

Supporting information

Manuscript title. Teachers and sanitation promotion: an assessment of community-led total sanitation in Ethiopia

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Table S1. Timeline of main implementation activities for two CLTS interventions in Ethiopia.

Period	HEW facilitated CLTS	Teacher facilitated CLTS
Sep 2012	District orientation	District orientation
Oct 2012	Pre-triggering	Pre-triggering
Nov 2012	HEW and kebele leader training	Teacher and kebele leader training
Nov 2012 - Jan 2013	Triggering	Triggering
Dec 2012 - May 2013	Follow-up	Follow-up
Mar 2013	HEW and kebele leader review meeting	Teacher review meeting
Jun - Nov 2013	ODF certification and celebrations	ODF certification and celebrations
Sep 2013	Natural leader training	Natural leader training

Table S2. Census and survey sampling counts for kebele, village, and household (HH) levels, by intervention and region, in Ethiopia.

Approach	Region	Kebele	Census		Sampled		HHs surveyed	
			Villages	HHs	Villages	HHs	Baseline	Follow-up*
Conventional	Oromia	Kebele 1	24	651	18	515	479	490
	SNNP	Kebele 2	30	973	14	530	496	499
Teacher-facilitated	Oromia	Kebele 3	32	1000	11	335	285	320
		Kebele 4	22	586	13	333	280	308
	SNNP	Kebele 5	31	1212	9	363	324	322
		Kebele 6	26	1040	10	368	318	324

*Baseline and follow-up surveys were administered in October 2012 and 2013.

Table S3. Sanitation practice definitions.

Sanitation practice	Primary place of defecation
Open defecation	Anywhere in the open, including in the bush, field, river, or pond. Includes dig and bury, and households reporting using a latrine that surveyors observed to be full or have a collapsed or unstable floor.
Communal latrine	A public latrine accessible to anyone (including school-latrines).
Shared latrine	A latrine shared by multiple households,* including when one compound** shares a latrine, multiple households jointly own a latrine, or a household uses a neighbor's latrine.
Private latrine	A latrine used by only one household, either owned or rented in the case of tenants.

*A household was defined as a single housing unit with one acknowledged male or female head of household.

**A compound is a group of household sharing a patio or courtyard.

Table S4. Logistic regression models: sanitation practice as a function of teacher-facilitated CLTS compared to conventional CLTS in Ethiopia, full sample.

Variable	Sanitation practice outcome							
	Open defecation		Communal latrine use		Shared latrine use		Private latrine use	
Treatment	0.418*** (0.113)	0.256** (0.116)	-1.131* (0.620)	-1.238* (0.620)	-0.372 (0.391)	-0.511 (0.402)	-0.372*** (0.113)	-0.199* (0.117)
Time	-1.067*** (0.131)	-1.11*** (0.135)	0.661 (0.459)	0.694* (0.467)	1.668*** (0.351)	1.625*** (0.348)	0.668*** (0.114)	0.715*** (0.121)
Treat * Time	0.523*** (0.188)	0.527*** (0.195)	1.466* (0.746)	1.503 (0.755)	0.215 (0.435)	0.224 (0.437)	-0.416** (0.170)	-0.432** (0.181)
HH size (people)		-0.535*** (0.113)		-0.212 (0.442)		-0.667** (0.321)		0.579*** (0.102)
Metal roof (%)		0.007 (0.015)		-0.469*** (0.080)		-0.181*** (0.057)		0.034** (0.015)
Water collection time (round trip, minutes)		-0.003** (0.001)		0.006** (0.003)		-0.002 (0.003)		0.003** (0.001)
Spoke with neighbor about san. or hyg. in past 2 months (%)		-0.621*** (0.116)		0.290 (0.306)		-0.063 (0.237)		0.575*** (0.103)
Constant	-0.503*** (0.086)	0.063 (0.144)	-4.629*** (0.312)	-2.690*** (0.370)	-4.366*** (0.283)	-3.107*** (0.453)	0.410*** (0.089)	-0.384*** (0.140)
Transformed difference-in-difference, in percentage points	7.4%* (0.040)	8.2%** (0.041)	0.014 (0.010)	0.8% (0.006)	-0.005 (0.013)	-0.9% (0.012)	-8.3%** (0.040)	-9.0%** (0.043)

The full sample is 6 kebeles. The survey sample is 76 / 165 villages. Analysis includes data collected at two times, immediately before and after the CLTS interventions: baseline (Oct 2012, 2182 households surveyed), and follow-up (Oct 2013, 2153 households surveyed). Sanitation practice outcomes were modeled using logistic regressions as a function of just treatment group and time, then with with addition of four covariates (roofing material, household size, water collection time, and discussing sanitation or hygiene with a neighbor in the past two months). Unequal selection probability, non-response rates, and village clustering of outcomes were accounted for using the “svyset” command in STATA 12/13/SE. Difference-in-difference estimates are calculated with all covariates set to their mean. * p < 0.1 ** p < 0.05 *** p < 0.01

Table S5. Logistic regression models: open defecation and private latrine use as functions of teacher-facilitated CLTS compared to conventional CLTS in Ethiopia, by region.

Variable	Outcome: open defecation				Outcome: private latrine use			
	Oromia region		SNNP region		Oromia region		SNNP region	
Treatment	0.519** (0.220)	0.512** (0.231)	0.454*** (0.152)	0.418** (0.158)	-0.467** (0.218)	-0.435* (0.232)	-0.392** (0.158)	-0.307* (0.166)
Time	-2.341*** (0.284)	-2.389*** (0.296)	-0.106 (0.145)	-0.122 (0.141)	1.907*** (0.238)	2.001*** (0.258)	-0.244* (0.135)	-0.240* (0.133)
Treat * Time	1.231*** (0.350)	1.263*** (0.362)	-0.100 (0.245)	-0.086 (0.246)	-0.970*** (0.308)	-1.018*** (0.330)	0.051 (0.225)	0.039 (0.229)
HH size (people)		-0.470* (0.245)		-0.144 (0.129)		0.572** (0.234)		0.225* (0.113)
Metal roof (%)		-0.012 (0.022)		-0.069** (0.026)		0.027 (0.022)		0.130*** (0.025)
Water collection time (round trip, minutes)		0.002 (0.002)		0.000 (0.002)		-0.002 (0.002)		0.000 (0.002)
Spoke with neighbor about san. or hyg. in past 2 months (%)		-0.268 (0.173)		0.099 (0.150)		0.173 (0.189)		-0.004 (0.124)
Constant	0.491*** (0.165)	0.569** (0.254)	-1.302*** (0.104)	-0.935*** (0.151)	-0.586*** (0.167)	-0.804*** (0.259)	1.174*** (0.117)	0.369** (0.150)
Transformed difference-in-difference, in percentage points	22.6%*** (0.072)	22.9%*** (0.072)	-2.4% (0.046)	-2.1% (0.046)	-21.9%*** (0.068)	-22.5%*** (0.071)	0.4% (0.048)	0.3% (0.048)

