Baseline Survey Findings

Ethiopia West Arsi VHV
December 7, 2015

BACKGROUND

In October 2015 Lifewater International started a new program in West Arsi Zone, Ethiopia. Over three years Lifewater will target an estimated 45,000 people in 8 kebeles in Kokosa and Nensebo Districts with safe water, sanitation, and hygiene. Lifewater will use its Vision of a Healthy Village strategy to reach households, communities, and primary schools with improved WASH access and behavior change. In addition to extensive behavior change programming at multiple levels, Lifewater will complete the following hardware:

Table 1: Planned Outputs

Outputs	Program Year 1	2	3	Total
Water				
Spring Protection	2	3	3	**8**
Washing Basins	2	3	3	**8**
Cattle Troughs	0	1	1	**2**
Spring Rehabs	2	3	3	**8**
Hand Dug Wells	16	22	18	**56**
Hand Dug Well Rehabs	2	3	5	**10**
Sanitation				
School VIP Latrine Blocks	6	5	5	**16**
Demonstration Latrines	10	10	10	**30**

METHODS

For this analysis, the following data were used:

- ***Household survey*** conducted in November 2015: Lifewater staff surveyed 426 households, capturing data electronically through mobile phones and uploading the data into the AKVO system. Sample households were selected from all 8 target kebeles, with the number of samples from each kebele determined using probability proportional to size. Villages were selected randomly prior to implementation, and households were selected randomly at the time of the survey. There were 192 households sampled in Kokosa and 234 in Nensebo. Lifewater HQ analyzed the survey data using Excel and a consultant in Ethiopia analyzed the focus group discussion (FGD) data. Lifewater HQ drafted the baseline report and received feedback and contextual information from West Arsi field staff.
- ***Focus group discussions*** conducted in November 2015: Lifewater contracted with Zenawos Research & Development Consultants PLC to perform key informant interviews and focus group discussions. Zenawos conducted interviews with woreda water, health, and education offices as well as school principals, and completed 16 focus group discussions (FGDs): 2 groups of men, 2 of women, 2 of male students and 2 of female students in each of the districts.

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Zenawos performed the qualitative data analysis and provided Lifewater with a report. Lifewater has incorporated information from the FGDs into this report.

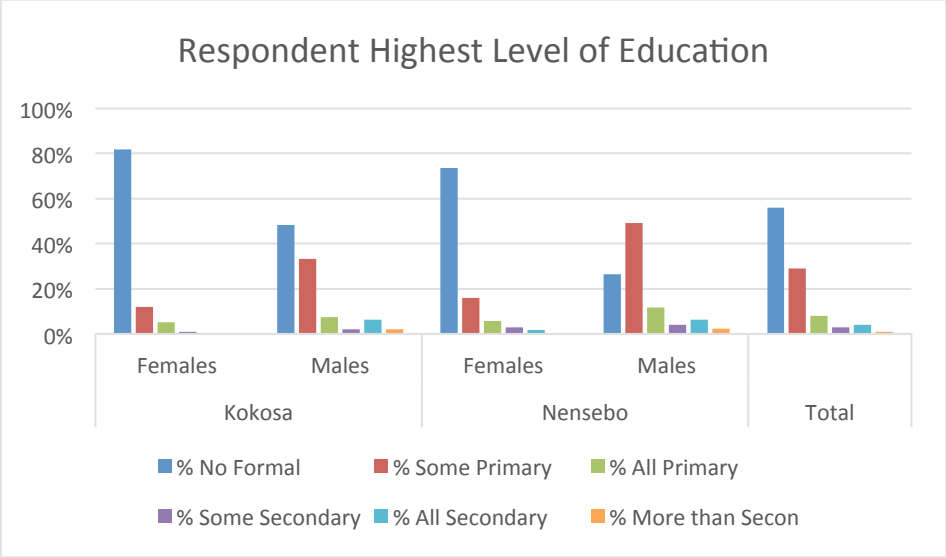
- ***School survey*** conducted in November 2015: Lifewater staff surveyed all 18 primary schools in target kebeles, 8 in Kokosa and 10 in Nensebo. Lifewater has produced a separate report with data about each target school.

RESULTS

Respondent Characteristics and Household Age Structure

- *Respondents:* The average age of respondents was 38 years. In Kokosa, 52% of respondents were female and in Nensebo 45% were female. The majority of respondents (56%) have never had any formal education. However, there is variation by district and gender. In both districts, females were less likely to have received education than males. In Kokosa, 82% of female respondents had never had formal education compared to 48% of males. In Nensebo, 74% of female respondents had never had formal education compared to 27% of males. In Kokosa, 5% of female respondents and 8% of male respondents had completed primary school, and in Nensebo 6% of female respondents and 12% of male respondents had finished primary school. Overall, 3% of respondents had some secondary school and 4% had completed secondary. See Figure 1 below for more details.

Figure 1: Respondent Education Level



- *Family structure:* The average respondent family size is 7.1 in Kokosa and 6.4 in Nensebo, with 6.7 overall. Households have an average of 1.2 children under 5 years old, 2.9 youth ages 5-17, and 2.6 adults 18 and older. Overall, 18% of the population is under 5 years old, 61% is under 18, and 39% is over 18. See Figure 2 below.

