

**Gold standard for the global goals**

**Monitoring report**

**"VPA - Spouts - 3" (GS6445)**

**by Believe Green LLC**



June 2017, version 1

Title of the project	VPA - Spouts-3
Gold Standard project id	GS6445
Version number of the monitoring report	V05
Completion date of the monitoring report	07/04/20
Date of project design certification	15/08/2019
Start date of crediting period	01/09/2017
Duration of this monitoring period	(01/09/2017) to (31/08/2019) – (see section A.1)
Duration of previous monitoring period	This is the first period
Project representative(s)	Dr. Federico Gallo Managing Director of Believe Green LLC
Host Country	Uganda
Certification pathway (activity certification/impact certification)	Impact certification
SDG Contributions targeted (as per approved PDD)	1 – SDG13 – Emission Reductions 2 – SDG 12 – Quantity of fuel burned avoided from domestic consumption 3 – SDG 6 – Proportion of population using safely managed drinking water services
Gold Standard statement/product certification sought (GSVER/ADALYs/RECs etc.)	GSVER
Selected methodology(ies)	“Technologies and Practices to Displace Decentralized Thermal Energy Consumption” Version 3.1, August 2017.
Estimated amount of annual average certified SDG impact (as per approved PDD)	1 – SDG13 – Emission Reductions 9,497 tCO <sub>2</sub> e/year 2 – SDG 12 – Quantity of fuel burned avoided from domestic consumption 7,081 Tonnes of wood 3 – SDG 6 – Proportion of population using safely managed drinking water services 0.04%
Total amount of certified SDG impact (as per approved methodology) achieved in this monitoring period	<i>Period 2017-2018: (see Section A.1.b)</i> 1 – SDG13 – Emission Reductions 8,544 tCO <sub>2</sub> /year 2 – SDG12 – Quantity of fuel burned avoided from domestic consumption 5,454 Tonnes of wood 3 – SDG 6 – Proportion of population using safely managed drinking water services 0.04 %

	<p><i>Period 2018-2019: (see Section A.1.b)</i></p> <p>1 – SDG13 – Emission Reductions 9,378 tCO<sub>2</sub>/year</p> <p>2 – SDG12 – Quantity of fuel burned avoided from domestic consumption 5,986Tonnes of wood</p> <p>3 – SDG 6 – Proportion of population using safely managed drinking water services 0.04 %</p>
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<i>Vintage break up</i>		Spouts-3	Spouts-3_2Y
<i>year</i>	<i>Period</i>	<i>tCO2</i>	<i>tCO2</i>
2017	01/09/2017 to 31/12/2017	2,071	0
2018	01/01/2018 to 31/12/2018	6,473	2,762
2019	01/01/2019 to 31/08/2019	0	6,616
	<b>Total</b>	<b>8,544</b>	<b>9,378</b>

<b>Document Control</b>			
<b>Rev.</b>	<b>Data</b>	<b>Approved</b>	<b>Description and reason of revision</b>
<b>00</b>	10/09/19	F. Gallo	Verification – Issuance I
<b>01</b>	29/11/19	F. Gallo	Verification – Issuance I – Round 1
<b>02</b>	31/01/20	F. Gallo	Verification – Issuance I – Round 2
<b>03</b>	24/02/20	F. Gallo	Verification – Issuance I – Round 3
<b>04</b>	28/03/20	F. Gallo	Verification – Issuance I – Round 4
<b>05</b>	07/04/20	F. Gallo	Verification – Issuance I – Round 4

**SECTION A. Description of project****A.1. Purpose and general description of project**

>> (Provide a brief summary of the detailed description given in section B.1 including purpose of the project, brief description of the installed technology and equipment and relevant dates for the project (e.g. construction start/end, commissioning, continued operation periods, etc.)

"Believe Green Safe Drinking Water – Spouts–3" is a Gold Standard micro-programme activity (VPA) which aims to reduce biofuel consumption, such as wood, as is traditionally used to boil water to make it safe to drink. This is done by offering low income populations affordable and easily accessible treated water that is safe to drink. Since these people usually use inefficient cook stoves that cause large amounts of smoke leading to respiratory diseases, the project also has significant health co-benefits. Also, the project generates significant employment and income opportunities for the local villagers, who are invited to join the project across the production and delivery chain.

**Believe Green LLC** is responsible for coordinating all aspects related to the Gold Standard Certification, as well as designing and managing all the monitoring activities.

**Spouts of Water** is the local partner in Uganda. **Spouts of Water** provides Ugandan communities with increased access to safe drinking water by manufacturing and distributing the Purifaaya ceramic water filter, the only locally manufactured water filter in Uganda. The Purifaaya is affordable even to poorer communities at 20 USD, providing a tested solution to people who need it most.

By replacing the common practice of boiling, families and especially women save money, time, and fuel.

**A.1.a - Technology - Distribution channels - Strategy - Awareness campaigns**

The Purifaaya water filter uses ceramic filtration technology. Ceramic water filters are an innovative product offered as an appropriate clean water solution in Uganda. An assessment on the use of ceramic water filters in Cambodia by UNICEF states, "[Ceramic] filters have the advantage of being lightweight, portable, relatively inexpensive, chemical-free, low-maintenance, effective, and easy to use."

To distribute the filters across the entire nation, SPOUTS segments the market by income level, targeting all households while also working with NGOs to provide clean drinking water to refugee camps, schools, prisons, clinics and other public spaces. In urban and peri-urban areas, SPOUTS products are sold in retail shops, targeting households that can afford the upfront cost of the filter.

In Section B.1, Tab.2.a and Tab.2.b show the filters quantity sold per Account Type.

'Spouts -ERC' spreadsheet, 'Sales Tracker-Database' worksheet shows each detail of the filters distribution.

**A.1.b - The Monitoring Period - Vintage wise break-up (year 2017, 2018, 2019)**

Since the project meets the requirement of the GS4GG PRINCIPLES AND REQUIREMENTS, Section 3.4.7, i.e.:

- the Project Start Date has already occurred prior to the first submission of Preliminary Review information to Gold Standard
- the Project was submitted for Preliminary Review within 1 year of the Project Start Date

and

Since the project meets the rule (3.4.10.13) of the GS4GG PRINCIPLES AND REQUIREMENTS, i.e.:

- the Project Start Date is two years prior to Project Design Certification to unless otherwise stated in a specific Methodology or Product Requirements.

(see tab on the cover page)

then this project may be deemed as a Retroactive Design Certification Project.

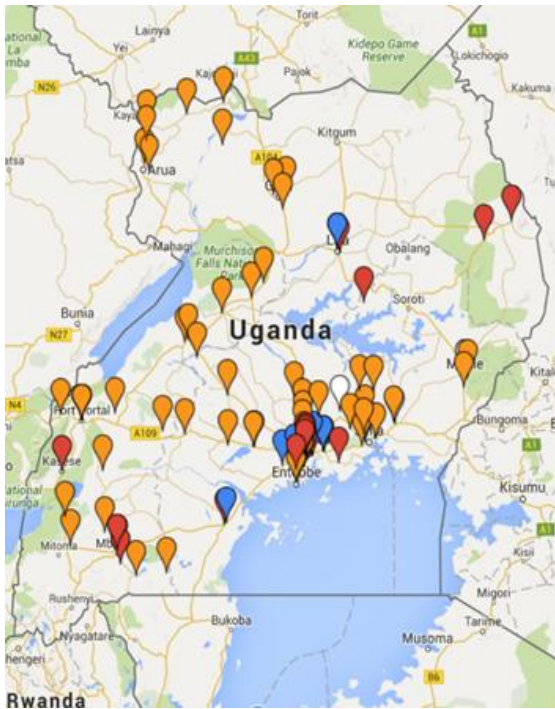
The start date of this project was 01/09/2017 and this is the first issuance for the period 2017-2019.

### A.2. Location of project

>> (Provide host country, state/province, city/town details along with GPS co-ordinates.)

Host country: Uganda

**Spouts of Water** distributes filters in over 200 communities across all four regions of Uganda. The map and the table below show the distribution points in Region/City:



Central	East	North	West
Bugolobi	Jinja	Adjumani	Bundibugyo
Bukoto	Kumi	Arua	Bushenyi
Entebbe	Mbale	Lira	Fort Portal
Kajjansi		Moroto Town	Isingiro
Kampala		Moyo	Kabwohe
Kampala Rd			Kasese
Kasubi			Kyenjojo
Kawempe			Masindi
Kigo			Mbarara
Kikubo			
Kireka			
Kisimenti			
Kiyinda			
Kololo			
Lubowa			
Mubende			
Mukono			
Nakulabye			
Nsangi			
Ntinda			
Old Kampala			
Rubaga			
Seguku			

**GPS COORDINATES OF UGANDA**

<b>DD COORDINATES</b> <div style="border: 1px solid black; padding: 5px; text-align: center;">1.3707295 32.3032414</div>	<b>DMS COORDINATES</b> <div style="border: 1px solid black; padding: 5px; text-align: center;">1°22'14.63" N 32°18'11.67" E</div>	<b>GEOHASH COORDINATES</b> <div style="border: 1px solid black; padding: 5px; text-align: center;">s8nzz1d9046xg</div>
<b>UTM COORDINATES</b> <div style="border: 1px solid black; padding: 5px; text-align: center;">36N 422488.32938526 151518.35964903</div>		

**REGIONS OF UGANDA SERVED BY SPOUTS OF WATER**



**A.3. Reference of applied methodology**

>>(Indicate title and version number of the methodology.)

Technologies and Practices to Displace Decentralized Thermal Energy Consumption Version 3.1 (TPDDTEC).

**A.4. Crediting period of project**

>> (Provide start date and length of the crediting period as given in approved PDD.)

01/09/2017 31/08/2022

5 years in first crediting period, renewable two times up to 15 years.

### SECTION B. Implementation of project

#### B.1. Description of implemented project

>> (Provide information on the implementation status of the project during this monitoring period. Specify any deviations / delays compared to information in approved project.)

To distribute the filters across the entire nation, **Spouts of Water** segments the market by income level, targeting all households while also working with NGOs to provide clean drinking water to refugee camps, schools, prisons, clinics and other public spaces.

**Spouts of Water** products are sold in retail shops, targeting households that can afford the upfront cost of the filter. 'Spouts – ERC' spreadsheet contains details of filter sales records.

Tab 1.a - *Filters distribution by Region/City - (Period 2017-2018)*

Micro	Spouts-3	
Sum of Quantity	Column Labels	
Row Labels	2019	Grand Total
<b>Central</b>	<b>1009</b>	<b>1009</b>
Kampala	342	342
Old Kampala	229	229
Ntinda	228	228
unrecorded	82	82
Bugolobi	55	55
Kikubo	34	34
Rubaga	26	26
Kisimenti	8	8
Lubowa	2	2
Kololo	2	2
Mukono	1	1
Kiyinda	0	0
<b>East</b>	<b>95</b>	<b>95</b>
Jinja	84	84
Kakira	11	11
<b>West</b>	<b>58</b>	<b>58</b>
Mbarara	45	45
Bushenyi	13	13
<b>unrecorded</b>	<b>2064</b>	<b>2064</b>
unrecorded	2064	2064
<b>Grand Total</b>	<b>3226</b>	<b>3226</b>

Tab 1.b - *Filters distribution by Region/City - (Period 2018-2019)*

Micro		Spouts-3_y2	
Sum of Quantity	Column Labels	Grand	
		2019	Total
Row Labels			
<b>Central</b>		<b>2901</b>	<b>2901</b>
Old Kampala		2765	2765
unrecorded		50	50
Kampala		50	50
Kikubo		30	30
Rubaga		6	6
<b>East</b>		<b>7</b>	<b>7</b>
Kakira		6	6
Jinja		1	1
<b>West</b>		<b>1</b>	<b>1</b>
unrecorded		1	1
<b>unrecorded</b>		<b>632</b>	<b>632</b>
unrecorded		632	632
<b>Grand Total</b>		<b>3541</b>	<b>3541</b>

Tab 2.a - *Filters distribution by Account Type - (Period 2017-2018)*

Micro		Spouts-3	
Sum of Quantity	Column Labels	Grand	
		2019	Total
Row Labels			
CBOs		88	88
Corporates		105	105
D2C Program		1725	1725
Individual		170	170
INGOs		562	562
Other		231	231
Public and Government Facilities		0	0
Retail & Wholesale		111	111
SACCOs & Coops		65	65
School		169	169
<b>Grand Total</b>		<b>3226</b>	<b>3226</b>

Tab 2.b - *Filters distribution by Account Type - (Period 2018-2019)*

Micro		Spouts-3_y2	
Sum of Quantity	Column Labels		
Row Labels	2019	Grand Total	
CBOs	3	3	
Corporates	18	18	
D2C Program	581	581	
Individual	52	52	
INGOs	2830	2830	
Microfinance Institutions	1	1	
Other	6	6	
Retail & Wholesale	43	43	
School	7	7	
<b>Grand Total</b>	<b>3541</b>	<b>3541</b>	

Tab 3.a - *Filters distribution by Product Name - (Period 2017-2018)*

Sum of Quantity	Column Labels	
Row Labels	2019	Grand Total
Filter Pot	47	47
Filter tap	3	3
Purifaaya	1663	1663
Purifaaya XL	486	486
Replacement Pot	7	7
XL Enduser Cust.Svce	62	62
XL Aid Sales Cust.Svce	154	154
XL Financing D2C	4	4
Purifaaya Commercial(Obsolete)	186	186
Regular SPOUTS NGO Cust.Svce	55	55
Regular Aid Sales Cust.Svce	50	50
Regular Discount D2C	74	74
Regular Financing D2C	264	264
Regular Upfront D2C	142	142
Transportation Charge	20	20
Regular Upfront Corp.	9	9
<b>Grand Total</b>	<b>3226</b>	<b>3226</b>

Tab 3.b - *Filters distribution by Product Name - (Period 2018-2019)*

Micro		Spouts-3_y2	
Sum of Quantity Row Labels	Column Labels		Grand Total
	2019		
Bucket	23		23
Filter Pot	11		11
Replacement Pot	8		8
XL Enduser Cust.Svce	24		24
XL Aid Sales Cust.Svce	15		15
XL Financing D2C	13		13
Purifaaya Commercial(Obsolete)	93		93
Regular Aid Sales Cust.Svce	2301		2301
Regular Discount D2C	90		90
Regular Financing D2C	234		234
Regular Upfront D2C	215		215
Transportation Charge	6		6
Regular Upfront Corp.	6		6
XL Upfront D2C	17		17
Regular Enduser Cust.Svce	21		21
Purifaaya Aid NGO	450		450
Regular Reseller Cust.Svce	14		14
<b>Grand Total</b>	<b>3541</b>		<b>3541</b>

### TECHNOLOGY

The *Purifaaya* water filter uses ceramic filtration technology. Ceramic water filters are an innovative product offered as an appropriate clean water solution in Uganda. An assessment on the use of ceramic water filters in Cambodia by UNICEF states, “[Ceramic] filters have the advantage of being lightweight, portable, relatively inexpensive, chemical-free, low-maintenance, effective, and easy to use.”<sup>1</sup>