The Oromia region sample is 3 kebeles, from which 1044 households were surveyed in October 2012 at baseline, and 1018 households were surveyed in October 2013 at follow-up, representing 43 / 78 villages in the kebeles. The SNNP region sample is 3 kebeles, from which 1138 households were surveyed in October 2012 at baseline, and 1135 households were surveyed in October 2013 at follow-up, representing 33 / 87 villages in the kebeles. Sanitation practice outcomes were modeled using logistic regressions as a function of just treatment group and time, then with with addition of four covariates (roofing material, household size, water collection time, and discussing sanitation or hygiene with a neighbor in the past two months). Unequal selection probability, non-response rates, and village clustering of outcomes were accounted for using the “svyset” command in STATA 12/13/SE. Difference-in-difference estimates are calculated with all covariates set to their mean. * p < 0.1 ** p < 0.05 *** p < 0.01

Table S6. Logistic regression parameters: open defecation as a function of teacher-facilitated CLTS compared to conventional CLTS in Ethiopia, full sample.

Variable	Coefficient	SE	t-stat	p-value	[95% CI]	
Treatment (Teacher-fac. CLTS)	0.26	0.12	2.20	0.031	0.02	0.49
Time	-1.11	0.14	-8.22	0.000	-1.38	-0.84
Treatment * time	0.53	0.20	2.70	0.009	0.14	0.92
Metal roof (%)	-0.53	0.11	-4.74	0.000	-0.76	-0.31
HH size (people)	0.01	0.02	0.50	0.620	-0.02	0.04
Water collection time (round trip, minutes)	0.00	0.00	-2.39	0.019	-0.01	0.00
Spoke with neighbor about san. or hyg. in past 2 months (%)	-0.62	0.12	-5.33	0.000	-0.85	-0.39
Constant	0.06	0.14	0.44	0.662	-0.22	0.35

Transformed regression parameters	Percentage of households		Difference	p-value	[95% CI]	
	Baseline	Follow-up				
Treatment group						
Conventional CLTS	40.0%	18.0%	-22.0%	0.000	-27.2%	-16.8%
Teacher-facilitated CLTS	46.2%	32.4%	-13.8%	0.000	-20.0%	-7.6%
Difference-in-difference	-	-	8.2%	0.048	0.1%	16.3%

The full sample is 6 kebeles. The survey sample is 76 / 165 villages. Analysis includes data collected at two times, immediately before and after the CLTS interventions: baseline (Oct 2012, 2182 households surveyed), and follow-up (Oct 2013, 2153 households surveyed). Open defecation was modeled using a logistic regression as a function of treatment group, time, and four covariates (roofing material, household size, water collection time, and discussing sanitation or hygiene with a neighbor in the past two months). Unequal selection probability, non-response rates, and village clustering of outcomes were accounted for using the “svyset” command in STATA 12/13/SE. Difference-in-difference estimates are calculated with all covariates set to their mean.

Table S7. Logistic regression parameters: open defecation as a function of teacher-facilitated CLTS compared to conventional CLTS in Ethiopia, Oromia region.

Variable	Coefficient	SE	t-stat	p-value	[95% CI]	
Treatment	0.51	0.23	2.22	0.032	0.05	0.98
Time	-2.39	0.30	-8.06	0.000	-2.99	-1.79
Treatment * time	1.26	0.36	3.49	0.001	0.53	1.99
Metal roof (%)	-0.47	0.24	-1.92	0.062	-0.97	0.03
HH size (people)	-0.01	0.02	-0.57	0.575	-0.06	0.03
Water collection time (round trip, minutes)	0.00	0.00	1.24	0.223	0.00	0.01
Spoke with neighbor about san. or hyg. in past 2 months (%)	-0.27	0.17	-1.55	0.130	-0.62	0.08
Constant	0.57	0.25	2.25	0.030	0.06	1.08

Transformed regression parameters	Percentage of households		Difference	p-value	[95% CI]	
Treatment group	Baseline	Follow-up				
Conventional CLTS	62.3%	13.2%	-49.1%	0.000	-59.4%	-38.9%
Teacher-facilitated CLTS	73.4%	47.2%	-26.2%	0.000	-36.2%	-16.2%
Difference-in-difference	-	-	22.9%	0.002	8.8%	37.1%

The Oromia region sample is 3 kebeles. The survey sample is 43 / 78 villages. Analysis includes data collected at two times, immediately before and after the CLTS interventions: baseline (Oct 2012, 1044 households surveyed), and follow-up (Oct 2013, 1018 households surveyed). Open defecation was modeled using a logistic regression as a function of treatment group, time, and four covariates (roofing material, household size, water collection time, and discussing sanitation or hygiene with a neighbor in the past two months). Unequal selection probability, non-response rates, and village clustering of outcomes were accounted for using the “svyset” command in STATA 12/13/SE. Difference-in-difference estimates are calculated with all covariates set to their mean.

Table S8. Logistic regression parameters: open defecation as a function of teacher-facilitated CLTS compared to conventional CLTS in Ethiopia, SNNP region.