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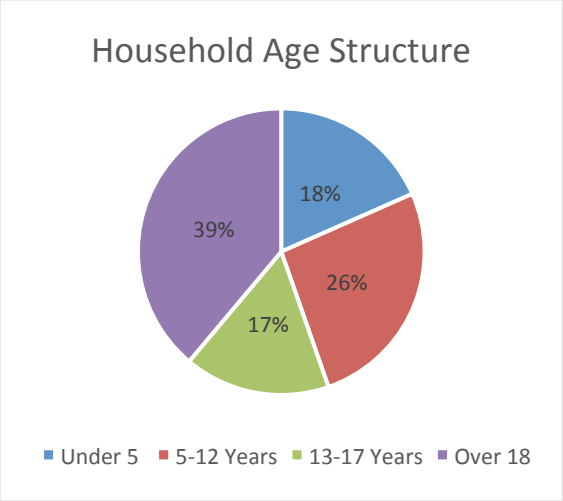
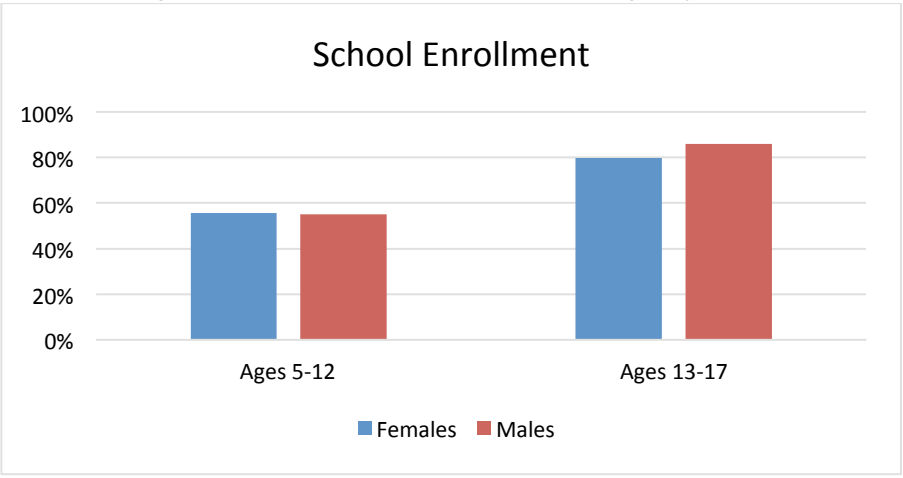
Figure 2: Household Breakdown by Age



Education and Economic Activity

- *Enrollment:* Male children are more likely than girls to be enrolled in school, and enrollment increases with age. At the time of the survey, 55% of boys and 56% of girls ages 5-12 were enrolled in school and 86% of boys and 80% of girls ages 13-17 were enrolled in school. (Figure 2 below.) In Kokosa there was not much variation between female and male enrollment, but in Nensebo 90% of males ages 13-17 were enrolled compared to 77% of females. When asked why their children were not enrolled in school, the most common reason was that the child supports the family with labor (43% in Kokosa, 78% in Nensebo, 61% overall). In Kokosa, 18% said there were not enough funds, 18% said the school is too far away, and 10% said illness. In Nensebo, 9% said the school is too far away.

Figure 2: School Enrollment between the ages of 5-17



- *Female economic activity:* 74% of women are engaged in some form of economic activity. The most common forms of female economic activity are livestock/animals (51%), agriculture/crops (42%), and small trading (20%).

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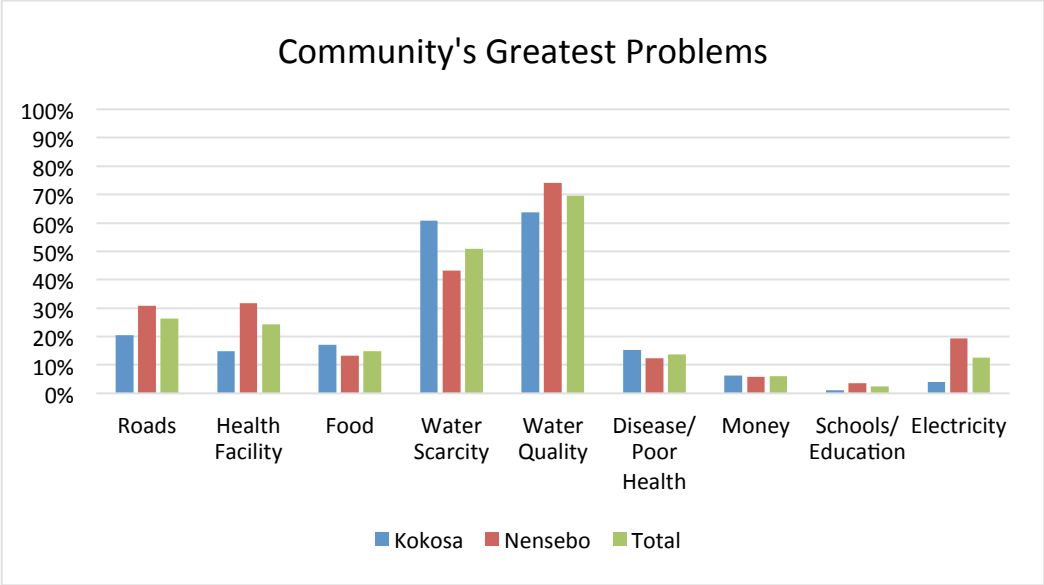
- *Household wealth:* When asked how their household wealth had changed since last year, 55% said it increased, 29% said it decreased, and 16% said it stayed the same. Those in Kokosa were slightly more positive about their wealth since last year, with 58% saying it increased compared to 52% in Nensebo.

Community Resources and Challenges

- *Greatest resources:* When asked to name the greatest resources of the community, nearly all respondents said livestock/animals (79%), agriculture/crops (67%), or land (52%). Livestock/animals was listed more often in Kokosa than in Nensebo (99% compared to 64%), and those in Nensebo were more likely to name agriculture/crops (80% compared to 51% in Kokosa).
- *Greatest problems:* When asked about the community's greatest problems, the most common response was water quality (69%), followed by water scarcity (51%), roads (26%), and health facilities (24%). Interestingly, water scarcity was listed most by Kokosa residents (61%), while water quality was listed most frequently by Nensebo residents (74%). See Figure 3 for more information.