The base of the filter is a ceramic pot with microscopic holes, which trap bacteria, enabling only clean drinking water to pass through. In order to maximize safety, all of our filters are subjected to strict quality control and then coated with an additional layer of silver nitrate, an effective biocide. Water from any source can be sanitized through the ceramic filtration system and stored at the bottom of the filter ready to drink. At the bottom of the filter is a tap, which makes the clean drinking water easily accessible. The household *Purifaaya* stores 20 liters of water, whilst the *Purifaaya* XL stores 60 liters, making it ideal for public spaces such as schools, hospitals and prisons. In 2015 The Ugandan Ministry of Water and Environment tested and approved the filter stating that SPOUTS OF WATER filters are “efficient and effective to produce water that meets

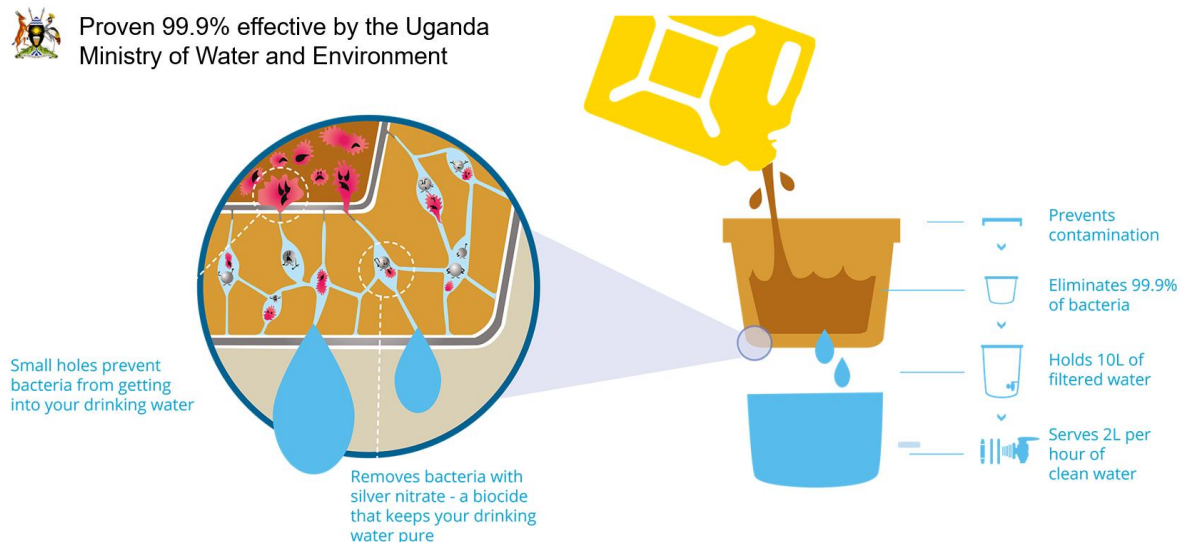
<sup>1</sup> Unicef. “Improving Household Drinking Water Quality: Use of Ceramic Water Filters in Cambodia.” August 2007. [https://www.unicef.org/eapro/WSP\\_UNICEF\\_FN\\_CWP\\_Final.pdf](https://www.unicef.org/eapro/WSP_UNICEF_FN_CWP_Final.pdf)

the recommended standard of water for human consumption.”<sup>2</sup> Test results conclude that the *Purifaaya* kills 99.9% of disease-causing bacteria, as well as removing the turbidity of the water, thus producing drinking water that is both safe and clean.

In addition to *Purifaaya’s* technical excellence, SPOUTS ‘ceramic filters are also culturally and socially acceptable in Uganda due to the long-standing tradition in villages of storing drinking water in clay pots. The local population prefers the taste of the water from ceramic filters and is accustomed to maintaining ceramic products.



Proven 99.9% effective by the Uganda Ministry of Water and Environment



### B.2. Post-registration changes

#### B.2.1. Temporary deviations from Certified Key Project Information, Project Design Document, Monitoring & Reporting Plan, applied methodology or applied standardized baseline

>> (Indicate whether any temporary deviations have been applied during this monitoring period. If applied, provide a description of the deviation(s). Include the reasons for the deviation(s), how it deviates from the monitoring plan, applied methodology(ies) and/or applied approaches, the duration for which the deviation(s) is(are) applicable and justification on the conservativeness of the approach. Also indicate if prior approval from GS-TAC have been sought on the deviation.)

No temporary deviations have been applied during this monitoring period

#### B.2.2. Corrections

>> (Indicate whether any corrections to project information or parameters fixed at validation have been applied.)

No corrections to project information or parameters fixed at validation have been applied

#### B.2.3. Changes to start date of crediting period

>> (Indicate whether any changes to the start date of the crediting period have been approved by Gold Standard that is relevant for this monitoring period.)

<sup>2</sup> Record of Approval: [http://spouts.org/wp-content/uploads/2016/09/SPOUTS\\_Purifaaya-Intro.pdf](http://spouts.org/wp-content/uploads/2016/09/SPOUTS_Purifaaya-Intro.pdf)

No changes to the start date of the crediting period have been introduced.

**B.2.4. Permanent changes from registered monitoring plan, applied methodology or applied standardized baseline**

>> *(Indicate whether any permanent changes from the approved monitoring plan, applied methodologies or applied approaches have been approved by GS-TAC that is relevant for this monitoring period.)*

No permanent changes from the approved monitoring plan, applied methodologies or applied approaches have been introduced.

**B.2.5. Changes to project design of approved project**

>> *(Indicate whether any changes to the design of the project have been approved by GS-TAC that is relevant for this monitoring period.)*

No changes have been made to the project design.

**SECTION C. Description of monitoring system applied by the project**

This project's monitoring included the following elements:

**1. A Total Sales Record**

The project proponent continuously maintains an accurate and complete sales record, which is backed up electronically.

'Spouts -ERC' spreadsheet, 'Sales Tracker-Database' worksheet shows each detail of the filters distribution.

***Double counting with other carbon standards***

The following steps ensure that we are avoiding double counting with other carbon standards:

1. We are only claiming and certifying water purchased from Spring Health, and we are keeping a precise record of this amount, as detailed elsewhere in this monitoring report and VPA.
2. We are only certifying this project with the Gold Standard / SustainCert: we are not certifying it under other standards.
3. Data collected for carbon certification purposes under this project is only shared internally within the team, and with the Gold Standard / SustainCert, so no other third parties can certify this project either.
4. We are not aware of other projects seeking carbon credits in our area of operation.
5. We asked to each customer to inform us about any proposal of participation in another program. (see Appendix 3)

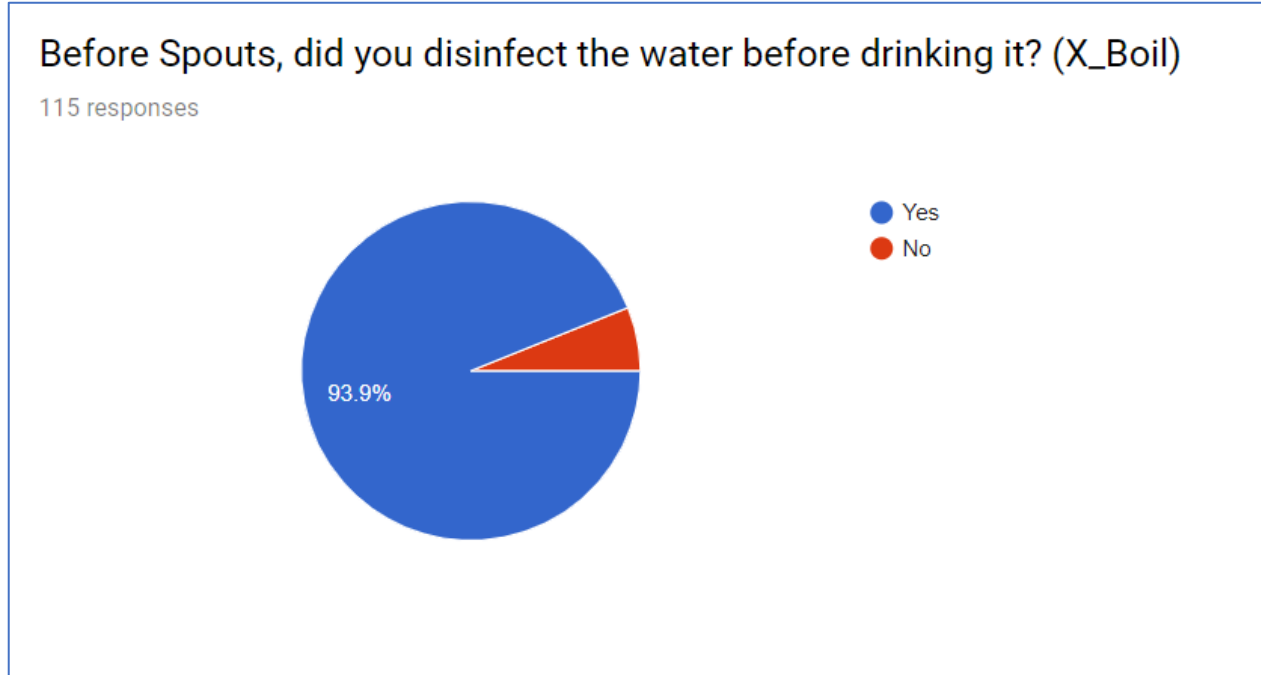
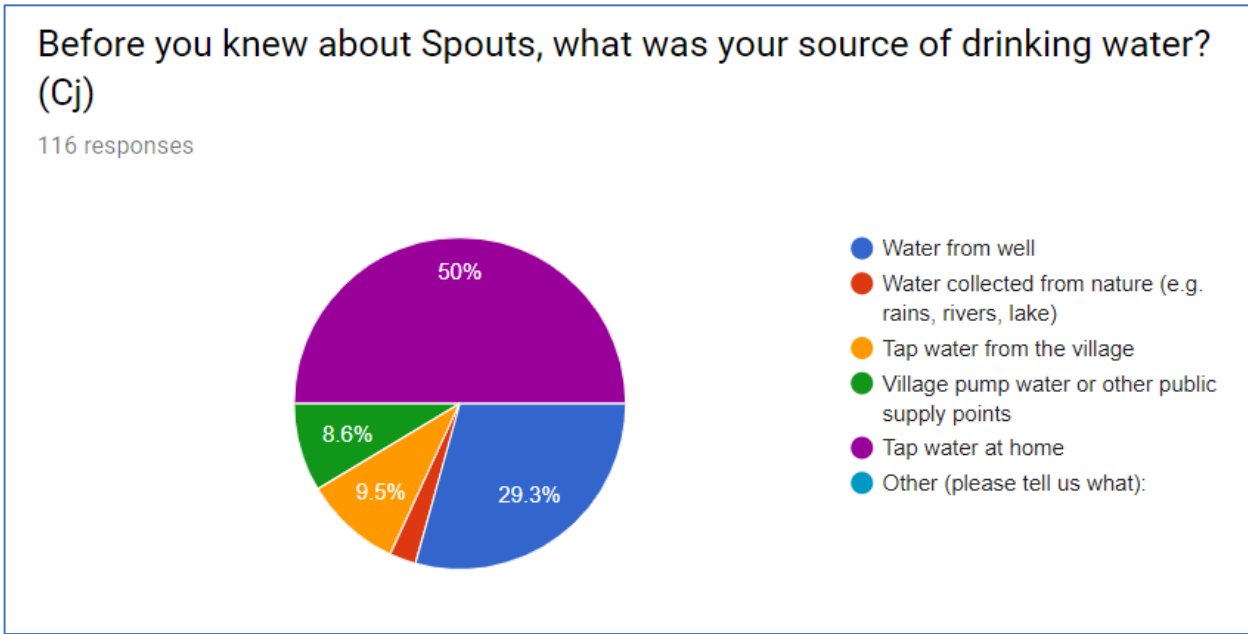
***Training activities***

The team assigned to carry out the surveys carried out the training activities described in:

- Annex A - *Training Manual: Teaching a community to use the filter*
- Annex B - *SPOUTS of Water Usage Study - Surveys and Training Manual*

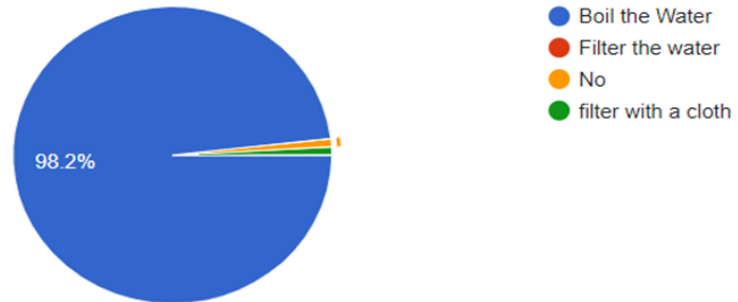
2. A monitoring survey, including a baseline survey and usage survey.

We have conducted a survey in July 2019. This section presents the results of the survey. The text includes the questions asked in the questionnaire and, immediately below, the relevant answers. The detailed results from the survey are included in the 'Survey 2019' worksheet of the 'Spouts – ERC' spreadsheet.



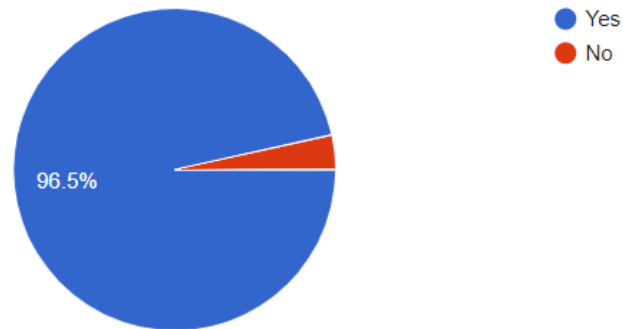
If you used to disinfect your water, how did you do it? (X\_Boil)

111 responses



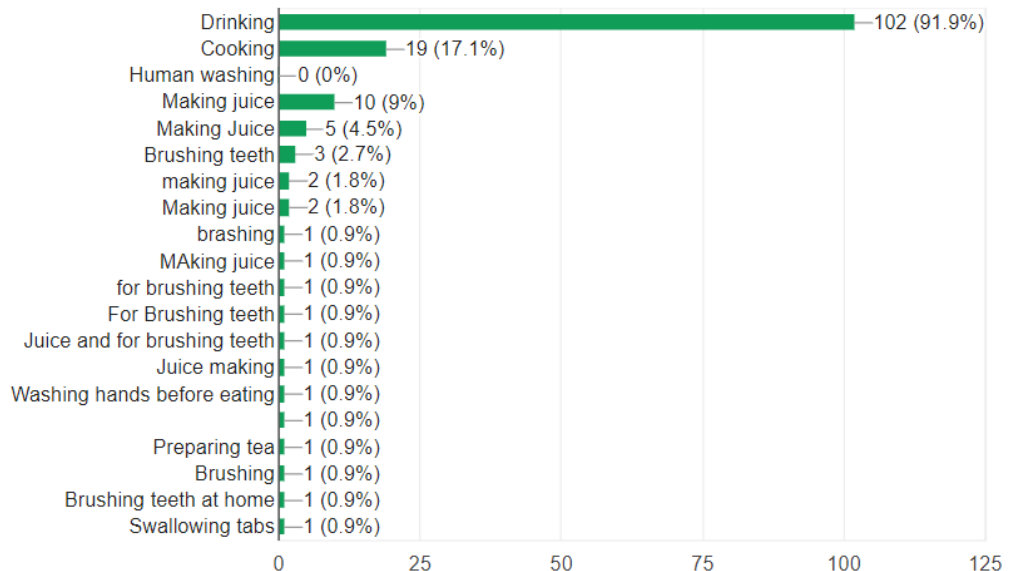
Are you using and maintaining correctly your filter?