Variable	Coefficient	SE	t-stat	p-value	[95% CI]	
Treatment	0.42	0.16	2.64	0.013	0.10	0.74
Time	-0.12	0.14	-0.86	0.394	-0.41	0.17
Treatment * time	-0.09	0.25	-0.35	0.728	-0.59	0.42
Metal roof (%)	-0.14	0.13	-1.11	0.274	-0.41	0.12
HH size (people)	-0.07	0.03	-2.61	0.014	-0.12	-0.02
Water collection time (round trip, minutes)	0.00	0.00	0.17	0.868	0.00	0.00
Spoke with neighbor about san. or hyg. in past 2 months (%)	0.10	0.15	0.66	0.515	-0.21	0.41
Constant	-0.93	0.15	-6.18	0.000	-1.24	-0.63

Transformed regression parameters	Percentage of households		Difference	p-value	[95% CI]	
Open defecation	Baseline	Follow-up				
Conventional CLTS	21.7%	19.7%	-2.0%	0.384	-6.5%	2.5%
Teacher-facilitated CLTS	29.6%	25.4%	-4.1%	0.296	-11.9%	3.6%
Difference-in-difference	-	-	-2.1%	0.639	-11.1%	6.8%

The SNNP region sample is 3 kebeles. The survey sample is 33 / 87 villages. Analysis includes data collected at two times, immediately before and after the CLTS interventions: baseline (Oct 2012, 1138 households surveyed), and follow-up (Oct 2013, 1135 households surveyed). Open defecation was modeled using a logistic regression as a function of treatment group, time, and four covariates (roofing material, household size, water collection time, and discussing sanitation or hygiene with a neighbor in the past two months). Unequal selection probability, non-response rates, and village clustering of outcomes were accounted for using the “svyset” command in STATA 12/13/SE. Difference-in-difference estimates are calculated with all covariates set to their mean.

Table S9. Logistic regression parameters: communal latrine use as a function of teacher-facilitated CLTS compared to conventional CLTS in Ethiopia, full sample.

Variable	Coefficient	SE	t-stat	p-value	[95% CI]	
Treatment	-1.24	0.62	-2.00	0.050	-2.47	0.00
Time	0.69	0.47	1.49	0.142	-0.24	1.63
Treatment * time	1.50	0.75	1.99	0.050	0.00	3.01
Metal roof (%)	-0.21	0.44	-0.48	0.632	-1.09	0.67
HH size (people)	-0.47	0.08	-5.89	0.000	-0.63	-0.31
Water collection time (round trip, minutes)	0.01	0.00	2.35	0.022	0.00	0.01
Spoke with neighbor about san. or hyg. in past 2 months (%)	0.29	0.31	0.95	0.348	-0.32	0.90
Constant	-2.69	0.37	-7.27	0.000	-3.43	-1.95

Transformed regression parameters Treatment group	Percentage of households		Difference	p-value	[95% CI]	
	Baseline	Follow-up				
Conventional CLTS	0.6%	1.3%	0.6%	0.159	-0.2%	1.5%
Teacher-facilitated CLTS	0.2%	1.6%	1.5%	0.001	0.6%	2.3%
Difference-in-difference	-	-	0.8%	0.203	-0.4%	2.1%

The full sample is 6 kebeles. The survey sample is 76 / 165 villages. Analysis includes data collected at two times, immediately before and after the CLTS interventions: baseline (Oct 2012, 2182 households surveyed), and follow-up (Oct 2013, 2153 households surveyed). Communal latrine use was modeled using a logistic regression as a function of treatment group, time, and four covariates (roofing material, household size, water collection time, and discussing sanitation or hygiene with a neighbor in the past two months). Unequal selection probability, non-response rates, and village clustering of outcomes were accounted for using the “svyset” command in STATA 12/13/SE. Difference-in-difference estimates are calculated with all covariates set to their mean.

Table S10. Logistic regression parameters: shared latrine use as a function of teacher-facilitated CLTS compared to conventional CLTS in Ethiopia, full sample.

Variable	Coefficient	SE	t-stat	p-value	[95% CI]	
Treatment	-0.51	0.40	-1.27	0.207	-1.31	0.29
Time	1.62	0.35	4.67	0.000	0.93	2.32
Treatment * time	0.22	0.44	0.51	0.610	-0.65	1.09
Metal roof (%)	-0.67	0.32	-2.08	0.041	-1.31	-0.03
HH size (people)	-0.18	0.06	-3.18	0.002	-0.29	-0.07
Water collection time (round trip, minutes)	0.00	0.00	-0.68	0.501	-0.01	0.00
Spoke with neighbor about san. or hyg. in past 2 months (%)	-0.06	0.24	-0.26	0.792	-0.54	0.41
Constant	-3.11	0.45	-6.87	0.000	-4.01	-2.20
Transformed regression parameters	Percentage of households		Difference	p-value	[95% CI]	
Treatment group	Baseline	Follow-up				
Conventional CLTS	1.2%	5.9%	4.7%	0.000	2.6%	6.8%
Teacher-facilitated CLTS	0.7%	4.5%	3.7%	0.000	2.4%	5.1%
Difference-in-difference	-	-	-0.9%	0.437	-3.2%	1.4%

The full sample is 6 kebeles. The survey sample is 76 / 165 villages. Analysis includes data collected at two times, immediately before and after the CLTS interventions: baseline (Oct 2012, 2182 households surveyed), and follow-up (Oct 2013, 2153 households surveyed). Shared latrine use was modeled using a logistic regression as a function of treatment group, time, and four covariates (roofing material, household size, water collection time, and discussing sanitation or hygiene with a neighbor in the past two months). Unequal selection probability, non-response rates, and village clustering of outcomes were accounted for using the “svyset” command in STATA 12/13/SE. Difference-in-difference estimates are calculated with all covariates set to their mean.

Table S11. Logistic regression parameters: private latrine use as a function of teacher-facilitated CLTS compared to conventional CLTS in Ethiopia, full sample.

