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# LOWLAND WATER, SANITATION AND HYGIENE ACTIVITY

## BASELINE ASSESSMENT REPORT

May 2016

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# BASELINE ASSESSMENT REPORT FOR USAID LOWLAND WATER, SANITATION AND HYGIENE ACTIVITY (LOWLAND WASH) FINAL REPORT

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## **ACRONYMS AND ABBREVIATIONS**

<b>CAPI</b>	Computer Assisted Personal Interviewing
<b>ETB</b>	Ethiopian Birr
<b>GTP</b>	Growth and Transformation Plan
<b>HEW</b>	Health Extension Worker
<b>HSDP</b>	Health Sector Development Program
<b>IRC</b>	International Rescue Committee
<b>JMP</b>	Joint Monitoring Program
<b>MDGs</b>	Millennium Development Goals
<b>ODK</b>	Open Data Kit
<b>OWNP</b>	One WASH National Program
<b>PASDEP</b>	Plan for Accelerated and Sustained Development to End Poverty
<b>PPS</b>	Probability Proportionate to Size
<b>SNNPR</b>	Southern Nations, Nationalities and People's Region
<b>SPSS</b>	Statistical Package for the Social Sciences
<b>SWAp</b>	Sector Wide Approach
<b>UAP</b>	Universal Access Plan
<b>USAID</b>	United States Agency for International Development
<b>WASH</b>	Water, Sanitation and Hygiene
<b>WHO</b>	World Health Organization
<b>WIF</b>	WASH Implementation Framework

## EXECUTIVE SUMMARY

This baseline survey was carried out for the USAID-funded Lowland WASH Activity in the Afar, Somali and SNNP regions of Ethiopia from April to May 2016. Lowland WASH aims to accelerate the expansion of improved sustainable drinking water supply and sanitation access and to catalyze enhanced hygiene behaviors, while also expanding sustainable water use for agriculture for populations vulnerable to drought and climate change.

The main objectives of the survey are to provide benchmark data to:

- Develop an evidence-based strategy and implementation plan for improving WASH coverage, facilities, and management at community level; and
- Set the basis for tracking (through future repeat surveys) changes that will be induced by Lowland WASH activities on the ground, and thus monitor the progress and performance of Lowland WASH.

A questionnaire was designed in order to address the above objectives through a list of 54 simple questions. The questionnaire was to be administered to a suggested sample of 1500 randomly selected households (about 500 hhs per region), covering a total of 23 target woredas; 10 woredas in the Somali region, 10 in the Afar region and 3 in South Omo zone of SNNPR. A multi-stage cluster sampling method was used to select study households in each target woreda (2 or 3 kebeles randomly selected in each woreda, then 3 villages randomly selected in each kebele).

Experienced enumerators, supervisors and field coordinators were mobilized, trained and deployed. Field data collection was conducted using tablets and a data entry template was developed through Open Data Kit (ODK). The collected data was checked and analyzed using SPSS version 21 software.

A total of 1585 households, shown on table below, (557 in Afar, 498 in Somali, 530 in SNNPR) were actually surveyed:

**Table 1 Households surveyed**

REGION	WOREDA	KEBELE	SAMPLE HH #
Afar (557hhs)	Bure Mudaitu	Debelay	13
		Beidaro	12
	Gewane	Gewane	20
		Sheloko	17
	Dubti	Ayrolaf	32
		Grumedale	32
	Teru	Gebu	27
		Alel	29
	Adar	Lady	35
		Geldi	30
	Mile	Beridiar	41
		Gasayo	40
	Erbeti	Alabo	18
		Adu	16
Kunaba	Kunaba	23	

		Belbel	25
	Dalol	Bada adimurga	40
		Bada armile	38
	Berahle	Deasa	35
		Sabana Bemale	34
SNNP (530 hhs)	South Ari	Artisha	120
		Kurea	110
		Shebi	100
	Male	Beneka	91
		Koyede	30
	Bena Tsemay	Goldiya	32
Alduba		47	
Somali (498hhs)	Babile	Ali Ethiopia	28
		Oda	18
	Gursum	Shekh Abdulsalam	8
		Genda Chombe	8
	Hareshin	Kotu Male	23
		Fara Limen	24
	Kebribeyah	Ferdo 2	45
		Ferdo 3	53
	Degahabour	Antena	37
		Eglile	32
	Yaole	Artuma Fursi	16
	Kebridehar	Denehan	60
		Merathon	20
	Shilabo	Ferdafore	20
		Kalu	13
	Warder	Tinehasenwole	17
		Leyeloho	16
	Boh	Demerjog	30
		Jirarie	30

## KEY FINDINGS

A majority (66%) of survey respondents was female; 75% respondents being females in Afar and Somali (pastoralist men being away with their cattle). There was an equal gender balance (50/50) of survey respondents in SNNPR.

The majority (86%) of respondents are married, and a minority received formal education (28% in Afar and 14% in Somali), with again SNNPR being significantly better (49%). Most educated respondents (around 80%) barely completed primary education (grades 1-8).

Use of improved drinking water sources is high in SNNPR (85%, mostly handpumps) and lower in Afar (52%, mostly public tapstands) and Somali (20%, mostly public tapstands), but requires significant travel: average water transportation time (roundtrip) is significant (2.5 hours) in Afar and (1h20) in Somali, more reasonable (40 min) in SNNPR. Per capita water consumption is around 10 l/day in Afar and Somali, and only 7 l/day in SNNPR.

Existence of household latrines is widespread in SNNPR (89%). However, most are without superstructure and rarely used, as this is the result of a rapid top-down effort by the regional government without much attention to sustainable behavior change on latrine use. There are fewer latrines in Afar (23%) and in Somali (5%). Most latrines are simple ones with mud/wood slabs, and systematic use remains weak in the three regions (22-37 %).

Handwashing is well practiced before eating (80% in Afar and SNNPR, 56% in Somali), and somewhat after defecation (75% in Afar, only 41% and 34% respectively in Somali and SNNPR), but much less so at other key moments (before feeding a child and food preparation, and after cleaning child bottom). While soap is present in the majority of households (64% in Afar, 84% and 92% respectively in Somali and SNNPR), handwashing is generally practiced using water only in Somali and SNNPR (73 and 90%), while more use of soap reported in Afar (58%). Child diarrhea (under 5 years old) is present in all three regions but somewhat limited (6-7%).

The main sources of health information are health professionals, except in Somali where community health volunteers are more often cited (probably due to a lesser presence of health professionals). There is strong demand for health information (90%), with most respondents favoring health professionals and health extension workers as main source of information.

## SUMMARY TABLE OF MAIN FINDINGS

**Table 2 Socio-demographic data**

Description	Results (n, % or Mean)		
	Afar	Somali	SNNP
Total HHs surveyed	557	498	530
Female	76%	75%	47%
Male	24%	25%	53%
Average household size	6	6	6
Mean age of respondents	33	36	35
Average number of children under five years of age per household	2	2	1

The main objective of the survey was to provide baseline values for several of the main M&E indicators for Lowland WASH:

**Table 3 Baseline values for key performance indicators**

Description	Afar (557)	Somali (498)	SNNP (530)	Aggregate (1585)
#1. Percentage of children under age of five who had diarrhea in the prior two weeks	7 % (14% and 13% EDHS <sup>1</sup> )	8 % (12% and 20% EDHS)	7 % (25% and 17% EDHS)	7 % (18% and 13% EDHS)
Percentage of population using an improved drinking water source (regardless of walking distance)	51 %	19 %	85 %	52 % (42% EDHS 2011)
#2. Percentage of population using an improved drinking water source (within 30 minutes)	29 %	3 %	47 %	26 % (35% EDHS 2011)
#7. Number of days of water system down time	111 days	114 days	68 days	98 days
#9. Percentage of households using an improved sanitation facility	3 %	1 %	7 %	4 % (7% EDHS 2011)
#10. Percentage of households with soap and water at hand washing station commonly used by family members	2 %	0 %	0 %	1 %
Per capita expenses, food items	10 ETB	8 ETB	4 ETB	7 ETB
Per capita expenses, non-food	3 ETB	4 ETB	4 ETB	4 ETB
Total household income (daily per capita expenditures)*	13 ETB	12 ETB	8 ETB	11 ETB

\* Baseline for indicator #18 additional income from small scale irrigation activities

<sup>1</sup> EDHS values refer successively to the 2005 (when available) and 2011 Ethiopia Demographic and Health Surveys (EDHS), implemented by the Ethiopian Central Statistical Agency, CSA. These household surveys provide national averages and some regional data.

## BACKGROUND

### BRIEF OVERVIEW OF WASH SITUATION IN ETHIOPIA AND THE PROJECT AREAS

Ethiopia endorses the MDGs to guide implementation of WASH activities to ensure improved access to safe drinking water, improved health and hygiene practices and increased gender equality. During the last 10 years, the Government of Ethiopia has accelerated its commitment to address the country's water, sanitation and hygiene issues. Development and implementation of the second round Universal Access Plan (UAP) in 2011, the National Sanitation Action Plan (2011), National WASH Inventory (2013) and the National Drinking Water Quality Monitoring Strategy are among the initiatives undertaken. Furthermore, in line with the previous Plan for Accelerated and Sustained Development to End Poverty (PASDEP), and the current Growth and Transformation Plan (GTP), Ethiopia has developed and implemented a series of Health Sector Development Programs (HSDP) to address health problems including water, hygiene and sanitation issues of the country.