Figure 3: Greatest Problems in the Community



- *Most significant change in past year:* When asked about the most significant change in the past year, the majority of respondents reported that there was no change that happened (34%). The second most common response was that there was a good yield from farm land, livestock, and forests (23%). The third most common response was that livestock was in good condition (12%).

Health and Diarrhea

- *Child health:* When asked how the health of their children has changed in the past year, respondents were generally positive with 57% saying it improved, 14% saying it declined, and 29% saying it stayed the same. The was no variation between districts. In FGDs, participants talked about cough, diarrhea, and eye infections as the dominant illnesses among their peers (in the case of students) or their children (in the women FGDs). Cough was attributed by participants to dust during the dry season, and diarrhea to poor sanitation and hygiene. Survey

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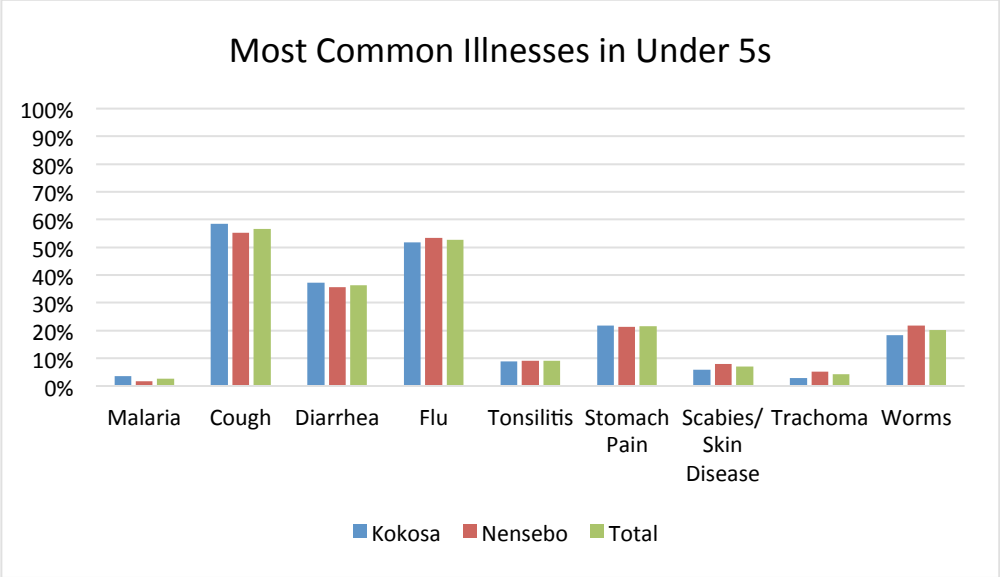
respondents said that the most common illnesses in children under 5 were cough (57%), flu (53%), diarrhea (36%), stomach pain (22%), and worms (20%). Five of the nine most common illnesses were WASH related illnesses. There was no significant variation between districts. For more information, see Figure 4 below.

Figure 4: Most Common Illnesses in Under 5s (Perceived)



- *Incidence of diarrhea in children*: According to survey responses, overall, 12% of children under 5 years old had diarrhea in the 7 days prior to the survey. Kokosa was slightly higher at 14%, while Nensebo was 10%.
- *Careseeking and treatment:* There was a noticeable difference between districts in appropriate home treatment of diarrhea. Appropriate home treatment includes use of Oral Rehydration Solution (ORS) or Sugar Salt Solution (SSS), and offering the child the same or more to drink and eat (limiting fluid and food intake has a negative influence on recovery). When their child had diarrhea, 52% of respondents offered the child the same or more to eat and drink. However, 42% offered less food than normal and 36% offered less fluid than normal. Those in Kokosa were less likely to offer the same or more fluid and food (40% compared to 64% in Nensebo). The common types of fluids offered were water (56%) and breast milk (54%). Overall, 27% offered ORS (30% in Nensebo and 24% in Kokosa) and 19% offered SSS (13% Nensebo and 24% in Kokosa). This variation might indicate that ORS packets are more readily available in Nensebo than they are in Kokosa, or it could be due to a difference in knowledge.
- *Diarrhea prevention:* There is very low knowledge about ways to prevent diarrhea. When asked how to prevent diarrhea, 25% overall said they did not know. Just 42% said using a latrine, 39% said keeping their area clean, 38% said drinking safe water, 28% said washing utensils, and 27% said washing hands. There was slight variation between districts, with those in Nensebo more likely to say using a latrine (46% compared to 39% in Kokosa) and drinking safe water (41% compared to 35%). However, those in Kokosa were more likely to say handwashing (29% compared to 26% in Nensebo). For more details, see Figure 5 below.