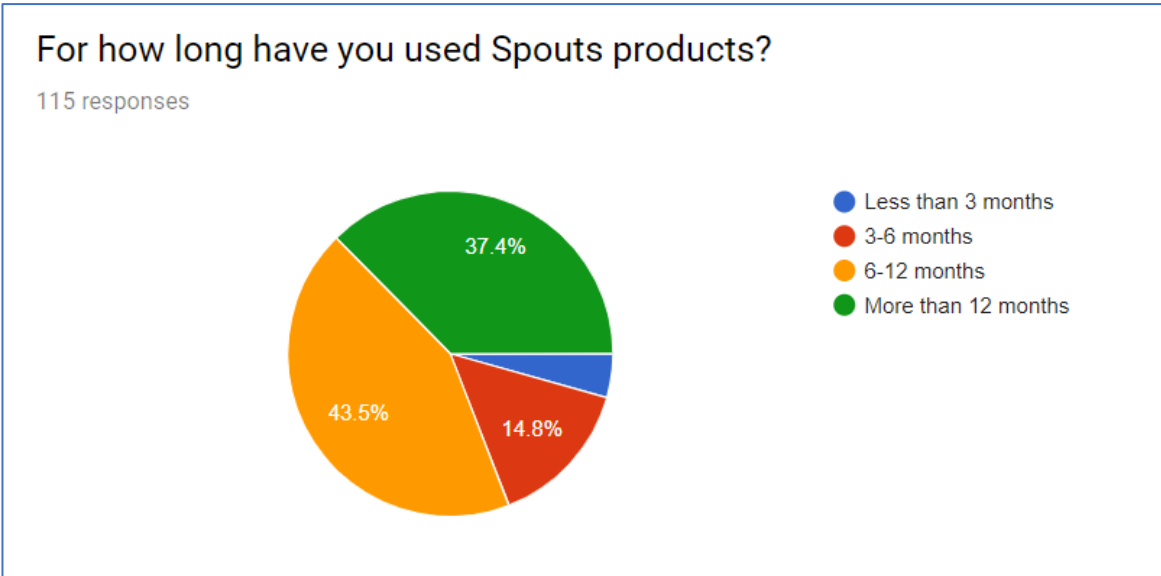
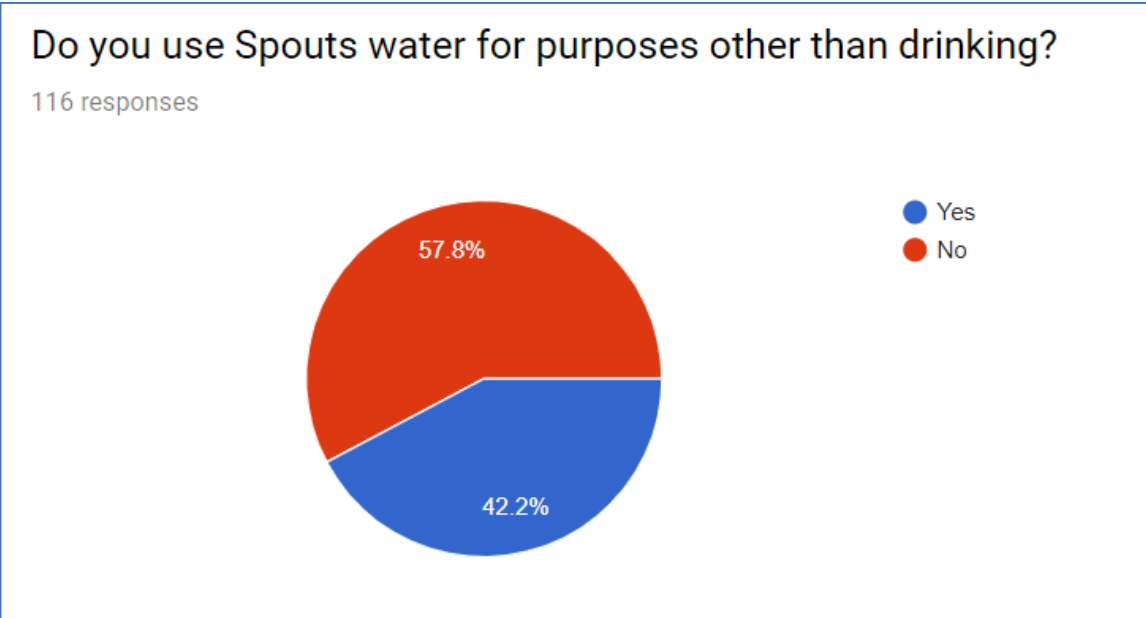
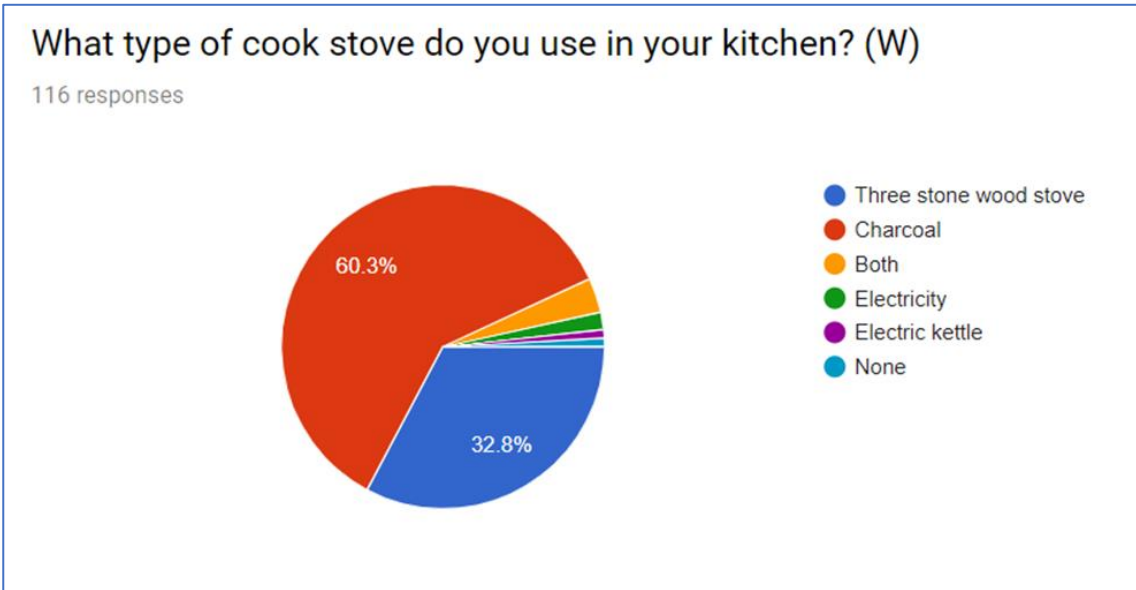
115 responses

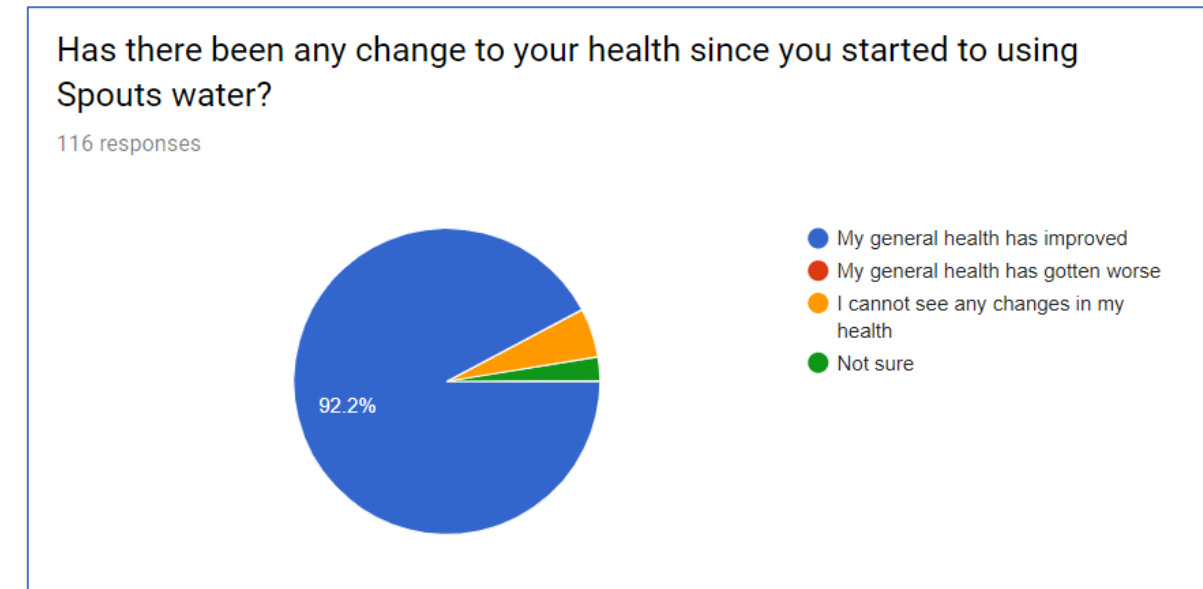
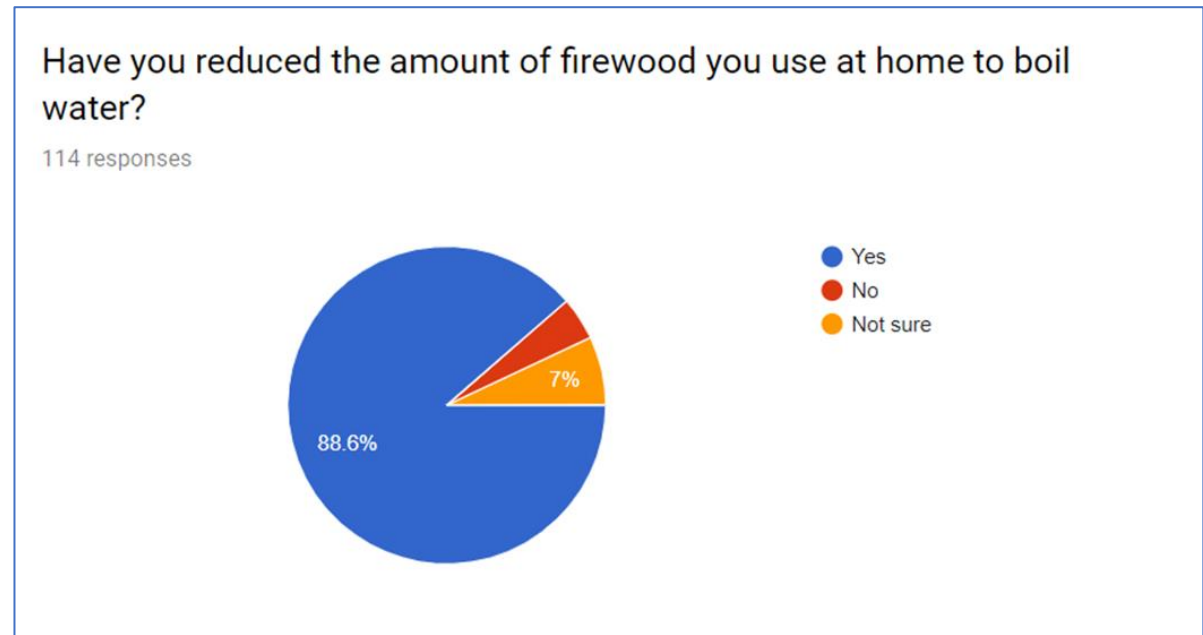
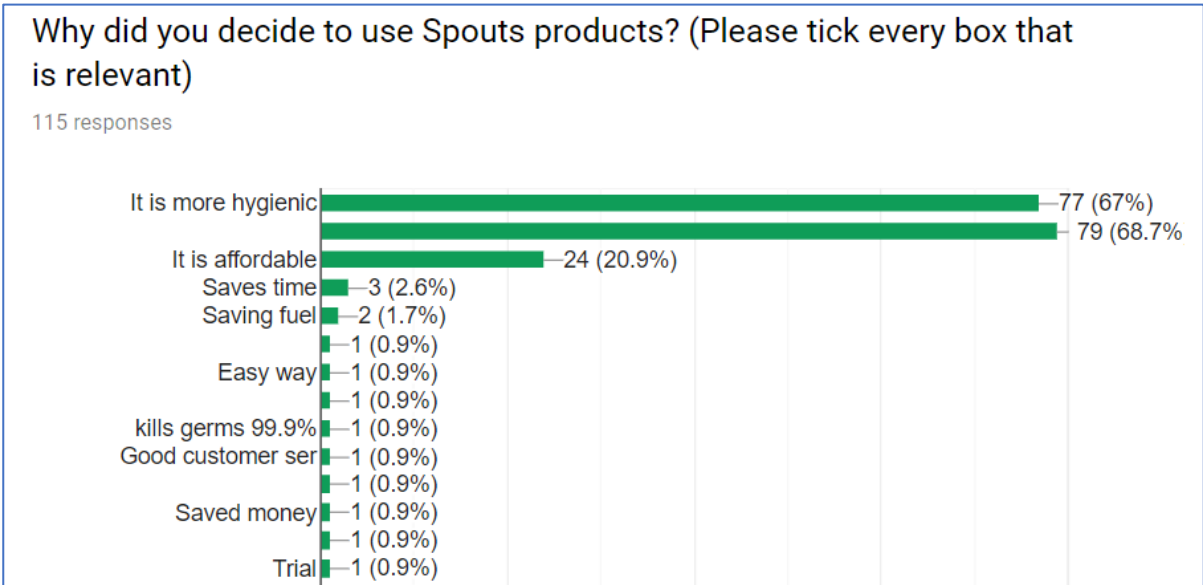


For what purposes are using Spouts water?

111 responses

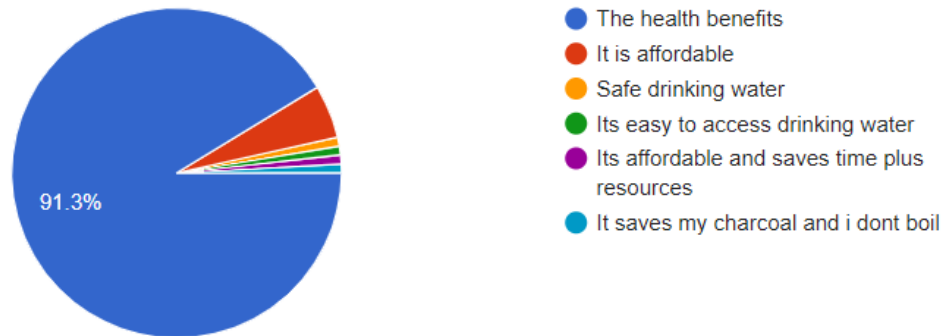






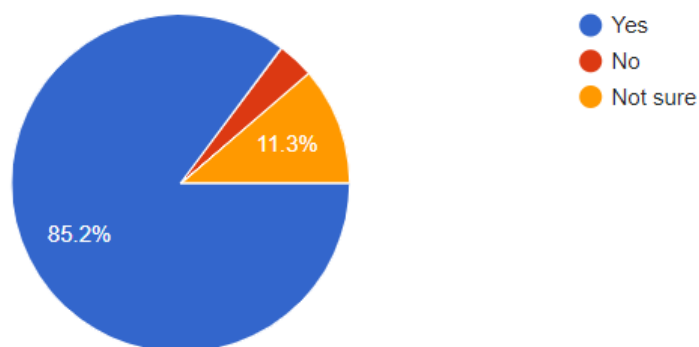
### What do you like about Spouts products and services?