Variable	Coefficient	SE	t-stat	p-value	[95% CI]	
Treatment	-0.20	0.12	-1.70	0.093	-0.43	0.03
Time	0.72	0.12	5.93	0.000	0.47	0.96
Treatment * time	-0.43	0.18	-2.38	0.020	-0.79	-0.07
Metal roof (%)	0.58	0.10	5.69	0.000	0.38	0.78
HH size (people)	0.03	0.01	2.28	0.025	0.00	0.06
Water collection time (round trip, minutes)	0.00	0.00	2.26	0.027	0.00	0.01
Spoke with neighbor about san. or hyg. in past 2 months (%)	0.58	0.10	5.56	0.000	0.37	0.78
Constant	-0.38	0.14	-2.73	0.008	-0.66	-0.10

Transformed regression parameters	Percentage of households		Difference	p-value	[95% CI]	
Treatment group	Baseline	Follow-up				
Conventional CLTS	57.5%	73.5%	15.9%	0.000	10.6%	21.3%
Teacher-facilitated CLTS	52.6%	59.6%	7.0%	0.032	0.6%	13.4%
Difference-in-difference	-	-	-9.0%	0.035	-17.3%	-0.6%

The full sample is 6 kebeles. The survey sample is 76 / 165 villages. Analysis includes data collected at two times, immediately before and after the CLTS interventions: baseline (Oct 2012, 2182 households surveyed), and follow-up (Oct 2013, 2153 households surveyed). Private latrine use was modeled using a logistic regression as a function of treatment group, time, and four covariates (roofing material, household size, water collection time, and discussing sanitation or hygiene with a neighbor in the past two months). Unequal selection probability, non-response rates, and village clustering of outcomes were accounted for using the “svyset” command in STATA 12/13/SE. Difference-in-difference estimates are calculated with all covariates set to their mean.

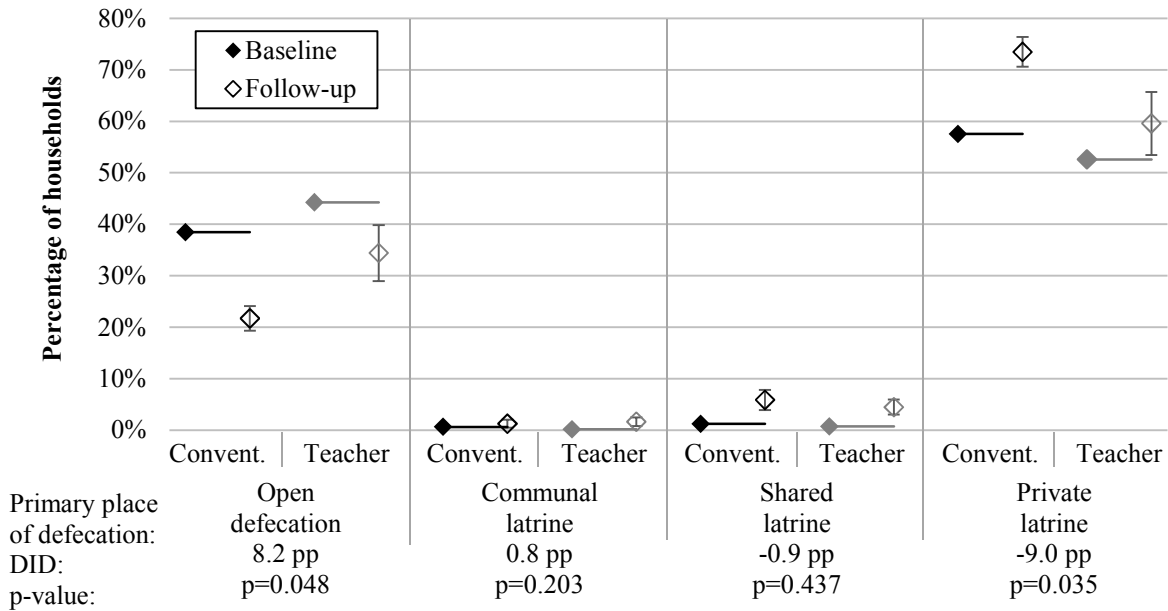


Figure S1. Sanitation practice before and after conventional and teacher-facilitated CLTS interventions in Ethiopia. Conventional includes 2 kebeles (54 villages). Teacher-facilitated includes 4 kebeles (111 villages). Kebeles are split evenly between the Oromia and SNNP regions. Horizontal lines are baseline means. Bars are 95% confidence intervals. Sanitation practices are modeled from logistic regression parameters with covariates set to their means (full regressions in the supplement). Sanitation practices are based on survey responses and latrine observations. All analysis accounts for unequal selection probabilities, non-response rates, and village clustering. “DID” = difference-in-difference.

Table S12. Sanitation practices by households with and without metal roofing

Group	Percentage of households		Change	p-value
	Baseline	Follow-up		
Practicing open defecation				
Full sample	44.8%	29.6%	-15.2%	<0.001
Households with natural roof	48.0%	32.6%	-15.4%	<0.001
Households with metal roof	33.2%	18.8%	-14.4%	<0.001
Using a communal latrine				
Full sample	0.5%	2.4%	1.9%	<0.001
Households with natural roof	0.5%	2.7%	2.2%	0.001
Households with metal roof	0.6%	1.3%	0.7%	0.235
Using a shared latrine				
Full sample	1.0%	5.4%	4.4%	<0.001
Households with natural roof	1.2%	6.0%	4.8%	<0.001
Households with metal roof	0.1%	3.1%	3.0%	0.004
Using a private latrine				
Full sample	53.7%	62.6%	8.9%	<0.001
Households with natural roof	50.3%	58.7%	8.4%	0.001
Households with metal roof	66.1%	76.7%	10.6%	0.009

In this analysis, the full sample contained 2152 households, of which 1706 had a natural roof at baseline, and 476 had a metal roof at baseline. P-values were calculated using a t-test. Unequal selection probability, non-response rates, and village clustering of outcomes were accounted for using the “svyset” command in STATA 12/13/SE.

Figure S2. Follow-up household survey

Section 1: Identification			
1	District Name	«District»	
2	Kebele Name	«Community»	
3	Village Name	«Village»	
4	Household ID	«UniqueID»	
5	Date	2013 / <u> </u> / <u> </u> / <u> </u> / <u> </u> M M D D	
6	Surveyor Name		
Section 2: Demographics			
7	Observe: What is the respondent's sex?	1. <input type="radio"/> Male 2. <input type="radio"/> Female	
8	What is your age?	<u> </u> <u> </u> years	
9	Are you married?	1. <input type="radio"/> Yes 2. <input type="radio"/> No	
10	What is the highest grade in school that you completed?	<u> </u> <u> </u> grade	
11	Observe: Does the house have a metal roof?	1. <input type="radio"/> Yes 2. <input type="radio"/> No	
12	Observe: How clean is the household compound?	1. <input type="radio"/> Abundant trash and solid waste strewn around the yard 2. <input type="radio"/> Less than 10 pieces of trash or solid waste evident in the yard 3. <input type="radio"/> No trash or waste; the yard is clean of any debris	
13	How many years has your family lived in this household?	<u> </u> <u> </u> years	
14	How many years have you lived in this community?	<u> </u> <u> </u> years	
<ul style="list-style-type: none"> • Before moving to the next survey question, check to make sure the response to question 13 is lower than or 			