Ethiopia's Growth and Transformation Plan (GTP) identifies water and sanitation as priority areas for achieving sustainable growth and poverty reduction. In line with the GTP, the Government of Ethiopia (GoE) has prepared a Universal Access Plan (UAP) with specific targets to improve access to water supply and sanitation facilities and to improve the practice of handwashing at critical times, safe water handling and water treatment at home. Furthermore, in order to facilitate achievement of the GTP and UAP targets, the GoE has prepared a WASH Implementation Framework (WIF) to provide guidance for implementing the program that defines the roles and responsibilities of major stakeholders in the WASH sector.

The Government of Ethiopia, with support from a number of development partners and Non-Governmental Organizations (NGOs) is now implementing a Sector Wide Approach (SWAp) through the One WASH National Program. The One WASH National Program was launched in 2013 with the intent to contribute to achieving the Government's social and economic priorities in an equitable and sustainable manner by increasing water supply and sanitation coverage and the adoption of good hygiene practices, guided by the WASH Implementation Framework (WIF).

In spite of these initiatives, millions of Ethiopians still lack access to improved water and basic sanitation facilities, and very few people regularly wash their hands with soap and water at critical times. According to a recent report by the Joint Monitoring Program (JMP)<sup>2</sup>, Ethiopia is among the 47 countries in the world with sanitation coverage of under 50%, and 29% of the population practices open defecation. The same report indicated that only 28% of the population uses improved sanitation facilities.

The challenge of ensuring access to improved water supply and sanitation facilities in Ethiopia is even more severe in pastoralist areas of Ethiopia including Afar, Somali and SNNPR. Access to improved water supply and sanitation facilities in these regions is relatively lower than central and highland areas and the overall national average. The water and sanitation access in pastoralist regions ranges from 39.5% to 61%, and from 6.5% to 21% respectively, while in the other parts of the country water and sanitation coverage ranges from 62% to 95% and 41% to 76%, respectively.<sup>3</sup>

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<sup>2</sup> Progress on Sanitation and Drinking Water – 2015 Update and MDG Assessment, UNICEF and World Health Organization 2015.

<sup>3</sup> Federal Democratic Republic of Ethiopia. 2013. ONE WASH NATIONAL PROGRAM, A Multi-Sectoral Swap , Program Document, August 2013.

## **USAID LOWLAND WASH ACTIVITY**

As part of its effort to save lives and advance development through improvements in water supply, sanitation, and hygiene (WASH) programs, and through sound management and use of water for food security, USAID has developed a Water and Development Strategy (2013-2018). One of the objectives to achieve this goal is to improve health outcomes through the provision of sustainable WASH. This will be achieved through a continued focus on providing safe water, an increased emphasis on sanitation and support for programs that can be brought to scale and be sustained. The other strategic objective is to manage water for agriculture sustainably and more productively to enhance food security. Under this initiative, AECOM International Development is implementing the USAID-funded Lowland Water, Sanitation and Hygiene (Lowland WASH) Activity in Somali, Afar and SNNP (lowland areas) regions of Ethiopia in partnership with IRC and CARE. The purpose of the USAID Lowland WASH Activity is to accelerate the expansion of improved, sustainable drinking water supply and sanitation access and to catalyze enhanced hygiene behaviors, while also expanding sustainable water use for agriculture for populations vulnerable to drought and climate change.

The goals of Lowland WASH are:

- 1) Increased access to improved drinking water supply sources on a sustainable basis;
- 2) Increased adoption of key hygiene behaviors and increased access to improved, sustainable sanitation;
- 3) Improved efficiency and sustainability of food production from irrigated and rain-fed agricultural systems; and
- 4) Improved water resource governance and data management.

This baseline survey was carried out in order to document bench mark data that will help to develop an evidence-based strategy and implementation plan for improving WASH coverage, quality of facilities, and management at community level.

## **OBJECTIVE OF THE BASELINE SURVEY**

The baseline survey was conducted to:

- Get an overall understanding of the existing WASH situation in target areas pertinent to project objectives;
- Set the basis for tracking changes (through future similar surveys) that will occur because of the Lowland WASH activities on the ground.

Specifically, the baseline survey aimed to collect information among a sample of households in 23 target woredas focusing on the following, among others:

- Percentage of children under age of five who had diarrhea in the prior two weeks;
- Percentage of population using an improved drinking water source;
- Number of days of water system down time in the past year;
- Percentage of households using an improved sanitation facility;
- Percentage of households with soap and water at handwashing station commonly used by family members;
- Household income from small scale irrigation activities (Daily per capita expenditures as proxy for income).

## SURVEY METHODOLOGY

### SURVEY DESIGN, STUDY POPULATION AND TARGETS

A cross sectional quantitative survey design was utilized; the study population was drawn from 23 target woredas of lowland areas of Afar, Somali and SNNP regions in Ethiopia. A total of 10 woredas in the Somali region, 10 in the Afar region and 3 in South Omo zone of SNNPR were included in the survey. The specific study targets were heads of the households or their spouses in randomly selected households who were 18 years old & above.

### SAMPLE SIZE AND SAMPLING STRATEGY

#### SAMPLE SIZE CALCULATION

The following sample size calculation formula that is based on a statistical test of the difference of proportions (or prevalence) for an indicator was used. The indicator used was the proportion of rural community with access to water supply in the three regions. Controlling for inferential error, this formula enables applying a statistical test at the time of the final evaluation to see if the targets set have been achieved.<sup>4</sup>

$$n = \frac{D * (Z_{1-a} + Z_{1-b})^2 * [p_1 (1 - p_1) + p_2 (1 - p_2)]}{(p_2 - p_1)^2}$$

Where;

n = required sample size

D = design effect (assumption D = 1.8);

p1 = PI was assumed as the proportion of rural community with access to water supply in 2013. The proportion for Afar, Somali and SNNP regions was assumed as 44%, 60% and 55%, respectively<sup>5</sup>.

p2 = the planned target value of the key indicator at the end-line/final evaluation, which was assumed to increase by 10% from the baseline figure in each region at the end of the project period

Z1-a = the z-score corresponding to the desired confidence level (a = 0.05, thus Z0.95 = 1.645);

Z1-b = the z-score corresponding to the desired power level (b = 0.2, thus Z0.8 = 0.840).

Thus, the calculated sample size for the three regions was 1578. The sample size calculated for each region is indicated in table I below.

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<sup>4</sup> USAID Food and Nutrition Technical Assistance III Project (FANTA), Sampling Guide Updated On December 2012  
Principles Of Biostatistics, Second Edition, Chapter 14 P330, Marcello Pagano, Harvard School Of Public Health

<sup>5</sup> Federal Democratic Republic of Ethiopia. 2013. ONE WASH NATIONAL PROGRAM, A Multi-Sectoral Swap , Program Document, August 2013.

**Table 4: Sample Size Calculated to Each Study Region**

INPUTS	Afar	Somali	SNNP
Proportion 1: baseline	0.44	0.6	0.55
Proportion 2: end line	0.54	0.7	0.65
Confidence level	0.95	0.95	0.95
Power	0.84	0.84	0.84
Total sample size in each region	550	500	528
<b>Suggested Sample Size for the Survey</b>	<b>1578</b>		

## SAMPLING PROCESS

A multi-stage cluster sampling method was used to select study households from each study woreda in each survey target region. The following sampling stages were used to allocate the regional sample size in to respective study woredas and kebeles in each region and ensure representativeness.

### STAGE ONE: ALLOCATION OF THE TOTAL SAMPLE SIZE COMPUTED FOR EACH REGION INTO THE STUDY WOREDA:

The total sample size computed for each region was allocated to each respective study woreda based on the principles of probability proportionate to size (PPS) technique. The population size of each study woreda was used as reference for calculating the proportion.

### STAGE TWO: ALLOCATION OF THE TOTAL SAMPLE SIZE COMPUTED FOR EACH WOREDA TO THE RESPECTIVE STUDY KEBELES:

The total sample size computed for each woreda was further allocated to respective kebeles based on the principles of probability proportionate to size (PPS) technique. This was done at the field level ones the kebeles were identified. From each woreda, two rural kebeles (some time three) were selected through random selection method (Lottery Method). Finally, the population size of the two (some time three) selected kebeles was used as reference to distribute the calculated sample size using PPS technique.

### STAGE THREE: SELECTION OF VILLAGES ('GOTES')

After the selection of two kebeles in each respective study woreda, the enumerators along with the Supervisor contacted the kebele administration bodies to get the list of Villages ('Gotes') in each kebele. Then, three Villages ('Gotes') were selected from each kebele using Lottery method. After that, the total sample size allocated to each kebele was divided equally to the three villages.