115 responses



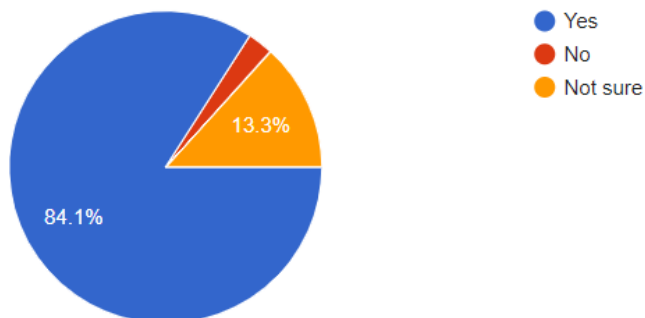
### Do you think that the project created opportunities to meet other people of the village and to interact with them?

115 responses



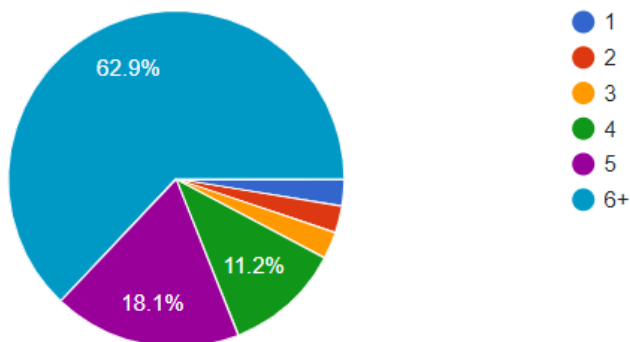
Do you think that the quality of air in your home has improved over the last year, (if you no longer needed to boil water)?

113 responses



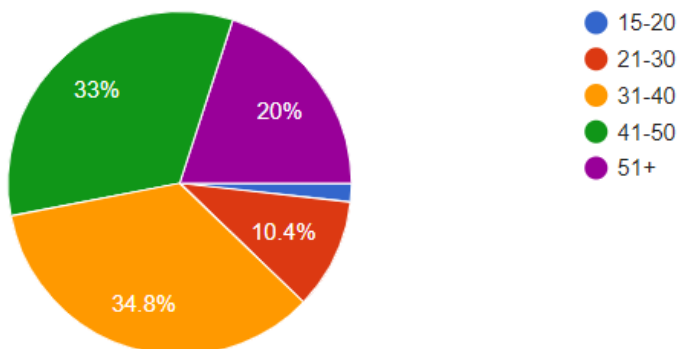
How many members does your family have?

116 responses



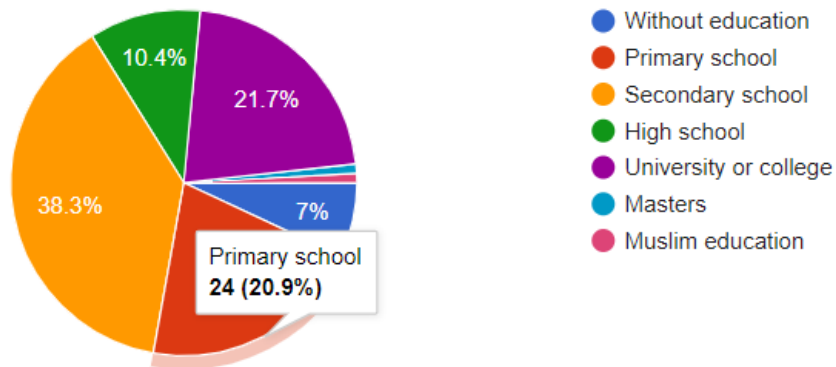
How old are you?

115 responses



### What is your level of education?

115 responses



### 3. Leakage (Ly)

#### ***Emissions from filter production***

The project activity will need firewood to fuel the kilns to fire the ceramic pots that make the key component of the ceramic filters (see pictures below). PP is accounting for the emissions coming from those activities by measuring the quantity of wood used while cooking the ceramic filters in the kilns. The calculations are available in the Emission Calculations spreadsheet.



The above pictures show a) the two kilns and the wood arranged before use in the firings; b) an instance when the wood weight was being measured to estimate the amount of wood used to cook the ceramic pots that make the key component of the filters.

$$L_y = L_{\text{kiln}} = \text{Filters}_{y} * W_F * ((f_{\text{NRB},p,y} * EF_{p,\text{wood},\text{CO}_2}) + EF_{p,\text{wood},\text{nonCO}_2}) * \text{NCV}_{p,\text{wood}}$$

*Period:* from 01/09/2017 to 31/08/2018

$$L_{\text{kiln}} = 3,226 * 0.00445 * ((82.0\% * 112) + 6.424) * 0.015 = 21 \text{ tCO}_2$$

*Period:* from 01/09/2018 to 31/08/2019

$$L_{\text{kiln}} = 3,541 * 0.00445 * ((82.0\% * 112) + 6.424) * 0.015 = 23 \text{ tCO}_2$$

Where:

$L_{\text{kiln}}$  Leakage carbon emitted in the wood kilns during production of the ceramic filters, measured in tCO<sub>2</sub>.

$\text{Filters}_{y,7,8}$  Number of filters sold from 01/09/2017 to 31/08/2018 = 3,226 Filters

$\text{Filters}_{y,8,9}$  Number of filters sold from 01/09/2018 to 31/08/2019 = 3,541 Filters

$W_F$  The amount of wood used to produce one ceramic filter in the kiln = 0.00445 tonnes of wood

$f_{\text{NRB},p,y}$  Non Renewable Biomass = 82.0 %

$EF_{p,\text{wood},\text{CO}_2}$  CO<sub>2</sub> Emission Factor for Wood = 112 tCO<sub>2</sub>/TJ

$EF_{p,\text{wood},\text{nonCO}_2}$  non CO<sub>2</sub> Emission Factor for Wood = 6.424 tCO<sub>2</sub>/TJ

$\text{NCV}_{p,\text{wood}}$  Net Calorific Value of Wood = 0.015 TJ/tonne

### SECTION D. Data and parameters

#### D.1. Data and parameters fixed ex ante or at renewal of crediting period

(Copy this table for each piece of data and parameter)

<b>Relevant SDG</b>	12 – Ensure sustainable consumption and production patterns
<b>Data / Parameter:</b>	$W_{b-\text{wood}} / W_{b-\text{charcoal}}$ <b>3-4-nm</b>
<b>Data unit:</b>	Tonnes/litre
<b>Description:</b>	Quantity of fuel in tons required to treat 1 litre of water using technologies representative of baseline scenario b

Source of data used:	Baseline water Boiling test
Value applied:	$W_{b-wood} = 0.000427$ - $W_{b-charcoal} = 0.000088$
Choice of data or measurement methods and procedures	The value provided above was derived from water boiling tests as recommended by the GS Methodology.  (See 'Spouts-ERC' spreadsheet, 'Boiling Test parameter W' worksheet)
Purpose of data	Definition of tCO2 emission reductions and Tons of burnt wood avoided
Any comment:	n.a.

<b>Relevant SDG</b>	13 – 'Climate Action - Carbon emission reductions'
<b>Data / Parameter:</b>	$EF_{b,wood,CO2}$ <b>5-nm</b>
Data unit:	tCO2/TJ
Description:	CO2 emission factor arising from use of fuels in baseline/project scenario
Source of data used:	IPCC Guidelines for National Greenhouse Gas Inventories, Volume 2, Energy, Chapter 2, Stationary Combustion, Table 2.5 <sup>3</sup>
Value applied:	$EF_{b,wood,CO2} = 112$ The value of these parameters is included in 'Spouts-ERC' spreadsheet.
Choice of data or measurement methods and procedures	Determined as per IPCC default figures.  The value is the same during both the baseline and project implementation (However, it is noted that during the project there is no fuel being used, as the filters do not require fuel and work on gravity).
Purpose of data	Definition of tCO2 emission reductions
Any comment:	n.a.

<b>Relevant SDG</b>	13 – 'Climate Action - Carbon emission reductions'
<b>Data / Parameter:</b>	$EF_{b,charcoal,CO2}$ <b>6-nm</b>
Data unit:	tCO2/TJ
Description:	CO2 emission factor arising from use of fuels in baseline/project scenario
Source of data used:	IPCC Guidelines for National Greenhouse Gas Inventories, Volume 2, Energy, Chapter 2, Stationary Combustion, Table 2.5 <sup>4</sup>
Value applied:	$EF_{b,charcoal,CO2} = 112$ The value of these parameters is included in 'Spouts-ERC' spreadsheet.

<sup>3</sup> [http://www.ipcc-nggip.iges.or.jp/public/2006gl/pdf/2\\_Volume2/V2\\_2\\_Ch2\\_Stationary\\_Combustion.pdf](http://www.ipcc-nggip.iges.or.jp/public/2006gl/pdf/2_Volume2/V2_2_Ch2_Stationary_Combustion.pdf)

<sup>4</sup> [http://www.ipcc-nggip.iges.or.jp/public/2006gl/pdf/2\\_Volume2/V2\\_2\\_Ch2\\_Stationary\\_Combustion.pdf](http://www.ipcc-nggip.iges.or.jp/public/2006gl/pdf/2_Volume2/V2_2_Ch2_Stationary_Combustion.pdf)

Choice of data or measurement methods and procedures	Determined as per IPCC default figures.  The value is the same during both the baseline and project implementation (However, it is noted that during the project there is no fuel being used, as the filters do not require fuel and work on gravity).
Purpose of data	Definition of tCO2 emission reductions
Any comment:	n.a.
<b>Relevant SDG</b>	13 – ‘Climate Action - Carbon emission reductions’
<b>Data / Parameter:</b>	$EF_{b,wood,nonCO2}$ <b>7-nm</b>
Data unit:	tCO2e/TJ
Description:	Non-CO2 emission factor arising from use of fuels in baseline/project scenario
Source of data used:	IPCC Guidelines for National Greenhouse Gas Inventories, Volume 2, Energy, Chapter 2, Stationary Combustion, Table 2.5 <sup>5</sup>
Value applied	$EF_{b,wood,nonCO2} = 6.424$ The value of these parameters is included in ‘Spouts-ERC’ spreadsheet.
Choice of data or measurement methods and procedures	Determined as per IPCC default figures. The Global Warming Potential (GWP) for CH4 it is 21, while for N2O it is 310. Source: UNFCCC . So, the value was calculated using the following formula: $EF_{p,wood,nonCO2} = ((CH4=0.3*GWPC_{H4} 25) + (N2O=0.004*GWPN_{2O} 295)) = ((CH4=0.3*21) + (N2O=0.004*310)) = 6.424$  The value is the same during both the baseline and project implementation.
Purpose of data	Definition of tCO2 emission reductions
Any comment:	n.a.

<b>Relevant SDG</b>	13 – ‘Climate Action - Carbon emission reductions’
<b>Data / Parameter:</b>	$EF_{b,charcoal,nonCO2}$ <b>8-nm</b>
Data unit:	tCO2e/TJ
Description:	Non-CO2 emission factor arising from use of fuels in baseline/project scenario
Source of data used:	IPCC Guidelines for National Greenhouse Gas Inventories, Volume 2, Energy, Chapter 2, Stationary Combustion, Table 2.5 <sup>6</sup>
Value applied	$EF_{b,charcoal,nonCO2} = 4.51$ The value of these parameters is included in ‘Spouts-ERC’ spreadsheet.

<sup>5</sup> [http://www.ipcc-nggip.iges.or.jp/public/2006gl/pdf/2\\_Volume2/V2\\_2\\_Ch2\\_Stationary\\_Combustion.pdf](http://www.ipcc-nggip.iges.or.jp/public/2006gl/pdf/2_Volume2/V2_2_Ch2_Stationary_Combustion.pdf)

<sup>6</sup> [http://www.ipcc-nggip.iges.or.jp/public/2006gl/pdf/2\\_Volume2/V2\\_2\\_Ch2\\_Stationary\\_Combustion.pdf](http://www.ipcc-nggip.iges.or.jp/public/2006gl/pdf/2_Volume2/V2_2_Ch2_Stationary_Combustion.pdf)

Choice of data or measurement methods and procedures	Determined as per IPCC default figures. The Global Warming Potential (GWP) for CH4 it is 21, while for N2O it is 310. Source: UNFCCC <sup>7</sup> . So, the value was calculated using the following formula: $((CH4=0.2*GWP_{25}) + (N2O=0.001*GWP_{295})) = 5.29$ . $EF_{p,charcoal,nonCO2} = ((CH4=0.2*GWP_{CH4}) + (N2O=0.001*GWP_{N2O})) =$ $= ((CH4=0.3*21) + (N2O=0.004*310)) = 4.51$
Purpose of data	Definition of tCO2 emission reductions
Any comment:	n.a.

<b>Relevant SDG</b>	12 – ‘Ensure sustainable consumption and production patterns’
<b>Data / Parameter:</b>	NCV <sub>b,wood</sub> <b>9-nm</b>
Data unit:	TJ/ton
Description:	Net calorific value of the fuels used in baseline/ project scenario
Source of data used:	Wood fuels handbook – European Biomass Association. Table 2.7.1 <sup>8</sup>
Value applied	NCV <sub>b,wood</sub> = 0.015 The value of these parameters is included in ‘Spouts-ERC’ spreadsheet.
Choice of data or measurement methods and procedures	Default value used by the European Biomass Association, as described in the above document.  The value is the same during both the baseline and project implementation.
Purpose of data	Definition of tCO2 emission reductions
Any comment:	n.a.

<b>Relevant SDG</b>	12 – ‘Ensure sustainable consumption and production patterns’
<b>Data / Parameter:</b>	NCV <sub>b,charcoal</sub> <b>10-nm</b>
Data unit:	TJ/ton
Description:	Net calorific value of the fuels used in baseline/ project scenario
Source of data used:	IPCC Guidelines for National Greenhouse Gas Inventories. Table 1.2 <sup>9</sup>
Value applied	NCV <sub>b,charcoal</sub> = 0.0295 The value of these parameters is included in ‘Spouts-ERC’ spreadsheet.

<sup>7</sup> [https://unfccc.int/ghg\\_data/items/3825.php](https://unfccc.int/ghg_data/items/3825.php)

<sup>8</sup> [http://www.biomassstradecentre2.eu/scripts/download.php?file=/data/pdf\\_vsebine/literature/wood\\_fuels\\_ha\\_nbook.pdf](http://www.biomassstradecentre2.eu/scripts/download.php?file=/data/pdf_vsebine/literature/wood_fuels_ha_nbook.pdf)

<sup>9</sup> <https://www.ipcc.ch/meetings/session25/doc4a4b/vol2.pdf>

Choice of data or measurement methods and procedures	Default value used by the IPCC, as described in the above document.  The value is the same during both the baseline and project implementation.
Purpose of data	Definition of tCO2 emission reductions
Any comment:	n.a.

### D.2. Data and parameters monitored

(Copy this table for each piece of data and parameter)

Exceptionally the Value applied will be valid for periods 2017/2018 and 2018/2019. (see 'Survey 2019' worksheet.)