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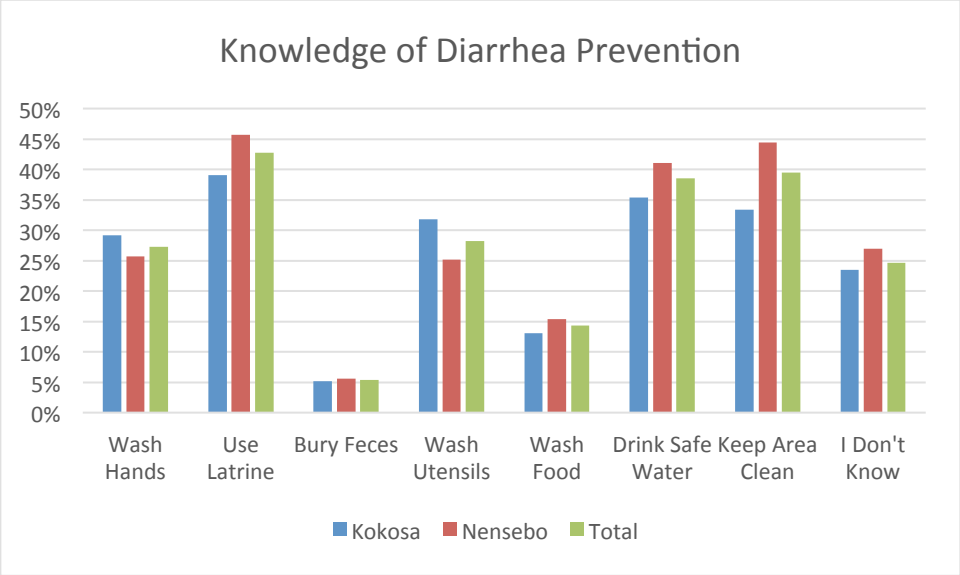
Figure 5: Knowledge of Ways to Prevent Diarrhea



- *Respondent health:* When asked how their health has changed in the past year, 50% said it improved, 23% said declined, and 27% said it stayed the same. Those in Nensebo were more likely to say it declined (26% compared to 19% in Kokosa). On average, respondents missed 4.1 days of work because of illness in the 2 weeks prior to the survey.
- *Medical expenses:* 83% of respondents reported that their household spent money on medical expenses in the 4 weeks prior to the survey. The average amount spent was 474 birr ($22.47 USD) in Kokosa and 258 birr ($12.21 USD) in Nensebo. Overall, the average amount was 361 birr ($17.12 USD). Slightly fewer people in Kokosa had medical expenses (81% compared to 85% in Nensebo), but those in Kokosa tended to pay more.

Water Usage

- *Daily water usage:* The average household uses 2.23 jerry cans per day, which means 44.5 liters per household. Considering average household size, this is 6.6 liters per person per day. This is less than half of the service standard goal of 15 liters/person/day for rural Ethiopia as outlined in the Government of Ethiopia's Universal Access Plan II.[1] Water usage is slightly higher in Nensebo compared to Kokosa (7.1 liters per person per day compared to 6.1 liters in Kokosa). See Figure 6 below for a comparison between districts and with the government standard.

[1] Ministry of Water and Energy, "Universal Access Plan". http://www.mowr.gov.et/index.php?pagenum=2.4

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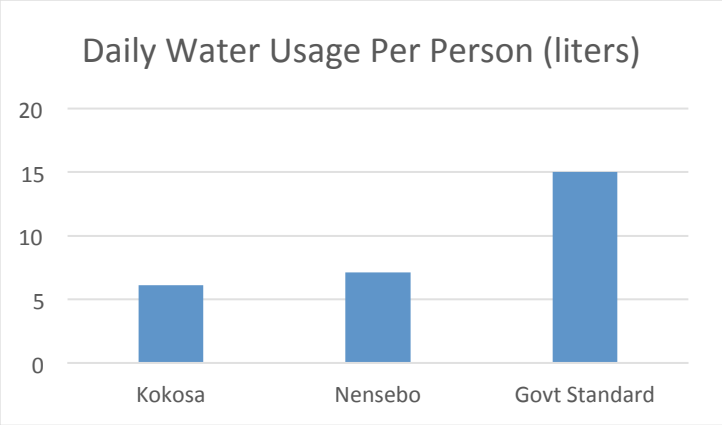
Figure 6: Daily Water Usage



- *Source of income:* Just 4% of respondents use their water source for income generation.
- *Water fetching:* Adult women are the most likely to fetch water for their families. 85% of respondents said adult women fetch the water, 67% said female children, 33% said male children, and 9% said adult males. Female and male children are more likely to fetch water in Kokosa than in Nensebo (73% compared to 62% of female children, 36% compared to 31% of male children). In FGDs, participants reported making the trip to the water point 2-4 times per day, based on the family size.
- *Yearly water access trends*: Overall, trends in water usage vary little between the rainy season and the dry season. The majority of respondents reported using an unprotected water source during both the dry and the rainy seasons. 72% of respondents reported using an unprotected source in the rainy season, whereas 68% were using an unprotected source in the dry season. Noticeable differences between water access during the dry and rainy seasons are the average distance to the source and the average queue time at the source. During the dry season, respondents have to travel an average of 400 meters farther and have to queue for an average of 40 minutes longer than during the rainy season.

Dry Season Water Sources

- *Dry season sources:* In the dry season, 32% of respondents reported using a safe water source for their drinking water (28% in Kokosa and 36% in Nensebo). The most common sources of water in the dry season were unprotected springs (38%), protected springs (28%), and surface water (17%). In Nensebo, 35% used a protected spring. In Kokosa, 7% used a protected hand dug well while 17% use an unprotected hand dug well. Only one respondent reported using a borehole and only two respondents reported using rainwater. 97% of respondents used a public source. See Figure 7 below.

