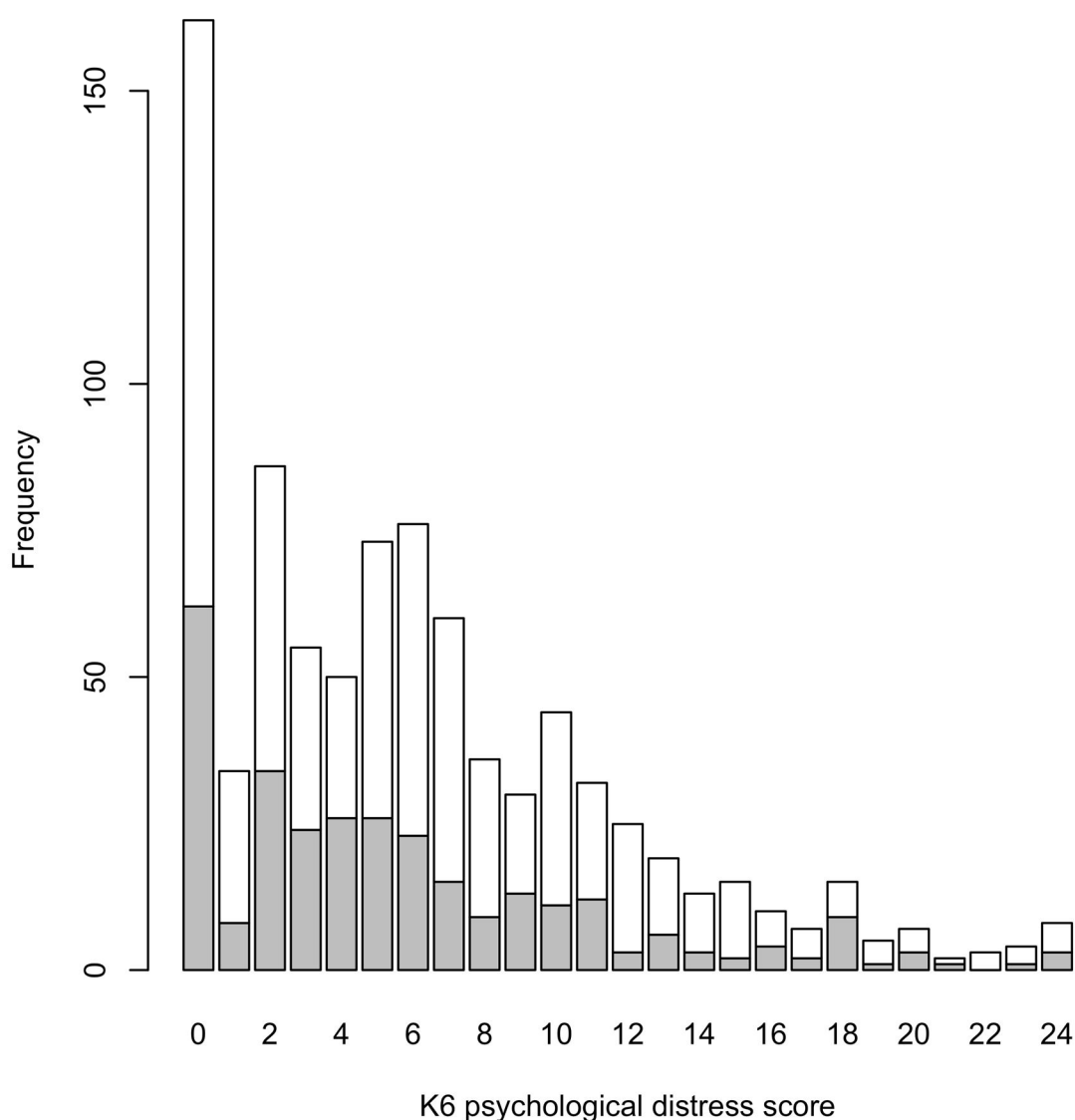
4.7 Data Management: Kessler psychological distress scale

Data were collected using the K6, Kessler psychological distress scale (Kessler RC et al, 2003):

- About how often during the past 30 days did you feel nervous – would you say all of the time, most of the time, some of the time, a little of the time, or none of the time?
- During the past 30 days, about how often did you feel hopeless – all of the time, most of the time, some of the time, a little of the time, or none of the time?
- During the past 30 days, about how often did you feel restless or fidgety? (all, most, some, a little, or none of the time?)
- During the past 30 days, how often did you feel so depressed that nothing could cheer you up? (all, most, some, a little, or none of the time?)
- During the past 30 days, about how often did you feel that everything was an effort? (all, most, some, a little, or none of the time?)
- During the past 30 days, about how often did you feel worthless – all of the time, most of the time, some of the time, a little of the time, or none of the time?

Total scores range from 0 (indicating no distress) to 24 (indicating severe distress). The distribution of the K6 in the sample is shown in Figure 5 below.

Figure 5: Distribution of the K6 in the sample, by sex



Women are shown in the white upper bars, men are shown in the grey lower bars.

4.8 Case definitions

The nutritional status of the population was defined using the criteria set out in Table 3.

Table 3: Indicators for nutritional status

Class	MUAC (mm)
Severe malnutrition	MUAC < 185
Moderate malnutrition	210 > MUAC ≥ 185
No malnutrition	MUAC ≥ 210

This case definition is not using the presence of bilateral pitting oedemas as an indicator of severe malnutrition, for two reasons:

- Oedemas in an older person might be caused by a range of diseases coming with age, such as cardiac failure.
- The prevalence of malnutrition is estimated by using the PROBIT approach, which requires a normal distribution.