<b>Relevant SDG</b>	6 – 'Clean Water and Sanitation - Safe drinking water provide'
<b>Data / Parameter:</b>	C <sub>j</sub> <b>1-m</b>
Data unit:	Percentage
Description:	Portion of users of project safe water supply who were already in baseline using a non-boiling safe water supply
Measured/calculated/default	Measured (See 'Spouts-ERC' spreadsheet, 'Survey 2019' worksheet)
Source of data used:	Across Uganda drinking water is not safe and is not considered to be safe by the government authorities C <sub>j</sub> =0. <sup>10,11,12,13,14,15</sup>  However, from the survey we found that: C <sub>j</sub> = 9.5%
Value applied	C <sub>j</sub> = 9.5%
Monitoring frequency	Only in the baseline study.
Monitoring frequency	Annually (Exceptionally the Value applied will be valid for periods 2017/2018 and 2018/2019)

<sup>10</sup> Bain, R., Cronk, R., Wright, J., Yang, H., Slaymaker, T., & Bartram, J. (2014). Fecal Contamination of Drinking-Water in Low- and Middle-Income Countries: A Systematic Review and Meta-Analysis. PLoS Medicine, 11(5). <http://doi.org/10.1371/journal.pmed.1001644>

<sup>11</sup> Haruna, R., Ejobi, F., & Kabagambe, E. K. (2005). The quality of water from protected springs in Katwe and Kisenyi parishes, Kampala city, Uganda. African Health Sciences, 5(1), 14–20.

<sup>12</sup> World Health Organization (WHO), & Unicef. (2012). Uganda WASH Statistics. Geneva. Retrieved from <https://www.wssinfo.org/documents>

<sup>13</sup> <http://www.onewater.org/stories/story/uganda>

<sup>14</sup> <https://www.monitor.co.ug/News/National/Water-Kampala-safe-WHO/688334-2658314-dbx3ku/index.html>

<sup>15</sup> <https://www.monitor.co.ug/SpecialReports/How-safe-water-consume/688342-4348206-5y8ijuz/index.html>

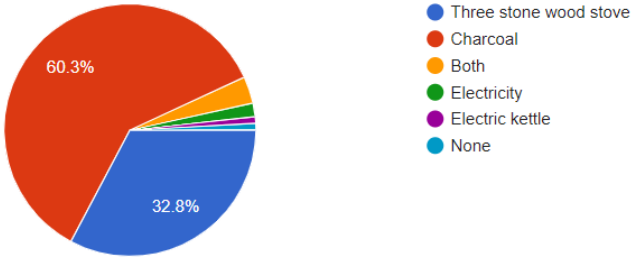
Calculation method	n.a.
QA/QC procedures	Development of surveys and data recording in accordance with the requirements of the Quality Management System.
Purpose of data	Baseline definition
Additional comments	n.a.

<b>Relevant SDG</b>	6 – ‘Clean Water and Sanitation - Safe drinking water provide’
<b>Data / Parameter:</b>	$X_{boil}$ <b>2-m</b>
Data unit:	Percentage
Description:	Percentage of premises that would have used other non-GHG emitting technologies like chlorine treatment techniques, if available, in the absence of the project activity.
Measured/calculated/default	Measured
Source of data used:	(See ‘Spouts-ERC’ spreadsheet, ‘Survey 2019’ worksheet)
Value applied	$X_{boil} = 6.1 \%$
Monitoring equipment	Survey equipment
Monitoring frequency	Annually (Exceptionally the Value applied will be valid for periods 2017/2018 and 2018/2019)
Calculation method	n.a.
QA/QC procedures	Development of surveys and data recording in accordance with the requirements of the Quality Management System.
Purpose of data:	Baseline definition
Any comment	n.a.

<b>Relevant SDG Indicator</b>	6 – ‘Clean Water and Sanitation - Safe drinking water provide’
<b>Data / Parameter:</b>	$Q_{p,y}$ <b>11-m</b>
Data unit:	Litres per person per day
Description:	Quantity of safe water in litres consumed in the project scenario p and supplied by project technology per person per day

Measured/calculated/default	This is a default value recommended by the WHO and approved by the GS: see Annex A.3.2 of the TPDDTEC methodology.
Source of data used:	This is a default value recommended by the WHO and approved by the GS: see Annex A.3.2 of the TPDDTEC methodology.
Value applied:	$Q_{p,y} = 4 \text{ L/person.day}$
Monitoring equipment	Survey equipment
Monitoring frequency	Annually (Exceptionally the Value applied will be valid for periods 2017/2018 and 2018/2019)
Calculation method	n.a.
QA/QC procedure	Data recording in accordance with the requirements of the Quality Management System.
Purpose of data	Definition of proportion of population using safely managed drinking water services
Any comment:	n.a.

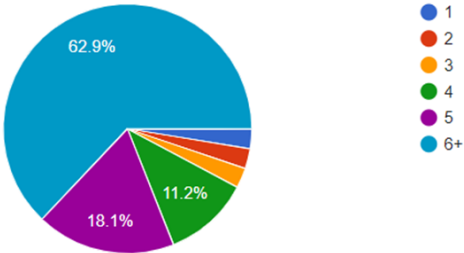
<b>Relevant SDG Indicator</b>	12 – ‘Ensure sustainable consumption and production patterns’
<b>Data / Parameter:</b>	$\pi_w, \pi_c$ <b>12-13-m</b>
Data unit:	Percentage
Description:	Percentage of people using wood or charcoal to boil water.
Measured/calculated/default	Measured/calculated (See ‘Spouts-ERC’ spreadsheet, ‘Survey 2019’ worksheet)
Source of data used:	Our internal survey. (See ‘Spouts-ERC’ spreadsheet, ‘Survey 2019’ worksheet)
Value applied	$\pi_w = 57 - \pi_c = 43$
Monitoring equipment	Survey equipment
Monitoring frequency	Annually (Exceptionally the Value applied will be valid for periods 2017/2018 and 2018/2019)

Calculation method	<p>The values were obtained from our internal survey. The graph below shows the obtained results.</p> <p>What type of cook stove do you use in your kitchen? (W)</p> <p>116 responses</p>  <p>A small fraction of the urban population uses electricity to boil water. For simplicity, we assume that the amount of CO2 emitted in these cases is zero (i.e. we are not counting the emissions reductions from electricity – this reduces the potential carbon credits that we can claim, but we decided to forgo them to simplify the calculations).</p>
QA/QC procedures	Development of surveys and data recording in accordance with the requirements of the Quality Management System.
Purpose of data	Definition of tCO2 emission reductions
Any comment:	<p>The percentage of people who use wood or coal to boil water has been invested between the first and the second period, i.e. .:</p> <p>2018:  <math>\pi_W = 78</math> - <math>\pi_C = 22</math></p> <p>2019:  <math>\pi_W = 35</math> - <math>\pi_C = 65</math></p> <p><b>We have adopted average values:</b>  <math>\pi_W = 57</math> - <math>\pi_C = 43</math></p>

Relevant SDG	6 - 'Clean Water and Sanitation - Safe drinking water provide'
Data / Parameter	Filters_Y <b>14-m</b>
Data unit	Number of filters.

Description	Number of filters sold in years Y and Y-1. Since the filters have a lifetime of two years, we consider as 'active' only those filters sold that were sold in the two years prior to each year's VER issuance request. In other words, filters older than two years are not counted towards the carbon emission reductions.
Measured/calculated/default	Measured/calculated
Source of data used	The data collected continuously by the sales. Each sale is recorded in a cloud based system using Salesforce. Information is collected on the date of sale, specific customer details, location etc. The relevant information is included in the Emissions Reductions spreadsheet.
Value applied	Period 2017-2018 → 3,557 Period 2018-2019 → 3,471
Monitoring equipment	Survey equipment
Monitoring frequency	Annually
Calculation method	The data is gathered continuously as filters are sold, using Salesforce software.
QA/QC procedure	Development of surveys and data recording in accordance with the requirements of the Quality Management System.
Purpose of data	Definition of proportion of population using safely managed drinking water services
Any comment	n.a.

Relevant SDG	6 - 'Clean Water and Sanitation - Safe drinking water provide'
Data / Parameter	nj <b>15-m</b>
Data unit	People per household
Description	Average number of people per household.
Measured/calculated/default	Measured/calculated
Value applied	nj = 5.60
Monitoring equipment	Survey equipment
Monitoring frequency	Annually (Exceptionally the Value applied will be valid for periods 2017/2018 and 2018/2019)

<p>Calculation method</p>	<p>The source of this data is our internal survey. (See 'Spouts-ERC' spreadsheet, 'Survey 2019' worksheet)</p> <table border="1" data-bbox="539 324 1401 772"> <thead> <tr> <th colspan="3">Number of people per household</th> </tr> <tr> <th>HH size</th> <th>Frequency</th> <th>Weighted HH size</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>2.6%</td> <td>0.026</td> </tr> <tr> <td>2</td> <td>2.6%</td> <td>0.052</td> </tr> <tr> <td>3</td> <td>2.6%</td> <td>0.078</td> </tr> <tr> <td>4</td> <td>11.2%</td> <td>0.448</td> </tr> <tr> <td>5</td> <td>18.1%</td> <td>0.905</td> </tr> <tr> <td>6+</td> <td>62.9%</td> <td>4.0885</td> </tr> <tr> <td></td> <td><b>Total</b></td> <td><b>5.5975</b></td> </tr> </tbody> </table> <div data-bbox="523 828 1428 1288"> <p>How many members does your family have?</p> <p>116 responses</p>  <table border="1"> <caption>Family Size Distribution Data</caption> <thead> <tr> <th>Family Size</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>2.6%</td> </tr> <tr> <td>2</td> <td>2.6%</td> </tr> <tr> <td>3</td> <td>2.6%</td> </tr> <tr> <td>4</td> <td>11.2%</td> </tr> <tr> <td>5</td> <td>18.1%</td> </tr> <tr> <td>6+</td> <td>62.9%</td> </tr> </tbody> </table> </div> <p>Since generally one filter serves one household, the value nj of the average number of people in each household quantified also the average number of people served by each filter on average.</p>	Number of people per household			HH size	Frequency	Weighted HH size	1	2.6%	0.026	2	2.6%	0.052	3	2.6%	0.078	4	11.2%	0.448	5	18.1%	0.905	6+	62.9%	4.0885		<b>Total</b>	<b>5.5975</b>	Family Size	Percentage	1	2.6%	2	2.6%	3	2.6%	4	11.2%	5	18.1%	6+	62.9%
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<p>Any comment</p>	<p>n.a.</p>																																									

Relevant SDG	6 - 'Clean Water and Sanitation - Safe drinking water provide'																								
Data / Parameter:	$U_{p,y}$ <b>16-m</b>																								
Data unit:	Fraction																								
Description:	Cumulative usage rate for technologies in project scenario p during year y, based on cumulative installation rate and drop off rate ( $U_{p,y}$ )																								
Source of data used:	Internal survey, see results below.																								
Value applied:	$U_{p,y} = 82\%$																								
Choice of data or measurement methods and procedures	<p>We followed the guidelines in Annex 9 of the TPDDTEC Methodology.</p> <p>The figure below shows the responses to the questions related to product reach broken down by region. Out of all 155 households surveyed, 90% are using their filter and 90% demonstrate correct use and cleaning protocol, however, only <b>82% are both using their filter and using and maintaining it correctly.</b></p> <p><b>Reach statistics (% of survey respondents)</b></p> <table border="1"> <caption>Reach statistics (% of survey respondents)</caption> <thead> <tr> <th>Category</th> <th>Farming Village</th> <th>Refugee Settlement</th> <th>Urban</th> </tr> </thead> <tbody> <tr> <td>Observation: Filter in use</td> <td>89</td> <td>90</td> <td>95</td> </tr> <tr> <td>Demonstrates Correctly maintaining filter</td> <td>86</td> <td>100</td> <td>92</td> </tr> <tr> <td>Reach total: In use, correct use, correct maintenance</td> <td>78</td> <td>90</td> <td>87</td> </tr> <tr> <td>Do you trust the water quality?</td> <td>99</td> <td>100</td> <td>97</td> </tr> <tr> <td>Do you use additional treatment?</td> <td>13</td> <td>0</td> <td>36</td> </tr> </tbody> </table>	Category	Farming Village	Refugee Settlement	Urban	Observation: Filter in use	89	90	95	Demonstrates Correctly maintaining filter	86	100	92	Reach total: In use, correct use, correct maintenance	78	90	87	Do you trust the water quality?	99	100	97	Do you use additional treatment?	13	0	36
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Any comment:	n.a.																								

Relevant SDG	6 - 'Clean Water and Sanitation - Safe drinking water provide'
Data / Parameter	$N_{p,y}$ <b>17-m</b>
Data unit	Number of Person.days
Description	Number of person.days consuming water supplied by project scenario p through year y
Measured/calculated/default	calculated
Source of data used	The value is calculated using the monitored data and the following formula: $N_{p,y} = \text{Filters\_Y} * n_j * 365$ Where Filters_Y and $n_j$ are measured empirically, as described above.
Value applied	$N_{p,y} = 7,269,895$
Monitoring equipment	Survey equipment
Monitoring frequency	Annually
Calculation method	The value is calculated using the monitored data and the following formula: $N_{p,y} = \text{Filters\_Y} * n_j * 365$ Where Filters_Y and $n_j$ are measured empirically, as described above.
QA/QC procedure	Development of surveys and data recording in accordance with the requirements of the Quality Management System.
Purpose of data:	Ensure that the population consumes drinking water.
Any comment	n.a.

Relevant SDG	12 – 'Ensure sustainable consumption and production patterns'
Data / Parameter	$f_{nr,b,y}$ <b>18-m</b>
Data unit	Fractional non-renewability
Description	Non-renewability of woody biomass fuel during year y
Measured/calculated/default	calculated
Source of data used	(see 'Spouts - ERC' spreadsheet, 'fNRB Uganda' worksheet)
Value applied	$f_{nr,b,y} = 82.0$
Monitoring equipment	Survey equipment
Monitoring frequency	Fixed by baseline study for a given crediting period. Annually (Exceptionally the Value applied will be valid for periods 2017/2018 and 2018/2019)
Calculation method	(see 'Spouts - ERC' spreadsheet, 'fNRB Uganda' worksheet)

QA/QC procedure	Development of surveys and data recording in accordance with the requirements of the Quality Management System.
Purpose of data	Definition of the quantity of wood fuel burned avoided
Any comment:	n.a.

Relevant SDG	12 – ‘Ensure sustainable consumption and production patterns’
Data / Parameter:	$W_F$ (Kiln) - (Leakage from filter production in the wood kiln)
Data unit:	Tonnes of wood / filter <b>19-m</b>
Description:	Amount of wood used to cook one filter in the wood kiln.
Measured/calculated/default	Calculated
Source of data used:	<p>The parameter is estimated empirically by measuring the amount of wood used in the kiln.</p> <p>More specifically, two quantities are measured:</p> <ul style="list-style-type: none"> <li>• Amount of wood used as fuel</li> <li>• Number of filters cooked (this number is fixed)</li> </ul> <p>The parameter <math>W_F</math> is calculated by dividing the amount of wood by the number of filters produced.</p> <p>This measurement is carried out several times to obtain an average.</p> <p>Detailed data and calculations are presented in the Emission Reduction Calculations spreadsheet.</p>
Value applied	$W_F$ (Kiln) = 4.45E-03
Monitoring equipment	Survey equipment
Monitoring frequency	This quantity will be reassessed if and when the technology to produce the filters (i.e. the kiln) is changed.
Calculation method	(see ‘Source of data used’)
QA/QC procedure	Development of surveys and data recording in accordance with the requirements of the Quality Management System.