<p><i>equal to the response to question 14.</i></p> <ul style="list-style-type: none"> <i>If response 13 is higher than response 14, ask both questions again starting with question 14.</i> 		
15a	<p>What do you think is the <i>highest</i> priority for your community?</p> <ul style="list-style-type: none"> <i>Do not read the answers.</i> <i>Check only one response.</i> <i>If multiple answers are given, ask them to pick the most important one.</i> 	<ol style="list-style-type: none"> <input type="radio"/> Schools <input type="radio"/> Health facilities <input type="radio"/> Roads <input type="radio"/> Electricity <input type="radio"/> Water supply <input type="radio"/> Sanitation facilities <input type="radio"/> Hygiene or handwashing <input type="radio"/> Housing <input type="radio"/> Employment
15b		<ol style="list-style-type: none"> <input type="radio"/> Other (specify):
16	Do you have a television in your house?	<ol style="list-style-type: none"> <input type="radio"/> Yes → go to question 17 <input type="radio"/> No → go to question 18
17	Can you show me the TV?	<ol style="list-style-type: none"> <input type="radio"/> Shown <input type="radio"/> Not show, or not able to show it
18	Do you have a radio in your house?	<ol style="list-style-type: none"> <input type="radio"/> Yes → go to question 19 <input type="radio"/> No → go to question 20
19	Can you show me the radio?	<ol style="list-style-type: none"> <input type="radio"/> Shown <input type="radio"/> Not show, or not able to show it
20	How many people normally live in this household?	___ ___ people
21	How many individuals are 18 years and above?	___ ___ people
22	How many individuals are between 5 years and 18 years?	___ ___ people
23	How many individuals are 5 years and below?	___ ___ people
<ul style="list-style-type: none"> <i>Before moving to the next question, check that responses 21 + 22 + 23 = 20, if the responses do not match, ask them again starting with question 20</i> <i>If the answer to question 23 is 0 → go to question 27</i> 		
24	In the last two weeks, how many of your children 5 years of age or younger have had diarrhea?	___ ___ children
<ul style="list-style-type: none"> <i>If the answer to question 24 is 0 → go to question 27</i> 		
25	Was he/she taken to a health facility for treatment?	<ol style="list-style-type: none"> <input type="radio"/> Yes <input type="radio"/> No

26	Was he/she given any medicine or rehydration solution?	1. <input type="radio"/> Yes 2. <input type="radio"/> No	
27	Do you think people not using latrines are a health risk in your village?	1. <input type="radio"/> Yes 2. <input type="radio"/> No	
28a	<i>Who do you think should bear the cost of improving sanitation in your village?</i>	<input type="checkbox"/> Family / household	
28b	• Do not read the answers.	<input type="checkbox"/> Kebele administration	
28c	• Circle all responses.	<input type="checkbox"/> Government (woreda, zone, region, and/or federal)	
28d	• After they have finished responding, ask <i>“are there any more occasions?”</i>	<input type="checkbox"/> NGOs / partners	
28e	• If the respondent indicates that (s)he does not know, do not probe for additional responses.	<input type="checkbox"/> Other (specify):	

Section 3: Water

29a	What is the main source of drinking water for members of your household?	1. <input type="radio"/> River/stream 2. <input type="radio"/> Pond/lake 3. <input type="radio"/> Open spring 4. <input type="radio"/> Protected spring 5. <input type="radio"/> Open well 6. <input type="radio"/> Protected well 7. <input type="radio"/> Tubewell/borehole 8. <input type="radio"/> Rainwater harvesting 9. <input type="radio"/> Public tap 10. <input type="radio"/> Piped water into dwelling or yard 11. <input type="radio"/> Water vendor 12. <input type="radio"/> Bottled water 13. <input type="radio"/> Other (specify):	
29b			
30	In the last two weeks, was water unavailable from this source for a day or longer?	1. <input type="radio"/> Yes 2. <input type="radio"/> No	
31	Do you share this water source with other households?	1. <input type="radio"/> Yes 2. <input type="radio"/> No	
32	Do you pay to use this water	1. <input type="radio"/> Yes 2. <input type="radio"/> No	

	source?		
33	If this source is not in your dwelling or yard, how long does it take to walk to it?	___ ___ ___ minutes	
34	Do you have to queue or wait to get water at this source?	1. <input type="radio"/> Yes 2. <input type="radio"/> No	
35	How long do you typically have to wait to get water at this source?	___ ___ ___ minutes	
36	Is this water source usable year round?	1. <input type="radio"/> Yes → go to question 38 2. <input type="radio"/> No → go to question 37	
37a	Where do you get drinking water when your main source is not available?	1. <input type="radio"/> River / stream 2. <input type="radio"/> Pond/lake 3. <input type="radio"/> Open spring 4. <input type="radio"/> Protected spring 5. <input type="radio"/> Open well 6. <input type="radio"/> Protected well 7. <input type="radio"/> Tubewell/borehole 8. <input type="radio"/> Rainwater harvesting 9. <input type="radio"/> Public tap 10. <input type="radio"/> Piped water into dwelling or yard 11. <input type="radio"/> Water vendor 12. <input type="radio"/> Bottled water 13. <input type="radio"/> Main source is always available	
37b		14. <input type="radio"/> Other (specify):	
38	Do you currently treat your drinking water?	1. <input type="radio"/> Yes → go to question 39 2. <input type="radio"/> No → go to question 40	
39a	How do you treat your drinking water?	1. <input type="radio"/> Chlorination 2. <input type="radio"/> Filtration with a ceramic device (such as a clay pot, or a candle filter) 3. <input type="radio"/> Filtration with a biosand filter 4. <input type="radio"/> Solar disinfection 5. <input type="radio"/> Boiling 6. <input type="radio"/> Chemical coagulant (such as aluminum salt or iron salt)	