### STAGE FOUR: SELECTION OF STUDY HOUSEHOLDS FROM EACH VILLAGE:

The households were selected using a systematic random sampling method and the detailed procedures followed are indicated below:

The supervisors obtained the list of households in each selected village from each kebele representative and the HEW.

- Then supervisors calculated a sampling interval by dividing the total number of households in each village by the total sample size allocated for each village.
- The supervisor then selected a random number between 1 and the sampling interval.
- The supervisors then assigned each data collector to select the first household corresponding to the random number and interview the respondent preferably the head of the household.
- After the selection and interview of the first household, the data collectors repeatedly added the sampling interval to select subsequent households for the interview until the total sample size allocated for the village was met.

## FIELD WORK MANAGEMENT

Field data collection for this survey was carried out from April 20 to May 12, 2016. The overall survey was led by a principal investigator and three co-investigators responsible for the implementation of the fieldwork. Under each Co-Investigator there were field teams involving enumerators and supervisors, logistics coordinators, a senior statistician and IT specialist (software engineer).

In order to manage the field work effectively within the anticipated time and at the same time ensuring collection of quality data, the firm has mobilized highly trained and experienced enumerators, supervisors and field coordinators. Enumerators and supervisors who had practical experience in electronic data collection with the use of tablets equipped with the ODK Application and proven prior experience in conducting WASH baseline surveys in the study regions were recruited, trained and deployed for field work.

The field data collection was based on computer assisted personal interviewing (CAPI). The firm has availed tablets to collect data from the field and a data entry template was developed through Open Data Kit (ODK) software.

The trained enumerators were provided with a printout copy of the survey tool which was translated into the respective languages during the actual data collection period. The enumerators administered the questionnaires to the heads of the households or their spouses who was 18 years old or above from the randomly selected households. Thus, the data collection as well as data entry was accomplished at the same time accurately and timely. The fact that the data collection from the field was done using ODK helped to access the data easily from the server.

After the completion of the field data collection, the data was transferred (exported) to SPSS version 21 software. The data analysis was also done through this software. Before the analysis further data check-up was made. Appropriate statistical tests were conducted to see the distribution of the data and to check whether or not the entire data is free from outliers, hence appropriate statistical measurements were made to correct such kind of data. The second phase of the data analysis involved a major statistical data analysis process which was primarily descriptive in nature to calculate percentages, mean etc. A 95% confidence level was used to calculate confidence interval of means and proportions. Confidence levels were generated based on statistical software from Mccallumlayon Research and Monitoring online i.e. <http://www.mccallumlayton.co.uk/stats/confedenceIntervalcalcProportions.aspx>.

## **DATA QUALITY ASSURANCE**

To ensure data quality for this survey, several measures were taken:

- An electronic data collection system was used to enable insertion of validation rules which include making cells required to avoid missing of questions, restricting the input type (text, number, both), field size, skip patterns to avoid filling unnecessary questions etc.
- Highly experienced Enumerators who speak the local languages of the study areas and are familiar with the study sites were recruited
- Two days intensive training was provided to data collectors and supervisors to ensure adequate internalization of objective of the study, data collection instruments & procedures and ethical considerations to be made during the study.
- The questionnaires were translated in to local languages and pretesting was done prior to actual data collection. The pretest was done in three kebeles selected in each study region, In Afar region it was done in rural kebele near Awash sebat town, in Somali in a rural kebele near Jijiaga town and in SNNP in a rural kebele near to Arbamich town. These kebeles were not targets for the actual data collection.
- On site supportive supervision, which included over-the-shoulder observation of data collectors was carried out in every study area by survey managers and field supervisors
- The back-checkers revisited selected households and checked whether or not the study participants were actually interviewed.
- By the end of each field day, a debriefing session was held to give an opportunity for data collectors to reflect their observations, challenges encountered and other issues. After each debriefing, strategies and mechanisms were forwarded to avoid subsequent similar challenges and issues.

## **CONFIDENTIALITY CONSIDERATIONS**

When conducting the baseline survey, the following ethical considerations were made:

- Prior to the survey, the necessary communications about the overall purpose of the survey were made with the zonal, woreda/town and kebeles/community level administrative bodies.
- The study participants were given complete information in their own local language as to the objective of the survey and potential benefits/risks and participated in the data collection only after their consent. Informed verbal consent was secured from each survey participant using the consent form attached in the survey tool.
- The confidentiality of individuals and the information they revealed was protected at all times. The information collected was anonymous and no identification, such as, names, identification numbers, telephone number etc. was used.
- All the information and data collected was accumulated, organized, stored, analyzed and retrieved guaranteeing confidentiality.

## PRESENTATION OF KEY FINDINGS

### SOCIO-DEMOGRAPHIC CHARACTERISTICS OF RESPONDENTS

A total of 1585 households were covered in this baseline survey, covering seven more households than planned. This small increase in sample size ensures equal sample size distribution among villages/ 'Gotts', if the sample size per kebele was not equally distributed to each village, a sample was added to the actual sample size allocated for the kebele to compensate.

**Table 5 Socio-demographic characteristics of respondents by region and total, Lowland WASH Baseline Survey, May 2016**

Variables	Region			Total	
	Afar n=557	Somali n=498	SNNP n=530	n=1585	%
<b>Sex of respondent</b>					
Female	76%	75%	47%	1044	66
Male	24%	25%	53%	541	34
<b>Age</b>					
18-24	21%	18%	19%	311	20
25-31	34%	25%	27%	445	29
32-38	17%	20%	21%	306	19
39-45	16%	20%	16%	271	17
46-52	6%	6%	7%	102	6
Above 52	6%	11%	10%	139	9
<b>Current marital status</b>					
Single	6%	5%	3%	75	5
married	87%	86%	86%	1374	86
Living together/conceptual	2%	0	0	13	1
Divorced	3%	2%	3%	42	3
Widowed/widower	2%	7%	8%	80	5
<b>Religion</b>					
Muslim	96%	100%	1%	1033	65
Orthodox	4%	0	29%	176	11
Protestant	0	0	60%	319	20
Catholic	0	0	1%	0	0
Traditional	0	0	6%	33	3
Other	0	0	3%	20	1

The majority (66%) of respondents surveyed were females (Table 5). The mean age of respondents in the surveyed regions was 34.5 (SD:11.8) and it was almost similar in the three surveyed regions, except with a slight decrease in Afar region. As indicated on Table 6 below, the majority of the surveyed respondents were married (86%) followed by those who reported widowed/widower (5%) and singles (5%). With regard to religion, all of the respondents in Somali region and 96% of the respondents in Afar

region were Muslims. The remaining 4% of the respondents in Afar region were Orthodox Christians. When it comes to SNNPR, the majority of the respondents (60%) were Protestants followed by Orthodox Christians (29%).

Only three-in-ten (31%) of the surveyed respondents had attended formal education. Higher proportion of participants in SNNPR (49%) had attended school compared to Somali (14%) and Afar (28%). Among the respondents who ever attended school in each region, completion of primary school (1-4) was the highest level of education achieved by the majority (43%) of the participants.

**Table 6 Educational status of respondents**

Variables	Region			Total	
	Afar n=557	Somali n=498	SNNP n=530	n=1585	%
Ever attend school	28%	14%	49%	484	31
<b>Highest level of education completed</b>	<b>n=155</b>	<b>n=67</b>	<b>n=262</b>	<b>n=484</b>	
Primary (1-4)	36%	70%	41%	208	43
Primary (5-8)	38%	25%	43%	189	39
Secondary (9-12)	20%	2%	14%	68	14
College/diploma	6%	3%	2%	19	4

The average household size was almost similar in the three regions as shown in table 4 below. On the other hand, the average number of children under five years of age in the surveyed households was two in Afar and Somali regions while it was slightly less than one in SNNPR region (Table 7).

**Table 7 Mean age of respondents, average household size and average number of under five children**

Variables	Afar n=557	Somali n=498	SNNP n=53
Mean age of respondents	33 (SD:11.4)	36 (SD:12.1)	35 (SD: 11.8)
Average household size	6 (SD: 3.0)	6 (SD: 2.3)	6 (SD: 2.5)
Average number of children under five years of age per household	2 (SD: 0.7)	2 (SD: 0.7)	1 (SD: 0.6)

## ACCESS TO IMPROVED DRINKING WATER

Improved drinking water supply refers to the use of piped water into dwelling yard or plot, public tap, or standpipe, tube-well or borehole or protected spring and protected dug well.<sup>6</sup> This baseline survey showed that the main sources of drinking water varied across the three study regions. As shown in Table 8 below, drinking water access from improved sources was highest in SNNPR (85% CI ± 3.04)

<sup>6</sup> Federal Democratic Republic of Ethiopia.2013. ONE WASH NATIONAL PROGRAM, A Multi-Sectoral Swap, Program Document, August 2013. Page 110-111

followed by Afar region (52% CI  $\pm$  3.1), while it was lowest in Somali region (19% CI  $\pm$  3.7). This was regardless of distance.

Table 8 shows the different types of protected/improved drinking water sources in each region. The prominent types of protected/improved sources of drinking water in Afar region was public tap/stand pipe (33%), and protected dug well with hand pump in SNNP (57%). In Somali, access to improved water sources is low (only 19%) and the types of water sources may not be representative.