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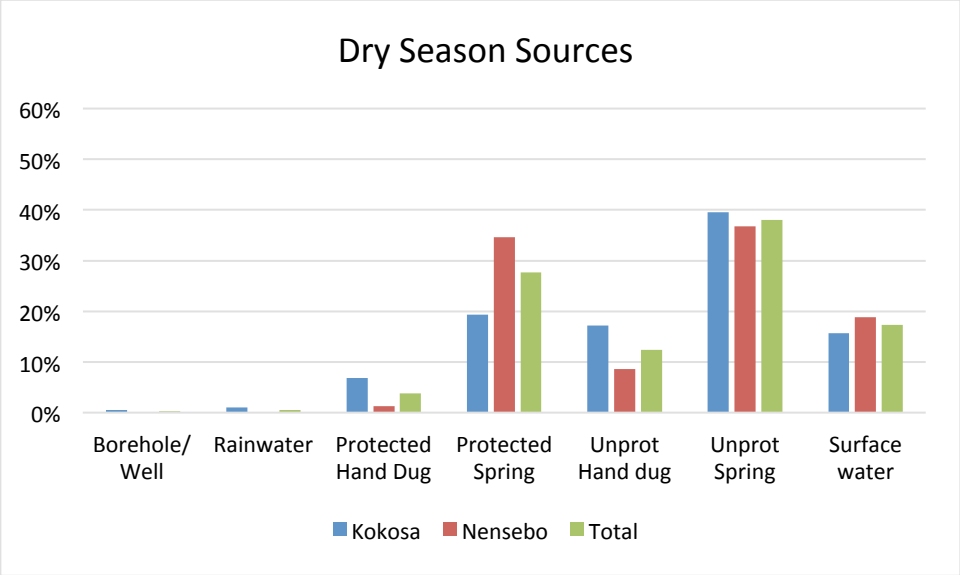
Figure 7: Dry Season Drinking Water Sources

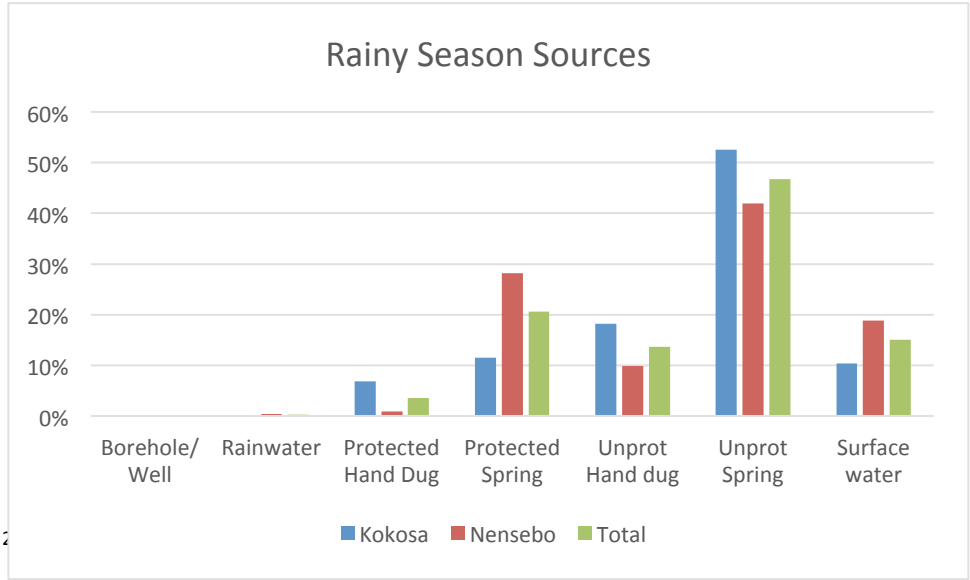


- *Distance and time spent:* The average household reported traveling 1,034 meters to the dry-season water source (one way), spending 22 minutes getting there, and waiting for 49 minutes in the queue (total journey time of 93 minutes). The median distance was 500 meters. Those in Kokosa reported a longer journey- they traveled an average of 1,223 meters which took 29 minutes, and they queued for 57 minutes. The longest response provided was someone in Nensebo who traveled 8,000 meters (5 miles) to a protected spring, spent 1 hour getting there, and waited 40 minutes in the queue.

Rainy Season Water Sources

- *Rainy season sources:* In the rainy season, 24% of respondents reported using a safe water source for their drinking water (18% in Kokosa and 29% in Nensebo). The most common sources of water in the rainy season were unprotected springs (47%), protected springs (21%), surface water (15%), and unprotected hand dug wells (14%). No one collected rainwater or used a borehole. 95% of respondents used a public source. See Figure 8 below.

Figure 8: Rainy Season Drinking Water Sources



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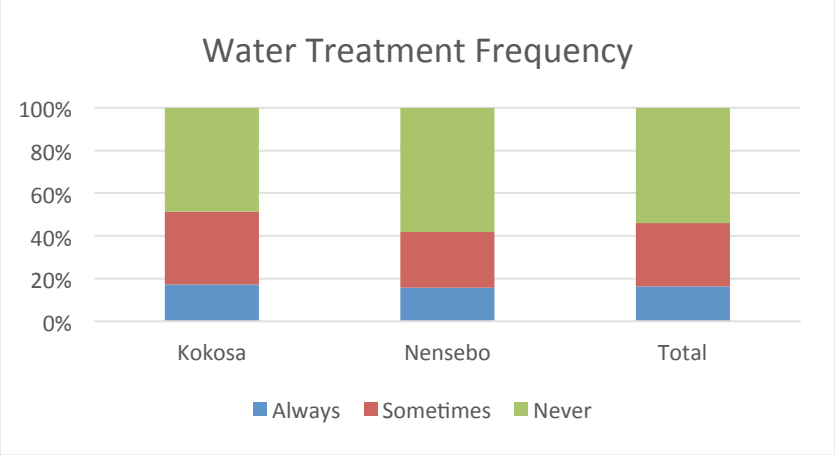
- *Distance and time spent:* The average household reported traveling 638 meters to the rainy season water source (one way), spending 15 minutes getting there, and waiting for 10 minutes in the queue (total journey time of 40 minutes). The median distance was 300 meters. The longest response provided was someone in Kokosa who traveled 8,000 meters (5 miles) to a protected spring, spent 1 hour getting there, and waited 1 hour in the queue.