5 Results of the survey

5.1 Demographic information

A total of 889 people aged 50 and above were interviewed, and their MUAC measured. In some cases where the person being interviewed was very old and frail, confused, or sick, a family member or neighbour answered the questions on their behalf.

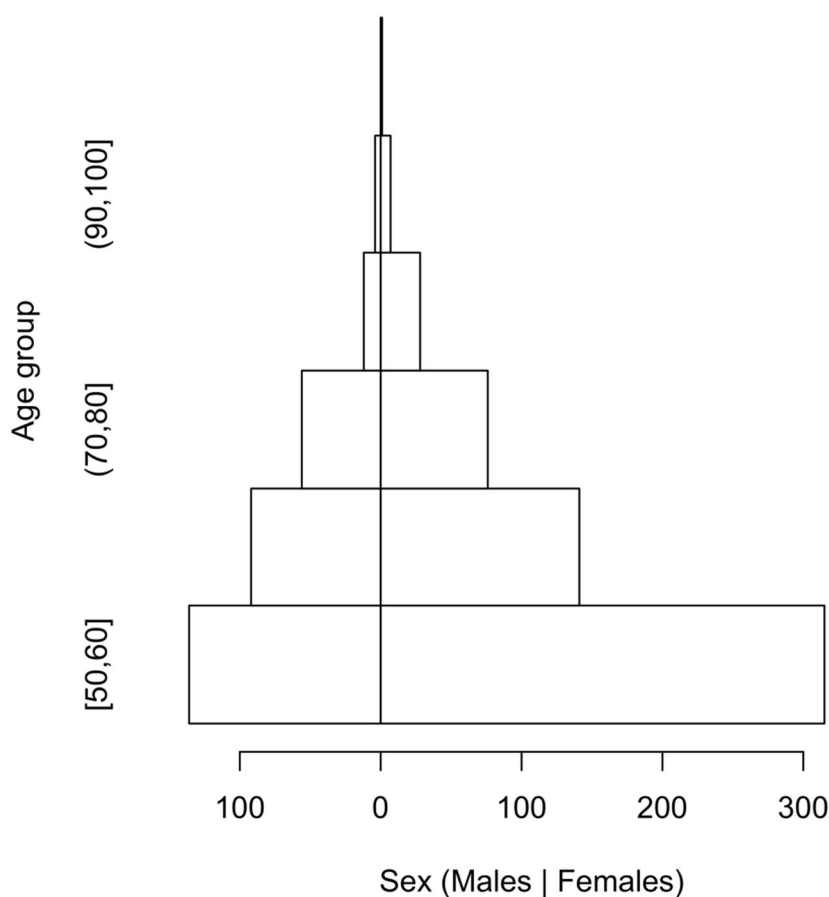
Table 4: Person answering the questionnaire

Person answering	Number of respondents	Percentage of respondents
Self	863	97.1%
Family	25	2.8%
Other	1	0.1%
Total	863	100.0%

Women represented 65.4 per cent of the older people. This is significantly more than the 46.9 per cent women aged 50 and above as indicated for Kolfe Keranyio in the 2007 census results. The fact that the interviews took place during working hours and from Monday to Saturday probably introduced a bias in the respondents' selection, as many men aged 50 and above were at work and absent from their household.

Respondents' ages (self-reported) ranged from 50 to 102 years old, with a mean age of 63 years and a median age of 60 years. Figure 6 shows a population pyramid (that is, the distribution of age by sex) in the survey sample.

Figure 6: Distribution of respondents' age by sex



5.2 Nutritional status of the population aged 50 and above

Table 5 shows the nutritional status of older people in Kolfe Keranyio, using MUAC-based case definitions for GAM, MAM and SAM.

Table 5: Nutritional status of older people (MUAC-based case definitions)

Class	Case definition	Prevalence	
GAM	MUAC <210mm or oedema	5.17%	(95% CI = 3.39 ; 7.01)
MAM	185mm ≤ MUAC <210mm	4.69%	(95% CI = 2.87 ; 6.55)
SAM	MUAC <185mm	0.47%	(95% CI = 0.13 ; 1.00)

Twelve older people had oedema (prevalence of oedema 1.33%, 95% CI = 0.67%;2.13%). Four of them had a MUAC <210 mm.

We did not distinguish primary malnutrition from secondary malnutrition (malnutrition due to factors such as chronic disease).

5.3 Health status

Morbidity

One quarter of the older people (25.6 per cent) were regularly taking “official” medicines (as opposed to traditional remedies). The main diseases treated were high blood pressure (53.2 per cent) and diabetes (32.0 per cent). A small percentage (5.6 per cent) declared being treated for HIV-related diseases.

More than a third of the older people (34.1 per cent) had been sick during the four weeks before the survey. The main cause of “sickness” was pain/arthritis, followed by fever and hypertension.

Activities of daily living (ADL) and dependency

6.3 per cent of the older people were bedridden or housebound.

The average score for the Katz index of Independence in Activities of Daily Living (see section 4.6) is 5.6 (95% CI: 5.5%; 5.7%) This is close to the maximum of 6, meaning that on average, older people were rather independent and coping well with their daily activities. Ninety-three per cent of them had a score from 5 to 6, indicating that they were fully functional.

Table 6 shows the degree of dependence in the older people by sex. Men and women had similar degrees of dependence.

Table 6: Levels of dependence by sex in the respondents

	Severe functional impairment Katz Index ≤2		Fully functional Katz Index ≥5	
	Number	%	Number	%
Male	8	2.6	277	92.0
Female	16	2.5	535	93.9

More than 90 per cent of the older people were not incontinent, or did not need help with getting dressed, going to the toilet, moving from a bed to a chair or eating. A high proportion (86.4 per cent) did not require help with bathing.