**Table 8 Proportion of Households who fetched drinking water from protected/improved sources and types of protected improved drinking water sources**

Improved drinking water sources reported	Regions		
	Afar n= 557	Somali n= 498	SNNP n=530
All Protected /Improved drinking water sources	290 (52%)	95 (19%)	453 (85%)
Protected /improved drinking water sources by type*			
Piped water into dwelling	2%	0%	0%
Piped water from a neighbor	5%	0%	1%
Piped water into yard/plot	5%	0%	1%
Public Tap/Standpipe	33%	3%	7%
Protected spring with on -spot tap	1%	1%	18%
Protected dug well with hand pump	4%	15%	57%
Protected spring without on-spot tap	2%	1%	1%
All unprotected /unimproved drinking water sources**	267 (48%)	403 (81%)	77 (15%)

\*First four types of sources (piped) are from boreholes (rarely from gravity spring)

\*\*includes water from unprotected dug well/unprotected spring/surface water/tanker water/caret with small tank)

Quantity of water per person per day was measured based on water collected or delivered to the household and used for drinking, cooking, bathing and for other personal and household hygiene and sanitation activities by the inhabitants of the household. It does not include water used for gardening or animal drinking. In order to calculate quantity of water per person per day, a 24-hour period per day was considered and all adults and children in the household were counted. It was assumed that the amount of water collected was the amount used. The finding indicated that quantity of water per person per day in the three regions was lower than the standard set by WHO and by the standard set in the Ethiopian National Water strategy document.<sup>7</sup> According to both sources, the per person per day quantity of water for drinking, cooking and personal and domestic use in a rural situation was set at least 15 l/c/d. Nevertheless, quantity of water used per person per day in the study regions ranges from 6.7 liters/person/day in SNNPR to 10.9 liters/person/day in Somali region (Table 9). The lesser use of water in SNNPR can be explained by the climate (less hot and arid) and the year-round availability of

<sup>7</sup> WHO. Minimum water quality needed for domestic use. WHO/SEARO technical notes for emergencies. Technical Note No.9: page 3.

rainwater. Moreover, Afar and Somali have Muslim populations who use water for daily ablutions before praying.

**Table 9 Quantity of water used and average minutes travelled to collect water**

Variable	Afar	Somali	SNNP
Per capita water consumption (domestic use) in liter/person/day	9.3	10.9	6.7
Time in minutes spent to collect water from the main source, round trip	149 (SD:125.1)	81 (SD:97.0)	41 (SD:19.8)

Even in instances where enough water is available, there may be other limiting factors to its use, such as the time taken to travel and line up. If people take more than 30 minutes to collect water, the amount they will collect will reduce.<sup>8</sup> Nevertheless, the survey shows that the average distance travelled (round trip) ranges from 149 minutes in Afar region to 41 minutes in SNNP region.

Respondents, who had access to improved water sources, were asked whether or not they had year-round<sup>9</sup> access to an improved water source. Year-round water access (Table 10) was lowest in SNNP region in which (80% CI:  $\pm 3.7$ ) of the households did not get water continuously but with frequent interruptions compared to Afar (58% CI:  $\pm 5.7$ ) and Somali region (10% CI:  $\pm 4.7$ ).

**Table 10 Water System downtime**

Variable	Afar (n=290)	Somali (n=95)	SNNP (n=453)
Proportion of Households who reported water system downtime in the past year	58%	10%	80%

The average water downtime days in the last fortnights and one year prior to the survey period reported is shown in Table 11 below. The longest water down time (where the main water source became dysfunctional at some time during the year) are in Somali and Afar regions (114 and 111 days, i.e. 1/3 of the time). Water system downtime is significantly less in SNNPR where most systems are simple hand pumps, easier to repair or replace.

**Table 11 Water System downtime days**

Water system downtime days reported	Afar n= 557	Somali n= 498	SNNP n=530
Average water system downtime days in the last one year prior to the survey	111	114	68

<sup>8</sup> Ibid.

<sup>9</sup> Year-round access refers to availability of water during the time(s) of the year when the water supply is least reliable.

Respondents who access water from improved/protected sources were asked the alternative source of water they use during water downtime days. The proportion of households who collected water from unimproved water sources during water downtime days from the main source was highest in Somali region (81%) compared to Afar (55%) and SNNPR (25%) (Table 13). Among the households who collected water from unimproved sources, only 8% treated the water to make it safe for drinking. The practice of treating water is absent in Somali (1%) and in SNNPR (0.2%) regions while 22% of the households in Afar region reported doing so. The main methods of water treatment reported were by boiling and by adding chlorine/bleach into water:

**Table 12 Main methods of treatment**

Water treatment methods	Afar n=114	Somali n=5	SNNP n=1
Boiling	16%	Not representative	Not representative
Bleach/chlorine	46%		
Filtering through cloth	5%		
Water filter (ceramic, sand, etc.)	9%		
Letting it stand for settlement	13%		
Others	11%		

**Table 13 Alternative sources of water during water downtime days among those who access water from improved sources**

Alternative sources of water	Afar n=290	Somali n=236	SNNP n=453
Improved/protected water sources*	45%	19%	75%
Unimproved/Unprotected water source	55%	81%	25%

\*other improved sources reported separate from their main sources

Respondents were asked the specific of types of alternative improved water sources they collect water from during downtime of their primary water source. The majority (76%) from Afar region and (71%) from SNNP region reported that they collect from protected dug well with a hand pump. For Somali, the sample of people collecting from a secondary improved source is too small to be representative. Other improved water sources reported in each region were as indicated in Table 14, below.

**Table 14 Types of alternative improved drinking water sources during water system downtime**

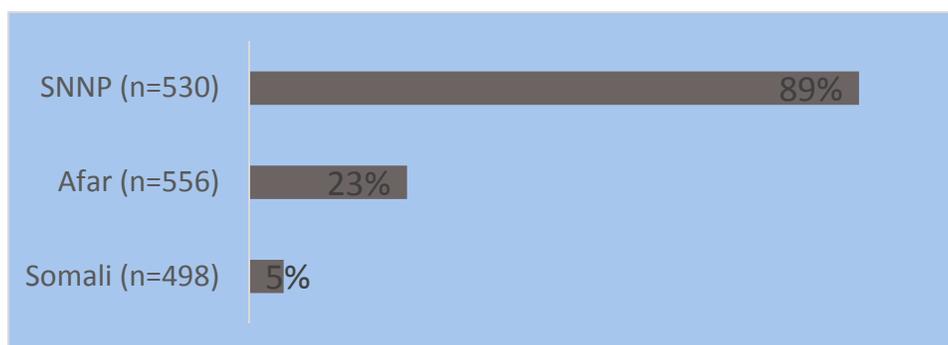
Types of alternative improved water sources, among those who mentioned from improved sources (Multiple answer)	Regions		
	Afar n= 130	Somali n= 45 **	SNNP n=339
Protected dug well with hand pump	76%	20%	71%
Piped water from a neighbor*	7%	27%	16%
Piped water into Yard/plot*	18%	0%	0%
Piped water into dwelling*	4%	2%	4%
Protected spring with on spot tap	4%	2%	4%

\*Piped sources are from boreholes (rarely from gravity spring)

\*\* Sample too small to be representative

## ACCESS TO SANITATION

Access to a sanitation facility refers to availability of a functioning excreta disposal facility, typically a toilet or latrine that is private or shared with others in the building or compound. The survey found that significantly higher proportion of households in SNNP region (89% CI:  $\pm 3.4$ ) had latrines, while only 23% (CI:  $\pm 1.6$ ) of households in Afar and 5% (CI:  $\pm 1.9$ ) in Somali had latrines (figure 1).