Purpose of data	This parameter is used in the following formula:  $LKiln = Filtersy * WF * ((\int NR_{B,p,y} * EF_{p,fuel,CO2}) + EF_{p,fuelnonCO2}) * NCV_{p,fuel}$
Any comment:	n.a.

<b>Relevant SDG</b>	6 - 'Clean Water and Sanitation - Safe drinking water provide'																																				
<b>Data / Parameter:</b>	Water Quality (carried by and accredited, ISO certified lab <sup>16</sup> ) <b>22-m</b>																																				
Data unit:	The test measures concentrations of several levels of pollutants. The table below is a screenshot from one example water test. In particular, it shows the units used for each pollutant  <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th colspan="4">TEST RESULT</th> </tr> <tr> <th>Sr. No.</th> <th>Test Parameters</th> <th>Standard Methods</th> <th>Result</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>pH</td> <td>APHA 22<sup>nd</sup> Edition 4500 H+(A+B)</td> <td>6.62</td> </tr> <tr> <td>2</td> <td>Fluoride (as F)</td> <td>APHA 22<sup>nd</sup> Edition 4500 F-(D)</td> <td>0.005 mg/L</td> </tr> <tr> <td>3</td> <td>Iron (as Fe)</td> <td>APHA 22<sup>nd</sup> Edition 3500 Fe (B)</td> <td>Absent</td> </tr> <tr> <td>4</td> <td>Nitrate- Nitrogen (as NO<sub>3</sub>)</td> <td>APHA 22<sup>nd</sup> Edition 4500 N-(B)</td> <td>0.52 mg/L</td> </tr> <tr> <td>5</td> <td>Sulphate (as So<sub>4</sub>)</td> <td>APHA 22<sup>nd</sup> Edition 4500-So<sub>4</sub> (C+D+E)</td> <td>Absent</td> </tr> <tr> <td>6</td> <td>Total Colonies</td> <td>APHA 22<sup>nd</sup> Edition</td> <td>Absent</td> </tr> <tr> <td>7</td> <td>Total Coliform (MPN Technique)</td> <td>APHA 22<sup>nd</sup> Edition</td> <td>Absent</td> </tr> </tbody> </table>	TEST RESULT				Sr. No.	Test Parameters	Standard Methods	Result	1	pH	APHA 22 <sup>nd</sup> Edition 4500 H+(A+B)	6.62	2	Fluoride (as F)	APHA 22 <sup>nd</sup> Edition 4500 F-(D)	0.005 mg/L	3	Iron (as Fe)	APHA 22 <sup>nd</sup> Edition 3500 Fe (B)	Absent	4	Nitrate- Nitrogen (as NO <sub>3</sub> )	APHA 22 <sup>nd</sup> Edition 4500 N-(B)	0.52 mg/L	5	Sulphate (as So <sub>4</sub> )	APHA 22 <sup>nd</sup> Edition 4500-So <sub>4</sub> (C+D+E)	Absent	6	Total Colonies	APHA 22 <sup>nd</sup> Edition	Absent	7	Total Coliform (MPN Technique)	APHA 22 <sup>nd</sup> Edition	Absent
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Measured/calculated/default	Measured																																				
Source of data used:	The laboratory receives water samples from each village																																				
Value applied:	Value applied: Absent (i.e. absence of e.coli and other coliforms). In all the tests carried out, it has been found that total colonies of e.coli and total coliform were absent. This was expected from the application of chlorine (see box above).																																				
Monitoring equipment	Survey equipment																																				

<sup>16</sup> Sai Biocare Pvt. Ltd.

Monitoring frequency	Twice a year in every village (this is four times more frequently than the requirement by the Methodology, i.e. once every two years by accredited labs).
Calculation method	n.a.
QA/QC procedure	The water tests are carried out by a third party lab that is ISO certified.
Purpose of data	To ensure the provision of safe drinking water
Any comment:	<i>(See Appendix 2 - Water Quality Test - Results)</i>

**D.3. Implementation of sampling plan**

>> *(If data and parameters monitored described in section D.2 above are determined by a sampling approach, provide a description on how project participants implemented the sampling plan and surveys for those data and parameters according to the approved PDD.)*

The samples are taken randomly from the customers database. First, we randomly select a number of regions served by the project. Then, within each region, we select at random a number of customers to be interviewed to match the sample size required by the methodology.

- Monitoring Survey sample sizing and data collection.

The following guidelines were used to determine the minimum sample size :

- i. Group size <300: Minimum sample size 30 or population size, whichever is smaller
- ii. Group size 300 to 1000: Minimum sample size 10% of group size
- iii. Group size > 1000: Minimum sample size 100.

Since our group size is larger than 1000, we randomly survey at least 100 customers, which meets the requirements shown above in iii.

- Monitoring Survey Representativeness. The TPDDTEC Meth requires that:

“End users from the project scenario are selected using representative sampling techniques to ensure adequate representation. Common sampling approaches such as representative random sampling are allowed and geographic distribution should be factored into selection criteria. End users can be surveyed at any time throughout the year with care taken to collect information pertaining to seasonal variations in technology and fuel use patterns.”

To meet the above requirement, we use a random sampling approach that factors in geographic distribution. This is implemented as follows:

1. To factor geographic distribution, we select separate regions where respondents will then be sampled randomly.
2. In each of the identified regions, we select respondents randomly.
3. The total number of interviewees shall be at least 100 to ensure that the sample size requirement above (case iii) is met.

**Detail on the Sampling Process**

This section describes in detail how the sampling process was carried out.

The survey was collected using Google Forms.

Spouts of Water maintains a database of all its customers.

In 'Spouts-ERC' spreadsheet, 'Survey 2019' worksheet we reproduce the entire collected dataset and the original diagram output on Google Forms.

It is deemed that the survey (conducted in July 2019) properly responds to the analysed monitoring period.

Our goal was to interview at least 100 respondents. We considered the option of selecting 116 respondents randomly from the above database (see 'Spouts-ERC' spreadsheet, 'Sampling 2019' worksheet).

In Seccion B.1 the tables Tab 1.a, Tab 1.b, Tab 2.a, Tab2.b, Tab 3.a, Tab 3.b show details of the water filters distribution:

## SECTION E. Calculation of SDG outcomes

### E.1. Calculation of baseline value or estimation of baseline situation of each SDG outcome

>> (Provide details of equations and approaches used to calculate/estimate baseline values.)

#### 1 – SDG13 – Climate Action

**UN TARGET (13.B) :** “Promote mechanisms for raising capacity for effective climate change-related planning and management in least developed countries and small island developing States, including focusing on women, youth and local and marginalized communities”

RELEVANT MONITORING INDICATOR: **Carbon Emission Reductions**

In order to calculate the **Emission Reduction of CO2** we use the following equations. These equations are presented in detail in the PDD and are also implemented in the Emission Reduction Calculation.

#### BASELINE

$$BE = \text{Filter\_Y} * \text{tCO}_2/\text{Filter}$$

**PERIOD 2017-2018:**

$$BE1 = 3,226 * 3.238 = 10,446 \text{ [tCO}_2\text{]}$$

**PERIOD 2018-2019:**

$$BE2 = 3,541 * 3.238 = 11,466 \text{ [tCO}_2\text{]}$$

#### PROJECT

$$PE = L_{\text{Kiln}} = \text{Filters\_Y} * W_F * ((\sum \text{NRB}_{p,y} * \text{EF}_{p,\text{wood},\text{CO}_2}) + \text{EF}_{p,\text{wood},\text{nonCO}_2}) * \text{NCV}_{p,\text{wood}}$$

**PERIOD 2017-2018:**

$$PE_1 = L_{Kiln} = 3,226 * 4.45E-03 * ((82\% * 112) + 6.424) * 0.015 = 21 \text{ tCO}_2$$

**PERIOD 2018-2019:**

$$PE_2 = L_{Kiln} = 3,541 * 4.45E-03 * ((82\% * 112) + 6.424) * 0.015 = 23 \text{ tCO}_2$$

**NET BENEFIT - PERIOD 2017-2018**

$$ER_1 = BE * (1-U_y) - PE = 10,446 * (1-82\%) - 21 = 8,544 \text{ [tCO}_2\text{]}$$

**NET BENEFIT - PERIOD 2018-2019**

$$ER_2 = BE * (1-U_y) - PE = 11,466 * (1-82\%) - 21 = 9,379 \text{ [tCO}_2\text{]}$$

**NET BENEFIT (TWO YEARS):**

$$\begin{aligned} ER &= (BE * (1-U_y) - PE) = (10,446 + 11,466) * (1-82\%) - (23 + 23) \\ &= 17,924 \text{ [tCO}_2\text{]} \end{aligned}$$

Where:

- BE = *Baseline emissions*
- PE = *Project emissions*
- ER = *Emission Reduction of CO<sub>2</sub>*
- Filters-Y = *N° filters*
- W<sub>F</sub> = *The amount of wood used to produce one ceramic filter in the kiln*
- tCO<sub>2</sub>/Filter = *Weighted Carbon per filter*
- f<sub>NRB</sub> = *% Non Renewable Biomass*
- EF<sub>p,wood,CO<sub>2</sub></sub> = *CO<sub>2</sub> Emission Factor for Wood*
- EF<sub>p,wood,CO<sub>2</sub></sub> = *Non CO<sub>2</sub> Emission Factor for Wood*
- NCV<sub>p,wood</sub> = *Net Calorific Value of Wood*
- L<sub>Kiln</sub> = *Leakage*
- U<sub>y</sub> = *Usage rates*

**2 – SDG 12 – Ensure sustainable consumption and production patterns**

**UN TARGET (12.2) :** “By 2030, achieve the sustainable management and efficient use of natural resources”

**UN RELEVANT MONITORING INDICATOR (12.2.1) :** Domestic material consumption (Quantity of wood fuel burned avoided)

**BASELINE****PERIOD 2017-2018:**

$$\begin{aligned} BW_{b1} &= Ly * W_b * \pi_w * Filters\_Y = 6,948 * 0.00042687 * 0.57 * 3,226 = \\ &= 5,454 \text{ Tonnes of wood} \end{aligned}$$

**PERIOD 2018-2019:**

$$\begin{aligned} BW_{b2} &= Ly * W_b * \pi_w * Filters\_Y = 6,948 * 0.00042687 * 0.57 * 3,541 = \\ &= 5,986 \text{ Tonnes of wood} \end{aligned}$$

**PROJECT:**

$$BW_p = 0 \text{ (zero) Tonnes of wood}$$

**NET BENEFIT PERIOD 2017-2018:**

$$\begin{aligned} BW_{NB1} &= BW_b - BW_p \\ &= 5,454 - 0 = 5,454 \text{ Tonnes of wood} \end{aligned}$$

**NET BENEFIT PERIOD 2018-2019:**

$$\begin{aligned} BW_{NB2} &= BW_b - BW_p \\ &= 5,986 - 0 = 5,986 \text{ Tonnes of wood} \end{aligned}$$

**NET BENEFIT (TWO YEARS):**

$$\begin{aligned} BW_{NB} &= BW_b - BW_p \\ &= ((5,454 + 5,986) - 0) = 11,440 \text{ Tonnes of wood} \end{aligned}$$

Where:

- $BW_b$  = Quantity of fuel burned during the baseline
- $BW_p$  = Quantity of fuel burned during the project
- $BW_{NB}$  = Net Benefit in the quantity of fuel burned during the baseline
- $Ly$  = Eligible litres per year-hh
- $Filters\_Y$  = N° filters
- $W_b$  = Fuel required to boil 1 litre of water
- $\pi_w$  = Percentage using wood

## 3 – SDG 6 – Clean Water and Sanitation

**UN TARGET (6.1):** “By 2030, achieve universal and equitable access to safe and affordable drinking water for all”

UN RELEVANT MONITORING INDICATOR (6.1.1): **Proportion of population using safely managed drinking water services**

BASELINE

$$PSW_b^{17} = C_j = 9.5 \%$$

PROJECT:

$$PSW_p = C_j + N_p / P_U = 9.5 + (19,919 / 44,270,563) = 9.54 \%$$

**NET BENEFIT:**

$$PSW_{NB} = PSW_p - PSW_b \\ = 9.5 + (19,919 / 44,270,563) - 9.5 = 0.04 \%$$

Where:

- $P_U$  = Population of Uganda<sup>18</sup>
- $N_p$  = Number of persons consuming water supplied by the project<sup>19</sup>
- $PSW_b$  = Proportion of population using safely managed drinking water services in the baseline
- $PSW_p$  = Proportion of population using safely managed drinking water services in the project
- $PSW_{NB}$  = Net Benefit in the proportion of population using safely managed drinking water services
- $C_j$  = % users who used clean water prior to the project.

### E.2. Calculation of project value or estimation of project situation of each SDG outcome

>> (Provide details of equations and approaches used to calculate/estimate project values.)

The calculation of the project situation is presented in section E.1.

### E.3. Calculation of net benefits as difference of baseline and project values or direct calculation for each SDG outcome

The calculation of the net benefit is presented in section E.1.

<sup>17</sup> Prior to the project, Spouts did not provide water filters.

<sup>18</sup> <https://en.wikipedia.org/wiki/Uganda>

<sup>19</sup> Please refer to the Emission Reductions spreadsheet which includes the data presented here.

E.4. Summary of ex-post values of each SDG outcome for the current monitoring period

Item	Baseline estimate	Project estimate	Net benefit	
			Period 2017-2018	Period 2018-2019
SDG 13	'17-'18 → 10,446 tCO <sub>2</sub> '18-'19 → 11,466 tCO <sub>2</sub>	'17-'18 → 1,902 tCO <sub>2</sub> '18-'19 → 2,088 tCO <sub>2</sub>	8,544 tCO <sub>2</sub>	9,378 tCO <sub>2</sub>
SDG 12	'17-'18 → 5,454 Tonnes '18-'19 → 5,986 Tonnes	0 Tonnes	5,454 Tonnes	5,986 Tonnes
SDG 06	9.50 %	9.54 %	0.04 %	0.04 %

E.5. Comparison of actual value of outcomes with estimates in approved PDD

Item		Values estimated in ex ante calculation of approved PDD (2 years)	Actual values achieved during this monitoring period (2 years)
SDG 13	Emission Reduction	18,994 tCO <sub>2</sub>	17,922 tCO <sub>2</sub>
SDG 12	Wood not burned	14,162 Tonnes	11,440 Tonnes
SDG 06	Proportion of population using safely managed drinking water services	0.08 %	0.08 %

E.6. Remarks on difference from estimated value in approved PDD

- a) The decrease in wood fuel avoided by the project is due to the decrease in the percentage using wood in relation to that assumed in the VPA-DD.  
Consequently there was also an increase in the number of filters sold to reach the amounts of tCO<sub>2</sub> hypothesized in the VPA-DD.
- b) The decrease in reduced tCO<sub>2</sub> is due to the elimination of filters sold abroad, that is, outside of Uganda.