Disability and impairment

More than half (54.1 per cent) of the respondents declared having a disability, whether a physical, visual or hearing impairment, or being bedridden. Table 7 summarises the data we collected on disability.

Table 7: Frequency of disabilities in the population

Disability	Prevalence	
Physical disability	7.3%	(95% CI = 5.7 ; 9.0)
Visual impairment	45.2%	(95% CI = 40.1 ; 49.8)
Hearing impairment	19.1%	(95% CI = 15.7 ; 22.3)
Bedridden	6.3%	(95% CI = 4.1 ; 8.9)

Men were more likely to have a physical disability (11.3 per cent of men, and 4.7 per cent of women), but the difference between the sexes was not significant for the visual or hearing impairments. This may also reflect a sampling bias in that men with a physical disability were more likely than able-bodied men to be at home during the day.

On average, older people had 0.9 disabilities (being bedridden is counted as a disability). More than half of them (54.4 per cent) declared having one or more disability. Table 8 shows how many older people are affected by how many disabilities.

Table 8: Frequency of number of disabilities (including being bedridden)

Number of disabilities	Number of people affected	%
0	405	45.6
1	306	34.4
2	147	16.5
3	27	3.0
4	4	0.5
Total	889	100

Mental health

With regard to mental health, the Kessler psychological distress scale (K6) shows an average score of 6.1.

As suggested by Kessler and colleagues, a score of 13 or more on the K6 is used to indicate serious psychological distress. Around 12.7 per cent of the respondents showed signs of severe psychological distress (95% CI: 8.7%; 17.7%).

Table 9 shows the number of respondents affected by severe psychological stress, by sex.

Table 9: Levels of psychological stress among respondents by sex

	No serious psychological distress (K6 0 to 12)		Serious psychological distress (K6 13 and above)	
	Male	Female	Male	Female
Number of respondents	266	497	35	73
Frequency	88.4%	87.2%	11.6%	12.8%

Only 7.6 per cent of older people reported having lost a family member in the three months before the survey.

5.4 Marital and social status

A majority of older people were married (56.1 per cent) or widowed (33.4 per cent).

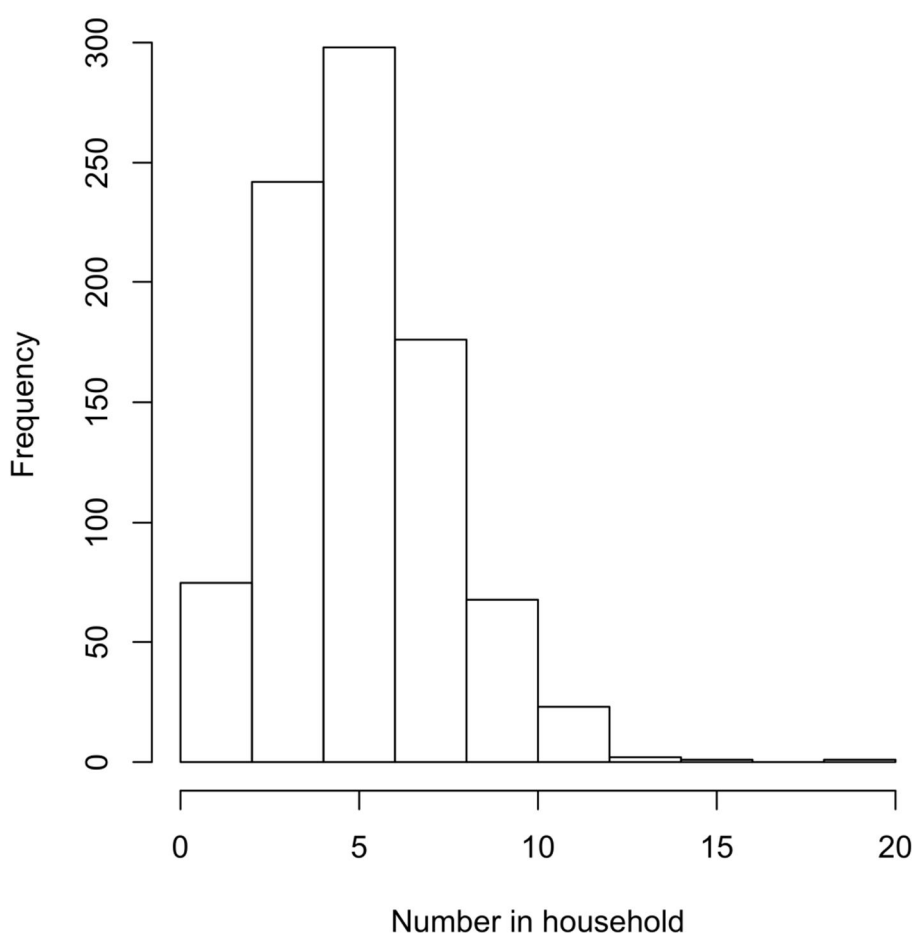
Table 10 shows the proportion of men and women according to their marital status. The proportion of widowed or divorced older women is much larger than for men (women represent 85.1 per cent of widowed respondents and 77.9 per cent of divorced respondents).

Table 10: Marital status of respondents by sex

Status	Men		Women		Total	
	Number	%	Number	%	Number	%
Married	232	46.7	265	53.3	497	100
Widowed	43	14.9	245	85.1	288	100
Divorced	15	22.1	53	77.9	68	100
Single	10	66.6	5	33.3	15	100

Only 31 older people reported that they were living alone (3.5 per cent), approximately the same number of men and women. All other respondents were living in households with between one and nineteen others. The average size of households in the sample is five people. Figure 7 shows the distribution of the household size among the respondents.