Water Storage and Treatment

- *Treatment frequency:* 16% of households reported always treating their drinking water, 30% reported sometimes treating it, and 54% reported never treating it. In Nensebo 58% said they never treat their water compared to 49% in Kokosa. The main reason given for not treating water is that it is already safe and there is no need (response provided by 39% of all households, 47% in Nensebo and 28% in Kokosa). However, just 24% of households reported using a safe water source in the rainy season and 32% in the dry season. Those in Kokosa were more likely to say they don't know how to treat their water (15% compared to 6% in Nensebo and 10% overall). See Figure 9 below for a breakdown by district.

Figure 9: Frequency of Water Treatment



- *Treatment methods:* The most common water treatment method was straining through a cloth (54%), followed by using a ceramic filter (38%). Just 13% boiled their water and just 2% used a chlorine treatment method. Straining does not effectively treat unsafe water unless followed by boiling.
- *Water storage (observed):* Enumerators were able to observe water storage containers for 76% of households surveyed (325 containers total). Overall, 85% were covered, 90% had narrow mouths, and 44% were clean. 43% of those observed met all 3 requirements (covered, clean, and narrow-mouthed) for safe water storage.

Water Source Management

- *Management and performance:* Very few people use a source that is managed by a committee. In Kokosa 8% said their source has a committee and in Nensebo 5% (6% overall). Of those who said their source had a committee, 41% said the committee is not active (75% in Nensebo and 13% in Kokosa). In Kokosa, 47% said the committee's performance is good while 27% said it is poor. The primary reasons for a good performance rating were that the source is kept clean (86%), fees are collected (57%) and there is no conflict at the source (57%). The primary reasons for a poor rating were fees not collected (100%), poor maintenance/repair (100%), and fees not

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kept safe (75%). In Nensebo, 0% said the performance is good and 17% said it is poor. The primary reason for a poor performance rating was that fees are not collected (100%). However, since so few sources in either district are managed by a committee, the response rate to these questions is very low and should not be considered representative of the population.

- Payment: Just 1% of respondents reported paying for their drinking water. The 4 people who paid were in Kokosa and they paid an average of 19 birr per month ($0.90 USD).

Source Functionality

- *Functionality:* 8% of respondents said their primary drinking water source broke down at some point in the past year. Overall, 57% of those whose source broke said the source was broken for longer than a month. This was higher in Nensebo at 71% compared to Kokosa at 44%. In Kokosa, 50% said the source was broken for less than a month.
- *Repairs:* When broken, 74% said it was repaired by government technicians where 10% said no one repaired the source, and 13% said it was repaired by the community.

Compound Cleanliness

- *Trash disposal:* The most common method of trash disposal was disposing of trash in garden/compost/giving to animals (82%) followed by scattering/littering on the ground (19%). Using a rubbish pit or pail and was listed by 15% of respondents and burning their trash was listed by 4% of respondents. Those in Kokosa were more likely to scatter/litter (28% compared to 19% in Nensebo).
- *Feces/rubbish around compound:* Overall, 39% of households had feces and/or rubbish visible around the compound. This was higher in Nensebo, where 45% of households had feces and/or rubbish visible (compared to 32% in Kokosa). As might be expected, this was more common among households that didn't use a latrine.
- *Child feces:* Overall, 47% of respondents said they put child feces in the latrine, 30% said their children practice open defecation, and 15% said all children use the latrine.

Latrines

- *Latrine observation:* Of all households surveyed (not just those observed), 6% had an improved latrine and 1% had an improved latrine "with dignity" that they showed to enumerators. Enumerators observed a total of 186 latrines. Just 14% of those observed would be considered an improved latrine (pit latrine, above-ground vault, or pour/flush to an enclosed pit, with an unbroken slab). This was slightly higher in Nensebo at 17% compared to 11% in Kokosa. Just 2% would be considered latrines that are "improved with dignity" (an improved latrine that also has whole walls, a whole roof, and complete privacy). 87% of observed latrines were pit latrines, 6% were above-ground vaults, and 5% were pour/flush to an enclosed tank or pit. Of those that were pour/flush, 15% had water available. 31% of latrines had a lid/cover for the pit and 70% had evidence of regular use. As far as maintenance, 7% were clean with no smell and no flies. See Figure 10 below for a summary of latrine use and whether households had a latrine that was improved or improved with dignity.

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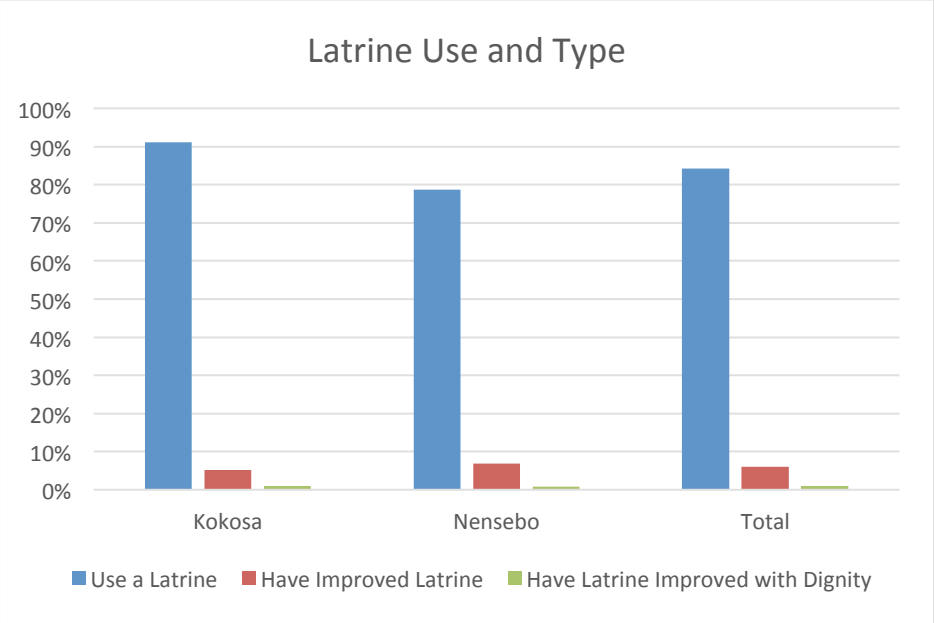
Figure 10: Latrine Use and Type Owned