**Figure 1 Proportion of households with any type of latrine**

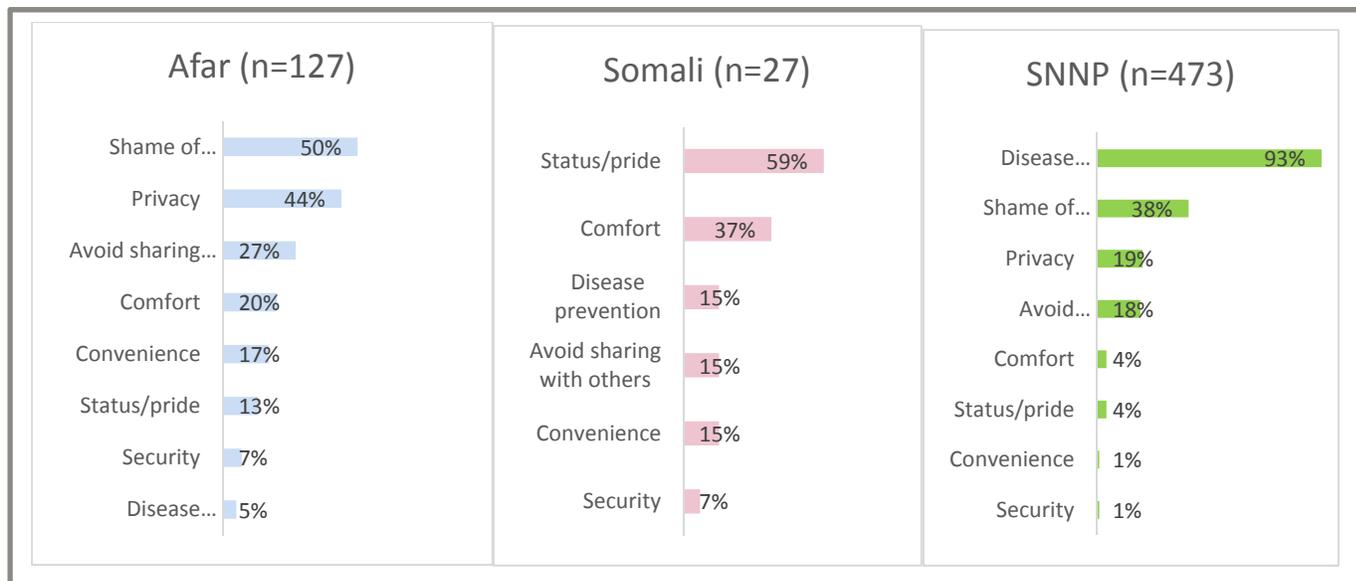
During the survey, observation was made to check the physical and infrastructural condition of the latrines. Table 15 shows the type of latrines found during the observation. As the table shows, the majority of the latrines in all the regions were pit latrines with a floor mud slab.

**Table 15 Type of latrines available in the household**

Type of latrines	Region		
	Somali n=27	Afar n=127	SNNP n=473
Improved latrines	85%	68%	77%
Ventilated improved pit latrine	7%	2%	0%
Pit latrine with concrete slab	26%	13%	1%
Pit latrine with floor mud slab	52%	53%	76%
Unimproved latrines	15%	32%	23%
Pit latrine without slab/open pit	15%	16%	16%
Composting latrine	0%	1%	0%
Other*	0%	15%	7%

\*includes with wood and grass slab.

Households that had latrines reported various reasons as motivation for building the latrines. The main reasons reported for building latrines in Afar region were visual shame, privacy and the desire to avoid sharing latrine with others. Likewise, in SNNPR except for the main reason being disease prevention, obviously as a result of recent sanitation promotion effort. In Somali region, the top three reasons reported (for a small non representative sample) were the desire to show high social status/pride, comfort and the need to prevent diseases (figure 2).



**Figure 2 Reasons to have latrine**

The physical and hygienic condition of the available latrines was observed in the baseline survey. It was found that the majority of latrines in the three regions were smelly, the floor of most of the latrines were with mud slab, and handwashing facility with water and hand washing facility with soap/ash were only available in a few of the latrines observed (Table 16).

**Table 16 Physical condition of latrines (from observations by enumerators)**

Physical and Hygienic condition of latrines (multiple answer)	Region		
	Somali n=27	Afar n=127	SNNP n=473
With private wall	52%	41%	28%
With roof	30%	39%	69%
With mud slab	70%	61%	78%
With concrete slab	19%	26%	2%
With door/safe to close	41%	22%	2%
With latch/rope (to secure door)	48%	19%	0%
With not smell inside and outside the latrine	19%	35%	27%
With no visible feces inside the latrine	52%	28%	25%

The utilization of sanitation facilities was also assessed in this survey. Utilization of a sanitation facility refers to the use of a sanitation facility as a predominant means of excreta disposal for household members >12 months of age. The findings from this survey showed that among those who had latrines, 37% (CI:  $\pm 6.2$ ) of the households in Somali, 34% (CI:  $\pm 4.6$ ) in SNNP region and 22% (CI:  $\pm 7.2$ ) of them in Afar region reported that all members in the household use a latrine:

**Table 17 Utilization of latrines**

Latrine Utilization	Region		
	Afar n=127	Somali n=27	SNNP n=473
Adults only	44%	22%	17%
Adults and children older than five years old only	34%	41%	49%
All members of the household	22%	37%	34%

Respondents who had no latrine were asked why they never had one. Several reasons were reported in the three regions (table 15 below). The main reasons reported for not having a latrine was lack of finance (57%), followed by other reasons (15%) that include mobile life style, being busy with other activities, had it before but destroyed by flood, water table is near hence difficult to dig a hole, etc. and lack of labor (12%).

**Table 18 Reasons reported for not having latrine**

Reported reasons for not having a latrine	Afar n=389	Somali n=461	SNNP n=28
Unavailability of adequate space	7%	1%	9%
Lack of construction material	8%	6%	0%
Lack of labor	14%	9%	20%
Lack of finance	46%	72%	23%
Lack of skill/knowledge to construct	7%	5%	0%
Have heard not about it	2%	3%	0%
Other reasons*	16%	4%	48%

\*includes mobile nature of residents, being busy with other activities, had it before but destroyed by flood, water table is near hence difficult to dig a hole, etc.).

## HAND WASHING AND ADOPTION OF KEY HYGIENE BEHAVIORS/PRACTICES

One of the key issues of appropriate handwashing behavior relates to handwashing at critical times, which includes washing hands after defecation, after cleaning babies' bottoms, before food preparation, before eating and before feeding children. Of the surveyed households, a majority (72% CI:  $\pm 2.2$ ) reported that they usually wash their hands before eating, 51% (CI:  $\pm 2.5$ ) after defecation, 33% (CI:  $\pm 2.3$ ) before food preparation, 18% (CI:  $\pm 1.9$ ) before feeding children and 16% (CI:  $\pm 1.8$ ) after cleaning babies' bottoms. As indicated on table 19 below, handwashing at critical times was reported more in Afar than the other two regions. This self-reporting is probably over-estimated but demonstrated knowledge of the needed practices.

**Table 19 Handwashing practices**

Handwashing Practices	Afar n=557	Somali n=498	SNNP n=530
After defecation	75%	41%	34%
Before eating	81%	56%	78%
After cleaning a child's bottom	29%	14%	4%
After cleaning a latrine	30%	4%	3%
Before food preparation	59%	24%	3%
Before feeding a child	26%	25%	3%
Other *	5%	5%	27%

\*includes after any work, after farming, after eating, after housework, & before praying.

Respondents were asked whether it was common to use soap in their household. Ninety-two percent ( $\pm 2.1$ ) in SNNP region, which was the highest compared to Somali (84% CI:  $\pm 3.2$ ) and Afar (64% CI:  $\pm 3.9$ ), reported that they had soap. Respondents also reported that they used soap commonly for various purposes: for washing clothes, washing of body and washing children. The proportion of respondents who reported that they commonly use soap to wash their hands is low in the three regions: only 20% in SNNP and Somali, 40% in Afar.

**Table 20 Practice of washing with soap**

Variables	Afar n=556	Somali n=498	SNNP n=530
Who reported it's common to use soap in the household	64% CI: ±3.9	84% CI: ±3.2	92% CI: (±2.1)
Commonly use soap for (multiple answer)	(n=356)	(n=418)	(n=510)
Washing of clothes	97%	99%	100%
Washing of my body	89%	73%	92%
Washing of my children	70%	40%	42%
Washing of my child bottom	40%	2%	1%
Washing of my child's hands	43%	15%	1%
Washing of my hands	63%	24%	22%
Washing of my hands (out of all respondents)	40%	20%	20%

For those who do not commonly use soap, hand washing is done with water only, with a small proportion (22%) using ash in Afar:

**Table 21 Practice of washing without soap**

Variables	Afar n=556	Somali n=498	SNNP n=530
Who reported it's not common to use soap in the household	36%	16%	8%
Commonly wash hands with (commonly use)	(n=200)	(n=80)	(n=20)
Ash and water	22%	0%	0%
Mud/sand and water	2%	0%	0%
Only water	76%	100%	100%

With regard to the availability of handwashing facilities at home, only 14% of the households in Afar region reported that they had handwashing facilities at their home, while none of the households in the remaining two regions had such a facility.

**Table 22 Availability of hand washing station**

Hand washing station in house/backyard	Region		
	Afar n=557	Somali n=498	SNNP n=530
Yes	14%	0%	0%
No	86%	100%	100%

Among the households in Afar with handwashing facilities, 39% reported that the facilities were used by adults only. About 7% reported that they were used by children older than five years and the same proportion of participants reported that handwashing facilities were used by children less than five years.

Surveyors observed the physical conditions of the handwashing facilities reported to be available at home in Afar region. The findings confirmed that about 38% of these households were able to show soap to the enumerators in less than one minute. Only 8% of these handwashing facilities (1% of total Afar respondents) were with soap and water during the time of the survey.

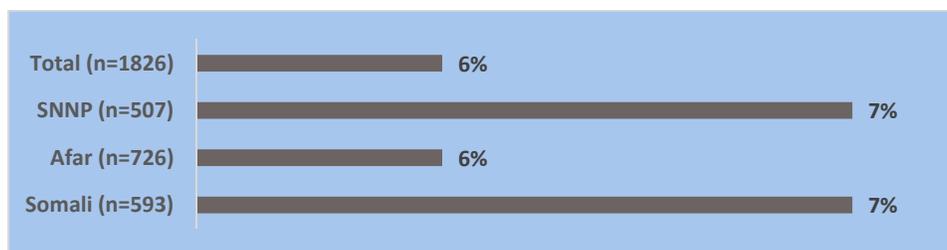
With regard to the benefit of washing hands with soap, the majority (73%) of the surveyed respondents reported that it helps to prevent diseases followed by those who reported that handwashing with soap remove germs from hands (49%).