Figure 7: Household size among the respondents



Most of the older people said that they had a source of income (85.7 per cent), of whom 467 (61.9 per cent) were female. For both sexes, the main declared source of income was gifts from their family (22.9 per cent of respondents), followed by receiving a pension (20.5 per cent of respondents). Women were more likely to receive money from their family, to be pensioned or to be involved in petty trading, sale of animal products or of charcoal. Men were more likely to receive a salary from an employer, or to be a skilled labourer or artisan.

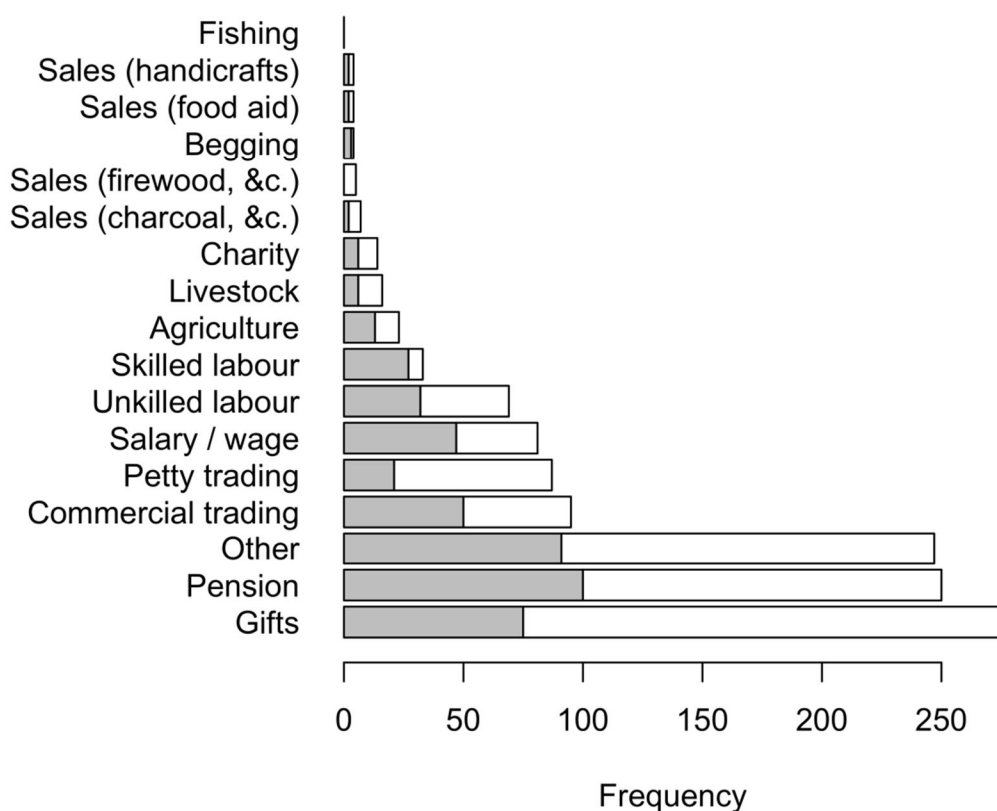
See Table 11 and Figure 8 about declared sources of income by sex.

Almost half (42.3 per cent) of respondents had responsibility for taking care of children or adolescents.

Table 11: Declared source of income by sex

Source of income	Men	Women	Total
	<i>frequency row percentage column percentage</i>	<i>frequency row percentage column percentage</i>	<i>frequency row percentage column percentage</i>
Gift from family / remittance	75 27.0 15.8	203 73.0 27.4	278 100 22.9
Government allowance (pension)	100 40.0 21.0	150 60.0 20.3	250 100 20.5
Other	91 36.8 19.1	156 63.2 21.1	247 100 20.3
Commercial trading	50 52.6 10.5	45 47.4 6.1	95 100 7.8
Petty trading	21 24.1	66 75.9 8.9	87 100 7.1
Salaries / wages (employees)	47 58.0 9.9	34 42.0 4.6	81 100 6.7
Unskilled wage labour	32 46.4 6.7	37 53.6 5.0	69 100 5.7
Skilled labour (artisan)	27 81.8 5.7	6 18.2 0.8	33 100 2.7
Agriculture (including crop sales)	13 56.5 2.7	10 43.5 1.4	23 100 1.9
Livestock (including animal / animal product sales)	6 37.5 1.3	10 62.5 1.4	16 100 1.3
Alms / charity from church, mosque or temple	6 42.9 1.3	8 57.1 1.1	14 100 1.1
Sale of charcoal / bricks	2 28.6 0.4	5 71.4 0.7	7 100 0.6
Sale of firewood / poles / thatch / roof-leaves	0 0.0 0.0	5 100.0 0.7	5 100 0.4
Begging	3 75.0 0.6	1 25.0 0.1	4 100 0.3
Selling of food aid	2 50.0 0.4	2 50.0 0.3	4 100 0.3
Sale of handicrafts	2 50.0 0.4	2 50.0 0.3	4 100 0.3
Fishing	0 0.0 0.0	0 0.0 0.0	0 0.0 0.0

Figure 8: Declared source of income by sex



Women are shown in the white bars on the right, men are shown in the grey bars (left).