- *Latrine use:* Overall, 84% of respondents said that they use a latrine for defecation and 16% said that they practice open defecation. Those in Nensebo are more likely to use a latrine (91% compared to 79% in Kokosa). Of those who use a latrine, 76% said they use it always. When asked who in the household uses the latrine, 92% said women, 87% said men, 49% said the elderly, and 41% said children.
- *Ownership:* Overall, 6% said they share their latrine with other households. Of those who share, the average number of households using the latrine is 5.8. Among those who do not use a latrine, the reasons provided were that they had one but it is no longer usable (63%), they are too expensive to construct (16%), and there is no need (13%). Those in Kokosa were more likely to say there is no need (29%) or they are too expensive to build (29%).
- *Difficulty to build:* Overall, 25% said it is very easy to build a latrine, 22% said easy, 32% said moderately difficult, and 21% said very difficult. These answers correlated with respondent latrine use or open defecation practice. Non-latrine users were less likely to say it is very easy to build a latrine than latrine-users (10% compared to 29% in Nensebo and 12% compared to 27% in Kokosa).
- *Satisfaction:* When asked how satisfied respondents are with their place of defecation (both latrine-users and non-latrine users), overall 35% said very satisfied, 39% said satisfied, 21% said unsatisfied, and 5% said very unsatisfied. However, there was great variation between latrine-users and non-latrine users. In Kokosa, 100% of non-latrine users said they were unsatisfied or very unsatisfied, and in Nensebo it was 92% of non-latrine users. See Figure 11 below for satisfaction levels by defecation location.

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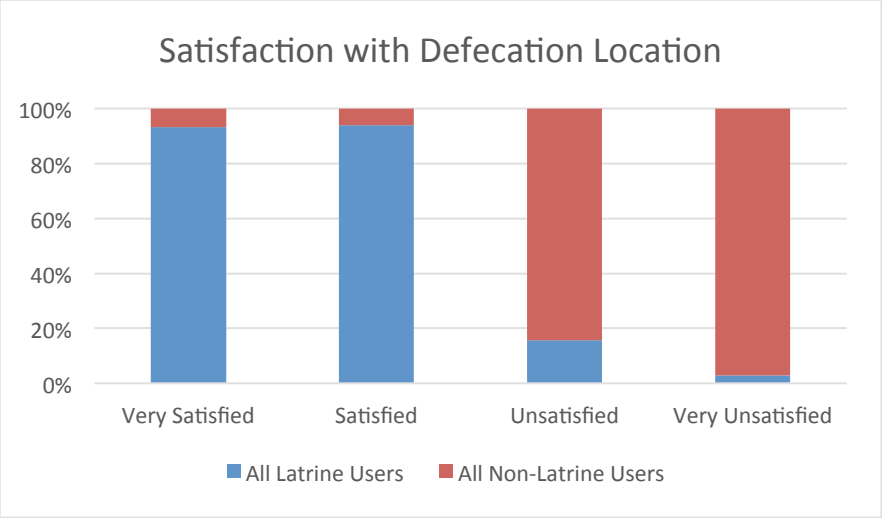
Figure 11: Defecation Location Satisfaction



- *Latrine benefits:* The most commonly named benefits of using a latrine were cleanliness (87%), health/disease prevention (70%), and comfort (34%). Latrine-users were more likely to say that health/disease prevention is a benefit (72% of latrine-users compared to 57% of non-latrine users), while non-latrine users were more likely to say a benefit is safety (15% of non-latrine and 5% of latrine).
- *Disadvantages of defecation location:* When asked the disadvantages of their current defecation location, the most common responses for both latrine-users and non-latrine users were bad smell (50%) and attracts flies (41%). These responses were about twice as common among those who do not use a latrine compared to latrine-users (85% compared to 43% for bad smell and 84% compared to 33% for attracts flies). Of latrine-users, 50% said that there are no disadvantages compared to just 7% of non-latrine users.

Hygiene

- *Handwashing station observation:* Enumerators observed a total of 188 handwashing stations. Of those observed, 44% had evidence of regular use and 62% did not reuse water. For supplies, 66% had water available, but just 4% had water and soap/ash. Just 1% of handwashing devices did not reuse water and had soap/ash and water available. 26% were located within 10 paces of the latrine.
- *Handwashing practice (reported):* Overall, 100% of respondents said they washed their hands in the 24 hours prior to the survey. However, just 33% used soap or ash and water while 67% used water alone. In Nensebo 27% used soap or ash compared to 41% in Kokosa.
- Though reported handwashing was very high, the proportion who said they washed their hands at the most important times was much lower. When asked if they washed their hands in the past 24 hours, 87% said before eating, 70% said when I woke in the morning, 50% before food preparation, and 46% for religious reasons. Just 18% said after defecation, and 3% said before feeding a child. Just 16% said they washed their hands at the 2 most important times: after defecation and before eating. See Figure 12 below for a breakdown of handwashing times.