39b		7. <input type="radio"/> Other (specify):	
40	Do you store your drinking water?	1. <input type="radio"/> Yes → go to question 41 2. <input type="radio"/> No → go to question 46	
41	May I see the container(s) where you store it?	1. <input type="radio"/> Allowed 2. <input type="radio"/> Not allowed	
42	Is this container used only for storing drinking water?	1. <input type="radio"/> Yes 2. <input type="radio"/> No	
43	Observe: Does the container have a wide or narrow mouth?	1. <input type="radio"/> Wide mouth (more than 10 centimeters across) 2. <input type="radio"/> Narrow mouth (less than 10 centimeters across)	
44	Observe: Does the container have a spigot?	1. <input type="radio"/> Yes 2. <input type="radio"/> No	
45	Observe: Does the container have a lid or fitted cover?	1. <input type="radio"/> Yes 2. <input type="radio"/> No	

Section 4: Sanitation

46a	Where do members of your family usually go to defecate? • (circle only one response)	1. <input type="radio"/> Bush, field, river, or pond → go to question 73 2. <input type="radio"/> Dig and bury → go to question 73 3. <input type="radio"/> Latrine at their own household → go to question 47 4. <input type="radio"/> Neighbor's household → go to question 58 5. <input type="radio"/> Communal or public latrine → go to question 58	
46b		6. <input type="radio"/> Other (specify): → go to question 58	
47	May I see the latrine you use please?	1. <input type="radio"/> Allowed → go to question 48 2. <input type="radio"/> Not allowed → go to question 49	
• If allowed to see the latrine, walk to the latrine with the respondent			
48	Observe: Has the path to the latrine been walked on recently?	1. <input type="radio"/> Yes (grass is trampled, wet footprints are visible, or the path has recently been cleared)	

		2. <input type="radio"/> No	
49	How much money did you spend to build this latrine?	___ ___ ___ ___ Birr	
50a	What did you buy to construct your latrine? • <i>Circle all responses.</i>	<input type="checkbox"/> Cement	
50b		<input type="checkbox"/> Pre-made slab/squat plate	
50c		<input type="checkbox"/> Wood	
50d		<input type="checkbox"/> Sheet metal (for walls or roof, etc)	
50e		<input type="checkbox"/> Labor/help for digging or construction	
50f		<input type="checkbox"/> Other (specify):	
51	How many total hours did it take your family to build this latrine?	___ ___ hours	
52	Did anyone besides of your family help you to build this latrine?	1. <input type="radio"/> Yes → go to question 53 2. <input type="radio"/> No → go to question 55	
53a	Who helped you to build this latrine? • <i>Circle all responses.</i>	<input type="checkbox"/> Neighbors, other community members	
53b		<input type="checkbox"/> Village leaders	
53c		<input type="checkbox"/> Kebele administration	
53d		<input type="checkbox"/> Woreda officials (from health office or other)	
53e		<input type="checkbox"/> Church, mosque, or other religious group	
53f		<input type="checkbox"/> NGOs/partners	
53g		<input type="checkbox"/> Other (specify):	
54	For how many hours did they help you build your latrine?	___ ___ hours	

55	Do you plan on changing your latrine before the start of the next rainy season?	1. <input type="radio"/> Yes → <i>go to question 56</i> 2. <input type="radio"/> No → <i>go to question 58</i>	
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56a	In what way do you plan to change your latrine? • Circle all responses.	<input type="checkbox"/> New slab/squat plate	
56b		<input type="checkbox"/> New walls	
56c		<input type="checkbox"/> New roof	
56d		<input type="checkbox"/> New door	
56e		<input type="checkbox"/> New/replacement latrine	
56f		<input type="checkbox"/> New/replacement pit	
56g		<input type="checkbox"/> Other (specify):	
57a	Who will pay for the changes to your latrine? • Circle all responses.	<input type="checkbox"/> Me, my family, or my household members	
57b		<input type="checkbox"/> Neighbor or friend	
57c		<input type="checkbox"/> Community members, or chief	
57d		<input type="checkbox"/> An NGO or outside organization	
57e		<input type="checkbox"/> The government, Health Extension Worker, or other officer of water or health	
57f		<input type="checkbox"/> The latrine will not cost any money	
57g		<input type="checkbox"/> Other (specify):	
58a	What kind of latrine is the latrine your family usually uses? • Circle only one response	1. <input type="radio"/> Bucket toilet 2. <input type="radio"/> Simple Pit latrine 3. <input type="radio"/> Ventilated improved pit latrine (VIP) 4. <input type="radio"/> Composting toilet 5. <input type="radio"/> Pour flush toilet 6. <input type="radio"/> Septic tank	
58b		7. <input type="radio"/> Other (Specify):	
59	Do you share this latrine with other households?	1. <input type="radio"/> Yes → go to question 60 2. <input type="radio"/> No → go to question 63	
60	How many households do you share this latrine with?	___ ___ households	

61	Are these households where only relatives of yours live?	1. <input type="radio"/> Yes→57 2. <input type="radio"/> No→56	
62	Is this toilet used by people that you do not know?	1. <input type="radio"/> Yes 2. <input type="radio"/> No	
63	Can you use this facility at all hours of the day and night?	1. <input type="radio"/> Yes 2. <input type="radio"/> No	
64	How much time does it take on average to get to the place you defecate?	___ ___ ___ minutes	
65	Do you have to queue/wait to use this latrine?	1. <input type="radio"/> Yes→go to question 66 2. <input type="radio"/> No→go to question 67	
66	On average, how long do you have to queue/wait?	___ ___ ___ minutes	
67	Since the beginning of the rainy season, did your latrine become unusable?	1. <input type="radio"/> Yes→go to question 68 2. <input type="radio"/> No→go to question 70	
68a	Why was it unusable? • Circle all responses.	<input type="checkbox"/> Roof problems	
68b		<input type="checkbox"/> Slab problems	
68c		<input type="checkbox"/> Pit overflow	
68d		<input type="checkbox"/> No water in tank	
68e		<input type="checkbox"/> Flushing mechanism broke down	
68f		<input type="checkbox"/> Bowl overflow/clogged	
68g		<input type="checkbox"/> Pipe breakdown	
68h		<input type="checkbox"/> Other (specify):	
69	During that period, how many weeks was it unusable?	___ ___ weeks	
70	Do any members of your family defecate in the bush, field, or nearby river when away from home?	1. <input type="radio"/> Yes 2. <input type="radio"/> No	