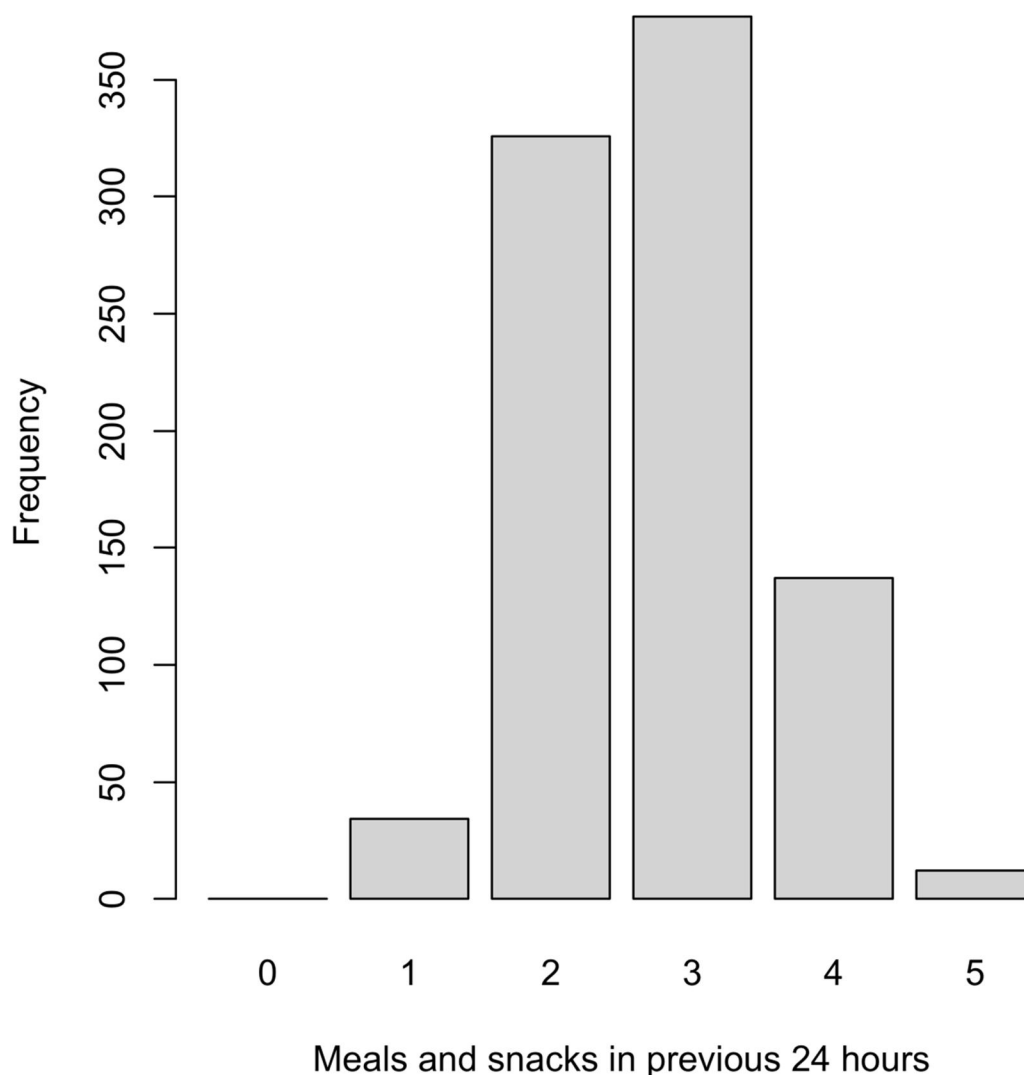
5.5 Access to basic services

Food

The meal frequency varied from one to five meals or snacks per day. On average, older people had fewer than three meals (or snacks) per day (2.7 on average). 40.6 per cent had four or five meals (or snacks) per day, and 40.6 per cent had one or two meals (or snacks) per day.

Figure 9 shows the distribution of meal frequency among the respondents.

Figure 9: Meal frequency among the respondents



The Lent fasting period for Orthodox Christians had started when we carried out the survey, and a large proportion of the respondents were following it, excluding any milk product and any meat from their diet. Almost half the respondents said that the previous 24 hours had been either a fasting or celebration period, where they ate less or more than usual. A few of them (five in total) refused to communicate any information about their food intake.

The dietary diversity score (see section 4.4) varied from 2 to 10 in the sample. The median as well as the mean was 6.0 for both sexes, meaning that approximately half the respondents were eating six or fewer food items every day.

The food habits of the older people were quite homogenous: most of them had a meal made of cereals (often teff), with a sauce made with pulses and/or root vegetables cooked with some oil (rarely red palm oil). Sugared coffee or tea were widely consumed.

Food categories consumed by more than 50 per cent of respondents were:

- Grains such as millet, wheat, barley, sorghum, rice, teff, maize, pasta, noodles, bread, pizza, porridge
- Oil, fat, butter, or ghee
- Drinks, including tea, coffee, soup, or broth
- Lentils, beans, peas, groundnuts, nuts, or seeds

- Roots or tubers such as white potatoes, white yams, false banana, cassava, manioc, onions, beets, turnips, and swedes
- Sugary foods such as sweets, candies, chocolate, cakes, and biscuits.

The data are summarised in Table 12.

Fewer than half of older people (41.1 per cent) reported eating food rich in iron, but almost two thirds (65.2 per cent) reported eating food rich in Vitamin A, mostly by eating orange flesh fruits and vegetables. A very small percentage reported eating food rich in calcium (12.3 per cent), but this was due in part to the religious fasting at the time of the survey.