**SECTION F. Stakeholder inputs and legal disputes**

### F.1. List all inputs/grievances which have been received for the project during the monitoring period together with their respective answers/actions

#### *Solicitation of comments from stakeholders*

Since Spouts is being registered as retroactive, no physical Stakeholder Consultation meeting was carried out prior to the start of the project activity. On the other hand, we carried out a Stakeholder Consultation via other channels, which allowed us to collect feedback, comments and suggestions from stakeholders.

This section below describes who we contacted and how.

We identified over 30 stakeholders that are impacted by or support Spouts in a variety of forms.

We sent an introductory email to all stakeholders. This included a link to a dedicated webpage<sup>20</sup> with details of the project, including a video and external links with additional information, such as Spouts website.

The webpage included a form allowing stakeholders to submit comments. Comments could also be submitted by email to [info@believegreen.org](mailto:info@believegreen.org).

Below is the email we sent to the stakeholders:

*Dear Stakeholder,*

*We greatly appreciate your involvement with Spouts. As a next step to understanding the impact Spouts has on our mission of getting clean water to all Ugandans we would like you to share your views of the Purifaaya filter and Spouts.*

*Please go to the link <https://federicogallo1.wixsite.com/believegreen/spouts-local-stakeholder-consultati> (password: lsc) and answer the questions in the form "Stakeholder comments" at the bottom of the page.*

*We hope you can fill this form out as soon as possible as it will enable us to meet one of the requirements for carbon credits. The Spouts water filter replaces boiling water for many families, reducing the amount of wood and charcoal used. This saves carbon and Spouts hopes to receive carbon credits for this work.*

*Thank you,*

*Spouts of Water*

Since not all stakeholders responded to the above invitation, we sent the email below to the stakeholders who had not responded in order to increase the response rate:

*Dear Stakeholder,*

---

<sup>20</sup> <https://federicogallo1.wixsite.com/believegreen/spouts-local-stakeholder-consultati> (password: lsc)

## Monitoring Report - Spouts\_3 - GS6445

*More children in Uganda die from waterborne illness' than either malaria or AIDS (WHO Child Mortality Estimates 2015) and more than half the population still leaves their water untreated (Uganda Bureau of Statistics 2014).*

*SPOUTS of Water directly addresses this need by building ceramic pot filters costing less than 1/5th of the cost of other filters on the Ugandan market, but we are currently operating with significant help from donor funding. Combined with the Gold Standard carbon finance program we can become a unique and economically sustainable business which improves public health.*

*PLEASE TAKE 5 MINUTES, [click this link](#) (password: lsc) and fill out this very short stakeholder survey asking for feedback from our valuable supporters and partners. Your feedback is a critical step to receiving carbon credits for the work we do to displace burning of charcoal and wood for boiling water.*

*Thank you so much for your time and continued involvement!*

*Spouts of Water*

The box below shows the form used to obtain the comments by the stakeholders. This is included at the bottom of the stakeholder consultation webpage. (Comments could also be submitted by email to [info@believegreen.org](mailto:info@believegreen.org))

### Stakeholder Comments

Please submit your comments on SPOUTS activities using the form below. Thank you.

**\* Required**

Surname / Name \*

Your answer

Institution or organization

Your answer

Position at the above institution

Your answer

Phone number

Your answer

Email

Your answer

Comments \*

Your answer

**SUBMIT**

Never submit passwords through Google Forms.

### Non-technical summary of the Programme

A webpage was created to provide the stakeholders with a non-technical summary of the programme: <https://federicogallo1.wixsite.com/believegreen/spouts-local-stakeholder-consultati> (password: lsc)

The box below shows a copy of the introduction section of the Consultation webpage that stakeholders were invited to visit:

## Local Stakeholder Consultation



### SPOUTS Safe Drinking Water Project, Uganda

Believe Green and Spouts are pleased to invite you to submit your comments for the Local Stakeholder Consultation for the project "Believe Green Spouts safe drinking water project" in Uganda.

Ten million Ugandans, or one third of the population, lack access to a clean source of water. This results in negative health, social, economic and environmental consequences. To make water safe for drinking, many families boil it, using wood, charcoal or other biomass which comes from non-renewable sources. Many families also are unaware of the health risks and continue to drink unsafe water.

To help address this challenge, Spouts has developed an innovative business approach whereby it manufactures and distributes Purifaaya ceramic water filters that are then used by low income families to purify and disinfect their drinking water at home.

However, a limiting factor for Spouts to accelerate its growth is access to investments and capital. To help overcome this obstacle, Spouts has partnered with Believe Green (BG) to certify the carbon emission reductions arising from avoided boiling of water to make it safe to drink. The resulting carbon credits generate a much needed source of additional revenue that allows Spouts to accelerate its growth and reach more communities across Uganda.

As part of the carbon certification process, we would greatly appreciate your participation and support in this stakeholder consultation to help advance this project. The purpose of the consultation is to discuss positive and negative impacts of Spouts' activities and to give stakeholders and the general public an opportunity to express their views. You can submit your comments in the contact form below or by emailing us at [info@believegreen.org](mailto:info@believegreen.org).

For more information on Spouts' business model and activities or Believe Green's carbon finance process, please check the video and links below.

The webpage also provides detailed and easily digested information via videos and external links. In particular:

- a. a link to Spouts' website, which describes in detail its activities,
- b. a weblink to technical details on Purifaaya ceramic filters,
- c. a video explaining Believe Green's carbon finance contribution.

The webpage also includes a form to submit comments, which can also be submitted via email.

Invitation tracking table

The table below summarizes the stakeholders that were invited and responded to our consultation.

Stakeholder #	Category	Name & surname	Email	Telephone	Institution	Responded?
1	C	Hon. Sam. Cheptoris	samcheptoris@gmail.com	(256) 772 997722	Ministry of Water and Environment	No
2	C	Chebet Maikut	chmaikut@yahoo.com, chmaikut@gn	(256) 701 69 414	Ministry of Water and Environment	No
3	A	Benson Nduhura	nduhurabenson@gmail.com	(256) 701 467 968	Besania SACCO	Yes
4	D	Mariko Fuwa	fuwa.mariko@savechildren.or.jp	771388475	Save the Children	Yes
5	D	Florence Ringe	ringeflorence@gmail.com	(256) 772357880	POPOW	Yes
6	A	Francis	kiima_foods@yahoo.com	(256) 785 471 880	Kiima Foods	Yes
7	A	Elinor Awchem	eawchem@yahoo.com	0772 514 661, 0751 069 065		Yes
8	D	Humphrey Lukatome	hlutakome@livinggoods.org	0774 005 040	Living Goods	No
9	B	Ian Keyune			Wakiso District	No
10	B	Ezekiel	NO EMAIL	0753 898 324	Nakawuka Town / Kasuku Cell	No
11	D	Sharmin	sharminsharif1@gmail.com		BRAC	No
12	A	Kyaka Twaha	twahakyaka06@yahoo.com		UCSCU	No
13	D	Ruth Kim	esmruithkim@gmail.com	0782 611 217	ENTS	Yes
14	A	Stella Kivela	stellakivela@vine.co.ug	774004448	Vine Pharmacies	Yes
15	A	Modester	busiusacco@yahoo.co.uk	772192237	Busiu SACCO	Yes
16	A	Rita		788159368	Mushanga SACCO	No
17	A	Stephen Katenge	katenge888@yahoo.com	783366598	Katosbec SACCO	Yes
18	A	Robert Kaheebwa	kaheebwarobert@gmail.com	774738741	Kyarusozzi Microfinance	Yes
19	A	Robert/Peterson		703774812	Kihuura SACCO	No
20	A	Humphrey Wamami	humphreywamani@yahoo.com	704855745	UCSCU	Yes
21	A	Nyangaro Collins	collinsnyangaro@gmail.com	782300601	UCSCU	Yes
22	A	Julius	julius@entventureenterprises.org	702314130	ENVenture	No
23	D	Julie Mwebesa	mwebesa@unhcr.org	772710140	UNCHR	Yes
24	D	Tracy Lamwaka	tracy.lamwaka@oxfamnovib.nl	772463979	Oxfam	Yes
25	A	Julius	julius.mubiru@finca.org	256 705 031 830	FINCA	Yes
26	A	Richard	Richard.Ndahiro@finca.org	752721011	FINCA	No
27	D	Shilpa	shilpa.alva@surgeforwater.org	1 312-899-6298	Surge for Water	No
28	A	Andrew	ajohnston@rti.org	784177720	RTI	No
29	A	Augustine Bagenda	augustines@pedn.org		PEDN	Yes
30	A	Marjolijn	M.Wilmink@mvnederland.nl		Kajjansi Project	No
31	A	Thies	thies.timmermans@gmail.com	772458796	Eco-tourism projects/recycling	No
32	A	Charles	cnjubakiwa@gmail.com	775107701	BRAC	No
33	A	Paul		772962310	Kinyara Sugar	No
34	A	Tito	muhereza2tito@gmail.com	0777682258 / 0759401247	BUFA	No
35	A	Kayondo Mugagga	kayondomugagga@ymail.com	755816444	MAMEDICOT	Yes
36	A	Denis Wabuki	wabuyidenis@gmail.com	782888360	Busiu SACCO	Yes
37	A	Andrew Bownds	andy@ugandamarathon.com	751447181	Masaka Marathon	Yes
38	A	Robert Chanceatenyi		774738741	Kyarusozzi Microfinance	Yes

During the Monitoring Period, the project received no grievances and no legal disputes.

The table below presents the feedback that we have received.

Surname / Name	Comments
KAYONDO MUGAGGA	The intervention that Spouts of water has come up with, shall help a lot in helping the rural communities adapt to climate change, through reducing on the number of number of trees cut down for wood fuel.
Wabuyi Denis	We are glad to be in collaboration with Spouts of Water and for your being responsive to all the questions at least most of the times

<p>Andrew Bownds</p>	<p>We have been able to buy over 50 20L filters and sell them onto rural based families in Masaka Region. The feedback we have had from the families is that the filters have reduced their daily living costs as they no longer need to use other systems for purifying there drinking water. We have found that Spouts of Water is a great program that can really make a large impact on both the environment and families own sustainability. Thank You</p>
<p>Nyangaro Collins</p>	<p>The purifaaya is such a reliable and cost-saving water dispenser.</p>
<p>Benson Nduhura</p>	<p>The filters you built are fine. My customers really like the product, people are appreciating the product very much. No problem so far for us and I think the product is good.</p>
<p>Robert Kaheebwa</p>	<p>We like the filters. The customers are very thankful, those who have taken filters have no problems.</p>
<p>Humphrey Wamani</p>	<p>The filter is so good and my dad bought one for at home in the village that we use as a family. Whoever comes there and takes water loves it. When I'm marketing it they feel the price is too high, but people who have it love it.</p>
<p>Francis</p>	<p>The customers like what is written on the bucket. Sometimes it is difficult to explain that the filters really do work and remove germs because it is a new technology. We would like to improve that. We would like to put some in public places to help market them because they are a good product.</p>
<p>Julius Mubiru</p>	<p>The Purifaaya has helped families in Western Uganda not only by giving them access to clean and safe water for drinking but also reducing on both fuel costs and time taken boiling water. It's reducing on the deforestation rate in the region by providing the easiest way of making water safe for drinking than boiling it with charcoal and firewood which are the main sources of fuel to most families in the region.</p>
<p>Stella Kivela</p>	<p>We work with SPOUTS to provide water to our clients. Secondly we are selling the filters. The filters are amazing, that's for sure, they are affordable, our clients love them!</p>
<p>Modester</p>	<p>Customers are complaining that the cost has increased. We hoped we would increase our market but our customers are not buying the product, they do not buy the product.</p>

<p>Stephen</p>	<p>My experiences that the SPOUTS are delicate and the filters are sometimes breaking and customers are upset and don't want to pay. The customers like the product, but many of them feel that 75K is too high a price. transportation is difficult, very delicate materials and high selling prices</p>
<p>Julie Mwebesa</p>	<p>First, the initiative is good. Locals need water treatment. Yes, it is a great thing, a great initiative, we like working with Spouts. Based on the reports from the field, people wanted a higher flowrate, so if that can improve it would be better. It is not adequate to provide drinking water for a large family. The affordability is also a challenge when we are dealing with refugees. Some of them are able to afford, especially when saving with a Sacco, but there are others who would need the filters and are not able to afford.</p>
<p>Ringe Florence</p>	<p>The filters in schools enable children not only to take clean and safe water, but also concentrate in class as they do not have to move in and out of class in such of drinking water. Households with Water filters no longer suffer from water Borne diseases hence increased production and productivity as a result of hood health.</p>
<p>Ruth Kim</p>	<p>Yes I am very thankful to SPOUTS in Uganda. These people who do not have access to clean water are able to drink clean water. Wonderful. Ideally we pray that many more people will purchase this from Spouts to live a healthy. I hope this continues even in other countries in Africa.</p>
<p>Bagenda Augustine</p>	<p>Purifaayas are impacting greatly to the young people in the schools in areas to do with better health, regarding reduction of water borne diseases, thereby enabling the young people to attend school, and learn better which leads to better performance.</p>
<p>Mariko Fuwa</p>	<p>We are really happy with the filter, both myself and with the project. What works really well was that Spouts came and did the training of the trainer and even now our volunteer is still training so this was helpful. I think we need to figure out how the filter can be maintained sustainably because a few are getting cracked and then do not get used. We need to discuss with the schools to figure out a system to make this more sustainable.</p>
<p>Elinor Awchem</p>	<p>I like the filters very much, I am personally a user and I use it at home. I have told my family and friends and most of them have taken it because it has reduced the cost of buying fuel for boiling water. In addition to the economy they are also very easy to use and clean.</p>

Robert Chanceatenyi	We have no problem because the clients they want more filters. Yes, they actually are all out of stock because people like them so much. It has helped me as well, I have my own filter. The demand is peaking because more people want filters to help them in their home.
Tracy Lamwaka	The filter is very good, especially in emergency situations where there is no safe water points. They can easily access safe water when it is most needed. It is very critical and essential in emergency situations. It is very good that it is a storage device as well. The taps that people withdraw the water from the bucket and there is no way for the water to be contaminated, so it is simple and safe. It also acts as a storage as well, which is very important. Our partnership at Oxfam with Spouts has been very good. We have volunteers who train people on the filter household use and this is very effective. They follow up afterwards as well and people are still using and like their filter.

***Report on consideration of comments received***

In our opinion, none of the comments, suggestions or questions received so far requires changes to our Programme design.

**F.2. List all inputs/grievances from previous monitoring period where follow up action is to be verified in this monitoring period**

This is the first monitoring period

**F.3. Provide details of any legal contest or dispute that has arisen with the project during the monitoring period**

No legal contest or dispute has arisen with the project during the monitoring period.

### Appendix 1 – Sample filled questionnaires

We interviewed 110 respondents. We used Google Forms to write the survey and collect the responses. All individual responses are available.

The screenshots below show the entire survey filled by the first respondent.

Le risposte non possono essere modificate

## Spouts Survey - July 2019 - OPEN

Thank you for answering this survey.

It is to help us understand how Spouts is impacting the lives of their customers – and to help the company decide what more it can do to create a positive impact in the local community.

Customer number

0781840229

Before you knew about Spouts, what was your source of drinking water? (Cj)

- Water from well
- Water collected from nature (e.g. rains, rivers, lake)
- Tap water from the village
- Village pump water or other public supply points
- Tap water at home
- Other (please tell us what):

Before Spouts, did you disinfect the water before drinking it? (X\_Boil)

Yes

No

If you used to disinfect your water, how did you do it? (X\_Boil)

Boil the Water

Filter the water

Altro: .....