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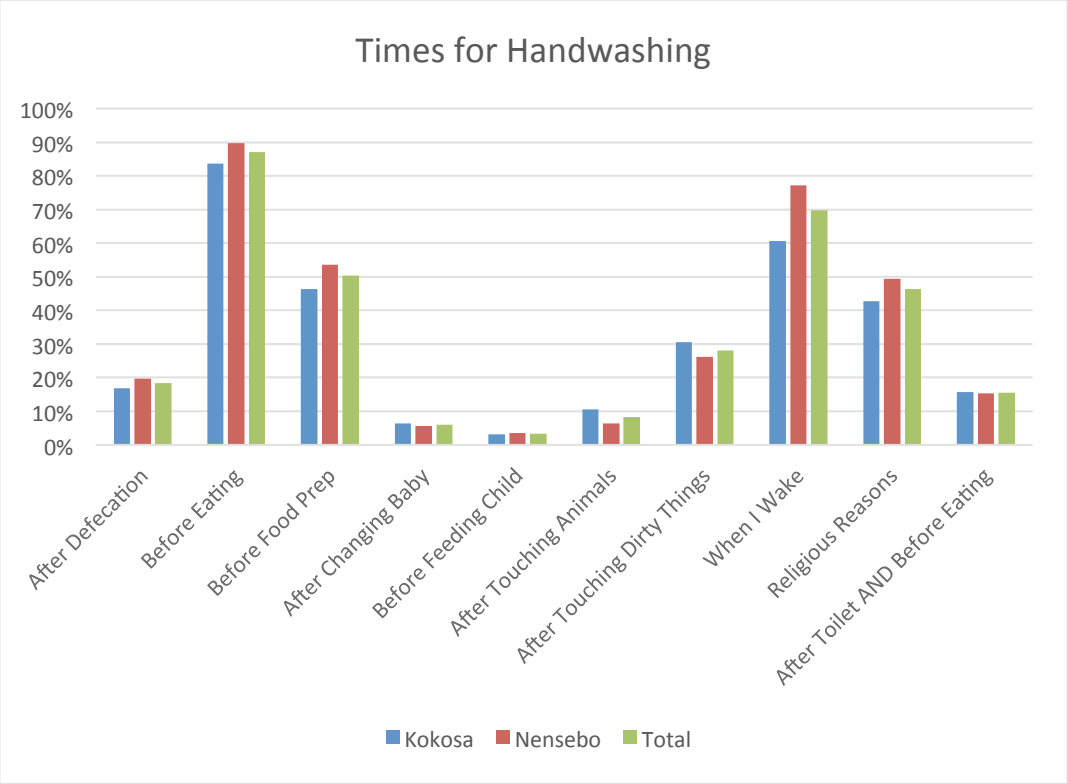
Figure 11: When People Wash Their Hands



- *Handwashing benefits and difficulties:* When asked the benefits of handwashing, 95% said it removes dirt/makes you clean. The health-related reasons were less common: 36% said it prevents diarrhea/disease, 31% said it removes germs, and 23% it improves health/wellbeing. When asked what makes handwashing difficult, 63% said there are no difficulties (71% in Nensebo and 53% in Kokosa). 24% of respondents said it can be difficult because they forget.
- *Hygiene education:* Overall, 58% of respondents said they have received sanitation/hygiene education at some point in time. This was higher in Kokosa at 67% compared to 51% in Nensebo. 54% overall said that someone is currently promoting sanitation/hygiene in their community, and this did not vary by district. It is primarily the health extension workers who are promoting sanitation/hygiene (97%). In Kokosa, 14% also said the group leader/village chief is promoting sanitation/hygiene. Very few respondents said that schoolteachers, government agencies, religious leaders, or other NGOs are promoting sanitation/hygiene currently.
- *Bathing:* 61% of respondents wash their body once per week, 16% bathe multiple times per week, and 13% bathe only during holidays. 78% of households use surface water for bathing.
- *Dish rack:* Overall, 21% of households had a dish rack. 80% of the dish racks were raised off the ground. Dish racks in Nensebo were more likely to be raised (87% compared to 71% in Kokosa).

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QUOTES

Female FGDs

- *"You know, he is my kid! Do you know how much mothers love their kids? It is extremely painful for us to see our kids get sick. We prefer we get sick instead of our children. We always wish our children to be healthy."*

Student FGDs

- *"For instance, if you take me, I don't wash my hands when I finish using the toilet because there is no water nearby; the water point is too far. When I am at home, I do wash my hands. I have never seen anyone at school wash their hands after using the toilet."*
- *"During school days it is very difficult to manage menstruation; we even decline to come to school as boys may laugh at us when they see our menstruation. If we come to know it before we come to school, we will not come. If we see it in school, we tell our teacher and leave the school early. Sometimes, we can miss exams."*
- *"You can't imagine how much it is painful if you don't have water supply in you school for drinking and cleaning oneself. Because of absence of water in the school, one of my classmates dropped out from the school."* - Female from Jetu School
- *"Our water supply is not working here and we are urged to go outside the school compound to line up with the community to satisfy our thirstiness. Sometimes we get back late to school, and are punished by our teachers. Specifically after playing games we all run to the water points with one water tap which of course creates chaos and sometimes it is not surprising to see students beating each other at the water point."* - Gemechu School
- *"If the latrine is in good condition we would absolutely use it."*
- *"I wish my school would be clean. It would be nice to have clean toilets, free from dirt and smell. It would also be nice to have some flowers and plants throughout the compound. The walls would be painted and there would be a pleasant smell everywhere. I am sure that this kind of environment would help all of us learn better."* - Taji School
- *"Girls are scared of using the toilets at school for fear of being laughed at by boys or even insulted."* - Gemechu School
- *"In addition, the boys' and the girls' toilets are very close to each other so we do not have privacy, for these reasons the students prefer to go out of the school compound to defecate or urinate."* - Taji School

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