Table 12: Type of food consumed by respondents

Food	Number of respondents eating this food	%
Grains such as millet, wheat, barley, sorghum, rice, teff, maize, pasta, noodles, bread, pizza, porridge	870	98.2
Oil, fat, butter, or ghee	829	93.5
Drinks, including tea, coffee, soup, or broth	802	90.4
Lentils, beans, peas, groundnuts, nuts, or seeds	766	83.4
Roots or tubers such as white potatoes, white yams, false banana, cassava, manioc, onions, beets, turnips, and swedes	716	80.7
Sugary foods such as sweets, candies, chocolate, cakes, and biscuits	617	69.6
Dark green leafy vegetables such as cabbage, broccoli, spinach, moringa leaves, cassava leaves	239	26.9
Fruits or vegetables that have yellow or orange flesh such as carrots, pumpkin, red sweet potatoes, mangoes, and papaya	209	23.3
Any other fruits or vegetables such as banana, plantain, avocado, cauliflower	196	22.1
Beef, pork, goat, lamb, mutton, veal, chicken, camel, or bush meat	152	17.2
Tinned, powdered or fresh milk	85	9.5
Cheese, yoghurt, or other milk products	54	6.1
Food made with red palm oil or red palm nuts	52	5.9
Eggs	49	5.5
Liver, kidney, heart, or other organ meats	20	2.3
Fresh or dried fish, shellfish, or seafood	7	0.8

The hunger scale (see section 4.5) shows that only a minority of older people and their households (8.8 per cent) were exposed to moderate hunger during the four weeks preceding the survey. Nobody was exposed to severe hunger. Table 13 shows the number and proportion of older people in each hunger class.

Table 13: Distribution of respondents by hunger class

Hunger class	Number of people in hunger class	%
Little or no hunger in the household	811	91.2
Moderate hunger in the household	78	8.8
Severe hunger in the household	0	0.0
Total	889	100.0

A very small percentage (2.94 per cent) reported that their household was receiving a food ration from an organisation, either personally (1.22 per cent) or through a member of their family (2 per cent).

Three quarters of the older people (77.9 per cent) reported giving food to other members of their family. Most of them ate with other people, but 17.7 per cent were eating alone.

Most of the older people (77.6 per cent) reported having a good appetite. One out of five older people (20.6 per cent) had problems chewing food.

Water and sanitation

Most of the older people (98.2 per cent) had access to a safe source of drinking water (mostly a public tap), and 98.4 per cent were drinking water from an improved or adequately treated source, but only just over half of them (58.7 per cent) had access to an improved sanitation facility. Almost three quarters of them (71.6 per cent) were sharing this facility with the neighbourhood.

Healthcare

From the 231 people who were taking medicines regularly, many had more than one reason for doing this. Table 14 below shows the collection of these causes.

They mostly purchased their drugs from a health centre (50.7 per cent) or private pharmacy (47.4 per cent).

Table 14: Reasons for taking drugs on a regular basis

Reason for taking drugs (self reporting)	Number of respondents
High blood pressure	90
Diabetes	34
HIV/AIDS only	13
Pain/arthritis only	7
Hypercholesterolemia	3
Tuberculosis only	1
Other cause(s)	43
Diabetes and high blood pressure	26
Diabetes, high blood pressure, pain/arthritis and other cause(s)	6
High blood pressure and pain/arthritis	4
High blood pressure and hypercholesterolemia	2
Diabetes, high blood pressure and hypercholesterolemia	1
Diabetes, high blood pressure, hypercholesterolemia and pain/arthritis	1
Diabetes, high blood pressure, hypercholesterolemia, pain/arthritis and other cause(s)	1
Diabetes, high blood pressure and pain/arthritis	1
Diabetes and hypercholesterolemia	1
Diabetes and pain/arthritis	1
Diabetes, pain/arthritis and other cause(s)	1
Pain/arthritis and HIV/AIDS	1

Diabetes, hypertension and hypercholesterolemia are very frequent morbidity causes in people aged 50 and above, and they are frequently associated. This table shows that a very small percentage of older people were receiving comprehensive treatment for their chronic condition: only one person was being treated for hypertension associated with hypercholesterolemia and diabetes, only two were being treated for hypertension and hypercholesterolemia, or diabetes and hypercholesterolemia, and 26 were being treated for diabetes and hypertension.

Two thirds (66.0 per cent) attended a health facility when they were sick.

The main reason given for not attending a public health facility was that the drugs were too expensive.

Almost half of the respondents (55.2 per cent) were receiving some help or care at home, mostly women (57.9 per cent).

5.6 Assessing nutritional vulnerability (risk factors)

A number of risk factors and risk markers for vulnerability were collected in this survey, as shown in Table 15.

Table 15: Risk factors and markers collected in the survey

Group	Risk factor / marker	Associated with malnutrition?	Notes	Comments Relative risk RR (95% CI) Mean difference MD (95% CI)
Demography	Sex	No	Being male	No association with malnutrition RR: 1.17 (0.46; 2.68)
	Age	Yes	Self-report	The oldest people are more likely to be malnourished. MD: 7.53 (2.09; 13.14) years
Family life	Living alone	No	Self-report	No association with malnutrition. RR: 0.95 (0.00; 4.07)
	Having a regular carer	No	Self-report	No association with malnutrition RR: 1.93 (0.87; 6.83)
	Looking after children	No	Self-report	No association with malnutrition RR: 0.95 (0.38; 2.38)
	Has no source of income	No	Self-report	No association with malnutrition RR: 0.47 (0.19; 1.73)
Functional ability	Low Katz Index	No	Self-report Katz Index of Independence in ADL ≤ 3	No association with malnutrition RR: 6.26 (0.00; 16.82)
	Housebound	No	Self-report	No association with malnutrition RR: 2.75 (0.63; 7.60)
	Has a disability	Yes	Self-report	Older people with at least one disability are more likely to be malnourished. RR: 2.51 (1.04; 8.00)
Health and Mental state	Recent illness	No	Self-report Has been ill in the last two weeks	No association with malnutrition. RR: 2.01 (0.93; 4.66)
	Treated for a chronic disease	No	Self-report Regularly takes prescribed drugs	No association with malnutrition. RR: 0.53 (0.11; 1.35)
	Serious psychological distress	No	Self-report Kessler Psychological Distress Scale K6 ≥ 13	No association with malnutrition. RR: 2.04 (0.55; 4.95)