**Table 23 Benefits of handwashing with soap reported**

Benefits of Hand Washing with Soap (multiple response)	Region		
	Somali n=498	Afar n=557	SNNP n=530
To prevent diseases	48%	77%	91%
To remove germs	48%	60%	37%
To prevent dirt from getting into mouth	25%	22%	16%
To prevent dirt from getting into food	42%	30%	5%
To smell good	60%	24%	1%

## OCCURRENCE OF DIARRHEAL DISEASE

The prevalence of diarrhea based on the two-week recall of the child's primary caretaker was assessed in this survey. A total of 1826 children under five years were counted in the three regions. Of the total children reported, 6% (CI:  $\pm 1.0$ ) had diarrhea (more than three loose stools passed in a twenty-four-hour period). The prevalence of diarrhea in the three regions was similar, but was slightly less in Afar region (figure 3).



**Figure 3 Incidence of diarrheal disease among under five children in past two weeks**

## SOURCE OF INFORMATION ON WASH ISSUES

The main source of information for the community on water, hygiene and sanitation related issues in the last 12 months before the survey period was assessed. As shown on Table 24 below, the three main sources of information on WASH were health professionals (70%), followed by friend/peers (30%) and

Voluntary Community Health promoters (25%). Health professionals were the leading source of information on WASH issues across the three regions.

**Table 24 Source of information about WASH issues in the last 12 months before the survey period**

Sources of information for WASH issues reported (multiple responses possible)	Afar n=557	Somali n=498	SNNP n=530	Average n=1585
Radio	10%	0%	1%	4% CI: ± 1.0
TV	3%	0%	1%	1% CI: ± 0.1
Health professional	72%	45%	92%	70% CI: ± 2.3
Health extension worker	8%	9%	13%	9% CI: ± 1.4
Voluntary Community Health Promoters	18%	51%	9%	25% CI: ± 2.1
Friends/peers	18%	36%	36%	30% CI: ± 2.3
Community meetings	10%	1%	1%	4% CI: ± 1.0
FBOs/Church/Mosques	17%	6%	2%	9% CI: ± 1.4
Spouse	3%	6%	0%	3% CI: ± 0.9
Never heard anything about WASH	3%	6%	0%	3% CI: ± 0.9

Respondents were also asked whether they want to hear more about WASH related issues in the future. About 90% of the surveyed respondents reported that they want to hear about it. Regarding the source of information, they would prefer to hear about WASH related issues in the future via health extension workers (50%), followed by health professionals (28%) and community meetings (6%). The preferred information sources in each region were as indicated in table 25 below.

**Table 25 Preferred source of information for WASH issues (one response only)**

Sources of information for WASH issues reported	Afar n=494	Somali n=410	SNNP n=524
Radio	11%	3%	0%
TV	7%	0%	0%
Health professional	27%	40%	18%
Health extension worker	43%	33%	71%
Voluntary community health promoters	0%	4%	2%
Friends/peers	3%	8%	0%
Community meetings	2%	11%	9%
FBOs/Church/Mosques	1%	1%	0%
Spouse	6%	0%	0%

## PER CAPITA EXPENSES

The daily per capita expenditure was also assessed. Respondents were asked how much they spent in the past week for food and non-food items, separately in monetary terms. The findings from the survey showed that the average per capita expenditure per day was 13, 11.5 and 8 ETB in Afar, Somali and SNNP regions, respectively, with more emphasis on food (vs. non-food) expenses in Afar and Somali.

**Table 26 Per capita expenditure**

Per capita daily expenses (ETB)	Region		
	Afar n=557	Somali n=498	SNNP n=530
Food items	10	8	4
Non-food items	3	3.5	4
Total	13	11.5	8

## CONCLUSIONS

The survey findings presented earlier highlighted the basic water hygiene and sanitation-related quantitative data which was collected from a total of 1585 randomly selected households from the rural Lowland WASH activity intervention woredas in Somali, Afar and SNNP regions. Based on the main findings from the preceding sections of this report, the following conclusions are made.

### **Access to drinking water from improved sources in the study regions is very low.**

A substantial proportion of the households (48%) from the three regions did not have access to drinking water from improved sources. The average time spent to fetch water from the nearest water point was found to be over 60 minutes (ranging between averages of 41 minutes in SNNP to 149 in Afar region). Moreover, the year-round access to potable water sources was limited, as the average water down time was close to three months in the study regions.

**Access to improved sanitation facilities in the study regions is low.** This is illustrated by the fact that 60% of the surveyed households did not have latrines. Existence of household latrines is widespread in SNNPR (89%), but most are without superstructure and little used, as this is the result of a rapid top-down effort by the regional government without much awareness raising and thus likely to be short-lived.

Observations made during field visits also showed that the very few available latrines constructed by the community were not well maintained and used properly. Among the few available pits observed, about 16% were not covered or were without slab. Handwashing facilities near or close to the available latrines were almost nonexistent, except in some cases and only very few of the handwashing facilities had water and soap at the nearby. These figures indicate that people in study regions have very low access to improved sanitary facilities and widely practice unsanitary methods of human waste disposal. The main reasons reported for not having a latrine were lack of finance, mobile life style, being busy with other activities, destroyed by flood, water table is near hence difficult to dig a hole, etc. and lack of labor. This shows the existence of a huge potential for positive change if people are given the required support to construct and use sanitary facilities, which are technologically suitable for mobile people.

**Utilization of sanitation facilities even when present in the study regions is low.** The existence of latrines is often due to the deployment of CLTS approaches, which trigger construction but may not provide enough awareness to sustain the use as health benefits are not emphasized enough nor fully grasped. The relatively high coverage of latrines in SNNPR is due to recent efforts by the regional government but these may have been top-down as latrines are often poor quality and use is limited. Beyond CLTS, alternative awareness raising activities are necessary to highlight the various sanitation benefits, with different messaging for different target audiences.

**The practice of handwashing at critical times in the study regions is low.** The survey data indicated that there is generally a culture of hand washing before eating but handwashing is mostly done with water only. Handwashing at other critical times was less practiced and even among those who practice, the practice of using soap was limited: 40% in Afar, 20% in Somali and SNNP. Although soap was commonly available in 81% of the surveyed households, its use was predominantly not for handwashing purposes. There was a low level of awareness and practice among surveyed households on the importance of hand washing using water and soap/ash at critical times. Thus, the findings generally revealed that the most effective way to help break the fecal-oral route of disease transmission was not widely known and practiced among the studied communities.

**There is incidence of diarrheal disease among under five children in the study area.** The prevalence of diarrhea among children under five within two weeks of the survey within the sample was 8%. This figure compares favorably with regional figures and even past figures in the and is only a snapshot taken during the dry season of a year without epidemics then. Literature shows that population groups that consistently use more water have better health than groups that use less water as this has been shown repeatedly to relate to several health outcomes, such as specific diarrheal pathogens, diarrheal morbidity, and child growth. Poor sanitation, unsafe water supply and inadequate personal hygiene are responsible for 90% of diarrhea occurrence.<sup>10</sup> The poor WASH conditions that this baseline evidenced in the survey regions potentially led to the high incidence of diarrheal disease among children under five.

**There is high community interest and opportunity for WASH promotion and education activities.** The majority of the households prefer to hear about WASH related issues from sources that are already in the existing health system and community structure, such as health extension workers, health professionals and community meetings. This presents a good opportunity to deliver WASH related messages and promotional activities through these channels available on the ground as the health extension program is considered as a means of providing a comprehensive, universal, equitable and affordable health information and services to rural communities.

Communication strategies will have to be adapted to the regional context; for example, with more focus on religious outreach and radio in Afar, on social networks in Somali and SNNPR, and on community health providers in Somali. Whenever present, health professionals remain the favorite source for health information

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<sup>10</sup> FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA MINISTRY OF HEALTH Hygiene and Sanitation Strategic Action Plan. PART II. FINAL , National Hygiene & Sanitation Strategic Action Plan for Rural, Peri-Urban & Informal Settlements in Ethiopia. 2011 – 2015 06/12/2011 Addis Ababa, Ethiopia. Main Document

## CONTRIBUTION TO KEY INDICATORS

The baseline survey results feed directly into baseline values for several of the key indicators:

**Table 27 Key Indicators**

Description	Afar (557)	Somali (498)	SNNP (530)	Aggregate (1585)
#1. Percentage of children under age of five who had diarrhea in the prior two weeks	7 % (14% and 13% EDHS <sup>11</sup> )	8 % (12% and 20% EDHS)	7 % (25% and 17% EDHS)	7 % (18% and 13% EDHS)
Percentage of population using an improved drinking water source (regardless of walking distance)	51 %	19 %	85 %	52 % (42% EDHS 2011)
#2. Percentage of population using an improved drinking water source (within 30 minutes)	29 %	3 %	47 %	26 % (35% EDH 2011)
#7. Number of days of water system down time	111 days	114 days	68 days	98 days
#9. Percentage of households using an improved sanitation facility	3 %	1 %	7 %	4 % (7% EDHS 2011)
#10. Percentage of households with soap and water at hand washing station commonly used by family members	2 %	0 %	0 %	1 %
Per capita expenses, food items	10 ETB	8 ETB	4 ETB	7 ETB
Per capita expenses, non-food	3 ETB	4 ETB	4 ETB	4 ETB
Total household income (daily per capita expenditures)*	13 ETB	12 ETB	8 ETB	11 ETB

\* Baseline for indicator #18 additional income from small scale irrigation activities

Several comments can be made on these baseline values:

**Indicator #1:** Total diarrhea incidence among children is an infrequently used indicator as it requires a household survey. Diarrhea occurrence is more regularly measured through health data such as actual deaths and treated (rehydrated) children.