71a	<p>The last time a child 5 years or younger in your house passed stool, where did he/she defecate?</p> <ul style="list-style-type: none"> If the household does not have any children below 5 years of age → go to question 63 	<ol style="list-style-type: none"> <input type="radio"/> Used potty → go to question 73 <input type="radio"/> Used diaper → go to question 72 <input type="radio"/> Went in his/her clothes → go to question 72 <input type="radio"/> Went in house/yard → go to question 72 <input type="radio"/> Went outside the premises → go to question 73 <input type="radio"/> Used own sanitation facility → go to question 73 <input type="radio"/> Used public latrine → go to question 73 <input type="radio"/> Don't know → go to question 72 	
71b		<ol style="list-style-type: none"> <input type="radio"/> Other (specify): → go to question 72 	
72a	<p>The last time a child in your house passed stool, where were his/her feces disposed?</p>	<ol style="list-style-type: none"> <input type="radio"/> Dropped into toilet facility <input type="radio"/> Buried <input type="radio"/> Solid waste/trash <input type="radio"/> In yard <input type="radio"/> Outside premises <input type="radio"/> Into sink or tub <input type="radio"/> Thrown into waterway <input type="radio"/> At the well <input type="radio"/> Don't know 	
72b		<ol style="list-style-type: none"> <input type="radio"/> Thrown elsewhere (specify): 	

Section 5: Sanitation, part 2

- If the household has their own latrine at their household, skip to question 80
- If the household does NOT have their own latrine, continue with question 73

73	<p>How much time does it take on average to get to the place you defecate?</p>	<p> ___ ___ ___ minutes</p>	
74	<p>Do you want to have your own household latrine?</p>	<ol style="list-style-type: none"> <input type="radio"/> Yes → go to question 76 <input type="radio"/> No → go to question 75 	

75a	Why do you not want to have a latrine? • Circle all responses.	<input type="checkbox"/> Expensive → go to question 77	
75b		<input type="checkbox"/> Materials not available → go to question 77	
75c		<input type="checkbox"/> Satisfied with neighbor or shared latrine → go to question 77	
75d		<input type="checkbox"/> Does not see benefit in having a latrine → go to question 77	
75e		<input type="checkbox"/> Culturally unacceptable → go to question 77	
75f		<input type="checkbox"/> Other (specify): → go to question 77	
76a	Why do you want to have a latrine? • Circle all responses.	<input type="checkbox"/> Dignity, appearance, or social status	
76b		<input type="checkbox"/> Health related reasons	
76c		<input type="checkbox"/> Time or distance spent walking to a latrine	
76d		<input type="checkbox"/> Safety from others when walking to a shared latrine or the bush	
76e		<input type="checkbox"/> Other (specify):	
77a	What is your reason for not having a latrine? • Circle all responses.	<input type="checkbox"/> Expensive	
77b		<input type="checkbox"/> Construction material are not available in the market	
77c		<input type="checkbox"/> Latrine slabs are not available in the market	
77d		<input type="checkbox"/> There is no one with technical capacity	
77e		<input type="checkbox"/> Does not see any benefits in having their own latrine	
77f		<input type="checkbox"/> There are higher priorities than a latrine	
77g		<input type="checkbox"/> Culturally unacceptable	
77h		<input type="checkbox"/> Other (specify):	
78	Do you plan on building a latrine by the start of the next rainy season?	1. <input type="radio"/> Yes → go to question 79 2. <input type="radio"/> No → go to question 80	
79a	Who will pay for the construction of your latrine?	<input type="checkbox"/> Me, my family, or my household members	

79b	<ul style="list-style-type: none"> • Circle all responses. 	<input type="checkbox"/> Neighbor or friend	
79c		<input type="checkbox"/> Community members, or chief	
79d		<input type="checkbox"/> An NGO or outside organization	
79e		<input type="checkbox"/> The government, Health Extension Worker, or other officer of water or health	
79f		<input type="checkbox"/> The latrine will not cost any money	
79g		<input type="checkbox"/> Other (specify):	

Section 6: Hygiene			
80	Have you been taught about hygiene and handwashing?	1. <input type="radio"/> Yes → go to question 81 2. <input type="radio"/> No → go to question 82	
81a	Who taught you about hygiene or handwashing? <ul style="list-style-type: none"> • Circle all responses. 	<input type="checkbox"/> School teachers	
81b		<input type="checkbox"/> Children or students	
81c		<input type="checkbox"/> Health Extension Workers	
81d		<input type="checkbox"/> Health Army	
81e		<input type="checkbox"/> Other (specify):	

82a	<p>Please mention all of the occasions when is it important to wash your hands.</p> <ul style="list-style-type: none"> • <i>Do not read the answers.</i> • <i>Circle all responses.</i> • <i>After they have finished responding, ask “are there any more times?”</i> • <i>If the respondent indicates that (s)he does not know, do not probe for additional responses.</i> 	<input type="checkbox"/> Before eating	
82b		<input type="checkbox"/> After eating	
82c		<input type="checkbox"/> Before praying	
82d		<input type="checkbox"/> Before breastfeeding or feeding a child	
82e		<input type="checkbox"/> Before cooking or preparing food	
82f		<input type="checkbox"/> After defecation/urination	
82g		<input type="checkbox"/> After cleaning a child that has defecated/changing a child’s nappy	
82h		<input type="checkbox"/> When my hands are dirty	
82i		<input type="checkbox"/> After cleaning the toilet or potty	
82j		<input type="checkbox"/> In the morning	
82k		<input type="checkbox"/> Other (specify):	
83	<p>Do you and your family members wash your hands at all of these times?</p>	<p>1. <input type="radio"/> Always</p> <p>2. <input type="radio"/> Sometimes</p> <p>3. <input type="radio"/> Never</p>	

Section 7: Latrine Observations

- *If the household has a latrine that you are allowed to observe, continue with question 84*
- *If the household does NOT have a latrine, or has NOT allowed you to see their latrine, skip to question 100*

84	<p>Observe: Is there visibly used anal cleansing material in the latrine or in the pit?</p>	<p>1. <input type="radio"/> Yes</p> <p>2. <input type="radio"/> No</p>	
85	<p>Observe: Are there fresh or recent feces evident in the pit?</p>	<p>1. <input type="radio"/> Yes</p> <p>2. <input type="radio"/> No</p>	
86	<p>Observe: Are there flies present inside the latrine?</p>	<p>1. <input type="radio"/> Yes – more than 10 flies</p> <p>2. <input type="radio"/> Yes – less than 10 flies</p> <p>3. <input type="radio"/> No</p>	