Group	Risk factor / marker	Associated with malnutrition?	Notes	Comments Relative risk RR (95% CI) Mean difference MD (95% CI)
Food intake	Dietary diversity score	Possibly	Self-report Number of types of foods (from a list of 18 different types) eaten in the previous 24 hours	Older people with low diet diversity are more likely to be malnourished. MD: 0.00 (-1.00; 0.00) items
	Meal frequency	Possibly	Self-report Number of meals eaten in the previous 24 hours	Older people who eat less than 3 meals a day are more likely to be malnourished. MD: 0.00 (-1.00; 0.00) meals / day
	Poor appetite	Yes	Self-report	Older people with a poor appetite are more likely to be malnourished. RR: 3.05 (1.31; 7.46)
	Gives food to others	No	Self-report	No association with malnutrition. RR: 0.88 (0.40; 2.53)
	Chewing problems	No	Self-report	No association with malnutrition. RR: 1.72 (0.60; 4.04)
	Eats alone	No	Self-report	No association with malnutrition. RR: 1.97 (0.58; 4.33)
Water and sanitation	Access to improved source of drinking water	No	Self-report	No association with malnutrition. RR: 0.40 (0.15; 1.17)
	Access to improved non-shared latrines	No	Self-report	No association with malnutrition. RR: 0.47 (0.06; 1.22)

All these risk factors were tested for their association with malnutrition, using a MUAC-based case definitions. The following variables were positively associated with malnutrition, that is, older people with these factors are more likely to be malnourished:

- Age: being older
- Having a disability
- Having a poor appetite
- Having a poor diet diversity
- Eating less than three meals a day.

Variables with significant associations in the bivariate analysis (i.e. age and poor appetite) were entered into a model of multiple logistic regression with stepwise backwards elimination of least significant variable at each step.

Only the odds ratio (OR) for age is significant: OR =1.05 (1.02; 1.08 95% CI) with p=0.0002

The odds ratio for age is the increase in odds associated with an extra year of age. The increase in odds associated with an extra 10 years is 1.63 meaning that a 60 year old person is about 1.63 times more likely to be malnourished than a 50 year old ($1.05^{10} = 1.63$).

6 Discussion and recommendations

Findings from the survey

Food and nutrition

A small percentage of older people in Kolfe Keranyio are malnourished (5.2 per cent). This prevalence is similar to the wasting rates observed in children in Addis Ababa, which are around 5 per cent (Sunil Rajkumar A et al, 2012). This confirms the vulnerability of older people for malnutrition. Though both children and older people are vulnerable to malnutrition, there is a big disparity in the services that are available to these two groups: community management of acute malnutrition in Ethiopia is not available to older people.

The risk factor analysis shows that, as they get older, people are more likely to be malnourished. This supports HelpAge's strategy to provide special attention to "the oldest of the old", particularly people aged 80 and more.

Other vulnerabilities significantly associated with malnutrition are the presence of disability, and food-related factors such as having a poor appetite, eating less than three meals a day, and having a poor diet diversity.

The GAM prevalence means that between 1,100 and 2,200 people aged 50 and above in Kolfe Keranyio (using the 2007 census figures) are in need of nutrition support.

The proportion of older people with bilateral pitting oedemas is not negligible (1.33 per cent, 95% CI 0.67%; 2.13%). These people are in need of medical care and possibly therapeutic feeding.

Older people eat around three meals per day, and their diet is rather diverse with at least six different categories of food eaten every day, including vegetables and proteins from vegetable origin.

The diet is poor in calcium-rich food, and in proteins from animal origin, but it is possible that these results are influenced by the fasting customs of a large proportion of the respondents at the time of the survey, which prohibit any meat and milk products during Lent.

No household is affected by severe hunger, though 8.8 per cent of older people report suffering from moderate hunger.

There is no food support for the population of Kolfe Keranyio, where some of the poorest households in Addis Ababa are living. A very small percentage of the older people interviewed said that their household was receiving a food ration (2.94 per cent), but we have no information about where it is coming from. The local authorities (woreda level) sell some food items at subsidised prices through consumers' associations. However, some of the respondents mentioned that there were not always available for their families, except for oil.

Health status and access to health services

Around one quarter of the older people (25.6 per cent) are being regularly treated for a chronic disease such as chronic pain, hypertension or diabetes. However, we do not have information about the percentage of older people who have an undiagnosed chronic disease or who are not being treated for it.

The management of chronic diseases should be comprehensive, and should include active screening and prevention of risk factors such as diabetes, hypertension and hypercholesterolemia. Only a very small percentage of the respondents are receiving comprehensive treatment for their chronic conditions.

Two thirds of the older people attend a health facility when they are sick. The cost of drugs is the main reason given for not attending a public health facility.

Even though more than half (54.1 per cent) of older people declared having a disability, whether a physical, visual or hearing impairment, or being bedridden, a large majority of them (93 per cent) are not impaired in their activities of daily living and are fully functionally independent.

Mental health is an important issue for older people. The percentage with severe psychological distress is quite high (12.7 per cent), while there is very limited psychosocial support available.

Socio-economic status

Only very few older people reported that they were living alone (3.5 per cent), approximately the same number of men and women. The average size of households in the sample was five people

Most of the older people have a source of income (85.7 per cent), though this source is mostly coming (as gifts) from their family.