Do you use Spouts water for purposes other than drinking?

Yes

No

If yes, what percentage of the water do you use for purposes other than drinking?

- 10%
- 25%
- 50%
- 75%

For what purposes are using Spouts water?

- Drinking
- Cooking
- Human washing
- Altro: .....

Are you using and maintaining correctly your filter?

- Yes
- No

What type of cook stove do you use in your kitchen? (W)



Three stone wood stove

Altro:

.....



Charcoal

What is your name?

Omona Brian

What is your phone number

0781840229

What is your address?

Kajjansi-Entebbe road

For how long have you used Spouts products?

- Less than 3 months
- 3-6 months
- 6-12 months
- More than 12 months

Why did you decide to use Spouts products? (Please tick every box that is relevant)

- It is more hygienic
- It is better for our family's health
- It is affordable
- Altro: .....

Have you reduced the amount of firewood you use at home to boil water?

- Yes
- No
- Not sure

Has there been any change to your health since you started to using Spouts water?

- My general health has improved
- My general health has gotten worse
- I cannot see any changes in my health
- Not sure

What do you like about Spouts products and services?

- The health benefits
- It is affordable
- Altro: .....

Do you think that the quality of air in your home has improved over the last year, (if you no longer needed to boil water)?

- Yes
- No
- Not sure

Do you think that the project created opportunities to meet other people of the village and to interact with them?

- Yes
- No
- Not sure

How old are you?

- 15-20
- 21-30
- 31-40
- 41-50
- 51+

What is your level of education?

- Without education
- Primary school
- Secondary school
- High school
- University or college
- Altro: .....


How many members does your family have?

- 1
- 2
- 3
- 4
- 5
- 6+

Data/ora invio: 09/08/19, 08:23

### Appendix 2 – Water Quality Test - Results

#### A) Ministry of Water & Environment - (Set-2019)



Republic of Uganda

**MINISTRY OF WATER AND ENVIRONMENT**  
**NATIONAL WATER QUALITY REFERENCE LABORATORY - ENTEBBE**  
**Certificate of Analysis**

Client Name	Spouts of Water			<b>US 201 Drinking Water Standards Class I</b>
Client Address	P. O. Box 12042, Rubaga			
Equipment Type	Purifaaya 5.5 Ceramic Water Filter			
Date of Analysis	7-Aug-19			
Purifaaya Ceramic Water Filter	Raw Water Lake	5.5 Purifaaya	Percentage Removal %	
Electrical Conductivity(µS/cm)	110	115	NA	1500
pH	6.5	6.3	NA	6.5 - 8.5
Turbidity (NTU)	8.6	2.4	NA	5
Total Coliforms (CFU/100mls)	TNTC	<1	99.9	<1
E. Coli (CFU/100mls)	28	<1	99.9	<1
Flow rate (l/hr)	NA	4.6	NA	NA

Notes; Samples are analyzed on as received basis. The client does bear sampling responsibility as to the representative characters of the sample delivered. Results are therefore based on the sample delivered and analyzed. mg/l - stands for milligrams per liter  
 NA Stands for Not Applicable

LABORATORY  
MANAGER

Checked by  
*[Signature]*


NATIONAL WATER QUALITY  
REFERENCE LABORATORY - ENTEBBE

Ministry of Water and Environment  
 Directorate of Water Resources Management Department  
 Water Quality Management Department  
 P.O Box 19, Entebbe  
 Tel: 041-321342  
 Fax: 041-321358

PRINCIPAL ANALYST  
LABORATORIES

30 SEP 2019

Issued by  
Principal Analyst  
*[Signature]*



Republic of Uganda

**MINISTRY OF WATER AND ENVIRONMENT**  
**NATIONAL WATER QUALITY REFERENCE LABORATORY - ENTEBBE**  
**Certificate of Analysis**

Client Name	Spouts of Water			<b>US 201 Drinking Water Standards Class I</b>
Client Address	P. O. Box 12042, Rubaga			
Equipment Type	Purifaaya 4.5 Ceramic Water Filter			
Date of Analysis	7-Aug-19			
Purifaaya Ceramic Water Filter	Raw Water Lake	Treated	Percentage Removal %	
Electrical Conductivity(µS/cm)	110	120	NA	1500
pH	6.5	6.2	NA	6.5 - 8.5
Turbidity (NTU)	8.6	1.8	NA	5
Total Coliforms (CFU/100mls)	TNTC	<1	99.9	<1
E. Coli (CFU/100mls)	28	<1	99.9	<1
Flow rate (l/hr)	NA	4.2	NA	NA

Notes; Samples are analyzed on as received basis. The client does bear sampling responsibility as to the representative characters of the sample delivered. Results are therefore based on the sample delivered and analyzed. mg/l - stands for milligrams per liter  
 NA Stands for Not Applicable

LABORATORY  
MANAGER

Checked by  
*[Signature]*

NATIONAL WATER QUALITY  
REFERENCE LABORATORY - ENTEBBE

Ministry of Water and Environment  
 Directorate of Water Resources Management Department  
 Water Quality Management Department  
 P.O Box 19, Entebbe  
 Tel: 041-321342  
 Fax: 041-321358

PRINCIPAL ANALYST  
LABORATORIES

30 SEP 2019

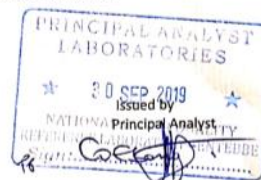
Issued by  
Principal Analyst  
*[Signature]*



MINISTRY OF WATER AND ENVIRONMENT  
 NATIONAL WATER QUALITY REFERENCE LABORATORY - ENTEBBE  
 Certificate of Analysis

Client Name	Spouts of Water			US 201 Drinking Water Standards Class I
Client Address	P. O. Box 12042, Rubaga			
Equipment Type	Purifaaya 3.5 Ceramic Water Filter			
Date of Analysis	7-Aug-19			
Purifaaya Ceramic Water Filter	Raw Water Lake	Treated	Percentage Removal %	
Electrical Conductivity(µS/cm)	110	115	NA	1500
pH	6.5	6.4	NA	6.5 - 8.5
Turbidity (NTU)	8.6	0.98	NA	5
Total Coliforms (CFU/100mls)	TNTC	<1	99.9	<1
E. Coli (CFU/100mls)	28	<1	99.9	<1
Flow rate (l/hr)	NA	3.3	NA	NA

Notes; Samples are analyzed on as received basis. The client does bear sampling responsibility as to the representative characters of the sample delivered. Results are therefore based on the sample delivered and analyzed. mg/l - stands for milligrams per liter  
 NA Stands for Not Applicable



Ministry of Water and Environment  
 Directorate of Water Resources Management Department  
 Water Quality Management Department  
 P.O Box 19, Entebbe  
 Tel: 041-321342  
 Fax: 041-321368

B) Chemiphar Laboratory (U) LTD - (Set-2019)



Kampala, 10<sup>th</sup> August 2018

Spouts of Water Ltd  
 Attn: Quality Assurance Manager  
 Busiro Block, Katala  
 Wakiso District

Dear Sir,

Please find enclosed the results for the requested analysis of the sample.

<u>Sample received on:</u>	1 <sup>st</sup> August 2018
<u>Identification of sample:</u>	Ceramic Water Filter Pot X
<u>Our reference:</u>	18/08/016.1 (Spiked Water Sample)
<u>Sampling by:</u>	Client
<u>Start analysis:</u>	7 <sup>th</sup> August 2018

Page: 1/1

### Certificate of Analysis

**Microbiology:**

Parameter	Method	Units	Results
<i>Pathogens</i>			
Total coliforms	MF-water-T.col	cfu/100ml	46
Escherichia coli	MF-water-T.col	cfu/100ml	34
Faecal streptococci	MF-water-F.entero	cfu/100ml	90
Staphylococcus aureus	PC-food-staph	cfu/100ml	59
Pseudomonas aeruginosa	PC-food-Pseudo_Aer	cfu/100ml	38

Thanking you for your confidence,

Yours Sincerely,



Winnie Nakaayi Kiwanuka  
Quality Assurance Manager



Julius Mbabazi  
Head of Laboratory

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 Test results shall not be reproduced except in full, without a written approval of Chemiphar (U) Ltd.  
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 Data concerning the measurement uncertainty of the test methods (if applicable) is available in the laboratory.

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[www.chemiphar.net](http://www.chemiphar.net) = VAT : 25639-J TIN : 1000033827



Kampala, 10<sup>th</sup> August 2018

Spouts of Water Ltd  
Attn: Quality Assurance Manager  
Busiro Block, Katala  
Wakiso District

Dear Sir,

Please find enclosed the results for the requested analysis of the sample.

Sample received on: 1<sup>st</sup> August 2018  
Identification of sample: Ceramic Water Filter Pot X  
Our reference: 18/08/016.1 (Filtrate)  
Sampling by: Client  
Start analysis: 7<sup>th</sup> August 2018

Page: 1/1

**Certificate of Analysis**

**Microbiology:**

Parameter	Method	Units	Results
<b>Pathogens</b>			
Total coliforms	MF-water-T.col	cfu/100ml	0
Escherichia coli	MF-water-T.col	cfu/100ml	0
Faecal streptococci	MF-water-F.entero	cfu/100ml	0
Staphylococcus aureus	PC-food-staph	cfu/100ml	0
Pseudomonas aeruginosa	PC-food-Pseudo_Aer	cfu/100ml	0

Thanking you for your confidence,

Yours Sincerely,

Winnie Nakaayi Kiwanuka  
Quality Assurance Manager

Julius Mbabazi  
Head of Laboratory

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C) Chemiphar Laboratory (U) LTD - Lake Victoria (Dec-2017)



Kampala, 1<sup>st</sup> December 2017

Spouts of Water Ltd  
Attn: Quality Assurance Manager  
Busiro Block, Katata  
Wakiso District

Dear Sir,

Please find enclosed the results for the requested analysis of the sample.

<u>Sample received on:</u>	24 <sup>th</sup> November 2017
<u>Identification of sample:</u>	Sample 1: Lake Water Raw
<u>Our reference:</u>	17/11/193
<u>Sampling by:</u>	Client
<u>Start analysis:</u>	27 <sup>th</sup> November 2017
<u>Page:</u>	1/1

### Certificate of Analysis

**Microbiology:**

Parameter	Method	Units	Results
<i>Pathogens</i>			
Total coliforms	MF-water-T.col	cfu/100ml	9.0 x 10 <sup>2</sup>
Escherichia coli	MF-water-T.col	cfu/100ml	4.0 x 10 <sup>2</sup>

Thanking you for your confidence.

Yours Sincerely,



Winnie Nakaayi Kiwanuka  
Quality Assurance Manager



Julius Mbabazi  
Head of Laboratory

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Kampala, 1<sup>st</sup> December 2017

Spouts of Water Ltd  
Attn: Quality Assurance Manager  
Busiro Block, Katala  
Wakiso District

Dear Sir,

Please find enclosed the results for the requested analysis of the sample.

Sample received on: 24<sup>th</sup> November 2017  
 Identification of sample: Sample 2: Lake Water Treated  
 Our reference: 17/11/194  
 Sampling by: Client  
 Start analysis: 27<sup>th</sup> November 2017

Page: 1/1

**Certificate of Analysis**

**Microbiology:**

Parameter	Method	Units	Results
<i>Pathogens</i>			
Total coliforms	MF-water-T.col	cfu/100ml	0
Escherichia coli	MF-water-T.col	cfu/100ml	0

Thanking you for your confidence,

Yours Sincerely,

Winnie Nakaayi Kiwanuka  
Quality Assurance Manager

Julius Mbabazi  
Head of Laboratory

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Kampala, 1<sup>st</sup> December 2017

Spouts of Water Ltd  
 Attn: Quality Assurance Manager  
 Busiro Block, Katala  
 Wakiso District

Dear Sir,

Please find enclosed the results for the requested analysis of the sample.

Sample received on: 24<sup>th</sup> November 2017  
 Identification of sample: Sample 3: Tap Water Treated  
 Our reference: 17/11/195  
 Sampling by: Client  
 Start analysis: 27<sup>th</sup> November 2017

Page: 1/1

**Certificate of Analysis**

**Microbiology:**

Parameter	Method	Units	Results
<b>Pathogens</b>			
Total coliforms	MF-water-T.col	cfu/100ml	0
Escherichia coli	MF-water-T.col	cfu/100ml	0

Thanking you for your confidence.

Yours Sincerely,

Winnie Nakaayi Kiwanuka  
 Quality Assurance Manager

Julius Mbabazi  
 Head of Laboratory

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D) Chemiphar Laboratory (U) LTD - Tap water - (Dec-2017)



Kampala, 13<sup>th</sup> December 2017

Spouts of Water Ltd  
Attn: Quality Assurance Manager  
Busiro Block, Katala  
Wakiso District

Dear Sir,

Please find enclosed the results for the requested analysis of the sample.

<u>Sample received on:</u>	7 <sup>th</sup> December 2017
<u>Identification of sample:</u>	Sample 1: Tap Water Raw
<u>Our reference:</u>	17/12/056
<u>Sampling by:</u>	Client
<u>Start analysis:</u>	11 <sup>th</sup> December 2017
<u>Page:</u>	1/1

### Certificate of Analysis

**Microbiology:**

Parameter	Method	Units	Results
<i>Pathogens</i>			
Total coliforms	MF-water-T.col	cfu/100ml	0
Escherichia coli	MF-water-T.cpl	cfu/100ml	0

Thanking you for your confidence,

Yours Sincerely,



Winnie Nakaayi Kiwanuka  
Quality Assurance Manager



Julius Mbabazi  
Head of Laboratory

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Kampala, 13<sup>th</sup> December 2017

Spouts of Water Ltd  
 Attn: Quality Assurance Manager  
 Busiro Block, Katala  
 Wakiso District

Dear Sir,

Please find enclosed the results for the requested analysis of the sample.

Sample received on: 7<sup>th</sup> December 2017  
 Identification of sample: Sample 2: Tap Water Filtered 3.5 L/hr  
 Our reference: 17/12/057  
 Sampling by: Client  
 Start analysis: 11<sup>th</sup> December 2017

Page: 1/1

**Certificate of Analysis**

**Microbiology:**

Parameter	Method	Units	Results
<b>Pathogens</b>			
Total coliforms	MF-water-T.col	cfu/100ml	0

Thanking you for your confidence,

Yours Sincerely,

Winnie Nakaayi Kiwanuka  
 Quality Assurance Manager

Julius Mbabazi  
 Head of Laboratory

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If you have any doubt about the authenticity of this Certificate, please e-mail us at [info@chemiphar.net](mailto:info@chemiphar.net)

Appendix 3 – Double Counting



*December 23<sup>th</sup> 2019*

*Dear Customer,*

*You participate in the Believe Green Safe Drinking Water Carbon Credits Program. This program allows Spouts of Water to provide an affordable, effective and easy-to-use solution for accessing water.*

*Spouts of Water must strictly avoid 'double counting', meaning that you cannot participate in another similar program.*

*We kindly ask you to inform us promptly if you receive a proposal to participate in another program.*

*Thank you for your cooperation.*

*Daniel Yin*

*Spouts of Water Chief Executive Officer*