87a	Observe: Construction: What are the floor and slab made of?	1. <input type="radio"/> Sticks or branches and dirt or clay	
87b		2. <input type="radio"/> Wooden boards 3. <input type="radio"/> Concrete 4. <input type="radio"/> Plastic 5. <input type="radio"/> Other (specify):	
88	Observe: Construction: What are the walls made of?	1. <input type="radio"/> Walls are completely deteriorated or collapsed 2. <input type="radio"/> Walls are made of a temporary material such as straw or palm leaves 3. <input type="radio"/> Walls are made of durable material such as wooden boards, concrete, or adobe	
89	Observe: Construction: What is the quality of the door?	1. <input type="radio"/> Door is absent, or door does not close properly. 2. <input type="radio"/> Door is present and can be closed.	
90	Observe: Construction: What is the quality of the roof?	1. <input type="radio"/> No roof, or roof in complete disrepair with large gaps that offer no protection 2. <input type="radio"/> Roof present but leaky 3. <input type="radio"/> Roof present and provides protection from sun and rain	
91	Observe: Maintenance: Is there a hole cover?	1. <input type="radio"/> No hole cover present 2. <input type="radio"/> Hole cover defective, broken, or not used 3. <input type="radio"/> Hole cover placed over hole and tight fitting	
92	Observe: Maintenance: What is the quality of the slab?	1. <input type="radio"/> Slab is significantly eroded, deteriorated to the point of being a safety concern. 2. <input type="radio"/> Hole significantly eroded or other small gaps or cracks in slab. Not yet a safety hazard. 3. <input type="radio"/> Slab more or less intact. No danger of children or adults slipping on uneven eroded surfaces, or of a foot or leg entering the pit through enlarged hole or other gaps in the slab.	

93	Observe: Maintenance: What privacy does the latrine have?	1. <input type="radio"/> User visible from outside (no walls, or walls do not provide privacy to user). 2. <input type="radio"/> Cosmetic issues in need of repair, even though user is not visible from the outside. 3. <input type="radio"/> Walls in sufficient repair to provide privacy.	
94	Observe: Maintenance: How clean is the hole/opening area of the latrine?	1. <input type="radio"/> Dry and clean 2. <input type="radio"/> Dry but smeared with shit 3. <input type="radio"/> Wet but no smeared shit 4. <input type="radio"/> Wet and smeared with shit	

Section 8: Washing Station Observations

95	Observe: Is there a hand washing station inside the latrine or within 10 paces of the latrine?	1. <input type="radio"/> Yes → go to question 96 2. <input type="radio"/> No → go to question 100	
96	Observe: Is there water at this hand washing station?	1. <input type="radio"/> Yes → go to question 97 2. <input type="radio"/> No → go to question 98	
97a	Observe: What device is used for water at this handwashing station?	1. <input type="radio"/> Tap 2. <input type="radio"/> Tippy tap 3. <input type="radio"/> Bucket 4. <input type="radio"/> Wash basin	
97b		5. <input type="radio"/> Other (specify):	
98a	Observe: Is there a handwashing material at this hand washing station inside/near the latrine? • Circle all responses	1. <input type="radio"/> None 2. <input type="radio"/> Soap 3. <input type="radio"/> Detergent 4. <input type="radio"/> Ash 5. <input type="radio"/> Mud/sand	
98b		6. <input type="radio"/> Other (specify):	
99	Observe: Does the washing station look like it has been recently used?	1. <input type="radio"/> Yes 2. <input type="radio"/> No	

Section 9: Interactions

100	<p>Were you at the meeting when triggering/igniting happened in your community?</p> <ul style="list-style-type: none"> • If the subject doesn't understand the question, ask "did you participate in the community triggering/igniting for sanitation and hygiene?" • If the subject still doesn't understand the question, mark "2 No". 	<ol style="list-style-type: none"> 1. <input type="radio"/> Yes → go to question 101 2. <input type="radio"/> No → go to question 102 	
101a	<p>Can you tell me what activities happened that day at the triggering/igniting?</p> <ul style="list-style-type: none"> • Do not read the answers. • Circle all responses. • After they have finished responding, ask "were there any more activities?" • If the respondent indicates that (s)he does not know, do not probe for additional responses. 	<input type="checkbox"/> Visiting open defecation sites (transect walk)	
101b		<input type="checkbox"/> Visiting refuse dumps	
101c		<input type="checkbox"/> Community mapping (mapping houses, latrines, refuse sites, open defecation sites)	
101d		<input type="checkbox"/> Shit calculation (calculating the amount of shit produced by the community)	
101e		<input type="checkbox"/> Fecal-oral contamination discussion (shit flow)	
101f		<input type="checkbox"/> Glass of water demonstration (putting a stick or hair into feces then water)	
101g		<input type="checkbox"/> Food demonstration (putting food near feces with flies)	
101h		<input type="checkbox"/> Medical cost calculation (calculating the cost of illness, diarrhea, treatment)	
101i		<input type="checkbox"/> Community action planning	
101j		<input type="checkbox"/> Does not remember	
101k		<input type="checkbox"/> Other (specify):	

102	Have you discussed sanitation or handwashing issues with any of your neighbors in the past 2 months?	1. <input type="radio"/> Yes 2. <input type="radio"/> No	
103	Does your village or kebele provide labor for households that cannot afford to build their own latrines?	1. <input type="radio"/> Yes 2. <input type="radio"/> No	
104	Does your village or kebele provide construction materials for households that cannot afford to build their own latrines?	1. <input type="radio"/> Yes 2. <input type="radio"/> No	
105	In the last 2 months, have you visited your kebele's health post?	1. <input type="radio"/> Yes 2. <input type="radio"/> No	
106	In the past 2 months, has a Health Extension Worker visited your house?	1. <input type="radio"/> Yes 2. <input type="radio"/> No	
107	In the past 2 months, has a teacher visited your house to talk about sanitation or hygiene?	1. <input type="radio"/> Yes 2. <input type="radio"/> No	