Water and sanitation

Most of the people (98.2 per cent) have access to a safe source of drinking water (mostly a public tap).

Only one quarter of them (28.4 per cent) have access to an improved, non-shared toilet facility.

Recommendations

We recommend that:

- Malnourished older people should have access to community management of acute malnutrition (CMAM) services, which are available in Ethiopia for children as well as pregnant or lactating women.

Severely malnourished children have access to Outpatient Therapeutic Programmes, and moderately malnourished children, pregnant and lactating women can benefit from Extended Outreach Strategy/Targeted Supplementary Feeding (EOS/ TSF) programmes. Older people are not included in these target groups, despite their vulnerability.

The oldest of the older people (particularly those aged 80 years and above) and older people with disabilities, could be specifically targeted by EOS/ TSF programmes.

As diet diversity is a factor of good nutrition, health education should be a component of these activities, in order to raise the awareness of older people on a healthy diet.

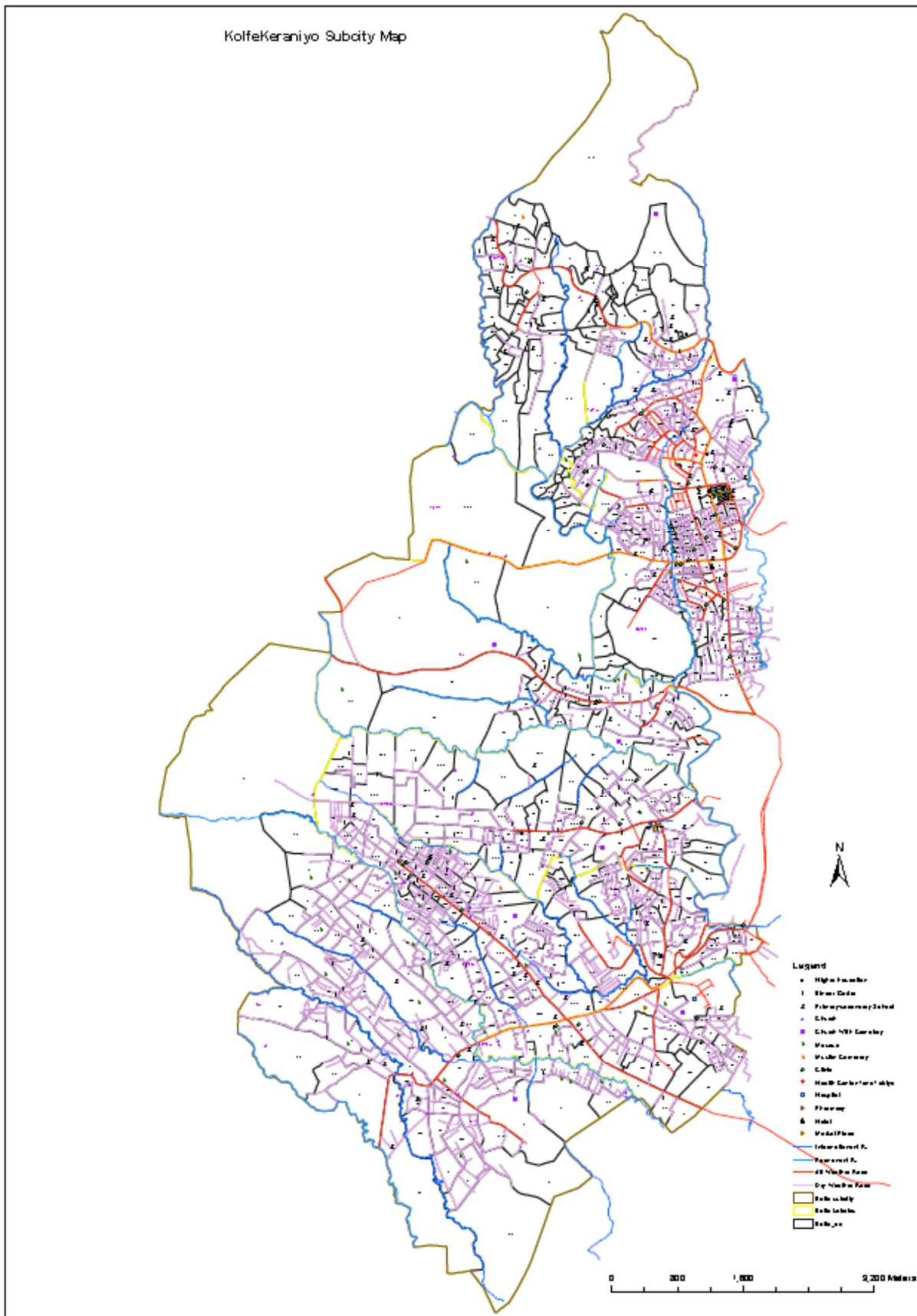
- Consumers' associations providing food items at subsidised prices should include households with older people in their target population.

Being able to benefit from subsidised food items would help older people to have a more diverse diet, and possibly reduce the number of older people who are eating less than the average of three meals per day.

HelpAge International should strongly advocate for this. Community-based associations such as Tesfa could ensure that older people are included in these distributions, and could put in place a follow up and a food-basket monitoring. They could help identify and target older people with vulnerabilities (old age, presence of disabilities, poor diet diversity, poor appetite or socio-economic status).

- The management of chronic diseases should be developed with early screening of risk factors, and availability of cheap essential drugs for all the people affected.
- Psychosocial services are needed at community level, in order to support older people with serious psychological distress, as well as their families. Associations such as Tesfa are already providing this kind of service, but they are needed on a larger scale, and specific services should be integrated in the primary health care package.

Annex 1: Map of Kolfe Keranyio Sub-City



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