The available data for Ethiopia (EDHS 2005 and 2011) shows irregularity as the time of the survey (dry or wet season) and the occurrence of epidemics impacts the results. It however shows a general decreasing trend.

**Indicator #2:** Ethiopian standards were recently upgraded to define service as less than 1 km and 20 l/person/day (GTP-2), while it used to be up to 1.5 km and 15 l/person/day; this explains why the baseline value is less than the national average measured in 2011.

<sup>11</sup> EDHS values refer successively to the 2005 and 2011 Ethiopia Demographic and Health Surveys (EDHS), implemented by the Ethiopian Central Statistical Agency, CSA. These household surveys provide national averages and some regional data.

**Indicator #7:** 100 days a year is equivalent to 30% annual downtime, which matches the little data available on rural water system downtime in Ethiopia.

**Indicator #9:** even when latrines are widely present (like in SNNPR), their poor construction and/or the lack of communication to induce behavior change reduces drastically actual and unanimous use.

**Indicator #10:** again a behavioral issue, with health benefits insufficiently understood for regular hand washing to become a reflex.

**Indicator #18:** household daily per capita expenditures will serve as baseline to assess increased expenditures that would reflect additional income coming from small-scale irrigation activities in targeted households.

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## ANNEX : DATA COLLECTION QUESTIONNAIRE

### Baseline Survey for USAID Lowland Water, Sanitation and Hygiene Activity (Lowland WASH) in Somali, Afar and SNNP (lowland areas) regions of Ethiopia

#### Baseline Household Survey Questionnaire

**Introduction**

My name is \_\_\_\_\_ and I am here to collect baseline survey data for the USAID Lowland Water, Sanitation and Hygiene Activity (Lowland WASH) that is being implemented in Somali, Afar and SNNP (lowland areas) regions by AECOM International Development in partnership with Care Ethiopia and IRC Ethiopia.

The objective of the USAID Lowland Water, Sanitation and Hygiene Activities to accelerate the expansion of improved, sustainable drinking water supply and sanitation access and to catalyze enhanced hygiene behaviors, while also expanding sustainable water use for agriculture for populations vulnerable to drought and climate change. This data collection is therefore intended to collect information that will inform the project to design and implement effective WASH related interventions in selected woredas of Somali, Afar and SNNP.

**Consent Form:**

As I explained earlier, the project would like to improve the living conditions of residents in your community. To be able to do this, however, we need your help to learn about family activities that impact health. We would like to talk with the person in your family who is responsible for taking care of children living in your house. The information we collect during this interview will be entirely confidential and will not ask for the names of none interviewed. Also, when the results of all of the interviews are combined, we will not identify specific individuals with any of the information collected. The information you provide will help AECOM International Development to develop better programs to address the water and sanitation issues faced by your family and your community. The project benefits your community as a whole and there will not be any financial or other benefits that you will receive as a result of your participation. Furthermore, there are no known risks associated with your participation in this survey. As participation in this survey is voluntary, please let us know your decision whether you want to take part in this survey as an informant or not.

(Please circle the category that describes the decision made by the respondent).

Consent granted \_\_\_\_\_

Consent refused \_\_\_\_\_

Date of Interview: \_\_\_\_\_

Code of the Interviewer: \_\_\_\_\_

#### 1: IDENTIFICATION

NO.	QUESTION	CODING CATEGORIES	SKIP																		
101	Region	Somali ..... 01 Afar ..... 02 SNNP ..... 03																			
102	Woreda	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Babile</td> <td style="width: 10%;">0101</td> <td style="width: 15%;">Adar</td> <td style="width: 10%;">0201</td> <td style="width: 10%;">Bena Tsemay</td> <td style="width: 10%;">0301</td> </tr> <tr> <td>Boh</td> <td>0102</td> <td>Berhale</td> <td>0202</td> <td>Male</td> <td>0302</td> </tr> <tr> <td>Gursum</td> <td>0103</td> <td>Bure Madaitu</td> <td>0203</td> <td>South Ari</td> <td>0303</td> </tr> </table>	Babile	0101	Adar	0201	Bena Tsemay	0301	Boh	0102	Berhale	0202	Male	0302	Gursum	0103	Bure Madaitu	0203	South Ari	0303	
Babile	0101	Adar	0201	Bena Tsemay	0301																
Boh	0102	Berhale	0202	Male	0302																
Gursum	0103	Bure Madaitu	0203	South Ari	0303																

NO.	QUESTION	CODING CATAGORIES						SKIP
		Hareshin	0104	Dallol	0204			
		Kebribeyah	0105	Dubti	0205			
		Kebridehar	0106	Erebt	0206			
		Degahabor	0107	Gewane	0207			
		Shilabo	0108	Kanaba	0208			
		Warder	0109	Mille	0209			
		Yaole	0110	Teru	0210			
103	Code of Interviewer							
104	Date of Interviewer	DD/MM/YY ____/____/____						
105	Respondent Code							

**SECTION 2: SOCIO-DEMOGRAPHIC CHARACTERISTICS OF RESPONDENTS**

NO.	QUESTION	CODING CATAGORIES				SKIP
201	Sex of the respondent	Female	.....	1		
		Male	.....	2		
202	Respondents position in the household?	Wife of HH head		1		
		Husband of HH head		2		
		Son/Daughter of the HH Head		3		
		Other (specify).....		98		
203	How old are you?	..... ( In completed years)				
204	Did you ever attend school?	Yes	.....	1		If No. go to Q 206
		NO	.....	2		
205	If yes, what was the highest level of education that you completed?	Primary Education (1-4)		1		
		Primary Education (5-8)		2		
		Secondary Education(9-12)		3		
		College/University		4		
206	Current marital status of the respondent	Single		1		
		Married		2		
		Living together/conceptual		3		
		Divorced		4		
		Widowed/Widower		5		
207	Religion of the respondent	Muslim		1		
		Orthodox		2		
		Protestant		3		
		Catholic		4		
		Traditional		5		
		Other (specify).....		98		
208	How many people live permanently in this household?	_____ (Write the number )				
209	Is there a child who is under 5 years of age in this household?	Yes	.....	1		If No. go to Q # .....301
		No	.....	2		
210	If yes, how many under five children are there in the household?	One		1		
		Two		2		

NO.	QUESTION	CODING CATAGORIES		SKIP
		Three and more	3	

SECTION 3: WATER SUPPLY

NO.	QUESTION	CODING CATAGORIES		SKIP
301	What is (currently) the main source of drinking water for your family?	Piped Water Into Dwelling	1	If any of the options from 8-14 are selected, skip to 306
		Piped Water From A Neighbor	2	
		Piped Water Into Yard/Plot	3	
		Public Tap/Standpipe	4	
		Protected Spring with on-spot tap	5	
		Protected Dug Well with hand pump	6	
		Water from Protected Spring	7	
		Unprotected Dug Well	8	
		Water from Unprotected Spring	9	
		Rainwater	10	
		Tanker Truck	11	
		Cart with Small Tank	12	
		Surface water (river/dam/lake/ponds/stream/canal/Irrigation Channel)	13	
		Bottled water	14	
Other(specify)	98			
302	If the respondents answer is any of the options from 1-7 (improved sources), ask the following Do you get water from your main source throughout the year? <b>(Note to enumerator:</b> Throughout the year = no interruption for 365 days)	Yes	1	If yes, Skip to 306
		No	2	
303	In the last two weeks, for how many days was water not available from your main source?	(Write number of days) _____ Days		
304	In the past one year, for how many days has the water supply system failed to provide service? <b>(Note to enumerator:</b> Help the respondent to remember the number of days water was not available from the main source during the past one year prior to the survey)	(Write number of days) _____ Days		
305	What other source of drinking water do you use when the main source does not have sufficient water or dried? (Seasonal or intermittent)	Piped Water Into Dwelling	1	
		Piped Water From A Neighbor	2	
		Piped Water Into Yard/Plot	3	
		Public Tap/Standpipe	4	
		Protected Spring with on-spot tap	5	
		Protected Dug Well with hand pump	6	
		Water From Protected Spring	7	
		Unprotected Dug Well	8	
		Water From Unprotected Spring	9	
		Rainwater	10	
		Tanker Truck	11	
		Cart with Small Tank	12	
		Surface	13	

NO.	QUESTION	CODING CATAGORIES			SKIP
		water(river/dam/lake/ponds/stream/canal/Irrigation Channel)			
		Bottled water	14		
		Other(specify)	98		
306	Who is responsible for providing water for drinking purpose at your main source?	Does not know	1		
		Government authority	2		
		Water committee	3		
		NGO	4		
		Private operator/Vendor	5		
		Household wells	6		
		Rainwater	7		
		Surface water	8		
		Other(specify)	98		
307	How many people spent the night yesterday in your household ?	_____ people			
308	How long does it take to go and come back while fetching water from your main source?	Minutes_____			
309	Now I am going to ask you how many times you fetched water in the last 24 hours and the type of container you used to fetch water.	Type Of Container Used	Number Of Times Water Fetched		
		10 litter Jerry can			
		20 liter Jerry Can			
		25 liter Jerry can			
		20 liter Bucket			
		200 liter Barrel			
		Clay pot( 25 liters)			
310	Observe the container and estimate the amount of water in liters fetched per day and record	_____ ( liters)			
311	Do you treat water in any way to make it safe for drinking?	Yes	.....	1	→ If No Go to Q 401
		No	.....	2	
312	If yes, what do you usually do to the water to make it safer to drink?	Boil	.....	1	
		Add bleach/chlorine	.....	2	
		Stain through a cloth	.....	3	
		Use water filter (ceramic/sand/composite)	.....	4	
		let it stand and settle	.....	5	
		Other (specify).....		98	

**SECTION 4: KNOWLEDGE, ATTITUDE AND PRACTICE ON HANDWASHING AND CLEANING**

NO.	QUESTION	CODING CATAGORIES			SKIP
401	Is it common to use soap in the household	Yes ... 1			→ If No Go to Q 403
		No ... 2			
402	For what purpose do you commonly use soap?	Washing clothes	1		
		Washing my body	2		
		Washing my children	3		
		Washing child's bottoms	4		
		Washing my child's hands	5		

NO.	QUESTION	CODING CATAGORIES		SKIP
		Washing my hands		
		Other(specify)	98	
403	What do you commonly use to WASH your hands?	Soap Plus water		
		Ash plus water		
		Mud/sand plus water		
		Only water		
		Other(specify)		
404	Do you have a hand Washing station in your house?	1. Yes		If no, Go to 407
		2. No		
405	If yes, who in the household uses the handwashing station?	1. Adults only		
		2. Adults and Children older than five years old only		
		3. All members of the household		
406	<b>Structured observation:</b> Observe the following hand Washing related situation and record all condition that apply	<b>Yes = 1 No = 0</b>		
		Check Availability of soap anywhere in the home (compound)		
		<b>Ask, Can you show me your soap?</b> <b>'Yes' if respondent produced the soap in less than 1 minute, otherwise check 'No'</b>		
		Check presence of a designated hand Washing station		
		Check presence of hand Washing station plus water at the time of the survey		
		Check presence of hand Washing station plus water plus soap (other hand cleansing agent) at the time of the survey		
407	What are the benefits of Washing hands with Soap/Ash? (Multiple choice, Do not read answers, record all answers provided.)	To prevent diarrhea		
		To prevent other diseases		
		To remove germs		
		To prevent dirt into getting into mouth		
		To prevent dirt into getting into food		
		To smell good		
		Other(specify)		

408	When do you usually WASH your hands with soap/ash and water? (MORE THAN ONE ANSWER IS POSSIBLE DO NOT READ THE ANSWERS)	After defecation	1	
		Before eating	2	
		After cleaning a child bottom/Washing a pad/potty	3	
		After cleaning latrine	4	
		Before food preparation	5	
		Before feeding a child	6	
		Other(specify)	98	

#### SECTION 5: KNOWLEDGE, ATTITUDE AND PRACTICE RELATED TO SANITATION

NO.	QUESTION	CODING CATAGORIES		SKIP
501	Do you have a latrine in your home/backyard?	Yes ... 1		→ If No Go to 507....
		No ... 2		
502	If yes, to Q 501 above, what kind of latrine do you have? <b>(Ask the respondent to show you the latrine, observe the kind of toilet facility the household use and select one</b>	Ventilated Improved pit latrine	1	
		Pit latrine with slab	2	
		Pit Latrin With Floor mud slab	3	
		Pit latrine without slab/open pit	4	
		Composting toilet	5	
		Hanging toilet/hanging latrine	6	

NO.	QUESTION	CODING CATAGORIES		SKIP
	<i>from the options given?</i>	Other (specify).....	98	
503	If yes for question 501 above, observe the situation of the latrine and what it looks like? And circle all that currently apply among the list given		Yes NO	
		With private wall	1 0	
		With roof	1 0	
		With Floor mud slab	1 0	
		With Floor concrete slab	1 0	
		With door /safe to close	1 0	
		With Safety (Secure /Unsecure	1 0	
		With NO Smell inside and outside	1 0	
		With NO Visible feces inside	1 0	
		With hand Washing facility but only water	1 0	
		With hand Washing facility with water and soap/ash	1 0	
		Other (specify)		98
504	If yes, what were the top three reasons for building the facility? (Multiple choice, Do not read answers, record all answers provided.)	Status/pride	1	
		comfort	2	
		Convenience	3	
		Privacy	4	
		Avoid sharing with others	5	
		security	6	
		Disease prevention	7	
		Shame of environmental contamination	8	
		Other(specify)		98
505	If yes to question 501 above who in the household uses the latrine?	1. Adults only 2. Adults and Children older than five years old only 3. All members of the household		
506	If yes to question 501 above, do you share your toilet facility with your neighbors?	1. Yes 2. No		Go to 509
507	If No to Q 501 above, where do you dispose of your feces/defecate?	/shared/communal/Neighborhoods latrine	1	
		Lakeshore/river bank etc	2	
		bushes/open field	3	
		Other(specify)		98
508	If no to Q 501 above what was your main reason for not having a latrine?	No adequate space available	1	
		Lack of construction material	2	
		Lack of labor	3	
		lack of finance	4	
		I don't know how to do it	5	
		have not heard about it	6	
		I don't know	7	
		Others ( Specify)		98
509	Where do children (aged under 5 years) feces disposed of/ defecate?	Disposed into the latrine	1	
		Elsewhere (bush/backyard/river etc)	2	
		Other (specify).....		98
<b>Occurrence of Diarrhea</b>				
510	Has anyone in this family been ill with diarrhea in the last two weeks? Please define diarrhea as passage of three or more loose	Yes ... 1 No ... 2		→ If No Go to Q 601....

NO.	QUESTION	CODING CATAGORIES		SKIP
	or liquid stools per day (or more frequent passage than is normal for the individual			
511	If yes for Q 510 above, who was it?  (Multiple choice, Do not read answers, record all answers provided.)	Child/children < 5 years' old	1	
		Above > 5 years old child/adult	2	

**SECTION 6: SOURCE OF INFORMATION ON HEALTH AND WASH ISSUES**

NO.	QUESTION	CODING CATAGORIES		SKIP
601	What are your main sources of information for receiving health related messages and information?  (Probe: all source of information. Multiple response)	Radio	1	
		TV	2	
		Newspapers	3	
		Health professional	4	
		Health extension workers	5	
		Voluntary community health promoters	6	
		Friends/peers	7	
		Community meetings	8	
		FBOs/church/mosques	9	
		Spouse	10	
		Other (specify)	98	
602	In the past 12 months, from whom did you mostly get information about water, hygiene and sanitation issues? (Multiple answer. Do not prompt but make sure to get all the answer)		Yes	No
		Radio	1	0
		TV	1	0
		Newspapers	1	0
		Health professional	1	0
		Health extension workers	1	0
		Voluntary community health promoters	1	0
		Friends/peers	1	0
		Community meetings	1	0
		FBOs/church/mosques	1	0
		Spouse	1	0
		I never heard anything about WASH		
		Other (specify)		98
603	Do you want to know more in the future about Water, Sanitation and Hygiene issues?	Yes	.....	1
		No	.....	2
				→ If No Go to Q 701
604	If yes to Q603 above, can you please specify your preferred source of information?	Radio	1	
		TV	2	
		Newspapers	3	
		Health professional	4	
		Health extension workers	5	
		Voluntary community health promoters	6	
		Friends/peers	7	
		Community meetings	8	

NO.	QUESTION	CODING CATAGORIES			SKIP
		FBOs/church/mosques	9		
		Spouse	10		
		Other (specify)	98		

**SECTION 7: INCOME AND PER CAPITAL EXPENDITURE RELATED QUESTIONS**

701	Did you visit the local market last week?	1. Yes 2. No	If no , end your questions
702	How many times did you visit the market in the last one week	_____times	
703	How much did you spend on average in each visit to the market?	_____birr	
704	How much did you spend last week on food items ( give examples of food items commonly available in the local market and study area)	_____on food items	
704	How much did you spend last week on non-food items (give examples of nonfood items common in the study areas)	_____on non-food items	

END \_ Thank you!!

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